



Water and Waste Department • Service des eaux et des déchets

2012

ANNUAL REPORT

CITY OF WINNIPEG WATER SUPPLY SYSTEM

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DRINKING WATER SYSTEM AND SOURCE

“Section 32(2) (a) a brief description of the drinking water system, including its water supply source.”

The City of Winnipeg gets its water from Shoal Lake, which is on the border between Manitoba and Ontario, and covers 277 square kilometres. The intake for Winnipeg's water system is on Indian Bay on the western end of Shoal Lake, and is only accessible by rail or boat. Water flows from Shoal Lake to Winnipeg by gravity through a 135 kilometre long aqueduct. The water is stored in Deacon Reservoir, a large reservoir that can hold 8.8 billion litres, enough water to supply Winnipeg for about 20 days. Water passes from Deacon Reservoir to a Drinking Water Treatment Plant, and then on to three smaller reservoirs and pumping stations in different areas of the city. Each day, an average of 219 million litres of water is delivered to approximately 198,000 accounts in Winnipeg.

DISINFECTION METHODS

“Section 32(2) (b) a description of the disinfection methods used.”

The first step in the disinfection process is periodic chlorination of 8 hours per week at the Intake in the warm water season only, as it was determined that it was not necessary in the cold water season. At the Water Treatment Plant, the water passes through several disinfection treatment steps including ozonation, chlorination and UV light disinfection. Finally, the water is chlorinated again at the pumping stations before being distributed to homes and businesses.

DRINKING WATER PARAMETERS

“Section 32(2) (c) a list of all bacteriological, chemical, physical and microbial drinking water quality standards that apply to the water system.”

Winnipeg water is intensively monitored on a routine basis to ensure that the water is safe and that regulatory and licence requirements are met. Table 1 provides a list of all the parameters analysed. The results of most of these tests are found in Appendix A. We measure how water quality changes from source to tap and the quality of water delivered to customers with these tests. We also respond to customer inquiries and complaints about water quality.

OCCASIONS OF A RESULT NOT MEETING A WATER QUALITY STANDARD AND CORRECTIVE ACTION TAKEN

“Section 32(2) (d) a summary of any incidents of failure to meet a drinking water quality standard, and a description of corrective action.”

Because water quality is so important, our level of monitoring and sampling exceeds regulatory requirements. The City of Winnipeg ensures that a high quality of water is delivered to customers and actions are taken to continuously improve water quality. Table 2 includes all occasions of a result not meeting a water quality standard and corrective action taken in 2012.

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Table 1. Drinking Water Parameters

Analyses Conducted by City of Winnipeg	Analyses Conducted by Contract Labs
Parameter	Parameter
Plankton Count	Giardia
Chlorophyll a	Cryptosporidium
Threshold Odour Number	Total Coliform
pH	Esherichia Coli
Turbidity	Heterotrophic Plate Count
Fluoride	Taste and Odour Compounds
True Colour	- IPMP
Total Solids	- IBMP
Total Dissolved Solids	- MIB
Total Alkalinity	- 246TCA
Total Hardness	- 236TCA
Specific Conductance	- Geosmin
Total Organic Carbon	- 345TCV
Dissolved Organic Carbon	Microcystin LR
Free Chlorine	Mercury
Total Chlorine	NDMA
Temperature	MTBE
UV Transmissivity	Total Kjeldahl Nitrogen
UV Absorbance	Total Phosphorus
Dissolved Oxygen	Dissolved Reactive Phosphorus
Transparency	Total Inorganic Carbon
Zebra Mussels	Ammonia (Dissolved)
Trihalomethanes (Total)	Toxicity
Bromodichloromethane	Barium
Haloacetic Acids	Beryllium
Aldehydes	Bismuth
Nitrate Nitrogen	Cesium
Soluble Phosphate	Cobalt
Chloride	Lithium
Sulphate	Molybdenum
Aluminum	Selenium
Antimony	Silicon
Arsenic	Silver
Boron	Strontium
Calcium	Tellurium
Cadmium	Thallium
Chromium	Thorium
Chromium IV	Tin
Copper	Titanium
Iron	Vanadium
Lead	Rubidium
Magnesium	Tungsten
Manganese	Volatile Organic Carbons
Nickel	Polychlorinated Biphenyls
Potassium	Organochlorine Pesticides
Sodium	Pesticides
Uranium	Herbicides
Zinc	Perchlorate
Zirconium	Methylene Chloride

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Table 2. Occasions of a Result not Meeting a Water Quality Standard and Corrective Action Taken

Date	Location	Type of result not meeting a water quality standard	Initial test result	Description of corrective actions taken
Mar 19, 2012		Total coliform >1 MPNU/100mL	2	All locations were re-sampled until negative results were found.
Apr 24, 2012		Total coliform >1 MPNU/100mL	4	
Aug 13, 2012		Total coliform >10 MPNU/100mL	101	
Sep 4, 2012		Total coliform >1 MPNU/100mL	1	
Sep 11, 2012		Total coliform >10 MPNU/100mL	109	
Oct 1, 2012		Total coliform >1 MPNU/100mL	1	
Oct 16, 2012		Total coliform >1 MPNU/100mL	3	Resampling also indicated that the chlorine levels at all locations were normal and provided adequate disinfection.
Aug 7, 2012		Free chlorine residual <0.10 mg/L	<0.02	All locations were re-sampled and/or alternate locations were sampled, and/or other actions were taken (such as adjusting watermain valves).
Oct 9, 2012		Free chlorine residual <0.10 mg/L	0.07	
Nov 13, 2012		Free chlorine residual <0.10 mg/L	0.09	
Nov 26, 2012		Free chlorine residual <0.10 mg/L	0.05	
				Chlorine set points were adjusted to ensure that the target level of disinfection was met.

MAJOR EXPENSES

“Section 32(2)(i) a description of any major expenses incurred to repair, replace or install equipment.”

1. Feeder Main valve works:
 - a. Replaced one existing valve at John Black Avenue and Main Street.
 - b. Replaced one existing valve at Main Street and Foley Avenue.
 - c. Replaced one existing valve at Main Street adjacent to the North End Water Pollution Control Centre.
2. Water main renewals were completed at 47 locations in the City's water distribution system.
3. At the Water Treatment Plant, we topped up three of our eight carbon filters with media and we installed a closed loop cooling system for the Deacon variable speed pumps.

APPENDIX A
WATER QUALITY SUMMARY REPORTS

City of Winnipeg
Environmental Standards Division
2012 Shoal Lake Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Odour	<i>units</i>	Inoffensive	154	80	200	Raw water - guideline does not apply
Perchlorate	<i>parts per billion</i>	no guideline	<0.2	<0.2	<0.2	-
Plankton (algae) count	<i>cells/mL</i>	no guideline	67,761	1,400	501,000	Algae contribute to odours and may cause filter clogging
Chlorophyll-a	<i>parts per billion</i>	no guideline	9	<1	27	Chlorophyll is found in algae
Cryptosporidium	<i>oocysts per 100 L</i>	no guideline	<1	<1	<1	12 samples taken in 2012 - no positive results
Giardia	<i>cysts per 100 L</i>	no guideline	<1	<1	<1	12 samples taken in 2012 - no positive results
Turbidity (clearness)	<i>NTU</i>	no guideline	1.82	0.42	5.04	-
Colour, True	<i>TCU</i>	no more than 15	3.4	2.0	6.5	Raw water - guideline does not apply
Total Solids	<i>parts per million</i>	no guideline	106	97	117	-
Total Dissolved Solids	<i>parts per million</i>	no more than 500	93	75	106	Raw water - guideline does not apply
Conductivity	<i>microsiemens per centimetre</i>	no guideline	158	143	181	Another measure of dissolved solids
pH	<i>units</i>	between 6.5 and 8.5	8.24	7.47	9.01	Raw water - guideline does not apply
Temperature	<i>degrees Celcius</i>	no more than 15	11.6	2.0	26.0	Raw water - guideline does not apply
Total Alkalinity	<i>parts per million as calcium carbonate</i>	no guideline	77	68	88	-
Total Hardness	<i>parts per million as calcium carbonate</i>	between 80 and 100	78	71	88	Raw water - guideline does not apply
Total Organic Carbon	<i>parts per million</i>	no guideline	11	9	13	-
Dissolved Organic Carbon	<i>parts per million</i>	no guideline	11	9	13	-
Total Kjeldahl Nitrogen (TKN)	<i>parts per million</i>	no guideline	0.61	0.47	0.78	TKN is a combination of ammonia and organic nitrogen
Total Phosphorus	<i>parts per billion</i>	no guideline	21	10	40	Phosphorus can contribute to algae growth
Dissolved Reactive Phosphorus	<i>parts per billion</i>	no guideline	4	<1	<10	-
Fluoride	<i>parts per million</i>	no more than 1.5	<0.08	<0.08	0.09	Raw water - guideline does not apply
Nitrate Nitrogen	<i>parts per million</i>	no more than 10	0.006	<0.003	0.040	Raw water - guideline does not apply
Chloride	<i>parts per million</i>	no more than 250	<5	<5	<5	Raw water - guideline does not apply
Sulphate	<i>parts per million</i>	no more than 500	<5	<5	<5	Raw water - guideline does not apply
Trihalomethanes	<i>parts per billion</i>	no more than 100	<0.5	<0.5	<0.5	Raw water - guideline does not apply
Bromodichloromethane	<i>parts per billion</i>	no more than 16	<0.5	<0.5	<0.5	Raw water - guideline does not apply
Haloacetic acids	<i>parts per billion</i>	no more than 80	<5	<5	<5	Raw water - guideline does not apply
Aldehydes	<i>parts per billion</i>	no guideline	2	<2	5	-
Carbofuran	<i>parts per billion</i>	no more than 90	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Propoxur	<i>parts per billion</i>	no more than 0.7	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Aldrin	<i>parts per billion</i>	no more than 0.7	<0.010	<0.010	<0.010	Raw water - guideline does not apply
Lindane (gamma-BHC)	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
alpha-Chlordane	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
gamma-Chlordane	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDT	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-

City of Winnipeg
Environmental Standards Division
2012 Shoal Lake Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Dieldrin	<i>parts per billion</i>	no more than 0.7	<0.010	<0.010	<0.010	Raw water - guideline does not apply
Heptachlor	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Heptachlor Epoxide	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Methoxychlor	<i>parts per billion</i>	no more than 900	<0.010	<0.010	<0.010	Raw water - guideline does not apply
alpha-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
beta-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
delta-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDD	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDE	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDD	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDE	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDT	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Alpha Endosulfan	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Beta Endosulfan	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Endrin	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Mirex	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Simazine	<i>parts per billion</i>	no more than 10	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Alachlor	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
Atrazine	<i>parts per billion</i>	no more than 5	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Metribuzin	<i>parts per billion</i>	no more than 80	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Azinphosmethyl	<i>parts per billion</i>	no more than 20	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Chlorothalonil	<i>parts per billion</i>	no guideline	<0.060	<0.060	<0.060	-
Chlorpyrifos	<i>parts per billion</i>	no more than 90	<0.10	<0.020	<0.10	Raw water - guideline does not apply
Diazinon	<i>parts per billion</i>	no more than 20	<0.10	<0.030	<0.10	Raw water - guideline does not apply
Dimethoate	<i>parts per billion</i>	no more than 20	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Malathion	<i>parts per billion</i>	no more than 190	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Parathion	<i>parts per billion</i>	no more than 50	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Terbufos	<i>parts per billion</i>	no more than 1	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Methyl Parathion	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
2,4-D	<i>parts per billion</i>	no more than 100	<0.050	<0.050	<0.050	Raw water - guideline does not apply
2,4-DB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4-DP	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4,5-T	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4,5-TP	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Bromoxynil	<i>parts per billion</i>	no more than 5	<0.020	<0.020	<0.020	Raw water - guideline does not apply
Dicamba	<i>parts per billion</i>	no more than 120	<0.0060	<0.0060	<0.0060	Raw water - guideline does not apply
Dinoseb	<i>parts per billion</i>	no more than 10	<0.050	<0.050	<0.050	Raw water - guideline does not apply
MCPA	<i>parts per billion</i>	no more than 100	<0.025	<0.025	<0.025	Raw water - guideline does not apply
MCPB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Mecoprop	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Picloram	<i>parts per billion</i>	no more than 190	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Trichlopyr	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Diclofop-methyl	<i>parts per billion</i>	no more than 9	<0.10	<0.10	<0.10	Raw water - guideline does not apply

City of Winnipeg
Environmental Standards Division
2012 Shoal Lake Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Eptam	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Propaclor	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Propanil	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Triallate	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
Trifluralin	<i>parts per billion</i>	no more than 45	<0.030	<0.030	<0.030	Raw water - guideline does not apply
Arochlor 1016	<i>parts per billion</i>	no guideline	<0.020	<0.000050	<0.020	-
Arochlor 1221	<i>parts per billion</i>	no guideline	<0.020	<0.000050	<0.020	-
Arochlor 1232	<i>parts per billion</i>	no guideline	<0.020	<0.000050	<0.020	-
Arochlor 1242	<i>parts per billion</i>	no guideline	<0.020	<0.000050	<0.020	-
Arochlor 1248	<i>parts per billion</i>	no guideline	<0.020	<0.000050	<0.020	-
Arochlor 1254	<i>parts per billion</i>	no guideline	<0.020	<0.000050	<0.020	-
Arochlor 1260	<i>parts per billion</i>	no guideline	<0.020	<0.000050	<0.020	-
Calcium	<i>parts per million</i>	no guideline	21.0	19.4	24.7	Contributes to hardness
Magnesium	<i>parts per million</i>	no guideline	6.2	5.4	8.0	Contributes to hardness
Sodium	<i>parts per million</i>	no more than 200	2.2	1.9	3.0	Raw water - guideline does not apply
Potassium	<i>parts per million</i>	no guideline	1.3	1.1	1.6	Raw water - guideline does not apply
Iron	<i>parts per million</i>	no more than 0.3	0.04	<0.01	0.08	Raw water - guideline does not apply
Copper	<i>parts per million</i>	no more than 1.0	0.003	<0.001	0.031	Raw water - guideline does not apply
Lead	<i>parts per million</i>	no more than 0.010	<0.001	<0.001	0.002	Raw water - guideline does not apply
Aluminum	<i>parts per million</i>	no more than 0.1	0.012	<0.001	0.109	Raw water - guideline does not apply
Antimony	<i>parts per million</i>	no more than 0.0006	<0.001	<0.001	<0.001	Raw water - guideline does not apply
Arsenic	<i>parts per million</i>	no more than 0.010	<0.001	<0.001	0.001	Raw water - guideline does not apply
Nickel	<i>parts per million</i>	no guideline	<0.001	<0.001	0.001	-
Chromium	<i>parts per million</i>	no more than 0.05	<0.001	<0.001	0.001	Raw water - guideline does not apply
Chromium IV	<i>parts per million</i>	no guideline	<0.01	<0.01	<0.01	-
Boron	<i>parts per million</i>	no more than 5	0.024	0.012	0.042	Raw water - guideline does not apply
Cadmium	<i>parts per million</i>	no more than 0.005	<0.001	<0.001	<0.001	Raw water - guideline does not apply
Manganese	<i>parts per million</i>	no more than 0.05	0.018	0.004	0.038	Raw water - guideline does not apply
Uranium	<i>parts per million</i>	no more than 0.02	<0.001	<0.001	<0.001	Raw water - guideline does not apply
Zinc	<i>parts per million</i>	no more than 5.0	0.002	<0.001	0.012	Raw water - guideline does not apply
Zirconium	<i>parts per million</i>	no guideline	<0.001	<0.001	<0.001	-
Mercury	<i>parts per million</i>	no more than 0.001	<0.000001	<0.000001	0.000002	Raw water - guideline does not apply

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, revised February 15, 2013

City of Winnipeg
Environmental Standards Division
2012 Water Treatment Plant - Raw Water
Drinking Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Odour	<i>units</i>	Inoffensive	133	75	200	Raw water - guideline does not apply
Methylene Chloride	<i>parts per billion</i>	no guideline	<0.5	<0.5	<0.5	-
Perchlorate	<i>parts per billion</i>	no guideline	<0.2	<0.2	<0.2	-
Geosmin	<i>parts per trillion</i>	no guideline	1.5	<0.5	3.4	Common taste and odour compound
IPMP - 2-isopropyl-3-methoxypyrazine	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<0.5	Common taste and odour compound
IBMP - 2-isobutyl-3-methoxypyrazine	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<0.5	Common taste and odour compound
MIB - 2-methylisoborneol	<i>parts per trillion</i>	no guideline	<0.9	<0.5	2.2	Common taste and odour compound
246 TCA - 2,4,6-trichloroanisole	<i>parts per trillion</i>	no guideline	<1.0	<0.5	<2.0	Common taste and odour compound
236 TCA - 2,3,6-trichloroanisole	<i>parts per trillion</i>	no guideline	<1.0	<0.5	<2.0	Common taste and odour compound
345 TCV - 3,4,5-trichloroveratrole	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<0.5	Common taste and odour compound
MTBE - methyl tertiary-butyl ether	<i>parts per million</i>	no more than 0.015	<0.0005	<0.0005	<0.0005	Raw water - guideline does not apply
NDMA - N-nitrosodimethylamine	<i>parts per billion</i>	no more than 0.04	<0.0005	<0.0005	0.0007	Raw water - guideline does not apply
Plankton (algae) count	<i>cells/mL</i>	no guideline	42,918	2,500	383,700	Algae contribute to odours and may cause filter clogging
Chlorophyll-a	<i>parts per billion</i>	no guideline	9	<1	34	Chlorophyll is found in algae
Microcystin LR	<i>parts per billion</i>	no more than 1.5	<0.2	<0.2	<0.5	Raw water - guideline does not apply
Cryptosporidium*	<i>oocysts per 100 L</i>	no guideline	<1	<1	<1	10 samples taken in 2012 - no positive results
Giardia*	<i>cysts per 100 L</i>	no guideline	<1	<1	<1	10 samples taken in 2012 - no positive results
Turbidity (clearness)	<i>NTU</i>	no guideline	1.24	0.36	4.02	-
Colour, True	<i>TCU</i>	no more than 15	2.9	0.5	7.0	Raw water - guideline does not apply
Total Solids	<i>parts per million</i>	no guideline	109	96	126	-
Total Dissolved Solids	<i>parts per million</i>	no more than 500	95	82	109	Raw water - guideline does not apply
Conductivity	<i>microsiemens per centimetre</i>	no guideline	164	152	182	Another measure of dissolved solids
pH	<i>units</i>	between 6.5 and 8.5	7.88	7.07	8.79	Raw water - guideline does not apply
Temperature	<i>degrees Celcius</i>	no more than 15	10.3	1.2	24.5	Raw water - guideline does not apply
Total Alkalinity	<i>parts per million as calcium carbonate</i>	no guideline	78	63	89	-
Total Hardness	<i>parts per million as calcium carbonate</i>	between 80 and 100	80	74	90	80 to 100 parts per million is recommended
Total Organic Carbon	<i>parts per million</i>	no guideline	10	9	12	-
Dissolved Organic Carbon	<i>parts per million</i>	no guideline	10	9	12	-
Total Inorganic Carbon	<i>parts per million</i>	no guideline	19.3	17.4	21.1	-
Dissolved Oxygen	<i>parts per million</i>	no guideline	10.0	7.8	13.2	-
Total Phosphorus	<i>parts per million</i>	no guideline	<0.20	<0.10	<0.20	Phosphorus can contribute to algae growth
Ammonia	<i>parts per million</i>	no guideline	0.023	0.015	0.030	-
Nitrate Nitrogen	<i>parts per million</i>	no more than 10	0.017	0.017	0.017	Raw water - guideline does not apply

City of Winnipeg
Environmental Standards Division
2012 Water Treatment Plant - Raw Water
Drinking Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Chloride	<i>parts per million</i>	no more than 250	<5	<5	<5	Raw water - guideline does not apply
Sulphate	<i>parts per million</i>	no more than 500	<5	<5	<5	Raw water - guideline does not apply
UV Absorbance (Unfiltered)	<i>units per centimeter</i>	no guideline	0.121	0.107	0.148	-
UV Transmittance (Filtered)	<i>percent transmissivity</i>	no guideline	78.1	71.8	86.8	-
UV Transmittance (Unfiltered)	<i>percent transmissivity</i>	no guideline	75.9	71.2	79.0	-
Chlorine (free)	<i>parts per million</i>	no guideline	0.02	<0.02	0.09	-
Chlorine (total)	<i>parts per million</i>	no guideline	0.04	<0.02	0.14	-
Trihalomethanes	<i>parts per billion</i>	no more than 100	<0.5	<0.5	<0.5	Raw water - guideline does not apply
Bromodichloromethane	<i>parts per billion</i>	no more than 16	<0.5	<0.5	<0.5	Raw water - guideline does not apply
Haloacetic acids	<i>parts per billion</i>	no more than 80	<5	<5	8	Raw water - guideline does not apply
Aldehydes	<i>parts per billion</i>	no guideline	<2	<2	3	-
Carbofuran	<i>parts per billion</i>	no more than 90	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Propoxur	<i>parts per billion</i>	no more than 0.7	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Aldrin	<i>parts per billion</i>	no more than 0.7	<0.010	<0.010	<0.010	Raw water - guideline does not apply
Lindane (gamma-BHC)	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
alpha-Chlordane	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
gamma-Chlordane	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDT	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Dieldrin	<i>parts per billion</i>	no more than 0.7	<0.010	<0.010	<0.010	Raw water - guideline does not apply
Heptachlor	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Heptachlor Epoxide	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Methoxychlor	<i>parts per billion</i>	no more than 900	<0.010	<0.010	<0.010	Raw water - guideline does not apply
alpha-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
beta-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
delta-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDD	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDE	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDD	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDE	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDT	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Alpha Endosulfan	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Beta Endosulfan	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Endrin	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Mirex	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Simazine	<i>parts per billion</i>	no more than 10	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Alachlor	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
Atrazine	<i>parts per billion</i>	no more than 5	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Metribuzin	<i>parts per billion</i>	no more than 80	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Azinphosmethyl	<i>parts per billion</i>	no more than 20	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Chlorothalonil	<i>parts per billion</i>	no guideline	<0.060	<0.060	<0.060	-
Chlorpyrifos	<i>parts per billion</i>	no more than 90	<0.10	<0.020	<0.10	Raw water - guideline does not apply
Diazinon	<i>parts per billion</i>	no more than 20	<0.10	<0.030	<0.10	Raw water - guideline does not apply
Dimethoate	<i>parts per billion</i>	no more than 20	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Malathion	<i>parts per billion</i>	no more than 190	<0.10	<0.10	<0.10	Raw water - guideline does not apply

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**2012 Water Treatment Plant - Raw Water
Drinking Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Parathion	<i>parts per billion</i>	no more than 50	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Terbufos	<i>parts per billion</i>	no more than 1	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Methyl Parathion	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
2,4-D	<i>parts per billion</i>	no more than 100	<0.050	<0.050	<0.050	Raw water - guideline does not apply
2,4-DB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4-DP	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4,5-T	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4,5-TP	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Bromoxynil	<i>parts per billion</i>	no more than 5	<0.020	<0.020	<0.020	Raw water - guideline does not apply
Dicamba	<i>parts per billion</i>	no more than 120	<0.0060	<0.0060	<0.0060	Raw water - guideline does not apply
Dinoseb	<i>parts per billion</i>	no more than 10	<0.050	<0.050	<0.050	Raw water - guideline does not apply
MCPA	<i>parts per billion</i>	no more than 100	<0.025	<0.025	<0.025	Raw water - guideline does not apply
MCPB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Mecoprop	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Picloram	<i>parts per billion</i>	no more than 190	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Trichlopyr	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Diclofop-methyl	<i>parts per billion</i>	no more than 9	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Eptam	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Propaclor	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Propanil	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Triallate	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
Trifluralin	<i>parts per billion</i>	no more than 45	<0.030	<0.030	<0.030	Raw water - guideline does not apply
Arochlor 1016	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1221	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1232	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1242	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1248	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1254	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1260	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Calcium	<i>parts per million</i>	no guideline	22.6	20.6	24.8	Contr butes to hardness
Magnesium	<i>parts per million</i>	no guideline	6.6	5.7	7.5	Contr butes to hardness
Sodium	<i>parts per million</i>	no more than 200	2.3	1.7	3.4	Raw water - guideline does not apply
Potassium	<i>parts per million</i>	no guideline	1.3	1.2	1.4	-
Iron	<i>parts per million</i>	no more than 0.3	0.05	<0.01	0.54	Raw water - guideline does not apply
Copper	<i>parts per million</i>	no more than 1.0	<0.001	<0.001	<0.001	Raw water - guideline does not apply
Lead	<i>parts per million</i>	no more than 0.010	<0.001	<0.001	<0.001	Raw water - guideline does not apply
Aluminum	<i>parts per million</i>	no more than 0.1	0.075	<0.001	0.549	Raw water - guideline does not apply
Arsenic	<i>parts per million</i>	no more than 0.010	<0.001	<0.001	0.001	Raw water - guideline does not apply
Chromium	<i>parts per million</i>	no more than 0.05	<0.001	<0.001	<0.001	Raw water - guideline does not apply
Chromium IV	<i>parts per</i>	no guideline	<0.01	<0.01	<0.01	-
Nickel	<i>parts per million</i>	no guideline	<0.001	<0.001	<0.001	-
Cadmium	<i>parts per million</i>	no more than 0.005	<0.001	<0.001	<0.001	Raw water - guideline does not apply

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PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Manganese	<i>parts per million</i>	no more than 0.05	0.017	0.004	0.046	Raw water - guideline does not apply
Zinc	<i>parts per million</i>	no more than 5.0	<0.001	<0.001	<0.001	Raw water - guideline does not apply
Mercury	<i>parts per million</i>	no more than 0.001	<0.000001	<0.000001	<0.000001	Raw water - guideline does not apply
Antimony	<i>parts per million</i>	no more than 0.006	<0.001	<0.001	<0.001	Raw water - guideline does not apply
Barium	<i>parts per million</i>	no more than 1	0.0190	0.0190	0.0190	Raw water - guideline does not apply
Beryllium	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Bismuth	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Boron	<i>parts per million</i>	no more than 5	0.019	0.012	0.026	Raw water - guideline does not apply
Cesium	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Cobalt	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Lithium	<i>parts per million</i>	no guideline	0.0027	0.0022	0.0032	-
Molybdenum	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Rubidium	<i>parts per million</i>	no guideline	0.00187	0.00172	0.00202	-
Selenium	<i>parts per million</i>	no more than 0.01	<0.0010	<0.0010	<0.0010	Raw water - guideline does not apply
Silicon	<i>parts per million</i>	no guideline	0.685	0.430	0.939	-
Silver	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Strontium	<i>parts per million</i>	no guideline	0.0421	0.0390	0.0452	-
Tellurium	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Thallium	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Thorium	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Tin	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Titanium	<i>parts per million</i>	no guideline	<0.00050	<0.00020	<0.00050	-
Tungsten	<i>parts per million</i>	no guideline	<0.0010	<0.00010	<0.0010	-
Uranium	<i>parts per million</i>	no more than 0.02	<0.001	<0.001	<0.001	Raw water - guideline does not apply
Vanadium	<i>parts per million</i>	no guideline	<0.00020	<0.00020	0.00022	-
Zirconium	<i>parts per million</i>	no guideline	<0.001	<0.001	<0.001	-

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, revised February 15, 2013

*Data reported was collected from Deacon Prechlorination Cell 1/3

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PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Odour	<i>units</i>	Inoffensive	20	12	25	Meets the guideline
Methylene Chloride	<i>parts per billion</i>	no guideline	<0.5	<0.5	<0.5	-
Perchlorate	<i>parts per billion</i>	no guideline	<0.2	<0.2	<0.2	-
Geosmin	<i>parts per trillion</i>	no guideline	<0.5	<0.5	2.3	Common taste and odour compound
IPMP - 2-isopropyl-3-methoxypyrazine	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<0.5	Common taste and odour compound
IBMP - 2-isobutyl-3-methoxypyrazine	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<0.5	Common taste and odour compound
MIB - 2-methylisoborneol	<i>parts per trillion</i>	no guideline	<0.6	<0.5	1.5	Common taste and odour compound
246 TCA - 2,4,6-trichloroanisole	<i>parts per trillion</i>	no guideline	<1.0	<0.5	<2.0	Common taste and odour compound
236 TCA - 2,3,6-trichloroanisole	<i>parts per trillion</i>	no guideline	<1.0	<0.5	<2.0	Common taste and odour compound
345 TCV - 3,4,5-trichloroveratrole	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<0.5	Common taste and odour compound
MTBE - methyl tertiary-butyl ether	<i>parts per million</i>	no more than 0.015	<0.0005	<0.0005	<0.0005	Meets the guideline
NDMA - N-nitrosodimethylamine	<i>parts per billion</i>	no more than 0.04	<0.0005	<0.0005	<0.0010	Meets the guideline
Plankton (algae) count	<i>cells/mL</i>	no guideline	<100	<100	<100	Algae contribute to odours and may cause filter clogging
Chlorophyll-a	<i>parts per billion</i>	no guideline	<1	<1	<1	Chlorophyll is found in algae
Microcystin LR	<i>parts per billion</i>	no more than 1.5	<0.2	<0.2	<0.5	Meets the guideline
Turbidity (clearness)	<i>NTU</i>	no more than 1	0.16	0.06	0.32	Meets the guideline
Colour, True	<i>TCU</i>	no more than 15	1.3	0.5	2.5	Meets the guideline
Total Solids	<i>parts per million</i>	no guideline	189	174	222	-
Total Dissolved Solids	<i>parts per million</i>	no more than 500	176	156	204	Meets the guideline
Conductivity	<i>microsiemens per centimetre</i>	no guideline	322	300	364	Another measure of dissolved solids
pH	<i>units</i>	between 6.5 and 8.5	7.67	7.23	8.05	Meets the guideline
Temperature	<i>degrees Celcius</i>	no more than 15	10.4	1.2	24.6	Does not always meet the guideline
Total Alkalinity	<i>parts per million as calcium carbonate</i>	no guideline	71	61	84	-
Total Hardness	<i>parts per million as calcium carbonate</i>	between 80 and 100	80	74	92	Does not always meet the guideline
Total Organic Carbon	<i>parts per million</i>	no guideline	4	3	5	-
Dissolved Organic Carbon	<i>parts per million</i>	no guideline	4	3	5	-
Total Inorganic Carbon	<i>parts per million</i>	no guideline	17.8	16.5	19.1	-
Dissolved Oxygen	<i>parts per million</i>	no guideline	11.3	8.8	14.5	-
Total Phosphorus	<i>parts per million</i>	no guideline	<0.20	<0.10	<0.20	Phosphorus can contribute to algae growth
Ammonia	<i>parts per million</i>	no guideline	<0.010	<0.010	<0.010	-
Nitrate Nitrogen	<i>parts per million</i>	no more than 10	0.027	0.027	0.027	Meets the guideline
Chloride	<i>parts per million</i>	no more than 250	22	17	28	Meets the guideline
Sulphate	<i>parts per million</i>	no more than 500	44	34	53	Meets the guideline
UV Transmittance (Filtered)	<i>percent transmissivity</i>	no guideline	95.6	90.7	99.2	-
UV Transmittance (Unfiltered)	<i>percent transmissivity</i>	no guideline	94.4	90.0	97.3	-

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PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Chlorine (free)	<i>parts per million</i>	no guideline	1.14	0.82	1.67	-
Chlorine (total)	<i>parts per million</i>	no guideline	1.34	1.04	1.92	-
Trihalomethanes	<i>parts per billion</i>	no more than 100	6.7	1.0	12.9	Meets the guideline
Bromodichloromethane	<i>parts per billion</i>	no more than 16	0.8	<0.5	1.8	Meets the guideline
Haloacetic acids	<i>parts per billion</i>	no more than 80	13	<5	23	Meets the guideline
Aldehydes	<i>parts per billion</i>	no guideline	17	7	27	-
Carbofuran	<i>parts per billion</i>	no more than 90	<0.20	<0.20	<0.20	Meets the guideline
Propoxur	<i>parts per billion</i>	no more than 0.7	<0.20	<0.20	<0.20	Meets the guideline
Aldrin	<i>parts per billion</i>	no more than 0.7	<0.010	<0.010	<0.010	Meets the guideline
Lindane (gamma-BHC)	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
alpha-Chlordane	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
gamma-Chlordane	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDT	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Dieldrin	<i>parts per billion</i>	no more than 0.7	<0.010	<0.010	<0.010	Meets the guideline
Heptachlor	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Heptachlor Epoxide	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Methoxychlor	<i>parts per billion</i>	no more than 900	<0.010	<0.010	<0.010	Meets the guideline
alpha-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
beta-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
delta-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDD	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDE	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDD	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDE	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDT	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Alpha Endosulfan	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Beta Endosulfan	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Endrin	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Mirex	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Simazine	<i>parts per billion</i>	no more than 10	<0.10	<0.10	<0.10	Meets the guideline
Alachlor	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
Atrazine	<i>parts per billion</i>	no more than 5	<0.10	<0.10	<0.10	Meets the guideline
Metr buzin	<i>parts per billion</i>	no more than 80	<0.20	<0.20	<0.20	Meets the guideline
Azinphosmethyl	<i>parts per billion</i>	no more than 20	<0.10	<0.10	<0.10	Meets the guideline
Chlorothalonil	<i>parts per billion</i>	no guideline	<0.060	<0.060	<0.060	-
Chlorpyrifos	<i>parts per billion</i>	no more than 90	<0.10	<0.020	<0.10	Meets the guideline
Diazinon	<i>parts per billion</i>	no more than 20	<0.10	<0.030	<0.10	Meets the guideline
Dimethoate	<i>parts per billion</i>	no more than 20	<0.10	<0.10	<0.10	Meets the guideline
Malathion	<i>parts per billion</i>	no more than 190	<0.10	<0.10	<0.10	Meets the guideline
Parathion	<i>parts per billion</i>	no more than 50	<0.10	<0.10	<0.10	Meets the guideline
Terbufos	<i>parts per billion</i>	no more than 1	<0.10	<0.10	<0.10	Meets the guideline
Methyl Parathion	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
2,4-D	<i>parts per billion</i>	no more than 100	<0.050	<0.050	<0.050	Meets the guideline
2,4-DB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4-DP	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4,5-T	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4,5-TP	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Bromoxynil	<i>parts per billion</i>	no more than 5	<0.020	<0.020	<0.020	Meets the guideline
Dicamba	<i>parts per billion</i>	no more than 120	<0.0060	<0.0060	<0.0060	Meets the guideline
Dinoseb	<i>parts per billion</i>	no more than 10	<0.050	<0.050	<0.050	Meets the guideline

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PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
MCPA	<i>parts per billion</i>	no more than 100	<0.025	<0.025	<0.025	Meets the guideline
MCPB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Mecoprop	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Picloram	<i>parts per billion</i>	no more than 190	<0.20	<0.20	<0.20	Meets the guideline
Trichlopyr	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Diclofop-methyl	<i>parts per billion</i>	no more than 9	<0.10	<0.10	<0.10	Meets the guideline
Eptam	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Propaclor	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Propanil	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Triallate	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
Trifluralin	<i>parts per billion</i>	no more than 45	<0.030	<0.030	<0.030	Meets the guideline
Arochlor 1016	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1221	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1232	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1242	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1248	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1254	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Arochlor 1260	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.050	-
Calcium	<i>parts per million</i>	no guideline	22.5	20.7	25.7	Contr butes to hardness
Magnesium	<i>parts per million</i>	no guideline	6.5	5.8	7.7	Contr butes to hardness
Sodium	<i>parts per million</i>	no more than 200	33.0	23.9	44.4	Meets the guideline
Potassium	<i>parts per million</i>	no guideline	1.3	1.2	1.5	-
Iron	<i>parts per million</i>	no more than 0.3	0.03	<0.01	0.11	Meets the guideline
Copper	<i>parts per million</i>	no more than 1.0	0.003	0.002	0.004	Meets the guideline
Lead	<i>parts per million</i>	no more than 0.01	<0.001	<0.001	<0.001	Meets the guideline
Aluminum	<i>parts per million</i>	no more than 0.1	0.002	<0.001	0.009	Meets the guideline
Arsenic	<i>parts per million</i>	no more than 0.01	<0.001	<0.001	<0.001	Meets the guideline
Chromium	<i>parts per million</i>	no more than 0.05	<0.001	<0.001	0.001	Meets the guideline
Chromium IV	<i>parts per</i>	no guideline	<0.01	<0.01	<0.01	-
Nickel	<i>parts per million</i>	no guideline	0.003	0.003	0.004	-
Cadmium	<i>parts per million</i>	no more than 0.005	<0.001	<0.001	<0.001	Meets the guideline
Manganese	<i>parts per million</i>	no more than 0.05	0.034	0.024	0.071	Does not always meet the guideline
Zinc	<i>parts per million</i>	no more than 5.0	<0.001	<0.001	<0.001	Meets the guideline
Mercury	<i>parts per million</i>	no more than 0.001	<0.000001	<0.000001	0.000002	Meets the guideline
Antimony	<i>parts per million</i>	no more than 0.006	<0.001	<0.001	<0.001	Meets the guideline
Barium	<i>parts per million</i>	no more than 1	0.0189	0.0188	0.0190	Meets the guideline
Beryllium	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Bismuth	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Boron	<i>parts per million</i>	no more than 5	0.011	0.009	0.014	Meets the guideline
Cesium	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Cobalt	<i>parts per million</i>	no guideline	0.00026	0.00024	0.00028	-
Lithium	<i>parts per million</i>	no guideline	0.0035	0.0023	0.0047	-
Molybdenum	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Rubidium	<i>parts per million</i>	no guideline	0.00183	0.00166	0.00200	-
Selenium	<i>parts per million</i>	no more than 0.01	<0.0010	<0.0010	<0.0010	Meets the guideline
Silicon	<i>parts per million</i>	no guideline	0.632	0.361	0.903	-
Silver	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Strontium	<i>parts per million</i>	no guideline	0.0433	0.0410	0.0456	-
Tellurium	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-

City of Winnipeg
Environmental Standards Division
2012 Water Treatment Plant
Finished Water - Deacon Booster Pumping Station 1 and 2
Drinking Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Thallium	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Thorium	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Tin	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.0020	-
Titanium	<i>parts per million</i>	no guideline	0.00062	<0.00020	0.00113	-
Tungsten	<i>parts per million</i>	no guideline	<0.0010	<0.00010	<0.0010	-
Uranium	<i>parts per million</i>	no more than 0.02	<0.001	<0.001	<0.001	Meets the guideline
Vanadium	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Zirconium	<i>parts per million</i>	no more than 0.1	<0.001	<0.001	<0.001	Meets the guideline

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, revised February 15, 2013

City of Winnipeg
Environmental Standards Division
2012 Winnipeg Distribution System Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Odour ¹	<i>units</i>	Inoffensive	23	15	35	Meets the guideline
Perchlorate ¹	<i>parts per billion</i>	no guideline	<0.2	<0.2	<0.2	-
Chlorophyll-a ¹	<i>parts per billion</i>	no guideline	<1	<1	<1	Chlorophyll is found in algae
Turbidity (clearness) ²	<i>NTU</i>	no guideline	0.26	0.11	3.84	-
Colour, True ³	<i>TCU</i>	no more than 15	1.3	0.5	2.5	Meets the guideline
Total Dissolved Solids ³	<i>parts per million</i>	no more than 500	175	161	189	Meets the guideline
pH ²	<i>units</i>	between 6.5 and 8.5	7.50	7.27	7.80	Meets the guideline
Temperature ²	<i>degrees Celcius</i>	no more than 15	11.7	1.9	27.2	Does not always meet the guideline
Total Alkalinity ³	<i>parts per million as calcium</i>	no guideline	69	60	80	-
Total Hardness ³	<i>parts per million as calcium</i>	between 80 and 100	81	75	90	Does not always meet the guideline
Dissolved Oxygen ²	<i>parts per million</i>	no guideline	11.2	8.5	14.2	-
Fluoride ³	<i>parts per million</i>	no more than 1.5	0.70	0.65	0.74	Meets the guideline
Soluble Phosphate ³	<i>parts per million as phosphate</i>	no guideline	2.01	1.87	2.28	Added for Lead Control Program
Chloride ³	<i>parts per million</i>	no more than 250	22	16	28	Meets the guideline
Sulphate ³	<i>parts per million</i>	no more than 500	44	32	53	Meets the guideline
Chlorine (free) ²	<i>parts per million</i>	no guideline	0.64	<0.02	1.15	-
Chlorine (total) ²	<i>parts per million</i>	no guideline	0.84	0.02	1.41	-
Trihalomethanes ⁴	<i>parts per billion</i>	no more than 100	28.8	9.9	55.0	Meets the guideline
Bromodichloromethane ⁴	<i>parts per billion</i>	no more than 16	4.0	<0.5	6.5	Meets the guideline
Haloacetic acids ⁴	<i>parts per billion</i>	no more than 80	28	14	40	Meets the guideline
Aldehydes ⁴	<i>parts per billion</i>	no guideline	18	9	26	-
Calcium ⁴	<i>parts per million</i>	no guideline	22.5	19.7	26.8	Contributes to hardness
Magnesium ⁴	<i>parts per million</i>	no guideline	6.3	5.0	8.0	Contributes to hardness
Sodium ⁴	<i>parts per million</i>	no more than 200	33.7	29.5	41.2	Meets the guideline
Potassium ⁴	<i>parts per million</i>	no guideline	1.3	1.2	1.7	-
Iron ⁵	<i>parts per million</i>	no more than 0.3	0.05	<0.01	0.24	Meets the guideline
Copper ⁴	<i>parts per million</i>	no more than 1.0	0.071	0.021	0.157	Meets the guideline
Lead ⁴	<i>parts per million</i>	no more than 0.01	<0.001	<0.001	<0.001	Meets the guideline
Aluminum ⁴	<i>parts per million</i>	no more than 0.1	0.003	<0.001	0.016	Meets the guideline
Arsenic ⁴	<i>parts per million</i>	no more than 0.01	<0.001	<0.001	<0.001	Meets the guideline
Chromium IV ⁴	<i>parts per million</i>	no guideline	<0.01	<0.01	<0.01	-
Chromium ⁴	<i>parts per million</i>	no more than 0.05	<0.001	<0.001	0.002	Meets the guideline
Nickel ⁴	<i>parts per million</i>	no guideline	0.003	0.002	0.004	-
Cadmium ⁴	<i>parts per million</i>	no more than 0.005	<0.001	<0.001	<0.001	Meets the guideline
Manganese ⁴	<i>parts per million</i>	no more than 0.05	0.031	0.018	0.088	Does not always meet the guideline
Zinc ⁴	<i>parts per million</i>	no more than 5.0	<0.001	<0.001	0.005	Meets the guideline
Mercury ⁴	<i>parts per million</i>	no more than 0.001	<0.000001	<0.000001	0.000001	Meets the guideline
Antimony ⁴	<i>parts per million</i>	no more than 0.006	<0.001	<0.001	<0.001	Meets the guideline
Boron ⁴	<i>parts per million</i>	no more than 5	0.012	0.009	0.016	Meets the guideline
Uranium ⁴	<i>parts per million</i>	no more than 0.02	<0.001	<0.001	<0.001	Meets the guideline
Zirconium ⁴	<i>parts per million</i>	no guideline	<0.001	<0.001	0.001	-

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, revised February 15, 2013

¹Data reported was collected from MacLean, Hurst, and/or McPhillips Pumping Station Discharges.

²Data reported was collected from 39 distribution system locations.

³Data reported was collected from a composite sample of the 39 distribution system locations and samples collected from MacLean, Hurst, and McPhillips Pumping Station Discharges.

⁴Data reported was collected from 6 distribution system locations.

⁵Data reported was collected from a composite sample of the 39 distribution system locations and samples collected from MacLean, Hurst, and McPhillips Pumping Station Discharges and samples collected from 6 distribution system locations.

City of Winnipeg
Environmental Standards Division
2012 Winnipeg Distribution System Water Quality Summary

PARAMETER	GUIDELINE	OUR TEST RESULTS	COMMENTS
Number of total coliform bacteria tests in year	1820 samples	3,159	More testing than required by the guideline/provincial regulation
Number of times that total coliform bacteria show up in a test	no more than 10% of samples with positive total coliform or no consecutive positives from the same site.	0.22% (7 positive tests)	All resamples were negative and met the guideline/provincial regulation
Number of Escherichia coli bacteria tests in year	1820 samples	3,159	More testing than required by the guideline/provincial regulation
Number of times that Escherichia coli bacteria show up in a test	no bacteria present in the sample	0.00% (no positive tests)	There were no positive tests for Escherichia coli bacteria
Number of heterotrophic (bacteria) plate count (HPC) tests done	no guideline	3,076	Heterotrophic plate count testing is not required under the provincial regulations.

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, revised February 15, 2013

Data reported was collected from 60 distribution system locations and MacLean, Hurst, and McPhillips Pumping Station Discharges

APPENDIX B
COMPLIANCE SUBMISSION REPORTS

2012 Monthly Chlorine Reports

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-09-412RR				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Jan-2012	NS	NS	NS	NS
02-Jan-2012	NS	NS	NS	NS
03-Jan-2012	1.17	1.39	1.14	1.36
04-Jan-2012	1.09	1.28	1.10	1.25
05-Jan-2012	1.03	1.27	1.04	1.23
06-Jan-2012	1.03	1.28	1.00	1.26
07-Jan-2012	NS	NS	NS	NS
08-Jan-2012	NS	NS	NS	NS
09-Jan-2012	1.07	1.33	1.02	1.28
10-Jan-2012	OL	OL	OL	OL
11-Jan-2012	1.04	1.23	0.97	1.16
12-Jan-2012	0.93	1.14	0.92	1.14
13-Jan-2012	0.98	1.23	1.05	1.28
14-Jan-2012	NS	NS	NS	NS
15-Jan-2012	NS	NS	NS	NS
16-Jan-2012	0.99	1.18	1.00	1.28
17-Jan-2012	1.01	1.25	1.05	1.29
18-Jan-2012	1.02	1.29	1.13	1.31
19-Jan-2012	1.11	1.35	1.13	1.34
20-Jan-2012	1.06	1.38	1.04	1.27
21-Jan-2012	NS	NS	NS	NS
22-Jan-2012	NS	NS	NS	NS
23-Jan-2012	1.06	1.32	1.07	1.27
24-Jan-2012	1.09	1.35	1.09	1.24
25-Jan-2012	1.15	1.36	1.08	1.34
26-Jan-2012	1.05	1.32	1.01	1.23
27-Jan-2012	1.07	1.34	1.05	1.27
28-Jan-2012	NS	NS	NS	NS
29-Jan-2012	NS	NS	NS	NS
30-Jan-2012	1.00	1.25	0.90	1.20
31-Jan-2012	1.13	1.41	1.11	1.39
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:

There was no sample taken on January 10, 2012 due to a plant shutdown at the time of sampling.

Report Compiled By: H.Demchenko
Approved in LIMS By: S.Fletcher



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

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

Report Created: **February 1, 2012**

Report Period: **January 2012**

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/01/2012	1.00	0.95	1.02	0.97
02/01/2012	0.99	0.92	0.99	0.90
03/01/2012	0.92	0.81	0.98	0.90
04/01/2012	0.95	0.85	0.99	0.94
05/01/2012	1.04	0.97	1.00	0.94
06/01/2012	1.17	0.97	1.12	0.92
07/01/2012	1.16	1.04	1.11	0.98
08/01/2012	1.14	1.04	1.03	0.93
09/01/2012	1.10	0.88	1.00	0.86
10/01/2012	1.59	0.94	1.45	0.86
11/01/2012	1.00	0.87	0.93	0.80
12/01/2012	0.96	0.87	0.93	0.77
13/01/2012	0.97	0.88	1.01	0.86
14/01/2012	0.93	0.85	0.97	0.86
15/01/2012	0.90	0.85	0.95	0.88
16/01/2012	0.92	0.85	1.01	0.94
17/01/2012	0.99	0.70	1.00	0.87
18/01/2012	1.01	0.63	0.98	0.75
19/01/2012	1.06	0.75	1.01	0.88
20/01/2012	1.13	0.99	1.00	0.89
21/01/2012	1.08	0.98	0.98	0.85
22/01/2012	1.08	0.93	0.95	0.84
23/01/2012	1.08	0.91	0.98	0.79
24/01/2012	1.11	1.04	0.99	0.93
25/01/2012	1.04	0.95	1.04	0.90
26/01/2012	1.03	0.90	1.06	0.97
27/01/2012	1.00	0.91	1.01	0.95
28/01/2012	0.98	0.91	1.01	0.95
29/01/2012	0.98	0.85	1.01	0.92
30/01/2012	0.96	0.89	0.94	0.87
31/01/2012	0.97	0.93	0.97	0.92

Total Number of Measurements, A:	22320	22320
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	22320	22320
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D.Minor Signature: Original signed by D.Minor



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-09-412RR				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Feb-2012	1.17	1.37	1.17	1.39
02-Feb-2012	1.13	1.39	1.11	1.26
03-Feb-2012	1.02	1.28	1.15	1.34
04-Feb-2012	NS	NS	NS	NS
05-Feb-2012	NS	NS	NS	NS
06-Feb-2012	1.04	1.30	1.07	1.36
07-Feb-2012	1.15	1.40	1.12	1.39
08-Feb-2012	1.15	1.40	1.07	1.34
09-Feb-2012	1.04	1.30	1.02	1.21
10-Feb-2012	1.13	1.37	1.11	1.35
11-Feb-2012	NS	NS	NS	NS
12-Feb-2012	NS	NS	NS	NS
13-Feb-2012	1.15	1.38	1.13	1.33
14-Feb-2012	1.15	1.42	1.23	1.40
15-Feb-2012	1.15	1.37	1.13	1.40
16-Feb-2012	0.98	1.24	1.05	1.24
17-Feb-2012	0.88	1.09	0.88	1.10
18-Feb-2012	NS	NS	NS	NS
19-Feb-2012	NS	NS	NS	NS
20-Feb-2012	NS	NS	NS	NS
21-Feb-2012	1.13	1.32	1.05	1.30
22-Feb-2012	1.05	1.30	1.11	1.34
23-Feb-2012	1.23	1.40	1.15	1.23
24-Feb-2012	1.12	1.36	1.14	1.35
25-Feb-2012	NS	NS	NS	NS
26-Feb-2012	NS	NS	NS	NS
27-Feb-2012	1.13	1.38	1.16	1.38
28-Feb-2012	1.17	1.43	1.08	1.30
29-Feb-2012	1.16	1.38	1.11	1.29
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: S.Fletcher

Printed From : N:\WQ Data\Routine Water Quality\2011\Chlorine.xls

Date Approved: 5-Mar-12

File: WQR3



City of Winnipeg

Water and Waste Department
Water Services Division

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

Water System Code: **252.00**
License Number: **PWS-09-412 RR**
Report Created: **01 March 2012**

Report Period: Feb-12

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/02/2012	0.99	0.92	1.04	0.93
2/02/2012	0.95	0.88	1.00	0.92
3/02/2012	1.04	0.91	1.05	0.89
4/02/2012	1.05	0.76	1.09	0.88
5/02/2012	1.10	1.05	1.12	1.03
6/02/2012	1.09	1.03	1.07	1.00
7/02/2012	1.06	0.99	1.01	0.92
8/02/2012	0.99	0.90	0.93	0.87
9/02/2012	1.00	0.90	0.98	0.87
10/02/2012	1.10	0.95	1.06	0.97
11/02/2012	1.16	1.01	1.08	0.94
12/02/2012	1.19	1.10	1.11	0.98
13/02/2012	1.19	1.05	1.14	0.99
14/02/2012	1.18	1.09	1.13	1.06
15/02/2012	1.16	0.92	1.08	0.87
16/02/2012	1.15	0.99	1.04	0.89
17/02/2012	1.09	0.81	1.02	0.75
18/02/2012	1.06	1.00	0.99	0.93
19/02/2012	1.06	0.85	1.00	0.78
20/02/2012	1.07	1.00	1.02	0.97
21/02/2012	1.08	0.99	1.08	0.95
22/02/2012	1.12	1.03	1.12	1.05
23/02/2012	1.12	1.05	1.10	0.98
24/02/2012	1.16	1.10	1.16	1.09
25/02/2012	1.17	1.08	1.25	1.15
26/02/2012	1.20	1.06	1.24	1.07
27/02/2012	1.14	1.01	1.20	0.97
28/02/2012	1.12	1.00	1.01	0.93
29/02/2012	1.08	0.95	1.04	0.93

Total Number of Measurements, A:	20160	20160
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20160	20160
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D.Minor

Signature: Original signed by D.Minor

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-09-412RR				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Mar-2012	1.06	1.27	1.17	1.33
02-Mar-2012	1.06	1.34	1.12	1.27
03-Mar-2012	NS	NS	NS	NS
04-Mar-2012	NS	NS	NS	NS
05-Mar-2012	1.08	1.34	1.15	1.35
06-Mar-2012	1.11	1.35	1.12	1.35
07-Mar-2012	1.19	1.41	1.17	1.35
08-Mar-2012	1.13	1.40	1.24	1.44
09-Mar-2012	1.15	1.40	1.22	1.41
10-Mar-2012	NS	NS	NS	NS
11-Mar-2012	NS	NS	NS	NS
12-Mar-2012	1.22	1.44	1.20	1.42
13-Mar-2012	1.09	1.26	1.07	1.31
14-Mar-2012	1.12	1.41	1.21	1.41
15-Mar-2012	1.01	1.30	1.06	1.26
16-Mar-2012	1.12	1.39	1.16	1.33
17-Mar-2012	NS	NS	NS	NS
18-Mar-2012	NS	NS	NS	NS
19-Mar-2012	0.86	1.08	0.96	1.21
20-Mar-2012	1.07	1.22	1.11	1.31
21-Mar-2012	1.02	1.22	1.04	1.25
22-Mar-2012	1.09	1.25	1.02	1.23
23-Mar-2012	0.98	1.13	1.08	1.29
24-Mar-2012	NS	NS	NS	NS
25-Mar-2012	NS	NS	NS	NS
26-Mar-2012	0.99	1.20	1.00	1.22
27-Mar-2012	1.16	1.39	1.09	1.36
28-Mar-2012	1.06	1.20	1.00	1.21
29-Mar-2012	0.88	1.09	0.94	1.14
30-Mar-2012	1.00	1.19	0.82	1.14
31-Mar-2012	NS	NS	NS	NS
Total number of measurements taken, A:	22		22	
Chlorine Standard for Monitoring Location (mg/L):	0.50		0.50	
Number of measurements meeting standard, B:	22		22	
Compliance with Chlorine Standard, C= B/A X 100%:	100%		100%	

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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher



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

Water System Code: **252.00**
License Number: **PWS-09-412 RR**
Report Created: **01 April 2012**

Report Period: March 2012

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/03/2012	1.06	0.94	1.08	0.99
2/03/2012	1.04	0.87	1.06	0.83
3/03/2012	1.07	0.97	1.17	1.01
4/03/2012	1.07	0.96	1.20	1.09
5/03/2012	1.06	0.99	1.22	1.10
6/03/2012	1.05	0.94	1.19	1.10
7/03/2012	1.07	0.96	1.13	0.97
8/03/2012	1.00	0.88	1.05	0.89
9/03/2012	1.16	0.84	1.15	0.83
10/03/2012	1.22	1.14	1.24	1.13
11/03/2012	1.20	1.08	1.19	1.09
12/03/2012	1.20	1.07	1.14	0.99
13/03/2012	1.16	1.04	1.20	0.99
14/03/2012	1.16	1.05	1.21	1.03
15/03/2012	1.15	0.99	1.16	1.05
16/03/2012	1.14	1.02	1.16	0.96
17/03/2012	1.06	0.95	1.13	1.02
18/03/2012	0.99	0.89	1.12	0.99
19/03/2012	1.00	0.89	1.18	1.03
20/03/2012	1.12	0.83	1.12	0.87
21/03/2012	1.10	0.97	1.05	0.94
22/03/2012	1.09	1.00	1.04	0.95
23/03/2012	1.06	0.90	1.05	0.92
24/03/2012	1.03	0.91	0.98	0.84
25/03/2012	1.04	0.95	0.92	0.85
26/03/2012	1.09	0.64	0.94	0.66
27/03/2012	1.02	0.62	1.04	0.64
28/03/2012	1.10	0.99	1.08	0.98
29/03/2012	1.08	1.00	1.02	0.92
30/03/2012	1.09	1.01	0.94	0.86
31/03/2012	1.01	0.90	0.89	0.82

Total Number of Measurements, A:	21568	21551
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21568	21551
COMPLIANCE, C = B/A X 100%:	100.00%	100.00%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2012\2012-03

Submitted By (Print): D.Minor

Signature: Original signed by D.Minor

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-09-412RR				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Apr-2012	NS	NS	NS	NS
02-Apr-2012	0.88	1.07	0.88	1.07
03-Apr-2012	0.93	1.16	0.93	1.08
04-Apr-2012	0.93	1.12	0.85	1.04
05-Apr-2012	0.96	1.10	0.92	1.05
06-Apr-2012	NS	NS	NS	NS
07-Apr-2012	NS	NS	NS	NS
08-Apr-2012	NS	NS	NS	NS
09-Apr-2012	NS	NS	NS	NS
10-Apr-2012	1.09	1.29	1.11	1.30
11-Apr-2012	OL	OL	OL	OL
12-Apr-2012	1.04	1.18	1.11	1.26
13-Apr-2012	1.09	1.27	0.99	1.18
14-Apr-2012	NS	NS	NS	NS
15-Apr-2012	NS	NS	NS	NS
16-Apr-2012	1.11	1.25	1.00	1.25
17-Apr-2012	1.08	1.28	1.06	1.29
18-Apr-2012	0.99	1.25	0.95	1.16
19-Apr-2012	1.07	1.27	1.00	1.22
20-Apr-2012	1.15	1.25	1.04	1.21
21-Apr-2012	NS	NS	NS	NS
22-Apr-2012	NS	NS	NS	NS
23-Apr-2012	1.08	1.25	0.95	1.21
24-Apr-2012	0.99	1.21	0.97	1.17
25-Apr-2012	1.18	1.44	1.06	1.34
26-Apr-2012	1.12	1.26	1.10	1.29
27-Apr-2012	1.18	1.35	1.13	1.27
28-Apr-2012	NS	NS	NS	NS
29-Apr-2012	NS	NS	NS	NS
30-Apr-2012	1.01	1.13	1.02	1.18
Total number of measurements taken, A:	18		18	
Chlorine Standard for Monitoring Location (mg/L):	0.50		0.50	
Number of measurements meeting standard, B:	18		18	
Compliance with Chlorine Standard, C= B/A X 100%:	100%		100%	

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

Comments:

OL: On April 11, 2012 there was a scheduled plant shutdown which resulted in the plant being off-line at the time of sampling.

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

Date Approved: 4-May-12

**City of Winnipeg**Water and Waste Department
Water Services Division**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping StationWater System Code: **252.00**
License Number: **PWS-09-412 RR**
Report Created: **01 May 2012**

Report Period: April 2012

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/04/2012	0.91	0.85	0.90	0.79
2/04/2012	0.90	0.84	0.88	0.83
3/04/2012	0.90	0.84	0.90	0.83
4/04/2012	0.96	0.90	0.91	0.86
5/04/2012	1.04	0.82	1.01	0.77
6/04/2012	1.13	0.97	1.02	0.93
7/04/2012	1.02	0.91	1.04	0.87
8/04/2012	0.97	0.86	1.04	0.92
9/04/2012	1.00	0.89	0.98	0.85
10/04/2012	1.08	0.89	1.12	1.00
11/04/2012	1.26	0.65	1.17	1.04
12/04/2012	1.10	0.65	1.13	0.80
13/04/2012	1.12	0.96	1.26	0.83
14/04/2012	1.12	0.94	1.20	1.01
15/04/2012	1.03	0.99	1.08	1.01
16/04/2012	1.04	0.94	1.04	0.92
17/04/2012	1.04	0.96	1.00	0.89
18/04/2012	1.07	0.94	0.95	0.87
19/04/2012	1.09	1.01	0.94	0.86
20/04/2012	1.00	0.91	0.94	0.90
21/04/2012	1.04	0.98	0.95	0.88
22/04/2012	1.01	0.93	0.98	0.94
23/04/2012	1.05	0.91	0.96	0.92
24/04/2012	1.00	0.88	1.03	0.91
25/04/2012	1.17	0.99	1.12	1.05
26/04/2012	1.14	1.02	1.12	1.03
27/04/2012	1.08	0.92	1.04	0.94
28/04/2012	0.96	0.84	1.01	0.93
29/04/2012	0.93	0.84	1.02	0.94
30/04/2012	1.02	0.87	1.05	0.93

Total Number of Measurements, A:	20878	20686
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	20878	20686
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): J.HumeSignature: Original signed by J.Hume

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-09-412RR				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-May-2012	1.02	1.19	1.02	1.25
02-May-2012	1.13	1.33	1.06	1.26
03-May-2012	1.13	1.28	1.03	1.20
04-May-2012	1.02	1.22	0.93	1.14
05-May-2012	NS	NS	NS	NS
06-May-2012	NS	NS	NS	NS
07-May-2012	1.07	1.23	1.01	1.22
08-May-2012	1.06	1.30	1.06	1.22
09-May-2012	1.14	1.29	1.05	1.24
10-May-2012	1.06	1.24	1.06	1.21
11-May-2012	0.97	1.16	1.02	1.18
12-May-2012	NS	NS	NS	NS
13-May-2012	NS	NS	NS	NS
14-May-2012	1.00	1.11	0.97	1.10
15-May-2012	0.92	1.08	0.92	1.04
16-May-2012	1.00	1.16	0.94	1.09
17-May-2012	0.95	1.18	0.97	1.16
18-May-2012	1.03	1.27	1.02	1.20
19-May-2012	NS	NS	NS	NS
20-May-2012	NS	NS	NS	NS
21-May-2012	NS	NS	NS	NS
22-May-2012	1.09	1.31	1.07	1.28
23-May-2012	1.05	1.24	1.02	1.19
24-May-2012	1.03	1.27	1.00	1.24
25-May-2012	1.06	1.24	1.05	1.28
26-May-2012	NS	NS	NS	NS
27-May-2012	NS	NS	NS	NS
28-May-2012	1.10	1.33	1.07	1.28
29-May-2012	1.20	1.42	1.21	1.37
30-May-2012	1.09	1.25	1.03	1.20
31-May-2012	1.18	1.42	1.02	1.18
Total number of measurements taken, A:	22		22	
Chlorine Standard for Monitoring Location (mg/L):	0.50		0.50	
Number of measurements meeting standard, B:	22		22	
Compliance with Chlorine Standard, C= B/A X 100%:	100%		100%	

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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

**City of Winnipeg**Water and Waste Department
Water Services Division**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping StationWater System Code: **252.00**
Licence Number: **PWS-09-412 RR**
Report Created: 01 June 2012

Report Period: May 2012

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/05/2012	1.18	0.89	1.09	0.80
2/05/2012	1.24	1.13	1.09	1.02
3/05/2012	1.13	0.93	1.07	0.95
4/05/2012	1.01	0.90	0.99	0.92
5/05/2012	0.99	0.88	0.95	0.89
6/05/2012	0.99	0.89	0.99	0.87
7/05/2012	1.06	0.97	1.11	1.04
8/05/2012	1.17	1.03	1.15	1.08
9/05/2012	1.17	1.03	1.11	1.01
10/05/2012	1.08	0.97	1.07	0.99
11/05/2012	0.97	0.89	0.99	0.91
12/05/2012	1.00	0.92	1.06	0.97
13/05/2012	0.95	0.81	1.00	0.92
14/05/2012	1.03	0.89	0.94	0.79
15/05/2012	1.03	0.94	0.87	0.82
16/05/2012	1.00	0.79	0.96	0.88
17/05/2012	1.06	0.72	1.07	0.91
18/05/2012	1.12	0.99	1.10	0.97
19/05/2012	1.06	0.92	1.11	1.04
20/05/2012	1.13	1.00	1.19	1.05
21/05/2012	1.10	1.02	1.26	1.19
22/05/2012	1.15	1.01	1.16	0.96
23/05/2012	1.14	1.06	1.07	1.01
24/05/2012	1.16	1.08	1.06	0.97
25/05/2012	1.21	1.07	1.07	1.00
26/05/2012	1.24	1.14	1.12	1.07
27/05/2012	1.17	1.03	1.14	1.07
28/05/2012	1.04	0.93	1.16	1.09
29/05/2012	1.11	1.00	1.23	1.10
30/05/2012	1.02	0.90	1.07	1.02
31/05/2012	1.08	0.97	1.05	0.98

Total Number of Measurements, A:	21599	21599
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	21599	21599
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2011\2012-05

Submitted By (Print): J.HumeSignature: Original signed by J.Hume

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-09-412RR				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Jun-2012	1.01	1.18	0.98	1.16
02-Jun-2012	NS	NS	NS	NS
03-Jun-2012	NS	NS	NS	NS
04-Jun-2012	1.06	1.18	1.04	1.22
05-Jun-2012	0.98	1.19	1.03	1.19
06-Jun-2012	1.05	1.20	1.08	1.20
07-Jun-2012	0.94	1.13	0.94	1.06
08-Jun-2012	1.13	1.28	1.13	1.29
09-Jun-2012	NS	NS	NS	NS
10-Jun-2012	NS	NS	NS	NS
11-Jun-2012	1.07	1.21	1.07	1.22
12-Jun-2012	1.07	1.25	1.09	1.27
13-Jun-2012	1.18	1.37	1.17	1.33
14-Jun-2012	1.19	1.46	1.21	1.39
15-Jun-2012	1.12	1.31	1.05	1.30
16-Jun-2012	NS	NS	NS	NS
17-Jun-2012	NS	NS	NS	NS
18-Jun-2012	1.27	1.41	1.15	1.37
19-Jun-2012	1.21	1.42	1.28	1.47
20-Jun-2012	1.34	1.52	1.32	1.52
21-Jun-2012	1.32	1.50	1.22	1.48
22-Jun-2012	1.08	1.30	1.09	1.25
23-Jun-2012	NS	NS	NS	NS
24-Jun-2012	NS	NS	NS	NS
25-Jun-2012	1.11	1.32	1.10	1.33
26-Jun-2012	1.07	1.31	1.13	1.31
27-Jun-2012	1.24	1.48	1.24	1.42
28-Jun-2012	1.26	1.46	1.21	1.39
29-Jun-2012	1.28	1.40	1.19	1.33
30-Jun-2012	NS	NS	NS	NS
Total number of measurements taken, A:	21		21	
Chlorine Standard for Monitoring Location (mg/L):	0.50		0.50	
Number of measurements meeting standard, B:	21		21	
Compliance with Chlorine Standard, C= B/A X 100%:	100%		100%	

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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

Printed From : N:\WQ Data\Routine Water Quality\2012\Chlorine.xls

Date Approved: 29-Jun-12

File: WQR3

**City of Winnipeg**Water and Waste Department
Water Services Division**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping StationWater System Code: **252.00**
License Number: **PWS-09-412 RR**
Report Created: 03 July 2012

Report Period: June 2012

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/06/2012	1.01	0.82	0.98	0.82
2/06/2012	0.96	0.83	0.91	0.80
3/06/2012	0.98	0.86	0.92	0.76
4/06/2012	1.00	0.88	0.97	0.89
5/06/2012	1.01	0.84	1.00	0.91
6/06/2012	1.00	0.90	0.98	0.86
7/06/2012	0.95	0.82	0.91	0.76
8/06/2012	1.17	1.01	1.11	0.96
9/06/2012	1.10	0.92	1.05	0.90
10/06/2012	0.98	0.57	0.92	0.63
11/06/2012	0.97	0.85	0.95	0.84
12/06/2012	1.03	0.88	1.03	0.83
13/06/2012	1.13	0.96	1.10	1.02
14/06/2012	1.20	1.08	1.14	1.07
15/06/2012	1.10	0.97	1.04	0.84
16/06/2012	1.16	0.99	1.11	0.98
17/06/2012	1.15	1.07	1.13	1.08
18/06/2012	1.15	1.02	1.15	1.00
19/06/2012	1.21	1.11	1.20	1.09
20/06/2012	1.26	1.16	1.23	1.12
21/06/2012	1.21	1.01	1.20	1.04
22/06/2012	1.10	1.00	1.08	1.00
23/06/2012	1.08	1.01	1.09	1.01
24/06/2012	1.11	1.05	1.16	1.09
25/06/2012	1.17	0.97	1.20	0.95
26/06/2012	1.22	1.05	1.20	1.08
27/06/2012	1.29	1.06	1.24	1.08
28/06/2012	1.35	1.17	1.28	1.14
29/06/2012	1.31	1.15	1.20	1.06
30/06/2012	1.22	1.09	1.15	1.05

Total Number of Measurements, A:	20880	20880
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20880	20880
COMPLIANCE, C = B/A X 100%:	100	100

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2012\2012-06

Submitted By (Print): A.WeremySignature: Original signed by A.Weremy

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-09-412RR				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Jul-2012	NS	NS	NS	NS
02-Jul-2012	NS	NS	NS	NS
03-Jul-2012	1.01	1.23	0.97	1.13
04-Jul-2012	1.03	1.23	1.00	1.20
05-Jul-2012	0.99	1.24	0.98	1.18
06-Jul-2012	1.05	1.29	1.07	1.24
07-Jul-2012	NS	NS	NS	NS
08-Jul-2012	NS	NS	NS	NS
09-Jul-2012	1.15	1.39	1.11	1.26
10-Jul-2012	1.27	1.48	1.18	1.36
11-Jul-2012	1.28	1.49	1.27	1.45
12-Jul-2012	1.08	1.30	1.10	1.25
13-Jul-2012	1.03	1.18	1.06	1.19
14-Jul-2012	NS	NS	NS	NS
15-Jul-2012	NS	NS	NS	NS
16-Jul-2012	1.06	1.28	0.99	1.20
17-Jul-2012	1.06	1.26	1.04	1.22
18-Jul-2012	1.25	1.48	1.17	1.33
19-Jul-2012	1.10	1.26	1.06	1.23
20-Jul-2012	1.19	1.39	1.13	1.33
21-Jul-2012	NS	NS	NS	NS
22-Jul-2012	NS	NS	NS	NS
23-Jul-2012	1.25	1.45	1.27	1.49
24-Jul-2012	1.24	1.48	1.26	1.44
25-Jul-2012	1.24	1.43	1.22	1.40
26-Jul-2012	1.38	1.55	1.33	1.48
27-Jul-2012	1.29	1.55	1.35	1.44
28-Jul-2012	NS	NS	NS	NS
29-Jul-2012	NS	NS	NS	NS
30-Jul-2012	1.29	1.51	1.31	1.48
31-Jul-2012	1.10	1.33	1.18	1.34
Total number of measurements taken, A:	21		21	
Chlorine Standard for Monitoring Location (mg/L):	0.50		0.50	
Number of measurements meeting standard, B:	21		21	
Compliance with Chlorine Standard, C= B/A X 100%:	100%		100%	

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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher / G. Levesque

**City of Winnipeg**Water and Waste Department
Water Services Division**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping StationWater System Code: **252.00**
Licence Number: **PWS-09-412 RR**
Report Created: 01 August 2012

Report Period: July 2012

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/07/2012	1.23	1.07	1.21	1.06
2/07/2012	1.17	1.00	1.12	0.96
3/07/2012	0.95	0.77	0.98	0.88
4/07/2012	1.04	0.78	1.06	0.86
5/07/2012	1.08	0.90	1.09	0.83
6/07/2012	1.06	0.94	1.08	0.88
7/07/2012	1.13	0.99	1.07	0.97
8/07/2012	1.17	1.06	1.09	0.98
9/07/2012	1.07	0.91	1.09	0.97
10/07/2012	1.15	0.87	1.16	1.04
11/07/2012	1.30	1.15	1.25	0.54
12/07/2012	1.09	0.93	1.01	0.88
13/07/2012	1.04	0.94	0.96	0.87
14/07/2012	1.00	0.89	0.98	0.76
15/07/2012	1.16	0.98	1.11	0.95
16/07/2012	1.13	0.96	1.02	0.95
17/07/2012	1.08	0.93	1.05	0.91
18/07/2012	1.13	0.96	1.12	0.97
19/07/2012	1.15	0.91	1.16	0.97
20/07/2012	1.31	1.09	1.26	1.10
21/07/2012	1.27	1.13	1.22	1.14
22/07/2012	1.31	1.18	1.24	1.16
23/07/2012	1.35	1.16	1.25	1.10
24/07/2012	1.38	1.16	1.22	1.07
25/07/2012	1.35	1.17	1.23	1.12
26/07/2012	1.33	1.20	1.27	1.17
27/07/2012	1.34	1.12	1.33	1.18
28/07/2012	1.35	1.13	1.33	1.18
29/07/2012	1.30	0.63	1.30	1.01
30/07/2012	1.23	1.02	1.25	1.06
31/07/2012	1.12	0.95	1.11	0.99

Total Number of Measurements, A:	21600	21529
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	21600	21529
COMPLIANCE, C = B/A X 100%:	100	100

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2011\2012-07

Submitted By (Print): A.WeremySignature: Original signed by A.Weremy

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-09-412RR				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Aug-2012	1.10	1.35	1.05	1.33
02-Aug-2012	1.06	1.25	1.05	1.23
03-Aug-2012	1.38	1.56	1.39	1.56
04-Aug-2012	NS	NS	NS	NS
05-Aug-2012	NS	NS	NS	NS
06-Aug-2012	NS	NS	NS	NS
07-Aug-2012	1.37	1.55	1.33	1.51
08-Aug-2012	1.40	1.57	1.31	1.55
09-Aug-2012	1.33	1.49	1.34	1.59
10-Aug-2012	1.46	1.63	1.44	1.68
11-Aug-2012	NS	NS	NS	NS
12-Aug-2012	NS	NS	NS	NS
13-Aug-2012	1.25	1.45	1.29	1.52
14-Aug-2012	1.30	1.51	1.34	1.49
15-Aug-2012	1.20	1.44	1.29	1.46
16-Aug-2012	1.22	1.38	1.30	1.48
17-Aug-2012	1.34	1.57	1.51	1.74
18-Aug-2012	NS	NS	NS	NS
19-Aug-2012	NS	NS	NS	NS
20-Aug-2012	1.18	1.34	1.17	1.46
21-Aug-2012	1.25	1.47	1.31	1.52
22-Aug-2012	1.27	1.46	1.36	1.55
23-Aug-2012	1.25	1.47	1.27	1.45
24-Aug-2012	1.28	1.44	1.25	1.44
25-Aug-2012	NS	NS	NS	NS
26-Aug-2012	NS	NS	NS	NS
27-Aug-2012	1.40	1.58	1.46	1.60
28-Aug-2012	1.34	1.60	1.40	1.56
29-Aug-2012	1.49	1.65	1.45	1.57
30-Aug-2012	1.43	1.66	1.43	1.62
31-Aug-2012	1.44	1.66	1.44	1.65
Total number of measurements taken, A:	22		22	
Chlorine Standard for Monitoring Location (mg/L):	0.50		0.50	
Number of measurements meeting standard, B:	22		22	
Compliance with Chlorine Standard, C= B/A X 100%:	100%		100%	

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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

**City of Winnipeg**Water and Waste Department
Water Services Division**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping StationWater System Code: **252.00**
Licence Number: **PWS-09-412 RR**
Report Created: 04 September 2012

Report Period: August 2012

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/08/2012	1.15	1.06	1.09	1.03
2/08/2012	1.24	1.02	1.13	0.96
3/08/2012	1.42	1.29	1.31	0.97
4/08/2012	1.29	1.13	1.21	0.95
5/08/2012	1.34	1.16	1.24	1.12
6/08/2012	1.36	1.23	1.31	1.21
7/08/2012	1.41	1.32	1.34	1.27
8/08/2012	1.50	1.35	1.39	1.23
9/08/2012	1.45	1.24	1.44	1.31
10/08/2012	1.31	1.17	1.40	1.24
11/08/2012	1.30	1.22	1.32	1.26
12/08/2012	1.25	1.15	1.25	1.17
13/08/2012	1.24	1.13	1.31	1.25
14/08/2012	1.34	1.22	1.39	1.26
15/08/2012	1.28	1.09	1.33	1.14
16/08/2012	1.22	1.11	1.33	1.21
17/08/2012	1.45	1.32	1.61	1.41
18/08/2012	1.24	1.14	1.34	1.30
19/08/2012	1.23	1.10	1.35	1.18
20/08/2012	1.20	1.12	1.30	1.25
21/08/2012	1.24	1.11	1.40	1.28
22/08/2012	1.54	0.88	1.50	0.80
23/08/2012	1.40	1.06	1.45	1.15
24/08/2012	1.36	1.16	1.35	1.14
25/08/2012	1.36	1.20	1.32	1.19
26/08/2012	1.47	1.30	1.42	1.27
27/08/2012	1.49	1.36	1.45	1.34
28/08/2012	1.51	1.06	1.47	1.05
29/08/2012	1.49	1.19	1.47	1.15
30/08/2012	1.46	1.32	1.45	1.30
31/08/2012	1.31	1.11	1.30	1.12

Total Number of Measurements, A:	21599	21554
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	21599	21554
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D.MinorSignature: Original signed by D.Minor

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-09-412RR				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Sep-2012	NS	NS	NS	NS
02-Sep-2012	NS	NS	NS	NS
03-Sep-2012	NS	NS	NS	NS
04-Sep-2012	1.39	1.53	1.29	1.54
05-Sep-2012	1.45	1.67	1.46	1.66
06-Sep-2012	1.49	1.63	1.47	1.64
07-Sep-2012	1.38	1.54	1.41	1.56
08-Sep-2012	NS	NS	NS	NS
09-Sep-2012	NS	NS	NS	NS
10-Sep-2012	1.54	1.65	1.57	1.77
11-Sep-2012	1.25	1.52	1.33	1.51
12-Sep-2012	1.23	1.43	1.31	1.51
13-Sep-2012	1.40	1.62	1.46	1.61
14-Sep-2012	1.38	1.59	1.41	1.60
15-Sep-2012	NS	NS	NS	NS
16-Sep-2012	NS	NS	NS	NS
17-Sep-2012	1.42	1.66	1.47	1.76
18-Sep-2012	1.10	1.34	1.16	1.38
19-Sep-2012	1.20	1.38	1.27	1.43
20-Sep-2012	1.41	1.61	1.38	1.59
21-Sep-2012	1.48	1.67	1.45	1.64
22-Sep-2012	NS	NS	NS	NS
23-Sep-2012	NS	NS	NS	NS
24-Sep-2012	1.52	1.79	1.41	1.67
25-Sep-2012	1.61	1.88	1.67	1.92
26-Sep-2012	1.31	1.50	1.28	1.46
27-Sep-2012	1.11	1.29	1.08	1.33
28-Sep-2012	1.02	1.29	1.07	1.26
29-Sep-2012	NS	NS	NS	NS
30-Sep-2012	NS	NS	NS	NS
Total number of measurements taken, A:	19		19	
Chlorine Standard for Monitoring Location (mg/L):	0.50		0.50	
Number of measurements meeting standard, B:	19		19	
Compliance with Chlorine Standard, C= B/A X 100%:	100%		100%	

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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

Printed From : N:\WQ Data\Routine Water Quality\2012\Chlorine.xls

Date Approved: 1-Oct-12

File: WQR3

**City of Winnipeg**Water and Waste Department
Water Services Division**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping StationWater System Code: **252.00**
Licence Number: **PWS-09-412 RR**
Report Created: 01 October 2012

Report Period: September 2012

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/09/2012	1.23	1.02	1.22	1.08
2/09/2012	1.22	1.06	1.31	1.11
3/09/2012	1.21	1.05	1.28	1.15
4/09/2012	1.31	1.15	1.37	1.25
5/09/2012	1.35	1.21	1.46	1.32
6/09/2012	1.34	1.22	1.43	1.30
7/09/2012	1.29	1.17	1.34	1.24
8/09/2012	1.39	1.22	1.42	1.32
9/09/2012	1.41	1.29	1.45	1.31
10/09/2012	1.20	0.97	1.31	1.16
11/09/2012	1.22	0.93	1.28	1.18
12/09/2012	1.40	1.28	1.32	1.24
13/09/2012	1.45	1.28	1.31	1.20
14/09/2012	1.46	1.37	1.43	1.31
15/09/2012	1.50	1.32	1.63	1.40
16/09/2012	1.55	1.36	1.57	1.39
17/09/2012	1.43	1.13	1.43	1.24
18/09/2012	1.16	1.00	1.21	1.09
19/09/2012	1.30	0.99	1.30	1.15
20/09/2012	1.52	1.31	1.37	1.29
21/09/2012	1.46	1.23	1.41	1.30
22/09/2012	1.47	1.35	1.49	1.36
23/09/2012	1.51	1.43	1.34	1.28
24/09/2012	1.54	1.39	1.45	1.27
25/09/2012	1.55	1.24	1.57	1.27
26/09/2012	1.21	1.01	1.22	1.03
27/09/2012	1.04	0.98	1.09	1.02
28/09/2012	1.18	0.97	1.17	1.04
29/09/2012	1.37	1.32	1.32	1.25
30/09/2012	1.42	1.29	1.39	1.34

Total Number of Measurements, A:	20880	28079
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	20880	20879
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D.MinorSignature: Original submitted by D.Minor

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-09-412RR				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Oct-2012	1.35	1.53	1.33	1.53
02-Oct-2012	1.39	1.62	1.36	1.56
03-Oct-2012	1.41	1.67	1.39	1.58
04-Oct-2012	1.47	1.63	1.39	1.60
05-Oct-2012	1.40	1.66	1.34	1.57
06-Oct-2012	NS	NS	NS	NS
07-Oct-2012	NS	NS	NS	NS
08-Oct-2012	NS	NS	NS	NS
09-Oct-2012	1.31	1.47	1.29	1.43
10-Oct-2012	1.19	1.42	1.13	1.35
11-Oct-2012	1.30	1.44	1.24	1.42
12-Oct-2012	1.33	1.51	1.29	1.39
13-Oct-2012	NS	NS	NS	NS
14-Oct-2012	NS	NS	NS	NS
15-Oct-2012	1.34	1.53	1.28	1.54
16-Oct-2012	1.05	1.26	1.09	1.27
17-Oct-2012	1.23	1.42	1.13	1.28
18-Oct-2012	1.04	1.16	1.00	1.28
19-Oct-2012	1.16	1.34	1.15	1.36
20-Oct-2012	NS	NS	NS	NS
21-Oct-2012	NS	NS	NS	NS
22-Oct-2012	1.10	1.29	1.16	1.34
23-Oct-2012	1.07	1.33	1.19	1.40
24-Oct-2012	1.30	1.46	1.36	1.54
25-Oct-2012	1.18	1.35	1.28	1.40
26-Oct-2012	1.39	1.53	1.36	1.55
27-Oct-2012	NS	NS	NS	NS
28-Oct-2012	NS	NS	NS	NS
29-Oct-2012	1.15	1.36	1.20	1.38
30-Oct-2012	1.24	1.50	1.35	1.59
31-Oct-2012	1.39	1.53	1.42	1.59
Total number of measurements taken, A:	22		22	
Chlorine Standard for Monitoring Location (mg/L):	0.50		0.50	
Number of measurements meeting standard, B:	22		22	
Compliance with Chlorine Standard, C= B/A X 100%:	100%		100%	

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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

**City of Winnipeg**Water and Waste Department
Water Services Division**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping StationWater System Code: **252.00**
Licence Number: **PWS-09-412 RR**
Report Created: 01 November 2012

Report Period: October 2012

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/10/2012	1.44	1.35	1.41	1.34
2/10/2012	1.40	1.25	1.35	1.24
3/10/2012	1.45	1.25	1.42	1.24
4/10/2012	1.45	0.81	1.51	0.97
5/10/2012	1.36	1.10	1.40	1.13
6/10/2012	1.19	1.00	1.17	0.99
7/10/2012	1.07	0.99	1.10	0.99
8/10/2012	1.06	0.92	1.06	0.94
9/10/2012	1.14	1.07	1.15	1.03
10/10/2012	1.18	1.03	1.14	1.01
11/10/2012	1.25	1.17	1.21	1.13
12/10/2012	1.27	1.18	1.18	1.08
13/10/2012	1.35	0.83	1.21	0.91
14/10/2012	1.22	1.07	1.25	1.19
15/10/2012	1.13	0.93	1.11	0.95
16/10/2012	1.04	0.93	0.98	0.89
17/10/2012	1.11	0.90	1.03	0.90
18/10/2012	0.93	0.84	1.03	0.97
19/10/2012	1.05	0.98	1.08	1.02
20/10/2012	1.06	0.92	1.09	1.03
21/10/2012	0.98	0.84	1.07	0.99
22/10/2012	1.02	0.82	1.12	1.01
23/10/2012	1.13	1.05	1.23	1.11
24/10/2012	1.18	1.12	1.23	1.12
25/10/2012	1.22	1.07	1.18	1.10
26/10/2012	1.31	1.22	1.24	1.17
27/10/2012	1.28	1.18	1.24	1.11
28/10/2012	1.23	1.17	1.14	1.09
29/10/2012	1.15	1.05	1.19	1.09
30/10/2012	1.24	1.15	1.29	1.22
31/10/2012	1.30	1.23	1.27	1.21

Total Number of Measurements, A:	21597	21597
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	21597	21597
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): A.WeremySignature: Original signed by A.Weremy

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				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Nov-2012	1.33	1.62	1.36	1.62
02-Nov-2012	1.29	1.45	1.36	1.52
03-Nov-2012	NS	NS	NS	NS
04-Nov-2012	NS	NS	NS	NS
05-Nov-2012	1.15	1.40	1.11	1.36
06-Nov-2012	1.00	1.24	1.02	1.22
07-Nov-2012	1.01	1.16	0.89	1.14
08-Nov-2012	1.05	1.27	1.02	1.22
09-Nov-2012	1.01	1.24	1.03	1.17
10-Nov-2012	NS	NS	NS	NS
11-Nov-2012	NS	NS	NS	NS
12-Nov-2012	NS	NS	NS	NS
13-Nov-2012	1.26	1.46	1.31	1.42
14-Nov-2012	1.15	1.39	1.17	1.37
15-Nov-2012	1.20	1.43	1.08	1.44
16-Nov-2012	1.23	1.41	1.15	1.32
17-Nov-2012	NS	NS	NS	NS
18-Nov-2012	NS	NS	NS	NS
19-Nov-2012	1.21	1.38	1.14	1.28
20-Nov-2012	1.21	1.38	1.14	1.34
21-Nov-2012	1.08	1.33	1.07	1.33
22-Nov-2012	0.99	1.13	0.89	1.11
23-Nov-2012	0.96	1.09	0.93	1.11
24-Nov-2012	NS	NS	NS	NS
25-Nov-2012	NS	NS	NS	NS
26-Nov-2012	1.01	1.15	0.94	1.07
27-Nov-2012	0.98	1.20	0.96	1.12
28-Nov-2012	0.98	1.25	0.96	1.17
29-Nov-2012	1.11	1.24	1.08	1.20
30-Nov-2012	1.00	1.21	0.94	1.15
Total number of measurements taken, A:	21		21	
Chlorine Standard for Monitoring Location (mg/L):	0.50		0.50	
Number of measurements meeting standard, B:	21		21	
Compliance with Chlorine Standard, C= B/A X 100%:	100%		100%	

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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

**City of Winnipeg**Water and Waste Department
Water Services Division**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping StationWater System Code: **252.00**
Licence Number: **PWS-09-412 A**
Report Created: 01 December 2012

Report Period: November 2012

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/11/2012	1.35	1.24	1.23	1.10
2/11/2012	1.12	0.96	1.11	1.00
3/11/2012	1.09	0.97	1.06	1.02
4/11/2012	1.14	0.86	1.03	0.80
5/11/2012	1.05	0.98	0.96	0.90
6/11/2012	0.96	0.91	0.93	0.89
7/11/2012	0.97	0.91	0.92	0.88
8/11/2012	1.03	0.98	1.01	0.93
9/11/2012	1.02	0.98	1.13	0.98
10/11/2012	1.04	1.01	1.15	1.05
11/11/2012	1.09	1.04	1.12	1.07
12/11/2012	1.10	1.05	1.13	1.10
13/11/2012	1.13	1.10	1.09	1.03
14/11/2012	1.11	1.07	1.05	1.01
15/11/2012	1.19	1.15	1.06	1.02
16/11/2012	1.18	1.12	1.01	0.94
17/11/2012	1.16	1.11	1.07	0.96
18/11/2012	1.17	1.11	1.12	1.06
19/11/2012	1.15	1.09	1.10	1.06
20/11/2012	1.16	1.04	1.10	1.03
21/11/2012	1.09	0.95	1.04	0.84
22/11/2012	0.96	0.91	0.89	0.85
23/11/2012	0.96	0.90	0.91	0.85
24/11/2012	0.98	0.93	0.96	0.92
25/11/2012	0.96	0.92	0.92	0.90
26/11/2012	0.98	0.93	0.94	0.89
27/11/2012	0.97	0.95	0.94	0.92
28/11/2012	0.99	0.94	0.99	0.93
29/11/2012	1.01	0.98	1.01	0.98
30/11/2012	1.06	0.93	0.94	0.86

Total Number of Measurements, A:	20911	20912
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	20911	20912
COMPLIANCE, C = B/A X 100%:	100	100

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Submitted By (Print): A.WeremySignature: Original signed by A.Weremy

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				
Date	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Free Chlorine (mg/L)	Total Chlorine (mg/L)
01-Dec-2012	NS	NS	NS	NS
02-Dec-2012	NS	NS	NS	NS
03-Dec-2012	0.96	1.20	1.04	1.24
04-Dec-2012	0.97	1.26	1.01	1.17
05-Dec-2012	0.93	1.21	1.01	1.19
06-Dec-2012	OL	OL	OL	OL
07-Dec-2012	1.02	1.15	1.05	1.14
08-Dec-2012	NS	NS	NS	NS
09-Dec-2012	NS	NS	NS	NS
10-Dec-2012	1.10	1.29	1.05	1.25
11-Dec-2012	1.12	1.29	1.05	1.26
12-Dec-2012	1.17	1.36	1.09	1.30
13-Dec-2012	0.99	1.27	1.05	1.23
14-Dec-2012	1.00	1.28	0.98	1.26
15-Dec-2012	NS	NS	NS	NS
16-Dec-2012	NS	NS	NS	NS
17-Dec-2012	1.02	1.24	0.94	1.11
18-Dec-2012	0.86	1.06	0.82	1.04
19-Dec-2012	1.01	1.21	0.96	1.24
20-Dec-2012	0.96	1.19	1.00	1.21
21-Dec-2012	1.00	1.10	1.04	1.14
22-Dec-2012	NS	NS	NS	NS
23-Dec-2012	NS	NS	NS	NS
24-Dec-2012	1.15	1.31	1.06	1.28
25-Dec-2012	NS	NS	NS	NS
26-Dec-2012	NS	NS	NS	NS
27-Dec-2012	0.94	1.18	0.93	1.18
28-Dec-2012	0.93	1.14	1.01	1.17
29-Dec-2012	NS	NS	NS	NS
30-Dec-2012	NS	NS	NS	NS
31-Dec-2012	1.04	1.20	1.13	1.30
Total number of measurements taken, A:	18		18	
Chlorine Standard for Monitoring Location (mg/L):	0.50		0.50	
Number of measurements meeting standard, B:	18		18	
Compliance with Chlorine Standard, C= B/A X 100%:	100%		100%	

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

Comments:

On December 6, 2012 there was a scheduled plant shutdown which resulted in the plant being off-line at the time of sampling.

Report Compiled By: J. Jones

Approved in LIMS By: S. Fletcher

Printed From : N:\WQ Data\Routine Water Quality\2012\Chlorine.xls

File: WQR3

Date Approved: 7-Jan-13

**City of Winnipeg**Water and Waste Department
Water Services Division**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping StationWater System Code: **252.00**
Licence Number: **PWS-09-412 A**
Report Created: 01 January 2013

Report Period: December 2012

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/12/2012	0.97	0.87	0.89	0.82
2/12/2012	1.00	0.92	0.93	0.87
3/12/2012	0.97	0.78	1.01	0.95
4/12/2012	0.99	0.92	1.03	0.99
5/12/2012	0.98	0.87	1.04	0.99
6/12/2012	0.86	0.76	0.97	0.88
7/12/2012	0.95	0.89	1.07	1.02
8/12/2012	1.02	0.95	1.08	1.03
9/12/2012	1.05	1.00	1.11	1.03
10/12/2012	1.06	1.00	1.04	1.00
11/12/2012	1.10	1.05	1.03	1.00
12/12/2012	1.15	1.09	1.04	0.99
13/12/2012	0.96	0.85	0.96	0.89
14/12/2012	0.96	0.85	0.99	0.91
15/12/2012	0.96	0.88	1.03	0.95
16/12/2012	0.75	0.86	0.96	0.90
17/12/2012	1.00	0.86	0.96	0.88
18/12/2012	1.07	0.91	1.13	1.04
19/12/2012	1.11	1.05	1.09	1.05
20/12/2012	1.02	0.91	1.04	0.98
21/12/2012	0.88	0.78	0.95	0.87
22/12/2012	0.94	0.86	0.96	0.92
23/12/2012	1.05	0.96	0.96	0.89
24/12/2012	1.09	1.01	1.00	0.93
25/12/2012	1.04	0.97	0.91	0.85
26/12/2012	0.97	0.93	0.85	0.82
27/12/2012	1.00	0.93	0.91	0.84
28/12/2012	0.97	0.93	0.97	0.93
29/12/2012	0.94	0.88	1.00	0.96
30/12/2012	0.96	0.92	1.00	0.97
31/12/2012	0.96	0.92	1.01	0.97

Total Number of Measurements, A:	21455	21598
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	21455	21598
COMPLIANCE, C = B/A X 100%:	100	100

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2012\2012-12

Submitted By (Print): D.MinorSignature: Original signed by D.Minor

2012 Monthly Turbidity Reports



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-09-412RR									
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-Jan-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Jan-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
03-Jan-2012	0.65	OL	0.10	OL	0.14	0.11	0.10	0.11	0.12
04-Jan-2012	0.64	0.10	0.11	0.13	OL	0.13	0.10	0.17	OL
05-Jan-2012	0.68	OL	OL	0.18	0.14	0.11	0.13	0.11	0.11
06-Jan-2012	0.69	0.14	0.14	0.17	OL	0.15	OL	0.16	0.17
07-Jan-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
08-Jan-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Jan-2012	0.90	0.12	0.13	0.14	0.19	0.13	OL	0.13	OL
10-Jan-2012	OL	OL	OL	OL	OL	OL	OL	OL	OL
11-Jan-2012	0.70	0.12	0.11	0.13	OL	0.13	0.11	0.13	OL
12-Jan-2012	0.67	0.11	0.11	0.13	0.10	0.14	0.11	OL	0.11
13-Jan-2012	0.65	0.14	OL	0.15	0.11	OL	0.10	0.11	0.11
14-Jan-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
15-Jan-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-Jan-2012	0.60	0.15	OL	0.16	0.14	OL	0.12	0.14	0.12
17-Jan-2012	0.71	0.18	0.12	0.13	OL	0.16	0.15	0.14	OL
18-Jan-2012	0.63	0.11	0.11	0.13	OL	0.12	OL	0.18	0.11
19-Jan-2012	0.63	0.13	OL	0.15	0.14	OL	0.11	0.10	0.11
20-Jan-2012	0.69	OL	0.14	0.18	0.21	0.14	0.16	0.14	OL
21-Jan-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Jan-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
23-Jan-2012	0.62	OL	0.09	0.12	OL	0.09	0.10	0.09	0.13
24-Jan-2012	0.71	0.09	0.09	OL	0.09	0.11	OL	0.12	0.08
25-Jan-2012	0.67	0.09	0.10	0.09	0.10	OL	0.08	OL	0.10
26-Jan-2012	0.57	0.10	OL	0.11	OL	0.07	0.08	0.07	0.08
27-Jan-2012	0.53	0.10	0.08	OL	0.08	0.08	0.09	0.09	0.09
28-Jan-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Jan-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
30-Jan-2012	0.54	0.10	0.10	0.14	OL	0.10	OL	0.12	0.10
31-Jan-2012	0.58	0.18	OL	0.16	0.15	OL	0.11	0.11	0.12
Total number of measurements taken, A:	16	14	17	12	15	15	18	15	
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	14	17	12	15	15	18	15	
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

Comments:

There was no sample taken on January 10, 2012 due to a plant shutdown at the time of sampling.

Report Compiled By: H.Demchenko

Approved in LIMS By: S.Fletcher

Date Approved: 6-Feb-12



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

Report Created:

February 1, 2012

January Date	Turbidity (NTU)																
	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
01/01/2012	0.71	0.06	0.09	0.06	0.08	0.05	0.15	0.08	0.23	0.08	0.20	0.06	0.08	0.06	0.13	0.03	0.15
02/01/2012	0.70	0.08	0.15	0.04	0.16	0.06	0.09	0.10	0.13	0.06	0.25	0.05	0.19	0.05	0.17	0.02	0.05
03/01/2012	0.67	0.05	0.25	0.03	0.05	0.04	0.17	0.10	0.23	0.06	0.08	0.04	0.21	0.07	0.09	0.05	0.27
04/01/2012	0.66	0.08	0.09	0.06	0.12	0.04	0.06	0.08	0.23	0.06	0.17	0.05	0.18	0.06	0.16	0.03	0.16
05/01/2012	0.66	0.06	0.17	0.02	0.09	0.07	0.19	0.12	0.14	0.05	0.16	0.08	0.12	0.04	0.15	0.04	0.06
06/01/2012	0.66	0.06	0.11	0.01	0.03	0.05	0.22	0.08	0.24	0.08	0.09	0.06	0.19	0.06	0.12	0.05	0.15
07/01/2012	0.65	0.09	0.19	0.03	0.12	0.07	0.10	0.11	0.21	0.06	0.18	0.07	0.10	0.03	0.11	0.02	0.05
08/01/2012	0.64	0.05	0.25	0.02	0.17	0.04	0.23	0.11	0.14	0.06	0.09	0.07	0.24	0.04	0.05	0.05	0.22
09/01/2012	0.63	0.07	0.10	0.03	0.05	0.04	0.17	0.09	0.24	0.08	0.23	0.06	0.19	0.04	0.19	0.03	0.18
10/01/2012	0.56	0.03	0.15	0.00	0.06	0.03	0.15	0.05	0.13	0.01	0.09	0.04	0.11	0.01	0.05	0.01	0.06
11/01/2012	0.66	0.06	0.23	0.02	0.05	0.04	0.17	0.07	0.20	0.07	0.15	0.06	0.17	0.03	0.18	0.03	0.13
12/01/2012	0.64	0.08	0.21	0.01	0.10	0.05	0.09	0.09	0.19	0.06	0.19	0.07	0.16	0.04	0.13	0.03	0.12
13/01/2012	0.64	0.06	0.16	0.01	0.09	0.05	0.16	0.08	0.12	0.05	0.15	0.05	0.09	0.03	0.12	0.04	0.07
14/01/2012	0.63	0.06	0.18	0.01	0.11	0.05	0.17	0.09	0.19	0.05	0.09	0.09	0.16	0.04	0.06	0.04	0.12
15/01/2012	0.60	0.08	0.10	0.03	0.04	0.05	0.07	0.07	0.25	0.08	0.24	0.07	0.23	0.04	0.18	0.03	0.26
16/01/2012	0.59	0.07	0.25	0.02	0.08	0.08	0.25	0.12	0.15	0.05	0.22	0.07	0.11	0.04	0.22	0.05	0.09
17/01/2012	0.62	0.06	0.23	0.01	0.28	0.05	0.14	0.08	0.24	0.06	0.09	0.08	0.20	0.05	0.11	0.03	0.19
18/01/2012	0.61	0.08	0.10	0.01	0.16	0.05	0.07	0.06	0.16	0.07	0.22	0.05	0.24	0.03	0.19	0.02	0.04
19/01/2012	0.63	0.08	0.20	0.02	0.11	0.08	0.19	0.10	0.18	0.05	0.24	0.05	0.10	0.03	0.13	0.05	0.13
20/01/2012	0.60	0.08	0.24	0.02	0.24	0.06	0.14	0.11	0.23	0.08	0.16	0.10	0.16	0.06	0.12	0.04	0.17
21/01/2012	0.58	0.07	0.10	0.01	0.05	0.07	0.27	0.05	0.11	0.05	0.19	0.05	0.22	0.02	0.14	0.02	0.21
22/01/2012	0.56	0.06	0.17	0.02	0.08	0.03	0.16	0.08	0.21	0.05	0.21	0.04	0.07	0.02	0.25	0.02	0.04
23/01/2012	0.59	0.05	0.19	0.01	0.20	0.05	0.08	0.05	0.22	0.05	0.08	0.07	0.17	0.02	0.04	0.02	0.22
24/01/2012	0.60	0.05	0.07	0.00	0.02	0.04	0.15	0.05	0.16	0.06	0.11	0.05	0.16	0.02	0.08	0.02	0.16
25/01/2012	0.59	0.05	0.11	0.00	0.03	0.04	0.29	0.05	0.09	0.04	0.16	0.05	0.16	0.01	0.06	0.01	0.11
26/01/2012	0.61	0.05	0.09	0.00	0.11	0.04	0.15	0.04	0.11	0.05	0.22	0.04	0.24	0.01	0.16	0.01	0.04
27/01/2012	0.64	0.05	0.20	0.01	0.15	0.05	0.17	0.06	0.11	0.05	0.18	0.06	0.08	0.02	0.05	0.02	0.16
28/01/2012	0.63	0.05	0.15	0.01	0.07	0.05	0.19	0.05	0.11	0.06	0.08	0.06	0.16	0.02	0.05	0.02	0.10
29/01/2012	0.62	0.04	0.14	0.01	0.11	0.05	0.18	0.07	0.10	0.06	0.13	0.05	0.16	0.03	0.10	0.02	0.11
30/01/2012	0.61	0.09	0.10	0.03	0.05	0.09	0.12	0.06	0.17	0.08	0.22	0.05	0.14	0.04	0.11	0.02	0.05
31/01/2012	0.60	0.08	0.20	0.03	0.09	0.06	0.23	0.09	0.12	0.09	0.24	0.09	0.11	0.04	0.19	0.05	0.11

Total Number of Measurements Taken, A:	14109	14085	14467	11398	14995	14345	14652	14002
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:	14109	14085	14467	11398	14995	14345	14652	14002
Compliance with Turbidity Standard, C = B/A x 100%:	100	100	100	100	100	100	100	100

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2012\2012-01

Submitted By (Print): D.Minor

Signature: Original signed by D.Minor



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-09-412RR									
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-Feb-2012	0.67	OL	0.13	0.17	0.15	0.11	0.16	0.13	OL
02-Feb-2012	0.60	0.11	0.13	OL	0.12	0.11	OL	0.15	0.10
03-Feb-2012	0.70	0.13	OL	0.13	0.13	0.15	0.12	OL	0.10
04-Feb-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
05-Feb-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
06-Feb-2012	0.46	0.11	OL	0.10	0.09	0.09	0.08	OL	0.08
07-Feb-2012	0.50	OL	0.08	0.11	0.09	OL	0.07	0.06	0.07
08-Feb-2012	0.49	0.11	0.15	OL	OL	0.10	0.11	0.07	0.08
09-Feb-2012	0.48	0.07	0.08	0.08	0.07	0.07	OL	0.11	OL
10-Feb-2012	0.50	0.12	OL	0.16	0.13	0.09	0.10	OL	0.08
11-Feb-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
12-Feb-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
13-Feb-2012	0.50	0.09	OL	0.10	0.08	0.08	0.07	OL	0.07
14-Feb-2012	0.51	OL	0.08	0.12	0.10	OL	0.07	0.07	0.07
15-Feb-2012	0.43	0.07	0.10	OL	OL	0.19	0.13	0.07	0.08
16-Feb-2012	0.43	0.09	0.08	0.11	0.09	0.09	OL	0.15	OL
17-Feb-2012	0.45	0.21	0.20	0.20	0.14	OL	0.16	OL	0.14
18-Feb-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
19-Feb-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
20-Feb-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
21-Feb-2012	0.46	0.11	OL	0.13	0.11	0.09	0.11	0.10	0.09
22-Feb-2012	0.45	0.10	0.08	0.09	0.07	0.09	0.07	0.07	OL
23-Feb-2012	0.40	OL	0.08	0.07	0.09	0.07	0.06	0.06	0.07
24-Feb-2012	0.41	0.07	OL	0.09	0.07	0.07	OL	0.07	0.08
25-Feb-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
26-Feb-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
27-Feb-2012	0.47	0.09	0.06	0.10	0.07	OL	0.06	0.09	OL
28-Feb-2012	0.48	OL	0.09	0.08	OL	0.06	0.06	0.07	0.06
29-Feb-2012	0.42	0.08	0.07	0.11	0.08	OL	0.08	0.08	OL
Total number of measurements taken, A:		15	14	17	17	15	16	15	14
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:		15	14	17	17	15	16	15	14
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

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: S.Fletcher

Date Approved: 5-Mar-12



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
License Number: PWS-09-412 RR
Report Created: March 01, 2012

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

February 2012 Turbidity (NTU)

Date	Raw Avg	Filter #1 Avg Max	Filter #2 Avg Max	Filter #3 Avg Max	Filter #4 Avg Max	Filter #5 Avg Max	Filter #6 Avg Max	Filter #7 Avg Max	Filter #8 Avg Max
1/02/2012	0.58	0.07 0.24	0.02 0.07	0.10 0.18	0.09 0.19	0.06 0.23	0.06 0.17	0.04 0.10	0.03 0.16
2/02/2012	0.56	0.05 0.09	0.02 0.22	0.06 0.26	0.06 0.21	0.06 0.09	0.06 0.14	0.03 0.08	0.03 0.29
3/02/2012	0.55	0.07 0.18	0.02 0.25	0.06 0.27	0.08 0.11	0.05 0.13	0.05 0.16	0.02 0.13	0.02 0.05
4/02/2012	0.55	0.05 0.27	0.01 0.02	0.07 0.21	0.06 0.23	0.04 0.11	0.07 0.16	0.02 0.11	0.03 0.12
5/02/2012	0.54	0.04 0.08	0.02 0.09	0.05 0.18	0.06 0.16	0.06 0.09	0.07 0.19	0.04 0.17	0.03 0.11
6/02/2012	0.54	0.07 0.15	0.01 0.13	0.05 0.08	0.06 0.09	0.05 0.16	0.05 0.13	0.02 0.28	0.01 0.07
7/02/2012	0.53	0.04 0.12	0.00 0.09	0.05 0.18	0.05 0.14	0.04 0.11	0.05 0.06	0.01 0.10	0.01 0.03
8/02/2012	0.53	0.04 0.16	0.00 0.01	0.04 0.14	0.05 0.23	0.04 0.10	0.05 0.09	0.02 0.05	0.01 0.06
9/02/2012	0.52	0.06 0.08	0.01 0.05	0.05 0.24	0.05 0.15	0.06 0.08	0.04 0.10	0.02 0.22	0.01 0.06
10/02/2012	0.52	0.08 0.15	0.01 0.04	0.07 0.10	0.09 0.14	0.05 0.12	0.04 0.11	0.03 0.24	0.01 0.03
11/02/2012	0.51	0.05 0.14	0.01 0.03	0.08 0.20	0.06 0.15	0.04 0.25	0.06 0.08	0.02 0.34	0.03 0.23
12/02/2012	0.51	0.06 0.18	0.03 0.09	0.07 0.26	0.07 0.21	0.06 0.11	0.06 0.14	0.04 0.07	0.02 0.10
13/02/2012	0.50	0.07 0.17	0.00 0.06	0.05 0.08	0.06 0.11	0.06 0.13	0.06 0.15	0.03 0.12	0.02 0.13
14/02/2012	0.50	0.03 0.11	0.00 0.02	0.03 0.15	0.06 0.15	0.04 0.12	0.04 0.07	0.02 0.20	0.01 0.02
15/02/2012	0.50	0.04 0.11	0.00 0.02	0.03 0.16	0.05 0.10	0.05 0.10	0.04 0.08	0.02 0.03	0.01 0.03
16/02/2012	0.49	0.05 0.06	0.00 0.07	0.04 0.06	0.05 0.15	0.07 0.08	0.04 0.09	0.03 0.08	0.01 0.06
17/02/2012	0.49	0.05 0.14	0.02 0.04	0.06 0.15	0.08 0.13	0.03 0.13	0.05 0.07	0.03 0.12	0.01 0.02
18/02/2012	0.51	0.04 0.07	0.01 0.17	0.03 0.13	0.05 0.19	0.07 0.09	0.04 0.09	0.02 0.05	0.01 0.13
19/02/2012	0.51	0.06 0.11	0.00 0.01	0.05 0.07	0.06 0.08	0.05 0.11	0.04 0.16	0.03 0.20	0.01 0.07
20/02/2012	0.50	0.05 0.14	0.02 0.08	0.05 0.15	0.07 0.18	0.05 0.14	0.06 0.09	0.03 0.11	0.01 0.03
21/02/2012	0.49	0.04 0.13	0.01 0.10	0.03 0.08	0.05 0.14	0.07 0.13	0.05 0.13	0.02 0.07	0.01 0.09
22/02/2012	0.49	0.04 0.06	0.00 0.00	0.03 0.15	0.05 0.08	0.05 0.11	0.03 0.09	0.02 0.13	0.00 0.04
23/02/2012	0.48	0.03 0.09	0.00 0.03	0.02 0.08	0.05 0.10	0.04 0.07	0.04 0.05	0.01 0.05	0.01 0.01
24/02/2012	0.48	0.03 0.05	0.00 0.04	0.03 0.04	0.03 0.09	0.05 0.07	0.03 0.09	0.01 0.02	0.01 0.13
25/02/2012	0.47	0.03 0.07	0.00 0.00	0.02 0.08	0.05 0.07	0.03 0.08	0.03 0.05	0.02 0.16	0.00 0.01
26/02/2012	0.46	0.02 0.08	0.00 0.01	0.02 0.04	0.04 0.17	0.05 0.06	0.04 0.08	0.01 0.02	0.01 0.01
27/02/2012	0.45	0.04 0.05	0.00 0.00	0.03 0.09	0.05 0.06	0.03 0.09	0.02 0.05	0.02 0.04	0.00 0.03
28/02/2012	0.45	0.02 0.08	0.00 0.04	0.02 0.05	0.04 0.15	0.05 0.06	0.04 0.08	0.01 0.02	0.01 0.01
29/02/2012	0.42	0.04 0.05	0.00 0.00	0.03 0.20	0.05 0.06	0.04 0.15	0.02 0.09	0.02 0.05	0.00 0.03
Total Number of Measurements Taken, A:		13443	11788	14419	11433	13689	13777	14197	13291
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:		13443	11788	14419	11433	13689	13777	14194	13291
Compliance with Turbidity Standard, C = B/A X 100%:		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.98% *	100.00%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2012\2012-02

* Data is in compliance with Operating Licence Section 3 Table 1 Water Quality Standards

Submitted By (Print): D.Minor

Signature: Original signed by D.Minor



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-09-412RR									
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-Mar-2011	0.46	OL	0.08	0.09	OL	0.06	0.07	0.06	0.06
02-Mar-2011	0.45	0.07	0.07	0.08	0.07	0.08	OL	0.09	0.09
03-Mar-2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
04-Mar-2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
05-Mar-2011	0.43	0.06	0.06	0.09	0.08	OL	0.09	0.08	OL
06-Mar-2011	0.37	OL	OL	0.07	0.08	0.06	0.06	0.06	0.06
07-Mar-2011	0.41	0.06	OL	0.09	0.06	0.06	0.07	0.06	0.06
08-Mar-2011	0.36	0.07	0.06	OL	0.07	0.07	0.05	0.06	OL
09-Mar-2011	0.36	0.09	0.07	0.09	0.08	0.07	0.07	OL	0.06
10-Mar-2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
11-Mar-2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
12-Mar-2011	0.43	OL	0.08	0.09	0.09	0.06	0.06	OL	0.06
13-Mar-2011	0.36	0.07	0.06	OL	0.06	0.06	OL	0.07	0.08
14-Mar-2011	0.38	0.10	0.08	0.09	0.07	OL	0.06	OL	0.08
15-Mar-2011	0.40	0.06	OL	0.06	OL	0.06	0.06	0.07	0.06
16-Mar-2011	0.38	0.06	0.06	0.06	0.06	0.06	OL	0.07	OL
17-Mar-2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
18-Mar-2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
19-Mar-2011	0.40	0.06	0.06	0.07	OL	0.06	OL	0.06	0.07
20-Mar-2011	0.65	0.08	0.21	0.10	OL	OL	0.06	0.08	0.08
21-Mar-2011	0.51	OL	0.09	OL	0.08	0.07	0.08	0.07	0.08
22-Mar-2011	0.63	0.06	0.10	0.13	0.11	0.09	OL	0.09	OL
23-Mar-2011	0.53	0.08	0.09	0.10	0.07	OL	0.07	OL	0.06
24-Mar-2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
25-Mar-2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
26-Mar-2011	0.56	0.06	0.07	0.09	0.06	0.05	0.06	OL	0.07
27-Mar-2011	0.57	0.08	0.09	0.07	0.09	0.07	OL	0.08	OL
28-Mar-2011	0.64	0.06	0.07	0.09	0.06	OL	0.15	OL	0.08
29-Mar-2011	0.56	OL	OL	0.06	0.14	0.10	0.07	0.05	0.07
30-Mar-2011	0.64	0.06	0.06	0.08	OL	OL	0.05	0.06	0.05
31-Mar-2011	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total number of measurements taken, A:		17	18	19	17	16	16	16	17
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:		17	18	19	17	16	16	16	17
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

Comments:

Report Compiled By: K.Wazny

Approved in LIMS By: S. Fletcher

Date Approved: 3-Apr-12



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
License Number: PWS-09-412 RR

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

March 2012 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
1/03/2012	0.41	0.03	0.06	0.00	0.06	0.03	0.09	0.04	0.23	0.05	0.06	0.04	0.06	0.01	0.06	0.01	0.01
2/03/2012	0.40	0.03	0.04	0.00	0.02	0.02	0.05	0.03	0.06	0.05	0.09	0.02	0.10	0.01	0.03	0.00	0.03
3/03/2012	0.39	0.03	0.06	0.00	0.00	0.02	0.08	0.05	0.10	0.03	0.07	0.03	0.05	0.01	0.05	0.00	0.01
4/03/2012	0.39	0.02	0.07	0.00	0.02	0.02	0.03	0.03	0.09	0.05	0.06	0.03	0.06	0.01	0.02	0.01	0.16
5/03/2012	0.39	0.03	0.05	0.00	0.00	0.02	0.07	0.05	0.06	0.04	0.08	0.02	0.08	0.01	0.05	0.00	0.03
6/03/2012	0.38	0.03	0.06	OL	OL	0.02	0.13	0.04	0.08	0.04	0.15	0.04	0.08	0.01	0.03	0.01	0.01
7/03/2012	0.38	0.03	0.11	0.00	0.02	0.02	0.03	0.04	0.10	0.05	0.06	0.03	0.11	0.01	0.02	0.01	0.07
8/03/2012	0.37	0.03	0.05	0.00	0.00	0.01	0.08	0.04	0.06	0.03	0.08	0.02	0.07	0.01	0.04	0.00	0.03
9/03/2012	0.37	0.03	0.07	0.00	0.01	0.02	0.04	0.04	0.09	0.04	0.08	0.03	0.06	0.01	0.04	0.00	0.02
10/03/2012	0.37	0.03	0.05	0.00	0.01	0.02	0.08	0.03	0.09	0.04	0.06	0.03	0.07	0.01	0.02	0.01	0.01
11/03/2012	0.37	0.04	0.05	0.00	0.00	0.01	0.09	0.05	0.05	0.04	0.09	0.02	0.08	0.02	0.04	0.00	0.02
12/03/2012	0.37	0.02	0.08	0.00	0.02	0.03	0.05	0.04	0.10	0.03	0.09	0.04	0.05	0.01	0.05	0.00	0.01
13/03/2012	0.38	0.03	0.05	0.00	0.02	0.02	0.09	0.03	0.05	0.05	0.07	0.03	0.10	0.01	0.02	0.01	0.03
14/03/2012	0.39	0.03	0.09	0.01	0.02	0.02	0.03	0.05	0.10	0.04	0.09	0.02	0.05	0.01	0.04	0.00	0.03
15/03/2012	0.40	0.02	0.07	0.02	0.23	0.03	0.25	0.04	0.29	0.04	0.07	0.04	0.08	0.01	0.04	0.01	0.01
16/03/2012	0.42	0.03	0.04	0.01	0.02	0.01	0.06	0.04	0.05	0.04	0.09	0.02	0.08	0.01	0.03	0.00	0.06
17/03/2012	0.44	0.03	0.08	0.02	0.05	0.02	0.03	0.04	0.09	0.03	0.08	0.03	0.05	0.01	0.04	0.00	0.02
18/03/2012	0.41	0.02	0.29	0.01	0.09	0.01	0.07	0.03	0.07	0.04	0.05	0.03	0.06	0.01	0.04	0.01	0.01
19/03/2012	0.44	0.08	0.14	0.00	0.01	0.01	0.03	0.04	0.05	0.08	0.12	0.02	0.06	0.01	0.02	0.00	0.02
20/03/2012	0.48	0.08	0.09	0.00	0.01	0.03	0.16	0.03	0.05	0.08	0.12	0.02	0.06	0.02	0.04	0.00	0.01
21/03/2012	0.50	0.04	0.11	0.01	0.04	0.03	0.12	0.04	0.06	0.05	0.12	0.05	0.06	0.02	0.09	0.01	0.01
22/03/2012	0.49	0.04	0.09	0.00	0.02	0.04	0.07	0.03	0.08	0.05	0.10	0.03	0.08	0.04	0.11	0.00	0.03
23/03/2012	0.53	0.09	0.11	0.00	0.01	0.06	0.13	0.03	0.09	0.03	0.08	0.04	0.09	0.02	0.08	0.00	0.02
24/03/2012	0.57	0.05	0.10	0.00	0.04	0.06	0.13	0.04	0.06	0.04	0.06	0.05	0.08	0.01	0.02	0.02	0.04
25/03/2012	0.57	0.06	0.09	0.00	0.03	0.08	0.10	0.03	0.08	0.04	0.09	0.03	0.08	0.02	0.05	0.01	0.06
26/03/2012	0.60	0.08	0.12	0.00	0.01	0.08	0.16	0.03	0.05	0.03	0.09	0.04	0.05	0.01	0.05	0.02	0.03
27/03/2012	0.64	0.05	0.12	0.00	0.04	0.09	0.13	0.04	0.11	0.05	0.14	0.03	0.09	0.01	0.09	0.01	0.06
28/03/2012	0.67	0.09	0.13	0.00	0.01	0.10	0.18	0.02	0.09	0.03	0.09	0.03	0.05	0.01	0.05	0.02	0.03
29/03/2012	0.68	0.04	0.11	0.00	0.04	0.05	0.13	0.03	0.06	0.04	0.06	0.04	0.09	0.01	0.02	0.01	0.05
30/03/2012	0.68	0.07	0.08	0.01	0.03	0.03	0.09	0.02	0.08	0.02	0.07	0.02	0.08	0.01	0.03	0.00	0.02
31/03/2012	0.73	0.05	0.13	0.03	0.12	0.03	0.10	0.03	0.05	0.02	0.04	0.05	0.06	0.01	0.07	0.01	0.04

Total Number of Measurements Taken, A:	14349	11591	14581	12095	15020	14766	14625	14297
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:	14349	11591	14581	12095	15020	14766	14625	14297
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\2012\2012-03

Submitted By (Print) D.Minor

Signature Original signed by D.Minor



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-09-412RR									
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Apr-2012	0.63	0.09	0.09	0.15	0.08	OL	0.07	OL	0.07
03-Apr-2012	0.70	0.08	OL	0.11	0.09	0.07	0.09	0.08	OL
04-Apr-2012	0.66	0.07	0.08	0.10	0.07	OL	0.06	OL	0.06
05-Apr-2012	0.61	OL	OL	0.08	0.08	0.07	0.08	0.07	0.08
06-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
07-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
08-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
10-Apr-2012	0.75	0.06	OL	0.07	0.08	0.06	0.08	0.06	OL
11-Apr-2012	OL	OL	OL	OL	OL	OL	OL	OL	OL
12-Apr-2012	0.72	0.06	0.08	0.08	0.09	0.06	OL	0.08	OL
13-Apr-2012	0.98	0.09	0.09	OL	0.12	OL	0.16	0.08	0.11
14-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
15-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-Apr-2012	0.66	OL	OL	0.09	0.08	0.08	0.09	0.08	0.09
17-Apr-2012	0.76	0.07	0.07	0.12	OL	0.08	OL	0.09	0.06
18-Apr-2012	0.85	0.15	0.14	OL	0.11	OL	0.09	0.09	0.09
19-Apr-2012	0.88	0.09	OL	0.11	0.12	0.09	0.12	0.09	OL
20-Apr-2012	0.81	0.10	0.10	0.16	OL	0.09	0.09	OL	0.08
21-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
23-Apr-2012	0.99	0.10	0.10	OL	0.10	0.10	0.07	OL	0.07
24-Apr-2012	0.89	OL	OL	0.10	0.09	0.08	0.09	0.08	0.11
25-Apr-2012	0.85	0.12	0.09	0.12	0.13	OL	OL	0.10	0.09
26-Apr-2012	0.91	0.12	0.09	OL	0.09	0.08	0.08	OL	0.09
27-Apr-2012	0.89	0.08	OL	0.09	0.08	0.09	0.10	0.09	OL
28-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Apr-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
30-Apr-2012	0.94	0.09	0.07	0.09	0.09	0.10	OL	0.08	OL
Total number of measurements taken, A:	15	11	14	16	13	14	13	12	
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:	15	11	14	16	13	14	13	12	
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

Comments:

OL: On April 11, 2012 there was a scheduled plant shutdown which resulted in the plant being off-line at the time of sampling.

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

Date Approved: 4-May-12



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: **252.00**
License Number: **PWS-09-412 RR**
Report Created: **May 01, 2012**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

April 2012 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
1/04/2012	0.72	0.06	0.09	0.03	0.11	0.04	0.06	0.04	0.11	0.05	0.13	0.04	0.14	0.01	0.03	0.01	0.08
2/04/2012	0.76	0.08	0.16	0.05	0.07	0.05	0.14	0.02	0.05	0.03	0.12	0.04	0.06	0.01	0.08	0.01	0.02
3/04/2012	0.77	0.05	0.13	0.03	0.11	0.04	0.07	0.05	0.13	0.05	0.07	0.04	0.14	0.01	0.03	0.01	0.10
4/04/2012	0.77	0.08	0.11	0.04	0.06	0.04	0.14	0.02	0.07	0.03	0.11	0.03	0.20	0.01	0.09	0.01	0.02
5/04/2012	0.76	0.05	0.17	0.03	0.14	0.02	0.08	0.03	0.05	0.04	0.05	0.04	0.07	0.01	0.02	0.01	0.09
6/04/2012	0.83	0.07	0.08	0.03	0.05	0.04	0.08	0.02	0.11	0.03	0.11	0.03	0.15	0.01	0.03	0.00	0.01
7/04/2012	0.89	0.05	0.15	0.03	0.16	0.02	0.12	0.03	0.04	0.03	0.05	0.05	0.06	0.01	0.07	0.01	0.09
8/04/2012	0.92	0.06	0.08	0.02	0.08	0.03	0.05	0.02	0.11	0.03	0.11	0.03	0.14	0.01	0.05	0.01	0.08
9/04/2012	0.93	0.06	0.14	0.04	0.12	0.03	0.12	0.02	0.03	0.02	0.11	0.04	0.05	0.01	0.07	0.01	0.02
10/04/2012	1.00	0.05	0.15	0.02	0.12	0.03	0.04	0.03	0.12	0.04	0.05	0.04	0.13	0.01	0.02	0.01	0.08
11/04/2012	0.94	0.06	0.20	0.03	0.13	0.04	0.21	0.02	0.13	0.02	0.08	0.04	0.15	0.00	0.02	0.01	0.11
12/04/2012	0.85	0.06	0.08	0.02	0.04	0.04	0.05	0.03	0.11	0.04	0.05	0.03	0.14	0.01	0.03	0.01	0.03
13/04/2012	0.97	0.05	0.15	0.04	0.11	0.03	0.19	0.02	0.03	0.02	0.06	0.04	0.06	0.01	0.02	0.01	0.02
14/04/2012	0.93	0.05	0.08	0.02	0.12	0.03	0.05	0.03	0.19	0.04	0.07	0.04	0.12	0.01	0.08	0.01	0.07
15/04/2012	0.92	0.07	0.10	0.04	0.05	0.03	0.19	0.02	0.05	0.02	0.13	0.03	0.06	0.01	0.08	0.01	0.02
16/04/2012	0.95	0.05	0.12	0.03	0.11	0.03	0.14	0.03	0.05	0.03	0.04	0.05	0.14	0.01	0.02	0.01	0.09
17/04/2012	1.03	0.09	0.11	0.04	0.06	0.06	0.08	0.03	0.14	0.04	0.11	0.04	0.13	0.02	0.07	0.00	0.02
18/04/2012	1.10	0.07	0.20	0.05	0.16	0.06	0.19	0.04	0.06	0.04	0.14	0.06	0.08	0.01	0.10	0.02	0.11
19/04/2012	1.04	0.06	0.15	0.04	0.16	0.06	0.07	0.05	0.16	0.04	0.06	0.05	0.17	0.02	0.05	0.02	0.13
20/04/2012	1.03	0.10	0.12	0.06	0.07	0.06	0.19	0.03	0.12	0.06	0.08	0.03	0.07	0.02	0.12	0.02	0.03
21/04/2012	1.03	0.07	0.23	0.04	0.20	0.05	0.11	0.06	0.08	0.04	0.11	0.07	0.11	0.02	0.04	0.02	0.08
22/04/2012	1.07	0.07	0.12	0.05	0.14	0.08	0.11	0.05	0.14	0.05	0.07	0.05	0.22	0.02	0.07	0.02	0.16
23/04/2012	1.03	0.10	0.16	0.07	0.09	0.04	0.26	0.03	0.19	0.05	0.16	0.04	0.07	0.01	0.12	0.02	0.03
24/04/2012	1.04	0.06	0.19	0.03	0.16	0.05	0.16	0.06	0.08	0.04	0.07	0.06	0.18	0.02	0.03	0.02	0.13
25/04/2012	1.13	0.07	0.09	0.03	0.05	0.06	0.09	0.06	0.15	0.04	0.24	0.04	0.18	0.02	0.11	0.02	0.16
26/04/2012	1.19	0.04	0.20	0.03	0.16	0.04	0.21	0.04	0.17	0.04	0.08	0.05	0.07	0.01	0.11	0.02	0.05
27/04/2012	1.13	0.04	0.18	0.02	0.16	0.03	0.05	0.05	0.07	0.06	0.16	0.04	0.19	0.01	0.02	0.02	0.16
28/04/2012	1.15	0.07	0.10	0.03	0.05	0.04	0.19	0.04	0.20	0.05	0.16	0.04	0.19	0.01	0.12	0.02	0.03
29/04/2012	1.17	0.04	0.19	0.03	0.17	0.04	0.23	0.04	0.06	0.06	0.07	0.06	0.08	0.01	0.14	0.02	0.15
30/04/2012	1.26	0.04	0.06	0.02	0.14	0.04	0.06	0.04	0.20	0.04	0.17	0.04	0.21	0.01	0.03	0.01	0.15

Total Number of Measurements Taken, A:	13687	13465	13923	11098	14067	13997	13952	13638
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:	13687	13465	13923	11098	14067	13997	13952	13638
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%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2011\2012-04

Submitted By (Print) J.Hume

Signature Original signed by J.Hume



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-09-412RR									
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-May-2012	0.85	0.08	0.08	OL	0.09	0.07	0.08	OL	0.09
02-May-2012	1.09	0.09	OL	0.10	0.10	0.09	0.10	0.09	0.10
03-May-2012	1.02	0.09	0.12	0.12	0.13	0.12	OL	0.11	OL
04-May-2012	0.92	0.08	0.08	0.11	OL	OL	0.08	0.11	0.08
05-May-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
06-May-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
07-May-2012	1.16	0.07	0.07	OL	0.08	0.07	0.06	OL	0.06
08-May-2012	1.14	OL	0.06	0.07	0.07	0.06	0.08	0.06	OL
09-May-2012	1.00	0.08	0.07	0.08	0.06	OL	0.06	OL	0.07
10-May-2012	0.99	0.10	OL	OL	0.09	0.07	0.07	0.08	0.07
11-May-2012	1.21	0.13	0.09	0.10	0.19	0.08	OL	0.11	OL
12-May-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
13-May-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
14-May-2012	1.01	0.10	OL	0.08	0.08	0.08	0.08	0.07	OL
15-May-2012	1.13	0.06	0.06	0.09	OL	0.06	OL	0.06	0.06
16-May-2012	1.04	0.08	0.08	OL	0.08	OL	0.07	0.10	0.07
17-May-2012	1.22	0.07	OL	0.09	0.09	0.06	0.08	OL	0.08
18-May-2012	0.82	0.09	0.10	0.10	0.09	0.07	0.09	0.07	OL
19-May-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
20-May-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
21-May-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-May-2012	0.96	0.09	0.09	0.20	0.09	0.10	OL	0.09	0.08
23-May-2012	1.01	0.08	0.10	0.09	0.09	0.08	0.08	OL	0.09
24-May-2012	1.03	0.08	0.08	0.11	OL	0.08	0.10	0.07	0.08
25-May-2012	1.09	0.07	0.08	OL	0.08	0.11	OL	0.09	0.08
26-May-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
27-May-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
28-May-2012	1.12	OL	0.06	0.08	OL	0.06	0.08	0.06	0.06
29-May-2012	1.02	0.06	0.07	OL	0.06	OL	0.05	0.09	0.06
30-May-2012	0.94	OL	0.13	0.13	0.11	0.07	0.08	0.16	OL
31-May-2012	0.84	0.06	0.06	OL	0.06	0.07	OL	0.07	0.06
Total number of measurements taken, A:		19	18	15	18	18	16	17	16
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:		19	18	15	18	18	16	17	16
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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

Date Approved: 05-Jun-12



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

May 2012 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
1/05/2012	1.17	0.05	0.18	0.04	0.15	0.04	0.20	0.03	0.20	0.05	0.17	0.05	0.28	0.01	0.13	0.01	0.10
2/05/2012	1.26	0.07	0.16	0.03	0.17	0.04	0.19	0.05	0.08	0.07	0.10	0.08	0.15	0.01	0.03	0.02	0.13
3/05/2012	1.18	0.05	0.18	0.03	0.15	0.05	0.08	0.05	0.18	0.06	0.15	0.05	0.21	0.02	0.13	0.01	0.16
4/05/2012	1.19	0.06	0.08	0.04	0.07	0.05	0.19	0.03	0.19	0.05	0.18	0.04	0.23	0.01	0.13	0.01	0.03
5/05/2012	1.14	0.05	0.17	0.03	0.16	0.03	0.20	0.04	0.05	0.05	0.07	0.06	0.08	0.01	0.08	0.01	0.16
6/05/2012	1.06	0.04	0.06	0.03	0.05	0.04	0.07	0.03	0.19	0.05	0.19	0.04	0.25	0.02	0.14	0.01	0.16
7/05/2012	1.22	0.05	0.18	0.03	0.15	0.03	0.16	0.02	0.06	0.03	0.18	0.05	0.09	0.01	0.12	0.01	0.03
8/05/2012	1.28	0.03	0.16	0.02	0.16	0.03	0.04	0.03	0.18	0.06	0.07	0.04	0.20	0.01	0.02	0.01	0.13
9/05/2012	1.27	0.05	0.06	0.04	0.05	0.03	0.16	0.02	0.17	0.04	0.16	0.04	0.21	0.01	0.15	0.01	0.01
10/05/2012	1.24	0.04	0.16	0.03	0.18	0.03	0.20	0.04	0.11	0.05	0.12	0.06	0.08	0.01	0.14	0.01	0.14
11/05/2012	1.46	0.04	0.17	0.03	0.15	0.04	0.05	0.03	0.16	0.05	0.18	0.04	0.21	0.01	0.02	0.01	0.15
12/05/2012	1.40	0.04	0.06	0.04	0.05	0.03	0.17	0.03	0.17	0.05	0.12	0.04	0.22	0.01	0.09	0.01	0.12
13/05/2012	1.43	0.05	0.15	0.04	0.14	0.03	0.15	0.02	0.04	0.04	0.20	0.05	0.06	0.01	0.12	0.01	0.01
14/05/2012	1.62	0.04	0.17	0.03	0.15	0.04	0.05	0.04	0.15	0.04	0.07	0.05	0.23	0.01	0.17	0.01	0.14
15/05/2012	1.83	0.05	0.20	0.04	0.14	0.05	0.16	0.02	0.14	0.06	0.14	0.04	0.22	0.02	0.04	0.01	0.18
16/05/2012	1.94	0.04	0.08	0.05	0.10	0.05	0.20	0.02	0.21	0.04	0.19	0.03	0.26	0.02	0.18	0.02	0.05
17/05/2012	1.60	0.05	0.13	0.03	0.18	0.03	0.21	0.02	0.03	0.04	0.09	0.05	0.07	0.01	0.16	0.01	0.16
18/05/2012	1.01	0.05	0.11	0.04	0.16	0.05	0.08	0.03	0.16	0.06	0.09	0.05	0.30	0.01	0.13	0.01	0.10
19/05/2012	1.08	0.05	0.10	0.05	0.14	0.05	0.09	0.03	0.06	0.06	0.18	0.06	0.18	0.01	0.11	0.01	0.05
20/05/2012	1.09	0.06	0.13	0.06	0.12	0.05	0.10	0.03	0.09	0.07	0.18	0.06	0.11	0.01	0.06	0.01	0.11
21/05/2012	1.01	0.07	0.16	0.06	0.18	0.07	0.18	0.04	0.15	0.09	0.10	0.07	0.14	0.01	0.03	0.01	0.13
22/05/2012	1.00	0.06	0.08	0.07	0.09	0.06	0.21	0.04	0.10	0.07	0.14	0.05	0.17	0.02	0.14	0.01	0.02
23/05/2012	1.21	0.06	0.14	0.05	0.18	0.05	0.07	0.04	0.06	0.06	0.18	0.06	0.08	0.02	0.15	0.01	0.11
24/05/2012	1.14	0.05	0.11	0.05	0.13	0.07	0.19	0.04	0.27	0.08	0.12	0.05	0.15	0.01	0.02	0.01	0.05
25/05/2012	1.05	0.05	0.07	0.06	0.17	0.04	0.28	0.03	0.15	0.05	0.20	0.04	0.11	0.01	0.14	0.01	0.02
26/05/2012	1.00	0.05	0.16	0.04	0.14	0.04	0.18	0.02	0.05	0.05	0.16	0.04	0.17	0.01	0.11	0.01	0.13
27/05/2012	1.03	0.03	0.07	0.03	0.16	0.04	0.05	0.02	0.16	0.04	0.07	0.05	0.06	0.01	0.11	0.01	0.11
28/05/2012	1.05	0.04	0.19	0.04	0.07	0.03	0.20	0.02	0.15	0.06	0.19	0.03	0.24	0.01	0.02	0.00	0.01
29/05/2012	0.98	0.05	0.06	0.04	0.19	0.03	0.17	0.02	0.03	0.04	0.20	0.04	0.06	0.01	0.12	0.01	0.13
30/05/2012	1.00	0.03	0.17	0.03	0.12	0.04	0.06	0.02	0.17	0.06	0.07	0.05	0.21	0.01	0.02	0.01	0.12
31/05/2012	0.95	0.03	0.05	0.05	0.06	0.04	0.20	0.02	0.11	0.05	0.17	0.04	0.13	0.01	0.12	0.01	0.01

Total Number of Measurements Taken, A:	14687	14853	14409	11878	14776	15321	14832	15084
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:	14687	14853	14409	11878	14776	15321	14832	15084
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%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2011\2012-05

Submitted By (Print): J.Hume

Signature: Original signed by J.Hume



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-09-412RR									
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-Jun-2012	0.82	0.08	OL	0.07	0.08	0.07	0.06	OL	0.09
02-Jun-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
03-Jun-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
04-Jun-2012	0.81	0.08	0.08	0.07	0.08	0.05	0.06	0.05	OL
05-Jun-2012	0.77	0.06	0.06	0.10	0.06	0.06	OL	0.07	0.05
06-Jun-2012	0.82	0.06	0.08	0.07	0.06	OL	0.05	OL	0.06
07-Jun-2012	0.84	OL	0.06	0.08	0.08	0.06	0.07	0.06	OL
08-Jun-2012	0.79	0.08	0.08	OL	0.06	0.06	OL	0.06	0.06
09-Jun-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
10-Jun-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
11-Jun-2012	0.74	0.06	0.07	OL	0.06	OL	0.06	0.08	0.12
12-Jun-2012	0.86	OL	0.06	0.08	0.08	0.06	0.06	0.06	OL
13-Jun-2012	0.94	0.06	0.07	OL	0.07	OL	0.06	0.07	0.06
14-Jun-2012	0.84	0.08	OL	0.08	0.07	0.07	0.06	0.06	OL
15-Jun-2012	0.76	0.06	0.07	OL	0.07	0.07	OL	0.07	0.08
16-Jun-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
17-Jun-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
18-Jun-2012	0.87	0.07	0.08	0.08	0.08	OL	0.07	OL	0.09
19-Jun-2012	0.99	OL	0.07	0.10	0.09	0.05	0.07	0.06	OL
20-Jun-2012	0.96	0.06	0.06	OL	0.06	0.17	0.07	0.07	0.05
21-Jun-2012	0.84	0.07	OL	0.07	0.08	0.06	0.06	0.05	OL
22-Jun-2012	0.84	0.07	0.07	0.08	OL	0.08	OL	0.07	0.07
23-Jun-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
24-Jun-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
25-Jun-2012	0.88	0.06	0.06	OL	0.06	OL	0.06	0.06	0.06
26-Jun-2012	0.94	0.07	OL	0.06	0.06	0.05	0.06	0.05	OL
27-Jun-2012	1.10	0.08	0.07	0.09	OL	0.07	OL	0.07	0.08
28-Jun-2012	1.16	0.09	0.06	OL	0.06	OL	0.06	0.09	0.07
29-Jun-2012	1.15	0.07	OL	0.09	0.07	0.08	0.07	0.07	OL
30-Jun-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total number of measurements taken, A:		18	16	14	19	15	16	18	13
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	16	14	19	15	16	18	13
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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

Date Approved: 29-Jun-12



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: **252.00**

License Number: **PWS-09-412 RR**

Report Created: **03 July 2012**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

June 2012		Turbidity (NTU)															
Date	Raw Avg	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	Avg	Max	Avg	Max	Avg	Max
1/06/2012	0.95	0.05	0.17	0.04	0.18	0.03	0.06	0.03	0.04	0.04	0.14	0.05	0.06	0.01	0.12	0.01	0.11
2/06/2012	0.92	0.03	0.18	0.04	0.06	0.04	0.19	0.02	0.16	0.07	0.08	0.04	0.19	0.01	0.02	0.00	0.13
3/06/2012	0.94	0.05	0.06	0.05	0.18	0.03	0.19	0.02	0.03	0.04	0.18	0.03	0.21	0.01	0.13	0.01	0.03
4/06/2012	0.95	0.03	0.18	0.03	0.20	0.04	0.05	0.02	0.16	0.05	0.07	0.06	0.24	0.01	0.02	0.00	0.14
5/06/2012	1.00	0.03	0.18	0.06	0.07	0.03	0.20	0.01	0.15	0.05	0.17	0.03	0.16	0.01	0.14	0.01	0.01
6/06/2012	1.10	0.05	0.10	0.05	0.22	0.02	0.18	0.02	0.02	0.04	0.19	0.03	0.04	0.01	0.14	0.01	0.14
7/06/2012	NR	0.03	0.16	0.05	0.19	0.04	0.05	0.01	0.14	0.06	0.07	0.03	0.17	0.01	0.02	0.01	0.10
8/06/2012	NR	0.03	0.06	0.05	0.09	0.03	0.20	0.02	0.14	0.05	0.21	0.03	0.13	0.02	0.22	0.01	0.01
9/06/2012	NR	0.06	0.19	0.02	0.13	0.03	0.05	0.03	0.04	0.04	0.11	0.03	0.05	0.01	0.17	0.01	0.06
10/06/2012	NR	0.04	0.23	0.02	0.04	0.05	0.21	0.03	0.21	0.07	0.08	0.03	0.21	0.01	0.02	0.01	0.22
11/06/2012	NR	0.06	0.08	0.02	0.20	0.03	0.16	0.03	0.06	0.04	0.21	0.02	0.05	0.01	0.23	0.01	0.03
12/06/2012	NR	0.04	0.24	0.01	0.18	0.05	0.06	0.03	0.12	0.07	0.08	0.04	0.22	0.01	0.02	0.01	0.18
13/06/2012	NR	0.05	0.07	0.02	0.04	0.03	0.22	0.02	0.04	0.04	0.23	0.02	0.23	0.02	0.21	0.01	0.01
14/06/2012	NR	0.05	0.09	0.01	0.20	0.05	0.06	0.04	0.21	0.05	0.08	0.04	0.05	0.01	0.21	0.01	0.16
15/06/2012	0.81	0.04	0.07	0.02	0.03	0.03	0.21	0.02	0.21	0.06	0.21	0.03	0.26	0.02	0.04	0.01	0.02
16/06/2012	0.70	0.06	0.12	0.01	0.20	0.04	0.06	0.04	0.17	0.04	0.11	0.04	0.05	0.01	0.22	0.01	0.20
17/06/2012	0.54	0.04	0.11	0.02	0.03	0.05	0.21	0.03	0.18	0.07	0.09	0.03	0.23	0.02	0.03	0.00	0.01
18/06/2012	0.97	0.07	0.08	0.02	0.17	0.03	0.19	0.04	0.05	0.04	0.23	0.03	0.05	0.01	0.20	0.01	0.11
19/06/2012	1.01	0.04	0.23	0.01	0.16	0.05	0.07	0.03	0.17	0.07	0.08	0.04	0.22	0.01	0.02	0.01	0.17
20/06/2012	1.00	0.06	0.19	0.02	0.08	0.04	0.24	0.03	0.13	0.04	0.21	0.02	0.17	0.02	0.06	0.02	0.18
21/06/2012	0.91	0.03	0.07	0.01	0.13	0.05	0.07	0.05	0.08	0.03	0.05	0.03	0.04	0.01	0.03	0.02	0.16
22/06/2012	0.98	0.03	0.16	0.01	0.01	0.04	0.17	0.03	0.12	0.04	0.14	0.02	0.19	0.01	0.02	0.01	0.03
23/06/2012	0.98	0.04	0.05	0.01	0.13	0.03	0.19	0.04	0.05	0.03	0.17	0.03	0.05	0.01	0.16	0.02	0.17
24/06/2012	0.99	0.03	0.18	0.00	0.01	0.05	0.07	0.03	0.16	0.04	0.05	0.03	0.14	0.01	0.02	0.01	0.17
25/06/2012	1.01	0.04	0.06	0.02	0.08	0.03	0.22	0.03	0.05	0.03	0.21	0.02	0.21	0.01	0.05	0.02	0.03
26/06/2012	1.08	0.04	0.13	0.01	0.17	0.06	0.07	0.04	0.12	0.04	0.06	0.04	0.05	0.01	0.17	0.02	0.21
27/06/2012	1.15	0.03	0.13	0.02	0.04	0.04	0.18	0.03	0.16	0.04	0.15	0.03	0.21	0.01	0.02	0.01	0.03
28/06/2012	1.30	0.04	0.05	0.02	0.14	0.04	0.18	0.03	0.05	0.04	0.16	0.03	0.18	0.01	0.17	0.02	0.04
29/06/2012	1.42	0.04	0.17	0.02	0.11	0.05	0.07	0.04	0.06	0.03	0.06	0.04	0.05	0.01	0.02	0.02	0.17
30/06/2012	1.40	0.04	0.17	0.02	0.04	0.05	0.19	0.03	0.16	0.06	0.11	0.03	0.20	0.01	0.02	0.02	0.17
Total Number of Measurements Taken, A:		13780		13440		13626		11258		14074		14299		13975		13793	
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:		13780		13440		13626		11258		14074		14299		13975		13793	
Compliance with Turbidity Standard, C = B/A X 100%:		100%		100%		100%		100%		100%		100%		100%		100%	

NR - No Result due to maintenance issues

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2012\2012-06

Submitted By (Print): A.Weremy

Signature: Original signed by A.Weremy



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-09-412RR									
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-Jul-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Jul-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
03-Jul-2012	1.33	OL	0.14	0.10	OL	0.07	0.09	0.07	0.07
04-Jul-2012	1.30	0.08	0.08	0.08	0.12	OL	0.07	0.10	0.07
05-Jul-2012	1.33	0.07	OL	0.08	0.09	0.06	0.07	OL	0.09
06-Jul-2012	1.33	OL	0.06	0.08	0.07	OL	0.06	0.06	0.05
07-Jul-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
08-Jul-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Jul-2012	1.42	0.07	OL	0.07	0.06	0.06	0.05	0.05	OL
10-Jul-2012	1.57	0.08	0.08	0.09	OL	OL	0.08	0.07	0.08
11-Jul-2012	1.52	0.08	0.10	OL	0.08	0.07	0.07	0.10	0.10
12-Jul-2012	1.76	0.08	0.07	0.08	0.07	0.07	0.07	0.07	OL
13-Jul-2012	1.58	OL	0.06	0.07	0.08	0.08	0.07	0.06	0.06
14-Jul-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
15-Jul-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-Jul-2012	1.91	0.07	0.07	OL	0.07	OL	0.07	0.08	0.10
17-Jul-2012	0.93	0.11	OL	0.11	0.10	OL	0.11	0.09	0.11
18-Jul-2012	1.04	OL	0.09	0.11	0.10	OL	0.10	0.09	0.08
19-Jul-2012	1.28	0.08	0.11	0.12	0.08	OL	OL	0.13	0.09
20-Jul-2012	1.16	0.08	0.08	OL	0.19	OL	0.07	0.09	0.08
21-Jul-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Jul-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
23-Jul-2012	1.70	0.10	0.08	OL	0.08	0.08	0.07	0.08	0.07
24-Jul-2012	1.63	0.09	0.10	0.10	0.09	OL	0.08	0.10	0.10
25-Jul-2012	1.91	0.10	0.10	0.10	0.13	0.07	0.08	0.07	OL
26-Jul-2012	1.81	0.09	0.09	0.13	0.08	0.09	OL	0.07	0.07
27-Jul-2012	2.21	0.10	0.12	0.10	0.09	OL	0.08	0.09	0.09
28-Jul-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Jul-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
30-Jul-2012	2.55	0.08	0.13	0.12	OL	0.12	0.22	0.16	0.09
31-Jul-2012	2.33	0.10	0.10	0.11	0.09	OL	0.12	0.09	0.08
Total number of measurements taken, A:	17	18	17	18	10	19	20	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:	17	18	17	18	10	19	20	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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher / G. Levesque



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

July 2012 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
1/07/2012	1.53	0.04	0.06	0.03	0.16	0.04	0.21	0.03	0.05	0.04	0.19	0.03	0.22	0.01	0.08	0.02	0.03
2/07/2012	1.48	0.05	0.19	0.03	0.17	0.06	0.07	0.05	0.17	0.04	0.07	0.05	0.06	0.01	0.18	0.02	0.21
3/07/2012	1.52	0.04	0.20	0.04	0.05	0.06	0.19	0.04	0.18	0.07	0.19	0.04	0.25	0.01	0.02	0.02	0.04
4/07/2012	1.74	0.07	0.09	0.06	0.10	0.05	0.23	0.04	0.06	0.05	0.21	0.04	0.20	0.01	0.23	0.04	0.18
5/07/2012	NR	0.05	0.19	0.05	0.21	0.05	0.11	0.04	0.16	0.04	0.09	0.05	0.07	0.01	0.15	0.03	0.20
6/07/2012	NR	0.05	0.09	0.05	0.16	0.05	0.07	0.03	0.06	0.03	0.22	0.04	0.12	0.01	0.02	0.03	0.17
7/07/2012	NR	0.04	0.19	0.06	0.08	0.04	0.17	0.03	0.17	0.04	0.16	0.03	0.20	0.01	0.13	0.03	0.05
8/07/2012	1.67	0.07	0.09	0.05	0.17	0.03	0.20	0.02	0.05	0.05	0.06	0.03	0.21	0.01	0.02	0.03	0.13
9/07/2012	1.79	0.05	0.20	0.05	0.16	0.04	0.07	0.04	0.16	0.05	0.17	0.04	0.05	0.01	0.16	0.02	0.13
10/07/2012	1.93	0.05	0.23	0.07	0.09	0.06	0.10	0.03	0.15	0.05	0.21	0.04	0.21	0.01	0.02	0.03	0.05
11/07/2012	1.97	0.08	0.10	0.06	0.21	0.05	0.17	0.04	0.12	0.06	0.08	0.05	0.15	0.01	0.19	0.05	0.20
12/07/2012	1.94	0.06	0.12	0.06	0.15	0.05	0.12	0.04	0.20	0.06	0.13	0.05	0.07	0.01	0.07	0.04	0.13
13/07/2012	2.08	0.06	0.13	0.06	0.12	0.05	0.07	0.04	0.10	0.05	0.13	0.05	0.11	0.01	0.06	0.03	0.11
14/07/2012	2.19	0.07	0.12	0.07	0.08	0.06	0.13	0.04	0.09	0.03	0.07	0.05	0.12	0.01	0.02	0.04	0.08
15/07/2012	2.12	0.07	0.15	0.07	0.11	0.06	0.12	0.04	0.17	OL	OL	0.05	0.13	0.01	0.05	0.04	0.09
16/07/2012	1.95	0.08	0.10	0.07	0.11	0.06	0.15	0.04	0.16	OL	OL	0.05	0.16	0.02	0.09	0.05	0.07
17/07/2012	1.12	0.09	0.19	0.07	0.14	0.07	0.20	0.07	0.09	OL	OL	0.07	0.08	0.03	0.14	0.06	0.17
18/07/2012	1.27	0.08	0.18	0.07	0.13	0.08	0.10	0.09	0.17	OL	OL	0.08	0.17	0.03	0.05	0.05	0.11
19/07/2012	1.38	0.07	0.12	0.06	0.07	0.05	0.16	0.09	0.12	OL	OL	0.06	0.12	0.02	0.14	0.02	0.07
20/07/2012	1.49	0.07	0.09	0.05	0.09	0.04	0.20	0.08	0.13	0.04	0.19	0.06	0.18	0.02	0.14	0.02	0.03
21/07/2012	1.70	0.07	0.16	0.06	0.12	0.06	0.08	0.11	0.13	0.07	0.16	0.07	0.09	0.02	0.11	0.03	0.13
22/07/2012	1.79	0.07	0.18	0.06	0.14	0.07	0.16	0.10	0.12	0.09	0.11	0.07	0.14	0.02	0.03	0.03	0.09
23/07/2012	1.95	0.07	0.16	0.07	0.08	0.06	0.11	0.09	0.13	0.08	0.15	0.07	0.12	0.02	0.06	0.02	0.06
24/07/2012	2.15	0.09	0.10	0.06	0.11	0.06	0.15	0.11	0.12	0.08	0.17	0.06	0.08	0.02	0.08	0.03	0.07
25/07/2012	2.27	0.07	0.17	0.06	0.15	0.08	0.10	0.10	0.13	0.09	0.11	0.07	0.12	0.01	0.05	0.03	0.09
26/07/2012	2.47	0.07	0.17	0.07	0.09	0.07	0.16	0.10	0.17	0.09	0.16	0.06	0.12	0.02	0.04	0.02	0.15
27/07/2012	2.51	0.08	0.09	0.06	0.11	0.07	0.22	0.09	0.13	0.09	0.21	0.06	0.10	0.02	0.09	0.03	0.05
28/07/2012	2.44	0.07	0.11	0.06	0.12	0.06	0.18	0.11	0.20	0.10	0.20	0.07	0.08	0.02	0.13	0.03	0.06
29/07/2012	2.91	0.07	0.14	0.05	0.13	0.07	0.13	0.09	0.21	0.10	0.19	0.06	0.14	0.02	0.10	0.03	0.10
30/07/2012	2.48	0.07	0.15	0.07	0.15	0.08	0.14	0.09	0.17	0.12	0.15	0.06	0.16	0.02	0.04	0.03	0.08
31/07/2012	2.76	0.07	0.12	0.07	0.11	0.07	0.15	0.07	0.14	0.06	0.24	0.06	0.12	0.02	0.05	0.03	0.07

Total Number of Measurements Taken, A:	15822	15694	15703	13455	12280	16184	15983	16123
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:	15822	15694	15703	13455	12280	16184	15983	16123
Compliance with Turbidity Standard, C = B/A X 100%:	100%	100%	100%	100%	100%	100%	100%	100%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2011\2012-07

OL - Off Line

NR - No Result due to maintenance issues

Submitted By (Print): A.Weremy

Signature: Original signed by A.Weremy



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-09-412RR									
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-Aug-2012	2.54	0.11	0.12	0.13	0.11	0.10	OL	0.12	0.10
02-Aug-2012	3.15	0.14	0.12	0.11	0.11	OL	0.13	0.14	0.11
03-Aug-2012	2.80	0.14	0.15	0.15	0.15	0.10	0.12	OL	0.14
04-Aug-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
05-Aug-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
06-Aug-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
07-Aug-2012	2.64	OL	OL	0.12	0.17	0.10	0.10	0.16	0.14
08-Aug-2012	3.03	0.12	0.11	0.15	OL	0.16	0.13	0.12	OL
09-Aug-2012	3.21	0.13	0.12	0.18	0.11	0.12	OL	0.11	OL
10-Aug-2012	2.64	0.12	0.11	OL	0.11	0.11	0.10	0.12	0.09
11-Aug-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
12-Aug-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
13-Aug-2012	2.90	0.09	0.09	0.12	OL	0.09	0.10	0.09	OL
14-Aug-2012	2.95	0.11	0.10	OL	0.10	0.12	OL	0.10	0.10
15-Aug-2012	3.22	NA	NA	NA	NA	NA	NA	NA	NA
16-Aug-2012	3.61	OL	0.10	0.13	0.13	0.12	0.12	0.12	0.12
17-Aug-2012	3.75	0.20	OL	0.16	0.12	0.14	0.12	0.12	0.16
18-Aug-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
19-Aug-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
20-Aug-2012	4.02	0.17	0.17	0.19	0.23	OL	0.14	0.21	0.14
21-Aug-2012	3.70	0.17	0.22	0.23	OL	0.21	0.15	0.19	0.23
22-Aug-2012	3.55	0.16	0.16	OL	0.11	0.10	0.11	0.13	0.10
23-Aug-2012	3.78	0.14	OL	0.11	0.13	0.10	0.11	0.11	0.14
24-Aug-2012	3.41	OL	0.11	0.17	0.12	0.15	0.12	0.10	0.13
25-Aug-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
26-Aug-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
27-Aug-2012	3.89	0.16	0.15	0.22	0.18	OL	0.13	0.12	0.11
28-Aug-2012	3.41	0.13	0.12	0.12	0.16	0.13	OL	0.11	0.10
29-Aug-2012	2.93	0.16	0.16	0.17	OL	0.16	0.20	0.19	0.14
30-Aug-2012	3.73	0.31	OL	0.20	0.20	0.16	0.16	0.21	0.16
31-Aug-2012	3.03	OL	0.21	0.22	0.12	0.14	0.24	0.12	0.16
Total number of measurements taken, A:		17	17	18	17	18	17	20	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	17	18	17	18	17	20	18
Compliance with Turbidity Standard, C= B/A X 100%:		94%	100%	100%	100%	100%	100%	100%	100%

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

Comments:

The samples were not analysed for turbidity on Aug 15 due to an instrument malfunction.

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

Date Approved: 04-Sep-12



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

August 2012 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
1/08/2012	3.31	0.07	0.13	0.08	0.11	0.08	0.23	0.07	0.15	0.09	0.16	0.06	0.13	0.02	0.11	0.04	0.12
2/08/2012	3.58	0.08	0.10	0.08	0.15	0.08	0.16	0.08	0.09	0.08	0.15	0.06	0.09	0.02	0.11	0.03	0.13
3/08/2012	3.54	0.08	0.15	0.08	0.11	0.09	0.24	0.08	0.17	0.10	0.17	0.06	0.16	0.02	0.05	0.04	0.05
4/08/2012	3.56	0.08	0.11	0.08	0.12	0.09	0.30	0.08	0.16	0.09	0.21	0.07	0.09	0.02	0.06	0.04	0.15
5/08/2012	3.47	0.06	0.23	0.06	0.09	0.10	0.18	0.06	0.28	0.12	0.16	0.07	0.15	0.02	0.05	0.03	0.20
6/08/2012	2.95	0.09	0.11	0.08	0.21	0.06	0.17	0.08	0.11	0.06	0.17	0.05	0.10	0.02	0.24	0.03	0.05
7/08/2012	3.58	0.05	0.22	0.04	0.11	0.08	0.11	0.07	0.21	0.07	0.12	0.07	0.09	0.01	0.19	0.04	0.21
8/08/2012	3.50	0.07	0.19	0.06	0.18	0.08	0.23	0.06	0.15	0.10	0.25	0.05	0.12	0.02	0.04	0.02	0.13
9/08/2012	2.69	0.08	0.18	0.05	0.10	0.06	0.14	0.07	0.13	0.09	0.21	0.04	0.11	0.03	0.11	0.03	0.22
10/08/2012	3.74	0.10	0.12	0.04	0.06	0.07	0.19	0.05	0.14	0.09	0.15	0.06	0.09	0.04	0.11	0.03	0.14
11/08/2012	3.85	0.09	0.17	0.03	0.07	0.06	0.14	0.06	0.19	0.09	0.20	0.05	0.17	0.03	0.09	0.03	0.05
12/08/2012	3.92	0.08	0.19	0.03	0.06	0.07	0.08	0.05	0.08	0.08	0.15	0.06	0.09	0.03	0.07	0.03	0.14
13/08/2012	3.73	0.07	0.21	0.02	0.09	0.08	0.18	0.04	0.09	0.10	0.22	0.05	0.09	0.03	0.05	0.02	0.09
14/08/2012	3.72	0.09	0.11	0.04	0.15	0.06	0.23	0.05	0.16	0.08	0.23	0.04	0.17	0.04	0.22	0.03	0.22
15/08/2012	3.66	0.08	0.20	0.03	0.16	0.07	0.17	0.07	0.20	0.08	0.25	0.07	0.15	0.04	0.15	0.03	0.06
16/08/2012	4.16	0.07	0.14	0.02	0.06	0.07	0.12	0.05	0.13	0.09	0.19	0.06	0.08	0.04	0.08	0.04	0.14
17/08/2012	4.61	0.10	0.18	0.04	0.11	0.08	0.21	0.07	0.12	0.10	0.24	0.08	0.17	0.05	0.10	0.04	0.22
18/08/2012	4.29	0.10	0.22	0.04	0.07	0.09	0.24	0.08	0.11	0.12	0.17	0.07	0.12	0.05	0.08	0.04	0.21
19/08/2012	4.18	0.09	0.20	0.04	0.05	0.07	0.17	0.08	0.10	0.10	0.16	0.06	0.15	0.05	0.07	0.03	0.13
20/08/2012	3.95	0.10	0.13	0.06	0.14	0.12	0.15	0.09	0.20	0.12	0.21	0.08	0.18	0.06	0.16	0.05	0.11
21/08/2012	3.78	0.13	0.18	0.07	0.19	0.13	0.25	0.11	0.22	0.12	0.20	0.08	0.18	0.07	0.18	0.06	0.07
22/08/2012	3.44	0.09	0.23	0.05	0.20	0.09	0.27	0.08	0.28	0.10	0.24	0.08	0.15	0.05	0.23	0.04	0.11
23/08/2012	3.66	0.07	0.16	0.02	0.10	0.07	0.16	0.07	0.13	0.09	0.16	0.06	0.15	0.07	0.14	0.02	0.10
24/08/2012	3.39	0.09	0.16	0.04	0.11	0.09	0.23	0.08	0.18	0.10	0.14	0.07	0.12	0.07	0.17	0.03	0.09
25/08/2012	3.37	0.10	0.20	0.04	0.13	0.11	0.23	0.08	0.16	0.11	0.20	0.09	0.17	0.09	0.18	0.05	0.17
26/08/2012	3.57	0.09	0.19	0.04	0.11	0.10	0.17	0.09	0.14	0.08	0.25	0.08	0.19	0.07	0.14	0.04	0.16
27/08/2012	3.22	0.08	0.13	0.03	0.06	0.10	0.20	0.09	0.15	0.10	0.24	0.08	0.18	0.08	0.11	0.03	0.13
28/08/2012	2.84	0.10	0.13	0.04	0.09	0.09	0.19	0.09	0.18	0.09	0.20	0.07	0.19	0.07	0.12	0.03	0.11
29/08/2012	2.94	0.10	0.20	0.02	0.08	0.09	0.20	0.09	0.19	0.11	0.21	0.08	0.20	0.07	0.19	0.04	0.11
30/08/2012	3.29	0.10	0.20	0.04	0.13	0.11	0.15	0.09	0.17	0.12	0.18	0.07	0.10	0.07	0.17	0.04	0.13
31/08/2012	3.16	0.10	0.20	0.04	0.12	0.10	0.20	0.08	0.14	0.11	0.20	0.09	0.17	0.08	0.17	0.04	0.15

Total Number of Measurements Taken, A:	16082	15846	16185	13119	16278	16468	16845	16138
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:	16082	15846	16185	13119	16278	16468	16845	16138
Compliance with Turbidity Standard, C = B/A X 100%:	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2012\2012-08

Submitted By (Print): D.Minor

Signature: Original signed by D.Minor



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-09-412RR									
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
03-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
04-Sep-2012	2.99	OL	0.17	0.19	0.15	0.13	0.14	0.13	0.13
05-Sep-2012	3.03	0.10	0.08	0.09	0.11	0.11	0.11	0.10	OL
06-Sep-2012	2.61	0.09	0.12	0.10	0.11	OL	0.12	0.10	0.09
07-Sep-2012	2.90	0.11	0.11	0.11	0.10	0.12	0.12	OL	0.15
08-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
10-Sep-2012	2.90	0.10	0.09	0.10	0.15	0.11	OL	0.12	0.10
11-Sep-2012	2.90	0.11	OL	0.11	0.09	0.09	0.08	0.08	0.09
12-Sep-2012	2.91	0.09	0.12	0.11	0.11	0.12	0.13	0.12	OL
13-Sep-2012	2.84	0.09	0.10	0.10	0.10	0.11	OL	0.09	0.08
14-Sep-2012	3.01	0.09	OL	0.09	0.09	0.09	0.09	0.10	0.09
15-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
17-Sep-2012	2.36	0.13	0.13	0.15	0.13	0.14	0.12	OL	0.12
18-Sep-2012	1.12	0.08	OL	0.08	0.11	0.08	0.06	0.06	0.07
19-Sep-2012	1.46	OL	0.05	0.08	0.07	0.06	0.11	0.07	0.07
20-Sep-2012	1.59	0.12	0.07	0.07	0.07	0.09	0.09	0.08	OL
21-Sep-2012	1.67	0.09	0.10	0.09	0.07	OL	0.08	0.07	0.08
22-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
23-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
24-Sep-2012	2.12	OL	0.08	0.11	0.12	0.11	0.12	0.11	0.13
25-Sep-2012	1.54	0.08	0.08	0.09	0.10	OL	0.10	0.08	0.07
26-Sep-2012	1.46	0.10	OL	0.12	0.09	OL	0.08	0.12	0.09
27-Sep-2012	1.66	0.10	OL	0.09	0.09	0.09	0.08	0.09	0.10
28-Sep-2012	1.62	OL	0.10	0.16	0.11	0.11	0.10	0.11	0.11
29-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
30-Sep-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total number of measurements taken, A:	15	14	19	19	15	17	17	16	
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:	15	14	19	19	15	17	17	16	
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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

Date Approved: 1-Oct-12



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

September 2012 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
1/09/2012	3.04	0.08	0.16	0.03	0.05	0.09	0.17	0.09	0.14	0.10	0.22	0.07	0.14	0.07	0.10	0.03	0.15
2/09/2012	3.18	0.08	0.09	0.03	0.04	0.07	0.29	0.07	0.15	0.09	0.18	0.06	0.10	0.07	0.10	0.02	0.13
3/09/2012	3.23	0.08	0.16	0.03	0.06	0.09	0.13	0.08	0.13	0.09	0.20	0.07	0.11	0.07	0.17	0.03	0.05
4/09/2012	3.28	0.08	0.14	0.02	0.08	0.08	0.19	0.07	0.16	0.11	0.13	0.08	0.09	0.06	0.13	0.04	0.14
5/09/2012	3.40	0.08	0.16	0.01	0.04	0.07	0.14	0.07	0.11	0.09	0.18	0.07	0.13	0.06	0.08	0.02	0.06
6/09/2012	3.85	0.07	0.09	0.01	0.04	0.08	0.16	0.06	0.10	0.08	0.17	0.06	0.13	0.06	0.11	0.02	0.12
7/09/2012	3.88	0.07	0.14	0.01	0.07	0.09	0.12	0.06	0.12	0.09	0.20	0.08	0.14	0.07	0.14	0.03	0.15
8/09/2012	3.79	0.08	0.17	0.02	0.11	0.09	0.15	0.07	0.15	0.10	0.13	0.08	0.10	0.07	0.13	0.05	0.15
9/09/2012	3.50	0.07	0.14	0.00	0.06	0.07	0.18	0.08	0.11	0.09	0.18	0.07	0.14	0.07	0.10	0.03	0.07
10/09/2012	3.50	0.07	0.12	0.02	0.06	0.07	0.10	0.06	0.13	0.08	0.17	0.05	0.17	0.05	0.23	0.02	0.15
11/09/2012	3.45	0.06	0.14	0.02	0.06	0.05	0.15	0.05	0.14	0.08	0.09	0.05	0.07	0.02	0.10	0.03	0.06
12/09/2012	3.69	0.06	0.13	0.02	0.04	0.05	0.10	0.07	0.10	0.07	0.12	0.06	0.15	0.04	0.06	0.03	0.10
13/09/2012	3.59	0.06	0.08	0.02	0.09	0.04	0.06	0.04	0.07	0.07	0.16	0.05	0.14	0.03	0.12	0.02	0.13
14/09/2012	3.33	0.05	0.13	0.01	0.07	0.04	0.09	0.05	0.10	0.07	0.08	0.05	0.11	0.02	0.05	0.03	0.05
15/09/2012	3.23	0.05	0.13	0.01	0.09	0.04	0.08	0.05	0.07	0.07	0.13	0.05	0.11	0.03	0.04	0.02	0.10
16/09/2012	3.21	0.06	0.07	0.02	0.03	0.04	0.10	0.05	0.08	0.06	0.11	0.05	0.10	0.03	0.10	0.03	0.12
17/09/2012	2.44	0.06	0.13	0.01	0.07	0.05	0.07	0.05	0.11	0.06	0.08	0.05	0.10	0.03	0.09	0.03	0.05
18/09/2012	1.37	0.05	0.11	0.00	0.02	0.04	0.10	0.05	0.08	0.06	0.10	0.04	0.11	0.03	0.06	0.02	0.07
19/09/2012	2.08	0.05	0.10	0.00	0.04	0.04	0.10	0.05	0.08	0.06	0.09	0.05	0.06	0.02	0.05	0.02	0.05
20/09/2012	2.49	0.04	0.09	0.01	0.05	0.04	0.10	0.05	0.07	0.05	0.07	0.04	0.09	0.02	0.03	0.01	0.06
21/09/2012	2.23	0.03	0.07	0.02	0.03	0.04	0.09	0.05	0.08	0.05	0.08	0.04	0.08	0.02	0.06	0.01	0.06
22/09/2012	2.24	0.04	0.06	0.03	0.06	0.05	0.07	0.06	0.11	0.05	0.09	0.05	0.09	0.03	0.06	0.02	0.09
23/09/2012	2.16	0.05	0.11	0.04	0.09	0.06	0.12	0.06	0.15	0.07	0.08	0.05	0.12	0.03	0.11	0.03	0.04
24/09/2012	2.13	0.06	0.14	0.04	0.12	0.07	0.16	0.08	0.09	0.07	0.11	0.06	0.10	0.03	0.05	0.03	0.11
25/09/2012	2.19	0.05	0.11	0.05	0.10	0.08	0.14	0.07	0.16	0.06	0.19	0.05	0.12	0.04	0.12	0.03	0.15
26/09/2012	2.11	0.07	0.15	0.05	0.10	0.07	0.17	0.07	0.12	0.06	0.09	0.05	0.12	0.03	0.08	0.03	0.05
27/09/2012	2.08	0.07	0.14	0.06	0.11	0.08	0.16	0.08	0.14	0.08	0.09	0.05	0.07	0.04	0.10	0.04	0.06
28/09/2012	1.98	0.08	0.17	0.06	0.13	0.10	0.11	0.09	0.10	0.08	0.13	0.07	0.12	0.04	0.12	0.04	0.13
29/09/2012	1.81	0.07	0.10	0.07	0.09	0.10	0.17	0.08	0.16	0.07	0.16	0.07	0.14	0.05	0.08	0.04	0.13
30/09/2012	1.77	0.09	0.14	0.07	0.12	0.09	0.21	0.07	0.17	0.08	0.10	0.06	0.14	0.04	0.12	0.04	0.07

Total Number of Measurements Taken, A:	15931	15655	15855	12486	16536	16417	16480	16019
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:	15931	15655	15855	12486	16536	16417	16480	16019
Compliance with Turbidity Standard, C = B/A X 100%:	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2011\2012-09

Submitted By (Print): D.Minor

Signature: Original submitted by D.Minor



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-09-412RR									
Date	Raw Water	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8
01-Oct-2012	1.16	OL	0.08	0.10	0.08	0.08	0.08	0.08	0.09
02-Oct-2012	1.49	0.07	OL	0.08	0.09	OL	0.08	0.06	0.19
03-Oct-2012	1.48	0.09	OL	0.14	OL	0.08	0.07	0.09	0.07
04-Oct-2012	1.17	0.08	0.08	0.08	OL	0.09	OL	0.09	0.08
05-Oct-2012	1.44	0.09	0.09	0.08	OL	0.08	0.06	0.06	0.08
06-Oct-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
07-Oct-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
08-Oct-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Oct-2012	1.32	0.09	0.10	OL	OL	0.09	0.11	0.07	0.10
10-Oct-2012	1.33	0.08	0.08	OL	OL	0.09	0.08	0.10	0.10
11-Oct-2012	1.10	0.09	0.11	0.09	0.09	OL	0.11	0.09	0.08
12-Oct-2012	1.14	0.12	0.12	0.12	0.11	0.09	0.11	OL	0.10
13-Oct-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
14-Oct-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
15-Oct-2012	1.12	OL	0.08	0.12	0.10	0.08	0.08	OL	0.09
16-Oct-2012	1.24	0.10	0.09	0.08	OL	0.10	0.09	0.10	OL
17-Oct-2012	1.02	0.11	OL	0.12	0.11	0.09	OL	0.09	0.11
18-Oct-2012	0.98	OL	0.09	0.12	0.11	0.09	0.09	OL	0.10
19-Oct-2012	1.13	OL	0.10	OL	0.13	0.10	0.10	0.09	0.10
20-Oct-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
21-Oct-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Oct-2012	0.94	0.09	0.09	OL	0.13	OL	0.10	0.09	0.10
23-Oct-2012	1.02	0.12	0.12	0.10	0.13	0.09	OL	0.10	OL
24-Oct-2012	0.96	OL	0.10	0.17	0.12	0.12	0.13	OL	0.10
25-Oct-2012	1.11	0.12	0.13	0.12	OL	OL	0.12	0.11	0.14
26-Oct-2012	1.19	0.16	OL	0.16	0.11	0.17	OL	0.14	0.11
27-Oct-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
28-Oct-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Oct-2012	1.30	OL	0.14	0.15	0.11	0.11	0.10	OL	0.11
30-Oct-2012	1.04	0.13	0.11	0.12	OL	0.10	0.13	0.12	OL
31-Oct-2012	1.23	OL	0.11	0.16	0.13	0.14	0.12	OL	0.15
Total number of measurements taken, A:		15	18	18	14	18	18	16	19
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:		15	18	18	14	18	18	16	19
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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

Date Approved: 05-Nov-12



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

October 2012 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
1/10/2012	1.71	0.07	0.14	0.03	0.07	0.09	0.16	0.07	0.08	0.06	0.13	0.06	0.08	0.03	0.07	0.03	0.10
2/10/2012	1.91	0.07	0.14	OL	OL	0.11	0.12	0.07	0.12	0.06	0.11	0.06	0.09	0.03	0.05	0.02	0.07
3/10/2012	1.55	0.07	0.10	0.01	0.06	0.08	0.18	0.05	0.13	0.06	0.11	0.05	0.11	0.03	0.08	0.02	0.07
4/10/2012	1.33	0.05	0.11	0.01	0.05	0.04	0.07	OL	OL	0.06	0.08	0.03	0.12	0.01	0.08	0.02	0.06
5/10/2012	1.70	0.05	0.10	0.01	0.02	0.03	0.06	0.03	0.09	0.05	0.08	0.03	0.04	0.02	0.06	0.02	0.07
6/10/2012	1.35	0.04	0.11	0.01	0.05	OL	OL	0.06	0.08	0.05	0.10	0.04	0.09	0.01	0.03	0.02	0.07
7/10/2012	1.44	0.05	0.07	0.01	0.05	OL	OL	0.06	0.07	0.05	0.12	0.03	0.09	0.02	0.06	0.02	0.07
8/10/2012	1.33	0.05	0.11	0.00	0.05	OL	OL	0.06	0.11	0.05	0.07	0.03	0.08	0.02	0.06	0.02	0.04
9/10/2012	1.50	0.05	0.09	0.01	0.05	OL	OL	0.06	0.12	0.05	0.11	0.03	0.09	0.02	0.06	0.02	0.08
10/10/2012	1.45	0.06	0.12	0.01	0.02	0.02	0.11	0.07	0.13	0.06	0.12	0.05	0.06	0.03	0.09	0.03	0.10
11/10/2012	1.41	0.07	0.08	0.01	0.06	0.05	0.06	0.07	0.15	0.06	0.14	0.05	0.14	0.03	0.05	0.03	0.11
12/10/2012	1.42	0.06	0.14	0.01	0.08	0.06	0.14	0.08	0.10	0.06	0.14	0.05	0.13	0.04	0.10	0.04	0.05
13/10/2012	1.40	0.06	0.14	0.01	0.02	0.05	0.14	0.07	0.16	0.07	0.10	0.05	0.07	0.03	0.05	0.04	0.12
14/10/2012	1.38	0.07	0.09	0.01	0.07	0.05	0.07	0.07	0.09	0.05	0.16	0.05	0.14	0.04	0.11	0.03	0.12
15/10/2012	1.35	0.04	0.15	0.00	0.07	0.04	0.09	0.07	0.16	0.06	0.08	0.04	0.06	0.02	0.14	0.04	0.07
16/10/2012	1.33	0.04	0.07	0.01	0.03	0.03	0.12	0.05	0.14	0.05	0.16	0.04	0.17	0.03	0.04	0.03	0.12
17/10/2012	1.33	0.07	0.14	0.01	0.07	0.05	0.07	0.06	0.09	0.05	0.18	0.04	0.22	0.03	0.11	0.03	0.11
18/10/2012	1.30	0.06	0.16	0.01	0.09	0.05	0.15	0.08	0.16	0.06	0.14	0.04	0.13	0.03	0.16	0.03	0.06
19/10/2012	1.29	0.05	0.17	0.01	0.02	0.04	0.15	0.06	0.17	0.07	0.10	0.05	0.07	0.03	0.14	0.04	0.12
20/10/2012	1.27	0.07	0.09	0.02	0.08	0.04	0.07	0.05	0.13	0.05	0.21	0.05	0.23	0.04	0.05	0.03	0.18
21/10/2012	1.27	0.06	0.18	0.01	0.09	0.06	0.15	0.09	0.11	0.05	0.08	0.04	0.26	0.03	0.18	0.04	0.05
22/10/2012	1.28	0.05	0.16	0.01	0.02	0.04	0.14	0.08	0.16	0.04	0.23	0.06	0.08	0.03	0.05	0.04	0.13
23/10/2012	1.32	0.08	0.10	0.02	0.09	0.06	0.07	0.05	0.13	0.05	0.08	0.04	0.24	0.04	0.17	0.03	0.26
24/10/2012	1.42	0.05	0.18	0.01	0.02	0.05	0.16	0.10	0.11	0.07	0.21	0.05	0.07	0.03	0.16	0.04	0.05
25/10/2012	1.49	0.06	0.12	0.03	0.09	0.05	0.17	0.07	0.17	0.05	0.18	0.05	0.25	0.05	0.06	0.04	0.20
26/10/2012	1.63	0.09	0.17	0.03	0.11	0.07	0.09	0.06	0.10	0.06	0.08	0.04	0.20	0.05	0.17	0.03	0.17
27/10/2012	1.50	0.05	0.17	0.02	0.04	0.05	0.15	0.10	0.19	0.06	0.18	0.04	0.06	0.04	0.18	0.04	0.06
28/10/2012	1.42	0.08	0.09	0.03	0.10	0.04	0.07	0.05	0.17	0.03	0.20	0.05	0.19	0.06	0.08	0.03	0.17
29/10/2012	1.42	0.05	0.16	0.01	0.02	0.05	0.15	0.09	0.10	0.07	0.10	0.04	0.06	0.04	0.19	0.05	0.06
30/10/2012	1.37	0.08	0.09	0.03	0.09	0.05	0.06	0.04	0.18	0.04	0.07	0.04	0.21	0.07	0.08	0.03	0.23
31/10/2012	0.81	0.05	0.17	0.01	0.02	0.05	0.15	0.09	0.11	0.07	0.21	0.05	0.06	0.03	0.16	0.05	0.06

Total Number of Measurements Taken, A:	15111	13645	12279	11177	15469	15968	15832	15709
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:	15111	13645	12279	11177	15469	15968	15832	15709
Compliance with Turbidity Standard, C = B/A X 100%:	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2012\2012-10

OL = Off Line

Submitted By (Print): A.Weremy

Signature: Original signed by A.Weremy



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-2012	1.24	0.13	0.16	0.12	OL	0.11	0.14	0.12	OL
02-Nov-2012	1.09	0.18	0.25	0.14	0.16	0.12	0.11	OL	0.10
03-Nov-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
04-Nov-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
05-Nov-2012	1.10	0.12	0.12	0.12	OL	OL	0.12	0.11	0.14
06-Nov-2012	1.39	0.13	0.16	0.14	0.11	0.11	OL	0.13	OL
07-Nov-2012	1.22	OL	0.11	OL	0.14	0.14	0.11	0.11	0.12
08-Nov-2012	1.35	0.12	0.13	0.12	0.11	0.12	OL	0.12	OL
09-Nov-2012	1.20	OL	0.10	0.13	0.10	0.09	0.24	OL	0.10
10-Nov-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
11-Nov-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
12-Nov-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
13-Nov-2012	2.02	0.11	OL	0.14	0.11	0.10	OL	0.13	0.09
14-Nov-2012	1.28	OL	0.10	OL	0.12	0.14	0.11	0.21	0.09
15-Nov-2012	1.12	0.14	0.13	0.12	OL	0.13	0.13	0.14	OL
16-Nov-2012	1.03	OL	0.11	0.13	0.11	0.12	0.14	OL	0.10
17-Nov-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
18-Nov-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
19-Nov-2012	1.05	0.11	0.09	0.10	OL	OL	0.11	0.10	0.14
20-Nov-2012	1.06	0.12	OL	0.13	0.11	0.10	0.09	OL	0.11
21-Nov-2012	1.03	0.09	0.09	0.10	OL	OL	0.11	0.09	0.11
22-Nov-2012	1.27	0.11	OL	0.09	0.08	0.08	0.08	OL	0.10
23-Nov-2012	1.11	0.16	0.10	0.18	OL	OL	0.27	0.16	0.11
24-Nov-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
25-Nov-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
26-Nov-2012	1.01	<0.05	0.11	0.09	0.08	0.08	OL	0.09	OL
27-Nov-2012	1.08	OL	0.05	OL	0.06	0.06	0.09	0.05	0.09
28-Nov-2012	1.07	0.06	0.08	0.06	0.07	0.05	OL	0.06	OL
29-Nov-2012	1.08	OL	0.17	OL	0.15	0.14	0.10	0.08	0.07
30-Nov-2012	1.23	0.10	0.13	0.08	0.11	0.06	OL	0.07	OL
Total number of measurements taken, A:	14	18	17	15	17	15	16	14	
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:	14	18	17	15	17	15	16	14	
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

Comments:

Report Compiled By: K. Wazny

Approved in LIMS By: S. Fletcher

Date Approved: 04-Dec-12



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

November 2012 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
1/11/2012	0.76	0.08	0.10	0.02	0.09	0.05	0.07	0.06	0.17	0.05	0.15	0.04	0.22	0.07	0.09	0.03	0.18
2/11/2012	1.36	0.06	0.17	0.01	0.08	0.06	0.12	0.10	0.11	0.07	0.10	0.03	0.06	0.04	0.20	0.04	0.06
3/11/2012	1.32	0.06	0.09	0.02	0.03	0.03	0.15	0.06	0.18	0.04	0.21	0.06	0.17	0.06	0.08	0.04	0.16
4/11/2012	1.47	0.07	0.17	0.01	0.07	0.07	0.12	0.09	0.11	0.06	0.09	0.02	0.25	0.04	0.19	0.03	0.06
5/11/2012	1.41	0.07	0.11	0.02	0.06	0.03	0.09	0.06	0.20	0.04	0.25	0.07	0.15	0.07	0.12	0.05	0.20
6/11/2012	1.66	0.09	0.18	0.03	0.11	0.08	0.16	0.07	0.12	0.07	0.10	0.05	0.15	0.06	0.17	0.04	0.16
7/11/2012	1.54	0.06	0.18	0.02	0.03	0.04	0.16	0.09	0.20	0.06	0.17	0.05	0.07	0.04	0.19	0.05	0.07
8/11/2012	1.62	0.08	0.17	0.02	0.09	0.05	0.07	0.06	0.18	0.04	0.11	0.04	0.18	0.07	0.09	0.04	0.15
9/11/2012	1.65	0.06	0.14	0.01	0.09	0.06	0.15	0.09	0.12	0.07	0.16	0.03	0.14	0.04	0.13	0.03	0.06
10/11/2012	1.58	0.06	0.10	0.02	0.04	0.04	0.16	0.07	0.20	0.05	0.16	0.06	0.10	0.06	0.09	0.05	0.14
11/11/2012	1.59	0.08	0.18	0.01	0.08	0.06	0.08	0.07	0.10	0.06	0.08	0.03	0.14	0.05	0.16	0.03	0.12
12/11/2012	1.58	0.04	0.15	0.00	0.01	0.03	0.14	0.08	0.17	0.04	0.13	0.05	0.06	0.04	0.07	0.05	0.07
13/11/2012	1.52	0.07	0.10	0.00	0.06	0.05	0.06	0.05	0.08	0.05	0.07	0.03	0.12	0.06	0.14	0.03	0.09
14/11/2012	1.44	0.04	0.15	0.00	0.01	0.03	0.14	0.08	0.16	0.05	0.12	0.04	0.06	0.04	0.13	0.05	0.06
15/11/2012	1.41	0.08	0.11	0.01	0.06	0.04	0.06	0.04	0.15	0.04	0.06	0.03	0.12	0.06	0.12	0.03	0.13
16/11/2012	1.31	0.03	0.14	0.00	0.06	0.04	0.12	0.08	0.09	0.06	0.11	0.03	0.06	0.04	0.13	0.06	0.07
17/11/2012	1.28	0.07	0.08	0.00	0.04	0.03	0.05	0.05	0.15	0.03	0.13	0.04	0.12	0.06	0.08	0.04	0.13
18/11/2012	1.26	0.05	0.15	0.00	0.07	0.05	0.14	0.08	0.09	0.07	0.09	0.03	0.05	0.04	0.14	0.05	0.07
19/11/2012	1.21	0.06	0.08	0.03	0.05	0.03	0.06	0.05	0.17	0.04	0.16	0.07	0.13	0.06	0.08	0.04	0.14
20/11/2012	1.11	0.06	0.17	0.02	0.11	0.05	0.13	0.07	0.08	0.09	0.11	0.05	0.09	0.04	0.16	0.04	0.06
21/11/2012	1.19	0.05	0.08	0.04	0.08	0.02	0.05	0.04	0.15	0.05	0.16	0.08	0.16	0.07	0.08	0.04	0.12
22/11/2012	1.21	0.05	0.14	0.02	0.06	0.04	0.13	0.06	0.07	0.08	0.10	0.04	0.08	0.03	0.13	0.03	0.05
23/11/2012	1.20	0.04	0.06	0.02	0.04	0.02	0.04	0.03	0.12	0.04	0.13	0.07	0.14	0.05	0.07	0.03	0.09
24/11/2012	1.19	0.03	0.08	0.01	0.04	0.02	0.04	0.03	0.05	0.06	0.07	0.03	0.07	0.03	0.08	0.01	0.03
25/11/2012	1.17	0.03	0.08	0.01	0.02	0.01	0.05	0.03	0.07	0.03	0.09	0.05	0.06	0.03	0.05	0.03	0.05
26/11/2012	1.17	0.04	0.05	0.01	0.04	0.02	0.03	0.03	0.05	0.05	0.07	0.03	0.10	0.05	0.08	0.01	0.07
27/11/2012	1.17	0.03	0.08	0.01	0.02	0.01	0.06	0.04	0.08	0.04	0.09	0.05	0.06	0.03	0.05	0.03	0.04
28/11/2012	1.17	0.05	0.06	0.01	0.04	0.02	0.03	0.03	0.20	0.06	0.08	0.04	0.13	0.05	0.07	0.02	0.10
29/11/2012	1.14	0.03	0.10	0.01	0.02	0.02	0.05	0.05	0.06	0.05	0.13	0.06	0.07	0.03	0.06	0.03	0.05
30/11/2012	1.11	0.05	0.06	0.01	0.05	0.03	0.03	0.03	0.05	0.06	0.08	0.03	0.14	0.05	0.11	0.02	0.11

Total Number of Measurements Taken, A:	13772	13234	13739	10532	13959	13967	14507	13731
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:	13772	13234	13739	10532	13959	13967	14507	13731
Compliance with Turbidity Standard, C = B/A X 100%:	100%	100%	100%	100%	100%	100%	100%	100%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2012\2012-11

Submitted By (Print): A.Weremy

Signature: Original signed by A.Weremy



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-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
03-Dec-2012	0.91	OL	0.06	OL	0.07	0.07	0.06	0.05	0.08
04-Dec-2012	0.98	0.07	0.08	0.07	0.08	0.06	OL	0.06	OL
05-Dec-2012	0.94	OL	0.10	OL	0.13	0.07	0.08	0.05	0.07
06-Dec-2012	OL	OL	OL	OL	OL	OL	OL	OL	OL
07-Dec-2012	1.04	0.12	0.07	OL	0.09	OL	0.05	0.13	0.10
08-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
10-Dec-2012	1.12	0.09	0.08	0.07	0.09	0.08	OL	0.07	OL
11-Dec-2012	0.90	OL	0.07	OL	0.07	0.08	0.07	0.05	0.07
12-Dec-2012	0.87	0.09	0.08	0.08	0.07	0.08	OL	0.09	OL
13-Dec-2012	0.82	OL	0.08	OL	0.08	0.07	0.06	0.09	0.06
14-Dec-2012	0.80	0.07	0.07	0.08	0.08	0.07	OL	0.07	OL
15-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
17-Dec-2012	0.79	OL	0.06	OL	0.07	0.07	0.07	0.07	0.06
18-Dec-2012	0.71	0.06	0.07	0.06	0.06	0.06	OL	0.06	OL
19-Dec-2012	0.67	OL	0.07	OL	0.08	0.10	0.08	0.08	0.08
20-Dec-2012	0.77	0.06	0.06	0.07	0.06	0.06	0.10	0.07	OL
21-Dec-2012	1.92	OL	0.11	OL	0.17	0.08	0.10	0.15	0.10
22-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
23-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
24-Dec-2012	0.78	0.17	0.07	0.15	0.06	0.12	OL	0.06	OL
25-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
26-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
27-Dec-2012	0.68	OL	0.07	OL	0.16	0.16	0.17	0.07	0.12
28-Dec-2012	0.65	0.10	0.10	0.09	0.09	0.08	OL	0.10	OL
29-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
30-Dec-2012	NS	NS	NS	NS	NS	NS	NS	NS	NS
31-Dec-2012	0.60	0.08	OL	0.09	0.08	0.08	0.08	OL	0.09
Total number of measurements taken, A:	10	17	9	18	17	11	17	10	
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:	10	17	9	18	17	11	17	10	
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

Comments:

On December 6, 2012 there was a scheduled plant shutdown which resulted in the plant being off-line at the time of sampling.

Report Compiled By: J. Jones

Approved in LIMS By: S. Fletcher

Date Approved: 7-Jan-13



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

December 2012 Turbidity (NTU)

Date	Raw Avg	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	Avg	Max	Avg	Max	Avg	Max
1/12/2012	1.08	0.03	0.08	0.02	0.03	0.02	0.08	0.05	0.09	0.05	0.14	0.07	0.07	0.03	0.06	0.04	0.04
2/12/2012	1.05	0.06	0.07	0.02	0.07	0.03	0.04	0.03	0.06	0.06	0.08	0.04	0.18	0.06	0.14	0.02	0.13
3/12/2012	1.05	0.03	0.11	0.02	0.04	0.02	0.09	0.05	0.10	0.05	0.15	0.07	0.08	0.03	0.06	0.03	0.05
4/12/2012	1.05	0.05	0.07	0.02	0.05	0.03	0.04	0.03	0.06	0.05	0.08	0.04	0.15	0.06	0.12	0.02	0.10
5/12/2012	1.03	0.03	0.10	0.01	0.03	0.02	0.08	0.05	0.07	0.06	0.12	0.06	0.08	0.03	0.08	0.03	0.04
6/12/2012	0.96	0.04	0.11	0.02	0.10	0.02	0.09	0.02	0.08	0.04	0.11	0.02	0.17	0.04	0.09	0.00	0.03
7/12/2012	1.01	0.03	0.11	0.02	0.03	0.02	0.08	0.04	0.10	0.04	0.13	0.07	0.09	0.04	0.06	0.04	0.12
8/12/2012	1.00	0.06	0.11	0.01	0.06	0.03	0.05	0.04	0.06	0.06	0.08	0.04	0.14	0.05	0.08	0.02	0.09
9/12/2012	0.99	0.03	0.10	0.01	0.02	0.02	0.08	0.04	0.10	0.04	0.13	0.07	0.08	0.04	0.07	0.04	0.05
10/12/2012	0.96	0.05	0.06	0.01	0.03	0.02	0.03	0.03	0.05	0.05	0.07	0.05	0.14	0.05	0.13	0.03	0.08
11/12/2012	0.93	0.03	0.10	0.01	0.02	0.02	0.09	0.05	0.09	0.05	0.14	0.07	0.08	0.03	0.06	0.04	0.11
12/12/2012	0.91	0.05	0.06	0.02	0.05	0.02	0.03	0.03	0.08	0.05	0.08	0.05	0.15	0.06	0.12	0.02	0.10
13/12/2012	0.89	0.03	0.10	0.01	0.02	0.02	0.09	0.05	0.07	0.06	0.13	0.07	0.09	0.03	0.12	0.04	0.05
14/12/2012	0.87	0.05	0.06	0.01	0.06	0.02	0.03	0.02	0.09	0.05	0.08	0.05	0.16	0.06	0.07	0.02	0.10
15/12/2012	0.84	0.03	0.09	0.01	0.02	0.02	0.07	0.05	0.06	0.06	0.12	0.08	0.09	0.03	0.11	0.04	0.05
16/12/2012	0.82	0.05	0.06	0.02	0.05	0.02	0.03	0.02	0.09	0.05	0.08	0.05	0.11	0.06	0.08	0.02	0.09
17/12/2012	0.80	0.03	0.10	0.01	0.02	0.02	0.06	0.05	0.06	0.06	0.13	0.09	0.10	0.03	0.06	0.04	0.05
18/12/2012	0.79	0.05	0.06	0.02	0.05	0.02	0.03	0.02	0.09	0.05	0.08	0.06	0.13	0.06	0.11	0.02	0.13
19/12/2012	0.76	0.03	0.08	0.01	0.02	0.02	0.07	0.05	0.06	0.06	0.13	0.09	0.10	0.03	0.10	0.04	0.05
20/12/2012	0.76	0.05	0.06	0.02	0.05	0.02	0.03	0.02	0.09	0.05	0.08	0.06	0.15	0.05	0.07	0.02	0.09
21/12/2012	0.78	0.03	0.09	0.01	0.02	0.02	0.07	0.05	0.06	0.06	0.12	0.08	0.11	0.03	0.09	0.03	0.05
22/12/2012	0.64	0.05	0.06	0.02	0.05	0.03	0.04	0.02	0.10	0.04	0.06	0.03	0.07	0.04	0.06	0.01	0.06
23/12/2012	0.67	0.03	0.10	0.01	0.02	0.02	0.08	0.05	0.07	0.05	0.11	0.04	0.06	0.02	0.06	0.01	0.02
24/12/2012	0.64	0.05	0.06	0.01	0.05	0.02	0.03	0.02	0.09	0.03	0.05	0.03	0.11	0.04	0.06	0.01	0.07
25/12/2012	0.64	0.03	0.09	0.00	0.01	0.02	0.07	0.05	0.07	0.04	0.11	0.04	0.05	0.02	0.08	0.01	0.02
26/12/2012	0.65	0.05	0.06	0.01	0.05	0.02	0.03	0.03	0.09	0.03	0.05	0.03	0.11	0.05	0.06	0.01	0.07
27/12/2012	0.64	0.02	0.08	0.01	0.02	0.02	0.08	0.05	0.07	0.04	0.07	0.04	0.07	0.03	0.09	0.01	0.02
28/12/2012	0.63	0.04	0.09	0.02	0.05	0.03	0.03	0.03	0.10	0.04	0.06	0.03	0.11	0.04	0.06	0.01	0.07
29/12/2012	0.62	0.03	0.05	0.01	0.05	0.02	0.08	0.05	0.08	0.05	0.11	0.04	0.05	0.03	0.10	0.01	0.02
30/12/2012	0.61	0.05	0.10	0.02	0.09	0.02	0.03	0.03	0.10	0.03	0.10	0.04	0.10	0.04	0.06	0.01	0.06
31/12/2012	0.59	0.03	0.11	0.01	0.06	0.03	0.06	0.05	0.06	0.06	0.07	0.03	0.06	0.03	0.10	0.01	0.02

Total Number of Measurements Taken, A:	13620	13938	13786	11460	14363	14381	14598	14568
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:	13620	13938	13786	11460	14363	14381	14598	14568
Compliance with Turbidity Standard, C = B/A X 100%:	100%	100%	100%	100%	100%	100%	100%	100%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2012\2012-12

Submitted By (Print): D.Minor

Signature: Original signed by D.Minor

2012 Monthly UV Monitoring Reports

UV Monitoring Report – Monthly

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

Report Period: **January 2012**

Date	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]				
	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	
1/1/2012	0.00	0.00	0.00	0.00	0.00	0.00	85.02	85.02	0.00	0.00	0.00	0.00	0.00	0.00	66.81	66.81	0.03	14.05	62.13	76.20	0.00	0.00	0.00	0.00	0.03	14.05	213.95	228.03	93.8
1/2/2012	0.00	0.00	0.00	0.00	0.00	0.00	85.02	85.02	0.00	0.00	0.00	0.00	0.00	0.00	64.32	64.32	0.00	4.83	69.04	73.87	0.00	0.00	0.00	0.00	0.00	4.83	218.39	223.22	97.8
1/3/2012	0.00	0.00	0.00	0.00	0.00	0.00	84.97	84.97	0.00	0.00	37.14	37.14	0.00	0.00	24.84	24.84	0.00	2.14	26.38	28.53	0.00	0.00	47.26	47.26	0.00	2.14	220.59	222.73	99.0
1/4/2012	0.00	0.00	0.00	0.00	0.00	0.00	85.01	85.01	0.00	0.00	62.86	62.86	0.00	0.00	0.00	0.00	0.00	0.62	32.99	33.62	0.00	0.00	43.56	43.56	0.00	0.62	224.43	225.05	99.7
1/5/2012	0.00	0.16	0.01	0.17	0.00	0.00	84.89	84.89	0.00	0.00	7.17	7.17	0.00	0.00	57.25	57.25	0.00	1.34	71.96	73.30	0.00	0.00	0.35	0.35	0.00	1.50	221.64	223.14	99.3
1/6/2012	0.00	0.00	28.75	28.75	0.00	0.00	56.34	56.34	0.00	0.00	17.55	17.55	0.00	0.00	46.63	46.63	0.00	0.16	73.62	73.78	0.00	0.00	0.00	0.00	0.00	0.16	222.89	223.05	99.9
1/7/2012	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.00	62.37	62.37	0.00	0.00	0.00	0.00	0.02	0.15	75.49	75.67	0.00	0.00	0.00	0.00	0.02	0.15	222.87	223.04	99.9
1/8/2012	0.00	0.00	84.86	84.86	0.00	0.00	0.00	0.00	0.00	0.00	39.70	39.70	0.00	0.00	0.00	0.00	0.00	0.38	65.63	66.00	0.00	0.00	30.34	30.34	0.00	0.38	220.53	220.91	99.8
1/9/2012	0.20	0.00	41.48	41.69	0.00	0.00	42.66	42.66	0.00	0.00	31.27	31.27	0.00	0.02	0.68	0.70	0.00	5.21	60.07	65.28	0.00	0.00	41.38	41.38	0.20	5.23	217.54	222.98	97.6
1/10/2012	0.00	0.00	0.00	0.00	0.00	0.00	39.35	39.35	0.00	0.00	20.98	20.98	0.00	0.00	0.00	0.00	0.00	0.92	10.06	10.98	0.00	0.01	12.95	12.96	0.00	0.93	83.35	84.28	98.9
1/11/2012	0.00	0.00	6.21	6.21	0.00	0.00	82.19	82.19	0.00	0.00	67.64	67.64	0.00	0.00	0.00	0.00	0.00	0.01	0.63	0.64	0.00	0.00	66.79	66.79	0.00	0.01	223.45	223.47	100.0
1/12/2012	0.00	0.00	65.87	65.87	0.00	0.00	50.66	50.66	0.00	0.00	54.71	54.71	0.00	0.63	14.61	15.24	0.00	0.67	34.45	35.12	0.00	0.02	14.32	14.35	0.00	1.33	234.61	235.94	99.4
1/13/2012	0.23	0.00	32.63	32.87	0.00	0.00	84.36	84.36	0.01	0.00	22.10	22.11	0.00	0.00	4.18	4.18	0.00	0.56	57.10	57.66	0.00	0.00	32.00	32.00	0.24	0.56	232.38	233.19	99.7
1/14/2012	0.00	0.00	0.00	0.00	0.00	0.00	84.84	84.84	0.00	0.00	62.78	62.78	0.00	0.00	0.00	0.00	0.00	0.17	0.72	0.89	0.00	0.00	84.63	84.63	0.00	0.17	232.98	233.15	99.9
1/15/2012	0.00	0.00	0.00	0.00	0.00	0.00	84.30	84.30	0.00	0.00	64.73	64.73	0.00	0.00	0.00	0.00	0.00	3.32	52.25	55.57	0.00	0.00	29.43	29.43	0.00	3.32	230.71	234.04	98.6
1/16/2012	0.00	0.00	0.00	0.00	0.00	0.00	75.39	75.39	0.00	0.00	75.57	75.57	0.00	0.07	0.44	0.51	0.02	0.77	40.57	41.36	0.00	0.00	43.26	43.26	0.02	0.84	235.23	236.08	99.6
1/17/2012	0.00	0.00	26.81	26.81	0.04	0.00	29.19	29.22	0.01	0.98	42.94	43.92	0.07	0.35	25.22	25.64	0.13	0.96	37.36	38.45	0.24	0.00	69.07	69.30	0.48	2.28	230.59	233.35	98.8
1/18/2012	0.00	0.00	4.20	4.20	0.00	0.00	0.00	0.00	0.01	0.00	27.25	27.26	0.00	0.00	44.52	44.52	0.00	0.42	64.35	64.77	0.00	0.00	82.91	82.91	0.02	0.42	223.23	223.67	99.8
1/19/2012	0.00	0.00	0.00	0.00	0.00	0.00	31.44	31.44	0.00	0.00	50.33	50.33	0.00	0.00	20.50	20.50	0.00	0.00	34.92	34.92	0.00	0.00	84.24	84.24	0.00	0.00	221.43	221.43	100.0
1/20/2012	0.00	0.00	45.50	45.50	0.00	0.00	36.99	36.99	0.00	0.00	30.19	30.19	0.00	0.00	21.74	21.74	0.00	1.63	41.75	43.38	0.00	0.00	38.02	38.02	0.00	1.63	214.18	215.82	99.2
1/21/2012	0.00	0.00	28.73	28.73	0.00	0.00	55.35	55.35	0.00	0.00	18.46	18.46	0.00	0.00	32.41	32.41	0.00	0.00	0.00	0.00	0.00	0.00	80.15	80.15	0.00	0.00	215.10	215.10	100.0
1/22/2012	0.00	0.00	51.71	51.71	0.00	0.00	30.44	30.44	0.00	0.00	35.11	35.11	0.00	0.00	17.75	17.75	0.00	0.00	57.06	57.06	0.00	0.00	25.50	25.50	0.00	0.00	217.56	217.56	100.0
1/23/2012	0.00	0.00	11.49	11.49	0.00	0.03	67.62	67.64	0.00	0.00	55.52	55.52	0.00	0.00	4.11	4.11	0.00	2.42	76.72	79.14	0.00	0.00	0.00	0.00	0.00	2.44	215.46	217.90	98.9
1/24/2012	0.00	0.00	0.00	0.00	0.00	0.00	84.52	84.52	0.00	0.00	49.59	49.59	0.00	0.00	0.00	0.00	0.00	0.35	30.16	30.52	0.00	0.00	49.48	49.48	0.00	0.35	213.76	214.11	99.8
1/25/2012	0.21	0.00	6.86	7.07	0.00	0.00	77.53	77.53	0.00	0.00	49.83	49.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.47	80.47	0.21	0.00	214.69	214.90	99.9
1/26/2012	0.00	0.00	0.00	0.00	0.00	0.00	85.01	85.01	0.00	0.00	39.01	39.01	0.03	0.00	10.74	10.78	0.00	0.00	0.00	0.00	0.00	0.00	79.66	79.66	0.03	0.00	214.42	214.46	100.0
1/27/2012	0.00	0.00	0.00	0.00	0.00	0.00	84.27	84.27	0.00	0.00	7.49	7.49	0.00	0.00	42.22	42.22	0.00	0.65	14.09	14.73	0.00	0.00	65.94	65.94	0.00	0.65	214.01	214.65	99.7
1/28/2012	0.00	0.00	52.17	52.17	0.00	0.00	29.64	29.64	0.00	0.00	41.90	41.90	0.00	0.03	9.14	9.17	0.00	0.26	61.87	62.13	0.00	0.04	18.23	18.27	0.00	0.34	212.95	213.29	99.8
1/29/2012	0.00	0.00	11.06	11.06	0.00	0.00	73.28	73.28	0.00	0.00	6.76	6.76	0.00	0.00	44.05	44.05	0.00	0.50	9.35	9.85	0.00	0.00	69.67	69.67	0.00	0.50	214.16	214.67	99.8
1/30/2012	0.00	0.00	77.32	77.32	0.00	0.00	9.21	9.21	0.00	0.00	56.07	56.07	0.00	0.01	0.33	0.34	0.00	0.38	71.91	72.29	0.00	0.00	0.00	0.00	0.00	0.39	214.84	215.23	99.8
1/31/2012	0.00	0.00	71.54	71.54	0.00	0.00	36.16	36.16	0.00	0.00	68.36	68.36	0.00	0.00	0.00	0.00	0.00	3.24	43.89	47.14	0.00	0.00	0.00	0.00	0.00	3.24	219.96	223.20	98.5

Total [ML]: 0.65 0.16 732.21 733.03 0.04 0.03 1755.64 1755.70 0.02 0.98 1205.37 1206.37 0.11 1.11 552.49 553.70 0.20 46.15 1276.51 1322.86 0.24 0.07 1189.63 1189.95 1.27 48.50 6711.85 6761.62

Report Created: **February-01-12**

Water Volume [%]

Untreated 0.0%
Below Dose 0.7%
To Dose 99.3%

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\01-2012

Notes: 1. UV Comparative Dose: 18.1 mJ/cm2

Submitted By (Print): D.Minor

Signature: Original signed by D.Minor

UV Monitoring Report – Monthly

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

Reactor: **UVR-100A**
Report Period: **January 2012**

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity										UV Lamp Status										% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2										Hours											Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/1/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1508	3640	4700	1120	3599	3600	3124	0	3124	OL	0.00	0.00	0.00	0.00		
1/2/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1508	3640	4700	1120	3599	3600	3124	0	3124	OL	0.00	0.00	0.00	0.00		
1/3/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1508	3640	4700	1120	3599	3600	3124	0	3124	OL	0.00	0.00	0.00	0.00		
1/4/2012	94.7	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1508	3640	4700	1120	3599	3600	3124	0	3124	OL	0.00	0.00	0.00	0.00		
1/5/2012	93.6	10.2	23.7	15.4	19.7	86.4	53.5	39.0	51.9	43.3	81.6	47.2	44.1	34.8	18.6	3.6	1509	3640	4700	1121	3599	3600	3125	0	3124	3.4	0.00	0.16	0.01	0.17		
1/6/2012	92.5	22.2	56.5	24.2	13.2	90.3	84.7	99.8	112.7	138.9	160.9	133.9	134.8	135.5	133.7	157.9	1509	3641	4700	1129	3607	3608	3133	8	3132	100.0	0.00	0.00	28.75	28.75		
1/7/2012	NA	23.8	24.7	24.2	80.1	88.9	85.0	OL	OL	OL	172.7	136.0	136.1	136.2	136.0	162.8	1509	3641	4700	1153	3631	3632	3157	32	3156	100.0	0.00	0.00	85.01	85.01		
1/8/2012	NA	23.4	24.6	24.2	68.7	95.3	84.9	OL	OL	OL	176.4	135.8	135.9	136.0	135.8	164.2	1509	3641	4700	1177	3655	3656	3181	56	3180	100.0	0.00	0.00	84.86	84.86		
1/9/2012	NA	0.0	24.5	24.0	3.9	89.1	84.9	OL	OL	OL	167.8	135.8	135.8	136.6	136.1	151.2	1509	3641	4700	1188	3667	3668	3192	68	3192	99.5	0.20	0.00	41.48	41.69		
1/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1509	3641	4700	1188	3667	3668	3192	68	3192	OL	0.00	0.00	0.00	0.00		
1/11/2012	93.5	23.4	48.9	25.1	12.1	64.0	56.4	105.2	91.8	140.7	168.2	94.4	109.7	114.3	91.4	143.6	1509	3641	4701	1191	3670	3670	3195	71	3194	100.0	0.00	0.00	6.21	6.21		
1/12/2012	93.7	23.0	25.5	24.2	41.4	93.2	65.8	OL	OL	OL	164.8	105.9	110.3	112.8	105.9	138.3	1509	3641	4701	1215	3694	3694	3219	95	3218	100.0	0.00	0.00	65.87	65.87		
1/13/2012	93.8	0.0	24.8	23.9	8.2	67.6	61.1	89.0	41.6	90.2	156.1	98.7	101.3	103.8	99.2	130.3	1509	3641	4701	1228	3707	3707	3232	108	3231	99.3	0.23	0.00	32.63	32.87		
1/14/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1509	3641	4701	1228	3707	3707	0	108	3231	OL	0.00	0.00	0.00	0.00		
1/15/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1509	3641	4701	1228	3707	3707	0	108	3231	OL	0.00	0.00	0.00	0.00		
1/16/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1509	3641	4701	1228	3707	3707	0	108	3231	OL	0.00	0.00	0.00	0.00		
1/17/2012	93.5	19.6	39.0	24.2	12.7	89.3	82.1	130.2	129.7	136.9	147.7	129.2	130.4	OL	OL	OL	1517	3649	4709	1236	3715	3715	0	108	3231	100.0	0.00	0.00	26.81	26.81		
1/18/2012	93.1	20.3	41.2	24.3	10.5	99.5	91.7	143.3	139.0	146.1	164.5	139.0	140.1	OL	OL	OL	1518	3650	4710	1237	3716	3716	0	108	3231	100.0	0.00	0.00	4.20	4.20		
1/19/2012	92.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1518	3650	4710	1237	3716	3716	0	108	3231	OL	0.00	0.00	0.00	0.00		
1/20/2012	92.3	19.8	36.4	24.1	18.6	84.0	80.3	128.2	128.4	129.3	153.5	128.6	129.0	OL	OL	OL	1532	3664	4724	1251	3730	3730	0	108	3231	100.0	0.00	0.00	45.50	45.50		
1/21/2012	NA	19.8	36.1	24.1	14.4	84.3	81.1	129.3	129.6	133.4	163.7	129.5	129.6	OL	OL	OL	1541	3672	4732	1259	3738	3739	0	108	3231	100.0	0.00	0.00	28.73	28.73		
1/22/2012	NA	19.6	40.7	24.1	10.9	84.3	80.5	129.0	128.9	133.8	163.6	128.9	129.1	OL	OL	OL	1556	3688	4748	1275	3754	3754	0	108	3231	100.0	0.00	0.00	51.71	51.71		
1/23/2012	NA	20.2	36.4	24.1	8.2	83.1	80.0	127.7	128.2	130.9	163.0	127.6	127.9	OL	OL	OL	1560	3691	4751	1278	3757	3758	0	108	3231	100.0	0.00	0.00	11.49	11.49		
1/24/2012	92.7	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1560	3691	4751	1278	3757	3758	0	108	3231	OL	0.00	0.00	0.00	0.00		
1/25/2012	92.9	0.0	58.7	23.6	4.9	81.8	76.9	89.3	106.8	124.1	153.3	86.7	96.6	98.0	84.9	79.9	1562	3694	4753	1281	3759	3760	2	110	3233	97.0	0.21	0.00	6.86	7.07		
1/26/2012	92.2	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1562	3694	4753	1281	3759	3760	2	110	3233	OL	0.00	0.00	0.00	0.00		
1/27/2012	92.8	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1562	3694	4753	1281	3759	3760	2	110	3233	OL	0.00	0.00	0.00	0.00		
1/28/2012	NA	18.8	45.9	24.1	5.3	100.6	79.5	82.0	97.6	109.1	145.5	119.9	120.5	122.7	119.3	119.1	1564	3696	4756	1296	3775	3776	18	126	3249	100.0	0.00	0.00	52.17	52.17		
1/29/2012	NA	20.1	52.0	24.3	5.2	83.4	80.3	84.8	95.5	118.2	139.1	120.3	121.0	126.4	119.8	121.7	1565	3697	4757	1300	3779	3779	21	129	3253	100.0	0.00	0.00	11.06	11.06		
1/30/2012	NA	19.8	25.0	24.1	52.8	87.6	77.3	OL	OL	OL	137.1	124.1	124.3	126.8	124.1	126.9	1565	3697	4757	1324	3803	3803	45	153	3277	100.0	0.00	0.00	77.32	77.32		
1/31/2012	91.1	20.0	24.9	24.1	44.7	88.5	71.5	OL	OL	OL	134.4	115.7	115.9	125.1	115.6	124.7	1565	3697	4757	1348	3827	3827	69	177	3301	100.0	0.00	0.00	71.54	71.54		

Report Created: **February-01-12**

Total [ML]: **0.65 0.16 732.21 733.03**

Water Volume [%]

Untreated **0.1 %**
Below Dose **0.0 %**
To Dose **99.9 %**

- Notes:
1. UV Comparative Dose: 18.1 mJ/cm2
 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\01-2012

UV Monitoring Report – Monthly

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

Reactor: **UVR-200A**
Report Period: **January 2012**

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity										UV Lamp Status										% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2										Hours											Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/1/2012	NA	21.9	24.8	24.3	82.9	86.8	85.0	153.8	95.6	91.4	287.0	87.0	86.6	123.4	86.5	86.4	2861	2861	2860	3389	1454	466	2968	2968	2969	100.0	0.00	0.00	85.02	85.02		
1/2/2012	NA	21.2	24.7	24.3	82.7	87.4	85.0	145.6	92.4	86.9	279.3	86.7	86.5	120.0	86.4	86.3	2885	2885	2884	3413	1478	490	2992	2992	2993	100.0	0.00	0.00	85.02	85.02		
1/3/2012	NA	21.4	24.7	24.3	77.7	87.3	85.0	147.5	95.1	86.6	282.8	86.7	86.5	122.9	86.4	86.3	2909	2909	2908	3437	1502	514	3016	3016	3017	100.0	0.00	0.00	84.97	84.97		
1/4/2012	94.7	21.3	24.8	24.3	81.4	87.7	85.0	145.0	95.0	86.6	278.5	86.7	86.5	121.5	86.5	85.8	2933	2933	2932	3461	1526	538	3040	3040	3041	100.0	0.00	0.00	85.01	85.01		
1/5/2012	93.6	21.3	41.5	24.3	6.6	95.3	84.9	138.7	91.3	86.5	266.1	86.6	86.3	117.5	86.4	80.4	2957	2957	2956	3485	1550	562	3064	3064	3065	100.0	0.00	0.00	84.89	84.89		
1/6/2012	92.5	21.4	36.5	24.3	18.6	87.3	84.9	129.5	86.6	86.2	251.1	86.6	86.3	111.4	86.3	72.6	2973	2973	2972	3501	1566	578	3080	3080	3081	100.0	0.00	0.00	56.34	56.34		
1/7/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2973	2973	2972	3501	1566	578	3080	3080	3081	OL	0.00	0.00	0.00	0.00		
1/8/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2973	2973	2972	3501	1566	578	3080	3080	3081	OL	0.00	0.00	0.00	0.00		
1/9/2012	NA	20.2	36.3	24.3	24.4	98.2	84.9	127.3	89.9	86.6	343.3	93.1	85.9	190.0	86.4	85.9	2985	2985	2984	3513	1578	590	3093	3092	3093	100.0	0.00	0.00	42.66	42.66		
1/10/2012	OL	0.0	36.7	24.4	1.6	97.2	65.2	123.2	88.9	78.9	311.3	91.1	78.5	164.2	82.6	81.9	3000	2999	2999	3527	1593	605	3101	3101	3101	100.0	0.00	0.00	39.35	39.35		
1/11/2012	93.5	20.0	35.9	24.3	26.5	105.5	85.0	137.8	95.5	86.2	336.1	97.0	86.1	201.5	86.4	86.4	3024	3023	3023	3551	1617	629	3125	3125	3125	100.0	0.00	0.00	82.19	82.19		
1/12/2012	93.7	21.0	40.8	24.3	2.8	93.6	86.6	129.5	92.8	88.2	331.6	91.1	87.7	189.5	88.1	88.1	3038	3037	3037	3566	1631	643	3139	3139	3139	100.0	0.00	0.00	50.66	50.66		
1/13/2012	93.8	21.3	25.2	24.3	55.3	105.8	84.3	129.3	87.4	85.8	319.9	86.8	85.7	184.9	85.9	85.9	3062	3061	3061	3590	1655	667	3163	3163	3163	100.0	0.00	0.00	84.36	84.36		
1/14/2012	NA	21.4	24.7	24.3	78.3	87.9	84.8	125.0	86.6	86.2	300.7	86.6	86.1	174.3	86.3	86.4	3086	3085	3085	3614	1679	691	3187	3187	3187	100.0	0.00	0.00	84.84	84.84		
1/15/2012	NA	21.4	25.2	23.9	64.4	87.4	84.3	121.0	86.3	85.6	285.0	85.9	83.5	167.0	85.8	85.8	3110	3109	3109	3638	1703	715	3211	3211	3211	100.0	0.00	0.00	84.30	84.30		
1/16/2012	NA	21.3	25.2	23.5	59.0	87.7	75.4	116.6	81.3	76.8	269.4	77.1	73.0	157.8	76.9	76.9	3134	3133	3133	3662	1727	739	3235	3235	3235	100.0	0.00	0.00	75.39	75.39		
1/17/2012	93.5	0.0	25.2	21.5	28.9	87.9	82.4	115.9	84.0	83.8	267.8	84.7	71.7	156.6	84.3	84.1	3142	3142	3141	3670	1736	747	3244	3243	3244	99.9	0.04	0.00	29.19	29.22		
1/18/2012	93.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3142	3142	3141	3670	1736	747	3244	3243	3244	OL	0.00	0.00	0.00	0.00		
1/19/2012	92.4	19.5	59.3	24.2	3.2	90.6	84.9	177.4	135.8	133.1	244.7	161.2	135.8	191.9	96.5	105.7	3151	3151	3150	3679	1745	756	3244	3244	3245	100.0	0.00	0.00	31.44	31.44		
1/20/2012	92.3	22.1	46.8	24.2	1.9	87.0	84.7	192.3	135.6	135.6	269.4	157.3	137.9	OL	OL	OL	3162	3161	3161	3689	1755	767	3244	3244	3245	100.0	0.00	0.00	36.99	36.99		
1/21/2012	NA	22.0	40.8	24.2	25.6	88.8	85.5	183.4	132.4	133.0	269.1	143.7	142.5	194.8	86.4	85.2	3177	3177	3177	3705	1771	782	3247	3247	3247	100.0	0.00	0.00	55.35	55.35		
1/22/2012	NA	21.7	44.9	24.1	8.9	87.5	84.7	184.3	135.4	135.4	256.3	136.8	137.1	OL	OL	OL	3186	3186	3185	3714	1779	791	3247	3247	3247	100.0	0.00	0.00	30.44	30.44		
1/23/2012	NA	17.8	37.4	24.3	5.6	88.4	78.7	185.8	118.9	116.3	233.3	105.4	115.6	211.7	80.9	78.4	3207	3206	3206	3734	1800	811	3259	3258	3259	100.0	0.00	0.03	67.62	67.64		
1/24/2012	92.7	21.7	24.4	24.1	75.2	87.4	84.5	193.1	135.5	135.4	251.9	135.8	135.4	OL	OL	OL	3231	3230	3230	3758	1824	835	3259	3258	3259	100.0	0.00	0.00	84.52	84.52		
1/25/2012	92.9	19.4	45.6	24.2	4.3	87.6	84.8	182.9	131.3	124.8	253.1	134.5	129.6	195.4	85.8	81.2	3253	3252	3252	3780	1846	857	3267	3266	3267	100.0	0.00	0.00	77.53	77.53		
1/26/2012	92.2	21.7	28.9	24.2	78.1	88.0	85.0	164.4	132.3	128.1	250.5	134.7	131.5	233.2	87.9	86.9	3277	3276	3276	3804	1870	881	3273	3272	3273	100.0	0.00	0.00	85.01	85.01		
1/27/2012	92.8	21.8	24.4	24.1	76.9	87.2	84.3	152.5	135.1	135.0	242.6	135.4	134.9	OL	OL	OL	3301	3300	3300	3828	1894	905	3273	3272	3273	100.0	0.00	0.00	84.27	84.27		
1/28/2012	NA	21.3	39.2	24.2	2.0	100.3	83.2	142.8	121.5	107.5	234.2	124.2	119.9	156.0	83.5	81.6	3309	3309	3308	3837	1903	914	3277	3277	3277	100.0	0.00	0.00	29.64	29.64		
1/29/2012	NA	19.0	36.4	24.1	2.0	87.1	84.7	159.4	109.4	86.9	234.3	135.1	134.8	208.0	134.1	134.2	3310	3310	3309	3858	1923	935	3298	3298	3298	100.0	0.00	0.00	73.28	73.28		
1/30/2012	NA	20.0	60.4	24.3	5.1	80.8	78.7	108.7	101.8	86.9	200.9	126.4	124.2	174.8	120.2	121.7	3311	3310	3310	3861	1926	938	3301	3301	3301	100.0	0.00	0.00	9.21	9.21		
1/31/2012	91.1	21.8	34.4	24.1	3.8	91.2	80.4	OL	OL	OL	210.6	128.7	128.8	198.9	128.9	129.0	3311	3310	3310	3871	1937	949	3312	3311	3312	100.0	0.00	0.00	36.16	36.16		

Report Created: **February-01-12**

Total [ML]: **0.04 0.03 1755.64 1755.70**

Water Volume [%]

Untreated **0.0 %**
Below Dose **0.0 %**
To Dose **100.0 %**

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm2
 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

UV Monitoring Report – Monthly



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

Reactor: **UVR-300A**
Report Period: **January 2012**

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity										UV Lamp Status										% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2										Hours											Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/1/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1998	1997	1998	1874	1875	1875	2003	2002	2002	OL	0.00	0.00	0.00	0.00		
1/2/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1998	1997	1998	1874	1875	1875	2003	2002	2002	OL	0.00	0.00	0.00	0.00		
1/3/2012	NA	20.6	31.6	24.5	12.8	66.8	62.4	68.1	64.1	64.1	80.7	71.3	64.1	110.8	65.3	49.9	2012	2012	2013	1889	1890	1889	2017	2017	2016	100.0	0.00	0.00	37.14	37.14		
1/4/2012	94.7	21.0	25.8	24.5	52.4	65.1	62.8	66.9	64.5	64.4	81.8	70.4	64.4	78.7	66.9	84.8	2036	2036	2037	1913	1914	1913	2041	2041	2040	100.0	0.00	0.00	62.86	62.86		
1/5/2012	93.6	19.3	35.8	23.4	15.6	64.9	62.8	66.8	64.0	66.6	81.5	70.0	66.3	62.3	68.5	10.4	2039	2039	2039	1916	1916	1916	2044	2043	2043	100.0	0.00	0.00	7.17	7.17		
1/6/2012	92.5	21.0	38.4	24.6	4.0	64.3	62.1	128.4	63.6	119.7	148.3	104.3	126.7	94.0	72.5	25.2	2046	2045	2046	1922	1923	1923	2050	2050	2050	100.0	0.00	0.00	17.55	17.55		
1/7/2012	NA	20.8	26.9	24.6	59.4	65.1	62.3	127.6	64.0	120.2	156.0	102.6	121.9	77.8	70.6	86.7	2070	2069	2070	1946	1947	1947	2074	2074	2074	100.0	0.00	0.00	62.37	62.37		
1/8/2012	NA	20.7	34.8	24.6	11.2	64.6	61.5	129.9	63.2	116.2	156.3	102.3	111.7	75.1	72.0	55.4	2085	2085	2086	1962	1963	1962	2090	2090	2090	100.0	0.00	0.00	39.70	39.70		
1/9/2012	NA	19.0	37.8	24.6	6.6	82.9	62.5	126.4	63.9	111.4	147.6	99.8	116.0	68.9	71.2	42.7	2097	2097	2098	1974	1975	1974	2102	2102	2102	100.0	0.00	0.00	31.27	31.27		
1/10/2012	OL	18.4	34.8	24.5	4.5	100.1	55.6	122.5	68.4	105.9	140.6	97.4	111.0	66.0	70.3	18.9	2106	2106	2107	1983	1984	1984	2108	2107	2107	100.0	0.00	0.00	20.98	20.98		
1/11/2012	93.5	20.6	70.1	24.5	24.2	126.0	67.0	128.6	71.2	108.9	153.2	100.5	115.1	71.3	73.1	84.2	2130	2130	2131	2007	2008	2008	2132	2131	2131	100.0	0.00	0.00	67.64	67.64		
1/12/2012	93.7	19.3	34.3	24.1	2.0	88.9	67.3	125.1	68.9	104.2	150.9	97.7	112.6	67.0	73.0	68.9	2150	2150	2150	2027	2027	2027	2151	2151	2151	100.0	0.00	0.00	54.71	54.71		
1/13/2012	93.8	0.0	35.0	24.4	2.6	67.7	61.4	122.3	62.8	100.0	139.3	96.3	112.4	95.9	64.4	29.1	2159	2158	2159	2035	2036	2036	2160	2160	2159	100.0	0.01	0.00	22.10	22.11		
1/14/2012	NA	20.6	26.2	24.5	48.3	70.4	62.8	118.5	64.3	92.5	143.0	92.8	105.2	105.4	64.4	74.2	2183	2182	2183	2059	2060	2060	2184	2184	2183	100.0	0.00	0.00	62.78	62.78		
1/15/2012	NA	20.8	25.7	24.5	59.3	82.5	64.7	114.0	66.2	84.7	136.7	88.9	98.4	101.4	66.3	70.3	2207	2206	2207	2083	2084	2084	2208	2208	2207	100.0	0.00	0.00	64.73	64.73		
1/16/2012	NA	18.8	27.4	24.3	44.5	107.8	75.6	110.9	77.0	80.9	132.7	86.6	93.4	98.2	76.7	77.2	2231	2230	2231	2107	2108	2108	2232	2232	2231	100.0	0.00	0.00	75.57	75.57		
1/17/2012	93.5	0.0	42.5	24.2	2.4	128.6	65.0	108.8	66.5	76.3	129.1	85.7	89.9	99.1	65.0	47.1	2247	2247	2247	2124	2124	2124	2248	2248	2248	97.8	0.01	0.98	42.94	43.92		
1/18/2012	93.1	0.0	55.0	24.2	13.6	88.2	83.4	133.9	132.1	134.4	138.5	133.2	133.9	98.0	76.9	1.3	2255	2255	2255	2132	2132	2132	2248	2248	2248	100.0	0.01	0.00	27.25	27.26		
1/19/2012	92.4	21.3	33.1	24.1	10.1	85.9	79.1	127.2	126.7	128.2	130.7	127.1	127.6	OL	OL	OL	2270	2270	2271	2147	2148	2147	2248	2248	2248	100.0	0.00	0.00	50.33	50.33		
1/20/2012	92.3	21.6	45.9	24.3	6.5	56.6	52.7	86.3	68.8	105.3	119.6	85.3	93.3	84.8	84.7	48.7	2270	2270	2271	2161	2161	2161	2262	2262	2262	100.0	0.00	0.00	30.19	30.19		
1/21/2012	NA	21.7	34.0	24.3	6.2	56.0	52.8	OL	OL	OL	142.2	89.4	103.0	89.0	85.6	30.2	2270	2270	2271	2169	2170	2169	2271	2270	2270	100.0	0.00	0.00	18.46	18.46		
1/22/2012	NA	21.8	51.6	24.5	9.7	57.0	53.0	84.8	67.4	115.9	139.8	92.3	102.9	93.7	85.7	57.4	2270	2270	2271	2185	2186	2185	2287	2286	2286	100.0	0.00	0.00	35.11	35.11		
1/23/2012	NA	21.7	26.6	24.3	36.2	76.4	55.5	OL	OL	OL	140.7	90.7	100.3	94.3	89.6	89.7	2270	2270	2271	2209	2210	2209	2311	2310	2310	100.0	0.00	0.00	55.52	55.52		
1/24/2012	92.7	21.8	25.9	24.3	42.3	53.7	49.6	OL	OL	OL	139.0	83.0	94.1	92.5	80.2	80.4	2270	2270	2271	2233	2234	2233	2335	2334	2334	100.0	0.00	0.00	49.59	49.59		
1/25/2012	92.9	21.7	26.6	24.3	37.1	54.6	49.8	OL	OL	OL	140.0	84.2	88.1	93.5	80.6	80.8	2270	2270	2271	2257	2258	2257	2359	2358	2358	100.0	0.00	0.00	49.83	49.83		
1/26/2012	92.2	21.5	30.1	24.3	11.7	52.6	49.7	OL	OL	OL	137.6	80.7	81.5	89.6	80.6	63.4	2270	2270	2271	2276	2277	2276	2377	2377	2377	100.0	0.00	0.00	39.01	39.01		
1/27/2012	92.8	20.5	37.3	24.4	8.6	51.0	46.9	74.0	73.9	104.6	119.0	81.4	76.8	80.5	60.7	1.2	2274	2274	2275	2280	2280	2280	2378	2378	2377	100.0	0.00	0.00	7.49	7.49		
1/28/2012	NA	21.1	33.1	24.3	6.9	102.9	52.0	84.3	84.2	100.0	132.3	86.6	84.3	OL	OL	OL	2294	2294	2294	2299	2300	2300	2378	2378	2377	100.0	0.00	0.00	41.90	41.90		
1/29/2012	NA	21.5	37.4	24.5	7.9	55.8	52.5	79.8	70.4	96.5	111.7	84.2	80.0	76.9	54.5	4.6	2297	2297	2297	2302	2303	2303	2379	2379	2379	100.0	0.00	0.00	6.76	6.76		
1/30/2012	NA	21.0	25.4	24.2	45.9	85.8	56.1	95.8	90.5	97.0	124.3	91.1	90.7	OL	OL	OL	2321	2321	2321	2326	2327	2327	2379	2379	2379	100.0	0.00	0.00	56.07	56.07		
1/31/2012	91.1	21.1	26.3	24.2	37.1	99.8	68.3	110.7	110.0	110.8	127.2	109.9	110.2	OL	OL	OL	2345	2345	2345	2350	2351	2351	2379	2379	2379	100.0	0.00	0.00	68.36	68.36		

Report Created: **February-01-12**

Total [ML]: **0.02 0.98 1205.37 1206.37**

Water Volume [%]

Untreated **0.0 %**
Below Dose **0.1 %**
To Dose **99.9 %**

- Notes:
1. UV Comparative Dose: 18.1 mJ/cm2
 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

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UV Monitoring Report – Monthly



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

Reactor: **UVR-400A**
Report Period: **January 2012**

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity										UV Lamp Status										% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2										Hours											Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/1/2012	NA	23.7	25.1	24.5	64.7	68.8	66.8	89.7	68.5	68.3	86.8	68.5	68.5	83.7	105.4	80.2	1646	1646	1646	1778	1779	1779	1823	793	1823	100.0	0.00	0.00	66.81	66.81		
1/2/2012	NA	23.8	25.2	24.5	59.4	69.0	64.3	84.1	66.0	65.8	83.2	66.0	66.0	81.6	101.6	75.9	1670	1670	1670	1802	1803	1803	1847	817	1847	100.0	0.00	0.00	64.32	64.32		
1/3/2012	NA	23.5	30.2	24.5	6.8	63.2	61.0	83.7	63.2	62.5	84.4	63.1	63.1	83.0	104.5	75.8	1680	1680	1680	1812	1813	1812	1857	827	1856	100.0	0.00	0.00	24.84	24.84		
1/4/2012	94.7	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1680	1680	1680	1812	1813	1812	1857	827	1856	OL	0.00	0.00	0.00	0.00		
1/5/2012	93.6	18.3	26.6	24.5	36.8	67.1	64.9	78.5	66.4	66.2	93.8	67.3	66.4	80.1	101.9	73.2	1701	1701	1701	1833	1834	1834	1878	848	1878	100.0	0.00	0.00	57.25	57.25		
1/6/2012	92.5	21.2	34.3	24.1	13.5	67.2	64.8	74.3	66.7	64.7	92.3	66.8	66.6	78.1	97.6	68.7	1719	1718	1718	1851	1851	1851	1895	865	1895	100.0	0.00	0.00	46.63	46.63		
1/7/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1719	1718	1718	1851	1851	1851	1895	865	1895	OL	0.00	0.00	0.00	0.00		
1/8/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1719	1718	1718	1851	1851	1851	1895	865	1895	OL	0.00	0.00	0.00	0.00		
1/9/2012	NA	16.3	38.9	22.0	5.6	66.7	60.9	119.7	96.5	46.8	82.3	92.6	92.9	101.9	108.9	81.8	1719	1719	1719	1851	1852	1851	1896	865	1895	97.4	0.00	0.02	0.68	0.70		
1/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1719	1719	1719	1851	1852	1851	1896	865	1895	OL	0.00	0.00	0.00	0.00		
1/11/2012	93.5	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1719	1719	1719	1851	1852	1851	1896	865	1895	OL	0.00	0.00	0.00	0.00		
1/12/2012	93.7	15.6	45.2	24.6	2.3	95.5	48.8	121.6	106.9	49.0	89.4	89.4	95.2	108.0	121.4	72.6	1727	1726	1726	1859	1859	1859	1903	873	1903	95.8	0.00	0.63	14.61	15.24		
1/13/2012	93.8	19.1	34.1	24.7	12.5	63.8	52.6	117.1	105.1	53.1	91.2	87.9	95.9	108.0	121.6	72.2	1729	1728	1728	1861	1861	1861	1905	875	1905	100.0	0.00	0.00	4.18	4.18		
1/14/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1729	1728	1728	1861	1861	1861	1905	875	1905	OL	0.00	0.00	0.00	0.00		
1/15/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1729	1728	1728	1861	1861	1861	1905	875	1905	OL	0.00	0.00	0.00	0.00		
1/16/2012	NA	13.9	49.1	23.0	11.0	99.3	74.4	104.8	89.1	51.8	81.6	92.3	92.5	90.3	99.3	88.9	1729	1729	1728	1861	1861	1861	1905	875	1905	86.7	0.00	0.07	0.44	0.51		
1/17/2012	93.5	0.0	51.6	23.3	7.8	93.8	66.7	95.0	92.6	63.6	79.9	74.5	84.2	96.2	108.9	72.7	1738	1738	1738	1870	1871	1870	1915	885	1914	98.4	0.07	0.35	25.22	25.64		
1/18/2012	93.1	0.0	52.2	23.0	0.7	91.6	67.7	94.3	88.9	63.8	82.1	71.6	81.8	93.9	107.0	70.4	1754	1754	1753	1886	1887	1886	1931	900	1930	100.0	0.00	0.00	44.52	44.52		
1/19/2012	92.4	17.7	30.2	24.7	4.9	61.7	52.4	95.3	79.7	53.7	76.7	64.5	73.9	88.9	101.3	56.2	1763	1763	1763	1895	1896	1896	1940	910	1940	100.0	0.00	0.00	20.50	20.50		
1/20/2012	92.3	21.2	30.4	24.7	12.1	53.3	50.5	100.8	82.8	52.1	80.4	69.7	74.9	93.7	104.9	57.1	1774	1774	1773	1906	1906	1906	1950	920	1950	100.0	0.00	0.00	21.74	21.74		
1/21/2012	NA	21.3	56.1	24.8	5.5	53.8	49.7	100.6	82.9	51.3	82.6	74.1	75.8	95.2	107.3	58.6	1789	1789	1789	1921	1922	1922	1966	936	1966	100.0	0.00	0.00	32.41	32.41		
1/22/2012	NA	21.2	30.8	24.7	14.9	54.3	51.0	99.3	82.8	52.6	84.3	74.1	76.6	97.3	107.8	60.4	1798	1798	1797	1930	1930	1930	1974	944	1974	100.0	0.00	0.00	17.75	17.75		
1/23/2012	NA	18.6	51.0	24.5	4.7	78.9	56.7	102.0	81.5	56.0	85.1	78.6	81.5	93.2	104.2	65.2	1800	1799	1799	1932	1932	1932	1976	946	1976	100.0	0.00	0.00	4.11	4.11		
1/24/2012	92.7	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1800	1799	1799	1932	1932	1932	1976	946	1976	OL	0.00	0.00	0.00	0.00		
1/25/2012	92.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1800	1799	1799	1932	1932	1932	1976	946	1976	OL	0.00	0.00	0.00	0.00		
1/26/2012	92.2	0.0	27.7	24.5	9.3	52.6	49.1	93.4	76.6	50.1	78.9	75.0	77.7	94.1	105.7	62.4	1805	1805	1804	1937	1938	1937	1982	951	1981	99.7	0.03	0.00	10.74	10.78		
1/27/2012	92.8	21.0	29.3	24.8	5.0	53.4	50.1	90.5	74.8	51.8	81.6	71.0	74.3	95.2	104.6	60.8	1825	1825	1825	1957	1958	1957	2002	972	2001	100.0	0.00	0.00	42.22	42.22		
1/28/2012	NA	15.0	47.6	24.8	5.8	85.1	45.3	89.2	74.2	46.6	80.7	72.1	75.9	92.1	104.0	63.4	1830	1830	1830	1962	1963	1962	2007	977	2006	99.7	0.00	0.03	9.14	9.17		
1/29/2012	NA	20.6	33.4	24.7	1.8	54.3	50.4	87.6	74.4	52.1	81.9	69.9	73.6	92.6	103.6	60.0	1851	1851	1851	1983	1984	1983	2028	997	2027	100.0	0.00	0.00	44.05	44.05		
1/30/2012	NA	15.7	45.5	22.8	4.7	81.0	62.2	94.7	76.6	41.9	81.3	87.4	83.4	87.3	94.0	87.6	1851	1851	1851	1983	1984	1984	2028	998	2027	96.9	0.00	0.01	0.33	0.34		
1/31/2012	91.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1851	1851	1851	1983	1984	1984	2028	998	2027	OL	0.00	0.00	0.00	0.00		

Report Created: **February-01-12**

Total [ML]: **0.11 1.11 552.49 553.70**

Water Volume [%]

Untreated **0.0 %**
Below Dose **0.2 %**
To Dose **99.8 %**

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm2
 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

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UV Monitoring Report – Monthly



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

Reactor: **UVR-500A**
Report Period: **January 2012**

Date	Transmittance %	UV Dose mJ/cm2			Reactor Flow MLD			Average UV Lamp Intensity W/m2										UV Lamp Status Hours										% Volume Treated to Validated Conditions	Daily Totals Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/1/2012	NA	0.0	25.0	22.2	73.7	78.8	76.2	89.3	77.9	77.9	235.4	77.7	78.0	208.9	77.7	88.8	3364	3825	1064	3041	525	4726	3009	5049	1545	81.5	0.03	14.05	62.13	76.20		
1/2/2012	NA	1.1	25.0	23.7	69.0	78.8	73.9	85.2	75.6	75.5	453.0	75.3	75.6	201.8	75.4	81.0	3388	3849	1088	3065	549	4750	3033	5073	1569	93.5	0.00	4.83	69.04	73.87		
1/3/2012	NA	9.7	30.9	23.5	3.4	73.9	71.6	85.7	73.1	73.1	470.6	73.2	74.0	204.5	73.0	82.1	3398	3859	1097	3075	558	4760	3043	5083	1578	92.5	0.00	2.14	26.38	28.53		
1/4/2012	94.7	1.0	26.9	24.0	7.1	78.8	76.6	85.9	79.0	78.9	433.5	77.6	78.4	263.8	78.0	100.2	3409	3869	1108	3085	569	4770	3054	5083	1589	98.1	0.00	0.62	32.99	33.62		
1/5/2012	93.6	7.3	26.4	24.2	40.6	78.2	73.3	85.1	75.1	74.9	466.1	74.7	75.0	269.8	74.8	86.9	3433	3893	1132	3109	593	4794	3078	34	1613	98.2	0.00	1.34	71.96	73.30		
1/6/2012	92.5	6.3	25.3	24.1	60.7	78.1	73.8	78.8	75.4	75.3	351.9	75.2	75.4	245.3	75.2	76.5	3457	3917	1156	3133	617	4818	3102	58	1637	99.8	0.00	0.16	73.62	73.78		
1/7/2012	NA	2.4	24.9	24.0	73.7	77.7	75.6	77.9	77.4	77.1	192.2	77.1	77.2	233.8	77.1	77.3	3481	3941	1180	3157	641	4842	3126	82	1661	99.8	0.02	0.15	75.49	75.67		
1/8/2012	NA	2.3	28.1	23.8	39.9	77.6	66.0	75.6	67.8	67.5	264.6	67.5	67.6	233.9	67.5	71.4	3505	3965	1204	3181	665	4866	3150	106	1685	99.4	0.00	0.38	65.63	66.00		
1/9/2012	NA	3.1	26.7	23.0	36.5	79.4	65.3	74.8	67.1	66.7	380.1	66.8	66.9	225.1	66.8	69.9	3529	3989	1228	3205	689	4890	3174	130	1709	92.0	0.00	5.21	60.07	65.28		
1/10/2012	OL	5.9	30.4	22.4	3.4	82.3	58.5	72.3	62.0	58.8	186.6	59.5	60.4	207.0	59.8	63.3	3533	3994	1233	3210	693	4895	3178	135	1714	91.6	0.00	0.92	10.06	10.98		
1/11/2012	93.5	14.8	31.4	20.6	24.3	94.7	77.0	105.5	92.4	56.0	436.5	62.7	70.6	174.0	66.5	98.9	3533	3994	1233	3210	694	4895	3178	135	1714	97.7	0.00	0.01	0.63	0.64		
1/12/2012	93.7	4.4	46.2	23.8	5.7	95.2	87.4	92.4	90.8	321.0	515.8	131.0	88.6	223.7	119.2	90.7	3543	4004	1243	3220	703	4905	3188	145	1724	98.1	0.00	0.67	34.45	35.12		
1/13/2012	93.8	0.3	36.9	23.7	6.8	91.5	82.4	85.8	84.0	328.9	411.4	120.5	83.8	234.4	114.7	85.3	3560	4021	1259	3237	720	4922	3205	162	1740	99.0	0.00	0.56	57.10	57.66		
1/14/2012	NA	6.3	41.7	23.6	8.8	93.1	72.8	97.6	83.3	283.2	480.1	142.6	74.2	173.6	132.1	87.4	3560	4021	1260	3237	721	4922	3205	162	1741	81.2	0.00	0.17	0.72	0.89		
1/15/2012	NA	2.2	30.2	23.5	33.5	91.3	85.0	87.1	86.8	327.4	609.7	128.0	86.3	215.2	113.8	87.0	3576	4037	1276	3253	736	4938	3221	178	1756	94.0	0.00	3.32	52.25	55.57		
1/16/2012	NA	0.9	38.6	24.1	1.9	106.6	84.6	87.1	86.7	322.4	606.4	125.0	85.4	207.0	106.6	86.4	3588	4049	1287	3265	748	4950	3233	190	1768	98.1	0.02	0.77	40.57	41.36		
1/17/2012	93.5	0.0	57.5	23.8	9.8	114.2	76.4	82.3	80.9	404.8	305.5	125.9	78.6	190.7	106.3	81.1	3600	4061	1300	3277	760	4962	3245	202	1781	97.2	0.13	0.96	37.36	38.45		
1/18/2012	93.1	0.0	53.4	24.3	2.3	106.1	68.4	72.3	70.7	408.1	154.4	109.6	69.9	192.2	93.5	70.5	3623	4084	1322	3300	783	4985	3268	225	1803	99.3	0.00	0.42	64.35	64.77		
1/19/2012	92.4	20.0	31.2	24.3	21.1	62.0	55.3	86.4	85.8	383.2	162.2	104.4	60.4	187.5	89.3	85.7	3638	4099	1338	3301	785	4986	3283	240	1819	100.0	0.00	0.00	34.92	34.92		
1/20/2012	92.3	1.2	30.8	23.4	7.9	86.3	82.2	84.3	83.7	347.3	166.2	98.5	83.4	173.7	85.7	83.7	3651	4112	1350	3314	797	4999	3296	253	1831	96.2	0.00	1.63	41.75	43.38		
1/21/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3651	4112	1350	3314	797	4999	3296	253	1831	OL	0.00	0.00	0.00	0.00		
1/22/2012	NA	18.2	38.8	24.3	11.9	86.6	83.3	85.4	85.0	370.3	171.3	105.4	84.5	188.4	87.2	84.8	3667	4128	1367	3330	814	5016	3312	269	1848	100.0	0.00	0.00	57.06	57.06		
1/23/2012	NA	1.2	26.5	23.8	11.7	88.5	84.5	86.5	86.3	360.3	137.7	105.4	85.8	192.4	87.5	86.0	3690	4151	1389	3353	836	5038	3335	292	1870	96.9	0.00	2.42	76.72	79.14		
1/24/2012	92.7	1.2	25.1	24.0	18.1	84.1	81.2	82.5	82.4	353.8	231.1	104.0	82.7	196.0	84.7	82.7	3699	4160	1398	3362	845	5047	3344	301	1879	98.8	0.00	0.35	30.16	30.52		
1/25/2012	92.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3699	4160	1398	3362	845	5047	3344	301	1879	OL	0.00	0.00	0.00	0.00		
1/26/2012	92.2	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3699	4160	1398	3362	845	5047	3344	301	1879	OL	0.00	0.00	0.00	0.00		
1/27/2012	92.8	13.7	29.3	23.7	5.6	79.4	62.5	74.4	71.8	309.3	137.2	87.5	68.6	157.8	78.2	72.1	3703	4164	1403	3368	851	5053	3350	306	1885	95.6	0.00	0.65	14.09	14.73		
1/28/2012	NA	1.2	25.2	24.2	4.8	85.9	81.8	83.5	83.2	330.1	147.5	91.8	83.2	184.6	83.8	83.4	3722	4182	1421	3386	870	5071	3368	325	1903	99.6	0.00	0.26	61.87	62.13		
1/29/2012	NA	3.4	28.5	23.1	21.2	85.3	82.0	83.8	82.3	310.7	199.5	91.3	82.8	149.2	88.0	84.0	3725	4185	1424	3389	872	5074	3371	328	1906	94.9	0.00	0.50	9.35	9.85		
1/30/2012	NA	1.2	25.0	24.1	11.1	86.3	82.1	83.8	83.6	308.8	142.4	87.3	83.6	176.0	84.0	83.6	3746	4207	1445	3410	894	5095	3392	349	1927	99.5	0.00	0.38	71.91	72.29		
1/31/2012	91.1	5.1	25.2	23.6	41.8	88.6	84.9	86.9	86.1	272.2	356.4	87.6	86.0	147.0	86.9	86.1	3759	4220	1459	3423	907	5109	3405	362	1941	93.1	0.00	3.24	43.89	47.14		

Report Created: **February-01-12**

Total [ML]: **0.20 46.15 1276.51 1322.86**

Water Volume [%]

Untreated **0.0 %**
Below Dose **3.5 %**
To Dose **96.5 %**

- Notes:
1. UV Comparative Dose: 18.1 mJ/cm2
 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

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UV Monitoring Report – Monthly



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

Reactor: **UVR-600A**
Report Period: **January 2012**

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status											% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours												Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/1/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1711	1711	1711	1665	1666	1666	392	1701	1700	OL	0.00	0.00	0.00	0.00		
1/2/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1711	1711	1711	1665	1666	1666	392	1701	1700	OL	0.00	0.00	0.00	0.00		
1/3/2012	NA	18.7	28.1	24.3	22.4	82.5	78.2	117.8	84.0	79.3	98.5	79.7	79.6	125.4	89.7	79.1	1725	1725	1725	1680	1681	1680	406	1715	1715	100.0	0.00	0.00	47.26	47.26		
1/4/2012	94.7	19.2	39.2	24.4	26.2	79.3	77.4	123.6	84.2	78.7	98.6	78.8	78.7	127.5	90.6	78.3	1739	1739	1739	1693	1694	1694	420	1729	1728	100.0	0.00	0.00	43.56	43.56		
1/5/2012	93.6	19.1	36.2	24.6	4.9	88.5	72.3	103.1	84.6	55.6	96.9	81.4	74.9	186.1	90.3	58.2	1739	1739	1739	1694	1694	1694	420	1729	1729	100.0	0.00	0.00	0.35	0.35		
1/6/2012	92.5	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1739	1739	1739	1694	1694	1694	420	1729	1729	OL	0.00	0.00	0.00	0.00		
1/7/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1739	1739	1739	1694	1694	1694	420	1729	1729	OL	0.00	0.00	0.00	0.00		
1/8/2012	NA	18.5	32.6	23.1	7.8	95.7	85.2	111.8	86.7	80.9	97.0	86.5	86.3	119.5	88.3	75.9	1748	1748	1747	1702	1703	1703	429	1737	1737	100.0	0.00	0.00	30.34	30.34		
1/9/2012	NA	19.4	43.7	22.1	13.5	89.1	82.8	116.6	84.9	74.3	94.7	84.4	84.1	122.1	86.5	70.5	1760	1760	1759	1714	1715	1715	441	1749	1749	100.0	0.00	0.00	41.38	41.38		
1/10/2012	OL	16.5	27.0	23.9	14.8	88.8	74.0	100.2	77.3	72.6	92.5	75.7	75.3	121.0	83.2	68.1	1764	1764	1764	1718	1719	1719	445	1754	1753	99.9	0.00	0.01	12.95	12.96		
1/11/2012	93.5	18.6	42.1	23.9	23.5	84.7	77.9	120.7	90.4	77.6	98.8	79.8	79.5	123.6	89.3	71.4	1785	1785	1785	1740	1740	1740	466	1775	1775	100.0	0.00	0.00	66.79	66.79		
1/12/2012	93.7	0.0	34.2	24.1	2.4	92.6	72.1	107.9	90.6	72.0	98.3	75.8	73.8	125.3	87.8	68.0	1790	1790	1790	1744	1745	1745	471	1780	1779	99.8	0.00	0.02	14.32	14.35		
1/13/2012	93.8	21.7	80.0	26.9	9.1	94.5	83.2	152.5	118.6	143.4	127.6	104.8	149.2	158.7	115.4	93.6	1797	1797	1797	1754	1755	1754	480	1789	1789	100.0	0.00	0.00	32.00	32.00		
1/14/2012	NA	19.7	74.8	26.1	17.1	94.7	85.2	161.2	111.3	138.1	121.6	93.5	148.1	155.9	109.2	86.3	1821	1821	1821	1778	1778	1778	504	1813	1813	100.0	0.00	0.00	84.63	84.63		
1/15/2012	NA	22.8	70.8	27.8	20.3	88.3	84.9	161.5	114.4	134.0	127.8	101.0	144.4	158.7	114.7	85.8	1830	1830	1829	1786	1787	1787	512	1821	1821	100.0	0.00	0.00	29.43	29.43		
1/16/2012	NA	21.0	76.5	26.8	18.4	102.7	84.9	140.8	112.6	127.2	107.3	135.1	153.8	116.6	96.9		1839	1839	1839	1798	1799	1799	525	1834	1833	100.0	0.00	0.00	43.26	43.26		
1/17/2012	93.5	0.0	74.0	26.0	5.8	120.6	85.7	137.8	106.0	120.9	121.8	100.7	130.0	150.0	108.9	94.7	1856	1856	1856	1818	1819	1819	544	1853	1853	99.7	0.24	0.00	69.07	69.30		
1/18/2012	93.1	0.0	73.9	24.5	1.7	112.7	83.9	122.5	93.1	112.1	121.4	110.6	127.3	134.6	112.7	109.4	1868	1868	1868	1842	1843	1842	568	1877	1877	100.0	0.00	0.00	82.91	82.91		
1/19/2012	92.4	19.2	34.4	24.3	55.2	102.6	84.2	115.5	86.2	101.4	113.8	99.2	117.8	126.6	102.2	98.5	1886	1885	1885	1866	1867	1866	592	1901	1901	100.0	0.00	0.00	84.24	84.24		
1/20/2012	92.3	19.5	54.1	24.3	5.1	86.9	79.9	127.5	85.8	102.2	122.4	115.9	123.5	130.4	118.3	114.8	1889	1889	1888	1877	1878	1878	604	1912	1912	100.0	0.00	0.00	38.02	38.02		
1/21/2012	NA	19.5	24.9	24.1	69.7	87.1	80.1	OL	OL	OL	128.1	128.1	127.9	131.0	128.3	127.9	1889	1889	1888	1901	1902	1902	628	1936	1936	100.0	0.00	0.00	80.15	80.15		
1/22/2012	NA	20.1	41.3	24.1	2.8	83.0	80.2	OL	OL	OL	128.6	128.3	128.3	130.1	128.3	128.0	1889	1889	1888	1909	1910	1909	635	1944	1944	100.0	0.00	0.00	25.50	25.50		
1/23/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1889	1889	1888	1909	1910	1909	635	1944	1944	OL	0.00	0.00	0.00	0.00		
1/24/2012	92.7	19.9	66.7	24.2	16.4	84.0	79.2	126.6	125.7	126.2	103.9	84.8	90.4	128.5	125.7	125.7	1904	1904	1903	1909	1910	1910	650	1959	1959	100.0	0.00	0.00	49.48	49.48		
1/25/2012	92.9	19.7	24.7	24.1	61.8	85.1	80.5	128.7	128.7	128.7	OL	OL	OL	129.1	128.7	128.4	1928	1928	1927	1909	1910	1910	674	1983	1983	100.0	0.00	0.00	80.47	80.47		
1/26/2012	92.2	19.8	24.8	24.1	73.8	82.8	79.6	127.4	127.4	127.4	OL	OL	OL	127.7	127.4	127.2	1952	1952	1951	1909	1910	1910	698	2007	2007	100.0	0.00	0.00	79.66	79.66		
1/27/2012	92.8	20.0	38.8	24.1	21.6	83.7	78.9	126.3	126.3	126.1	OL	OL	OL	128.0	126.3	126.1	1972	1972	1971	1909	1910	1910	718	2027	2027	100.0	0.00	0.00	65.94	65.94		
1/28/2012	NA	17.9	25.3	24.2	39.0	90.9	77.7	91.3	84.0	86.5	113.9	113.5	112.7	124.1	113.7	113.6	1973	1973	1973	1915	1916	1915	724	2033	2033	99.8	0.00	0.04	18.23	18.27		
1/29/2012	NA	19.9	37.9	24.1	10.7	85.2	78.9	OL	OL	OL	126.3	126.2	126.1	126.6	126.3	126.0	1973	1973	1973	1936	1937	1937	745	2054	2054	100.0	0.00	0.00	69.67	69.67		
1/30/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1973	1973	1973	1936	1937	1937	745	2054	2054	OL	0.00	0.00	0.00	0.00		
1/31/2012	91.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1973	1973	1973	1936	1937	1937	745	2054	2054	OL	0.00	0.00	0.00	0.00		

Report Created: **February-01-12**

Total [ML]: **0.24 0.07 1189.63 1189.95**

Water Volume [%]

Untreated **0.0 %**
Below Dose **0.0 %**
To Dose **100.0 %**

- Notes:
1. UV Comparative Dose: 18.1 mJ/cm2
 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: **252.00**
License Number: **PWS-09-412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **February 2012**

Report Created: **Thursday, March 01, 2012**

Date	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume Treated To
	Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				
	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	
1/02/2012	0.00	0.00	42.46	42.46	0.00	0.06	42.44	42.50	0.00	0.00	57.44	57.44	0.00	0.00	0.00	0.00	0.00	1.53	29.29	30.82	0.00	0.00	54.19	54.19	0.00	1.59	225.81	227.40	99.30
2/02/2012	0.00	0.00	0.00	0.00	0.00	0.00	81.43	81.43	0.00	0.00	62.56	62.56	0.00	0.17	0.12	0.29	0.00	1.11	48.16	49.27	0.00	0.00	33.65	33.65	0.00	1.28	225.92	227.21	99.44
3/02/2012	0.00	0.00	0.62	0.62	0.00	0.00	83.76	83.76	0.00	0.00	57.80	57.80	0.00	0.00	0.00	0.00	0.00	0.41	39.99	40.40	0.00	0.06	42.94	43.00	0.00	0.47	225.11	225.58	99.79
4/02/2012	0.01	0.01	0.00	0.02	0.05	0.06	73.96	74.08	0.03	0.05	57.13	57.21	0.00	0.00	0.00	0.00	0.00	0.02	0.04	65.12	65.17	0.11	0.15	196.22	196.48	99.87			
5/02/2012	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	64.43	64.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.57	79.57	0.00	0.00	229.00	229.00	100.00
6/02/2012	0.00	0.00	0.00	0.00	0.00	0.00	85.01	85.01	0.00	0.00	63.70	63.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.99	78.99	0.00	0.00	227.70	227.70	100.00
7/02/2012	0.00	0.00	0.00	0.00	0.00	0.00	87.38	87.38	0.00	0.04	60.35	60.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.55	76.55	0.00	0.04	224.28	224.33	99.98
8/02/2012	0.00	0.04	57.21	57.25	0.00	0.00	30.17	30.17	0.00	0.00	59.52	59.52	0.00	0.17	0.08	0.25	0.00	0.00	1.39	1.39	0.00	0.00	75.72	75.72	0.00	0.21	224.09	224.30	99.91
9/02/2012	0.00	0.00	47.32	47.32	0.00	0.00	36.88	36.88	0.00	0.00	56.46	56.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.44	84.44	0.00	0.00	225.11	225.11	100.00
10/02/2012	0.00	0.00	0.00	0.00	0.00	0.00	85.25	85.25	0.00	0.00	55.11	55.11	0.00	0.17	0.07	0.24	0.00	0.39	0.00	0.39	0.00	0.00	84.35	84.35	0.00	0.56	224.78	225.33	99.75
11/02/2012	0.00	0.00	16.26	16.26	0.00	0.00	86.17	86.17	0.00	0.05	37.89	37.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.18	84.18	0.00	0.05	224.50	224.55	99.98
12/02/2012	0.00	0.00	55.15	55.15	0.00	0.00	80.22	80.22	0.00	0.03	0.75	0.78	0.00	0.00	0.08	0.08	0.00	0.02	6.11	6.13	0.00	0.00	80.67	80.67	0.00	0.05	222.99	223.04	99.98
13/02/2012	0.00	0.00	66.91	66.91	0.00	0.00	49.54	49.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.22	23.67	23.98	0.00	0.00	83.38	83.38	0.09	0.22	223.50	223.82	99.86
14/02/2012	0.00	0.00	84.23	84.23	0.00	0.00	0.00	0.00	0.00	0.00	15.47	15.47	0.00	0.00	18.51	18.51	0.06	0.06	72.40	72.51	0.00	0.00	31.74	31.74	0.06	0.06	222.35	222.47	99.95
15/02/2012	0.00	0.00	65.39	65.39	0.04	0.04	18.84	18.91	0.00	0.00	28.00	28.00	0.02	0.02	28.84	28.89	0.00	0.00	60.13	60.13	0.01	0.01	18.37	18.40	0.08	0.08	219.57	219.72	99.93
16/02/2012	0.00	0.00	84.52	84.52	0.00	0.00	0.00	0.00	0.00	0.00	60.35	60.35	0.00	0.00	1.37	1.37	0.00	0.00	39.08	39.08	0.00	0.00	37.61	37.61	0.00	0.00	222.92	222.92	100.00
17/02/2012	0.00	0.00	79.46	79.46	0.00	0.00	0.00	0.00	0.00	0.00	35.40	35.40	0.00	0.00	26.96	26.96	0.00	0.00	0.00	0.00	0.00	0.00	84.85	84.85	0.00	0.00	226.66	226.66	100.00
18/02/2012	0.00	0.00	22.06	22.06	0.00	0.00	61.81	61.81	0.00	0.00	0.00	0.00	0.00	0.00	59.46	59.46	0.00	0.00	0.00	0.00	0.00	0.00	84.57	84.57	0.00	0.00	227.90	227.90	100.00
19/02/2012	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	40.42	40.42	0.00	0.04	18.28	18.32	0.00	0.00	0.00	0.00	0.00	0.00	84.99	84.99	0.00	0.04	228.68	228.72	99.98
20/02/2012	0.00	0.00	54.23	54.23	0.00	0.00	28.18	28.18	0.00	0.00	54.65	54.65	0.00	0.00	0.00	0.00	0.00	0.00	55.63	55.63	0.00	0.00	28.43	28.43	0.00	0.00	221.11	221.11	100.00
21/02/2012	0.00	0.00	63.62	63.62	0.00	0.00	57.85	57.85	0.03	0.03	15.28	15.33	0.00	0.00	0.22	0.22	0.00	0.00	24.97	24.97	0.00	0.00	60.06	60.06	0.03	0.03	221.99	222.04	99.98
22/02/2012	0.00	0.00	26.41	26.41	0.00	0.00	82.77	82.77	0.00	0.00	0.00	0.00	0.00	0.00	27.49	27.49	0.00	0.00	0.00	0.00	0.00	0.00	83.64	83.64	0.00	0.00	220.32	220.32	100.00
23/02/2012	0.00	0.00	57.48	57.48	0.00	0.00	25.33	25.33	0.00	0.00	36.84	36.84	0.00	0.00	16.02	16.02	0.00	0.00	4.48	4.48	0.00	0.00	79.89	79.89	0.00	0.00	220.04	220.04	100.00
24/02/2012	0.00	0.00	75.48	75.48	0.00	0.00	23.38	23.38	0.00	0.00	17.41	17.41	0.00	0.00	22.30	22.30	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	223.57	223.57	100.00
25/02/2012	0.00	0.00	55.01	55.01	0.00	0.00	80.45	80.45	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	84.61	84.61	0.00	0.00	220.07	220.07	100.00	
26/02/2012	0.00	0.00	49.50	49.50	0.00	0.00	69.97	69.97	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	75.80	75.80	0.00	0.00	195.27	195.27	100.00	
27/02/2012	0.00	0.00	53.58	53.58	0.00	0.00	53.34	53.34	0.00	0.00	9.30	9.30	0.00	0.10	0.10	0.20	0.00	0.20	6.79	6.99	0.00	0.00	70.42	70.42	0.00	0.30	193.52	193.82	99.85
28/02/2012	0.00	0.00	80.84	80.84	0.00	0.00	0.00	0.00	0.00	0.00	60.79	60.79	0.00	0.00	0.00	0.00	0.00	0.39	55.85	56.24	0.00	0.00	0.00	0.00	0.00	0.39	197.48	197.86	99.80
29/02/2012	0.00	0.00	69.16	69.16	0.00	0.00	6.71	6.71	0.00	0.00	43.28	43.28	0.00	0.00	3.83	3.83	0.00	0.00	68.79	68.79	0.00	0.00	5.22	5.22	0.00	0.00	197.01	197.01	100.00
0.01 0.05 1206.92 1206.98 0.09 0.15 1500.84 1501.09 0.06 0.19 1050.31 1050.56 0.02 0.67 223.73 224.42 0.15 4.33 536.70 541.18 0.03 0.11 1838.96 1839.10 0.37 5.52 6357.47 6363.35																													

Water Volume [%]:

Untreated: 0.01 %
Below Dose 0.09 %
To Dose 99.91 %

Submitted By (Print): D.Minor

Signature: Original signed by D.Minor



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: **252.00**
License Number: **PWS-09-412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **February 2012**

Report Created: **Thursday, March 01, 2012**

Reactor: **UVR-100A**

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated	Daily Totals				
	%	mJ/cm²			MLD			W/m²									Hours										to Validate	Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3			Untreated	Below Dose	To Dose	Total
1/02/2012	91.3	0.0	83.6	24.1	0.0	91.0	84.7	85.9	85.8	108.7	134.8	125.9	125.9	131.4	125.7	131.6	1568	3700	4759	1360	3839	3839	81	189	3313	100.00	0.00	0.00	42.46	42.46	
2/02/2012	93.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
3/02/2012	93.1	0.0	89.7	26.2	0.0	57.8	52.3	57.6	70.7	103.0	120.2	63.7	74.4	97.8	55.7	107.9	1568	3700	4760	1360	3839	3839	82	190	3313	100.00	0.00	0.00	0.62	0.62	
4/02/2012	NA	0.0	97.8	47.0	0.0	13.4	9.0	64.9	67.8	97.8	123.0	70.2	75.2	105.6	57.5	100.8	1568	3700	4760	1360	3839	3840	82	190	3313	0.00	0.01	0.01	0.00	0.00	
5/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
6/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
7/02/2012	92.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
8/02/2012	92.4	17.7	70.1	24.2	5.2	92.9	87.4	88.6	88.8	91.9	122.2	88.7	88.9	108.3	88.7	107.4	1584	3716	4775	1376	3855	3855	98	206	3329	99.93	0.00	0.04	57.21	57.25	
9/02/2012	92.0	0.0	47.7	24.2	0.0	99.9	83.5	84.8	85.0	94.9	125.4	85.2	85.1	111.3	84.9	104.0	1598	3729	4789	1390	3869	3869	111	219	3343	100.00	0.00	0.00	47.32	47.32	
10/02/2012	91.7	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
11/02/2012	NA	0.0	82.4	24.3	0.0	59.6	57.4	61.1	70.4	81.5	109.9	86.6	88.4	97.3	86.4	94.6	1599	3731	4791	1397	3876	3876	118	226	3350	100.00	0.00	0.00	16.26	16.26	
12/02/2012	NA	19.5	25.2	24.2	42.9	59.5	55.1	OL	OL	OL	108.8	89.0	89.0	103.6	88.9	92.2	OL	OL	OL	1421	3900	3900	142	250	3374	100.00	0.00	0.00	55.15	55.15	
13/02/2012	NA	18.2	26.4	24.2	49.4	103.8	66.9	83.0	82.9	83.3	120.4	88.8	88.9	110.5	88.8	102.4	1609	3740	4800	1445	3924	3924	166	274	3398	100.00	0.00	0.00	66.91	66.91	
14/02/2012	92.2	18.0	25.8	24.1	58.7	90.0	84.3	85.6	85.8	85.9	133.9	85.7	85.7	113.7	85.6	108.3	1633	3764	4824	1469	3948	3948	190	298	3422	100.00	0.00	0.00	84.23	84.23	
15/02/2012	92.6	0.0	93.2	24.2	0.0	90.0	83.5	85.2	85.6	85.8	130.9	85.2	85.4	109.7	85.2	104.9	1651	3783	4843	1488	3966	3967	209	317	3440	100.00	0.00	0.00	65.39	65.39	
16/02/2012	92.2	17.9	34.3	24.1	36.6	95.7	84.5	85.7	85.5	85.6	131.7	104.8	105.0	121.1	105.1	115.7	1667	3799	4858	1512	3990	3991	233	341	3464	100.00	0.00	0.00	84.52	84.52	
17/02/2012	90.9	18.3	25.0	24.2	71.9	83.0	79.4	81.0	81.1	81.7	124.8	80.9	81.1	105.2	80.8	94.7	1691	3823	4882	1536	4014	4015	257	365	3488	100.00	0.00	0.00	79.46	79.46	
18/02/2012	NA	0.0	47.0	24.2	0.0	83.0	81.0	83.1	82.9	86.3	126.8	82.4	82.4	106.7	82.4	96.0	1697	3829	4889	1542	4021	4021	264	371	3495	100.00	0.00	0.00	22.06	22.06	
19/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
20/02/2012	NA	18.4	90.2	24.2	4.6	85.6	81.0	82.3	82.3	82.5	114.2	82.6	82.6	97.0	82.3	89.9	1713	3845	4905	1558	4037	4037	280	388	3511	100.00	0.00	0.00	54.23	54.23	
21/02/2012	NA	18.7	28.6	24.2	44.5	84.8	63.6	83.6	83.4	86.8	117.7	88.4	88.4	100.6	88.3	92.4	1721	3852	4912	1582	4061	4061	304	412	3535	100.00	0.00	0.00	63.62	63.62	
22/02/2012	93.0	0.0	31.6	24.2	0.0	58.2	55.2	OL	OL	OL	119.4	88.9	88.9	105.0	89.0	96.0	OL	OL	OL	1594	4073	4073	315	423	3547	100.00	0.00	0.00	26.41	26.41	
23/02/2012	93.0	13.5	91.8	24.2	3.4	85.5	81.7	83.0	83.0	83.1	124.5	83.2	83.3	104.8	83.0	97.5	1738	3869	4929	1611	4089	4090	332	440	3563	100.00	0.00	0.00	57.48	57.48	
24/02/2012	91.9	18.1	25.9	24.2	53.2	86.8	75.5	84.2	84.3	84.4	122.2	86.0	86.1	103.4	85.9	93.9	1755	3887	4946	1635	4113	4114	356	464	3587	100.00	0.00	0.00	75.48	75.48	
25/02/2012	NA	19.7	24.8	24.2	52.4	58.8	55.0	OL	OL	OL	117.5	88.8	88.8	103.5	88.7	90.8	OL	OL	OL	1659	4137	4138	380	488	3611	100.00	0.00	0.00	55.01	55.01	
26/02/2012	NA	19.7	26.5	24.2	47.6	55.7	49.5	OL	OL	OL	111.2	80.1	80.1	101.6	80.0	86.8	OL	OL	OL	1683	4161	4162	404	512	3635	100.00	0.00	0.00	49.50	49.50	
27/02/2012	NA	19.4	25.5	24.2	37.3	71.6	53.5	OL	OL	OL	110.6	86.6	86.7	102.2	86.7	91.9	OL	OL	OL	1707	4185	4186	428	536	3659	100.00	0.00	0.00	53.58	53.58	
28/02/2012	92.3	19.6	26.4	24.0	69.9	88.7	80.8	OL	OL	OL	129.4	129.4	129.4	129.4	129.3	129.3	OL	OL	OL	1731	4209	4210	452	560	3683	100.00	0.00	0.00	80.84	80.84	
29/02/2012	92.9	0.0	30.1	24.0	0.0	77.7	75.4	OL	OL	OL	120.9	120.7	120.7	120.8	120.7	120.7	OL	OL	OL	1753	4232	4232	474	582	3706	100.00	0.00	0.00	69.16	69.16	

Total [ML]: 0.01 0.05 1206.92 1206.98

Water Volume [%]:

Untreated: 0.00 %

Below Dose 0.00 %

To Dose 100.00 %

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm²
 2. UV Transmittance values determined via grab sample (average of branch 1 & 2)
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\02-February



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: **252.00**
License Number: **PWS-09-412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **February 2012**

Report Created: **Thursday, March 01, 2012**

Reactor: **UVR-200A**

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated	Daily Totals				
	%	mJ/cm²			MLD			W/m²									Hours										to Validate	Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3			Conditions	Untreated	Below Dose	To Dose
1/02/2012	91.3	0.0	116.2	24.2	0.0	95.2	84.8	146.4	133.4	133.0	241.8	134.8	134.7	169.7	83.7	85.9	3323	3322	3322	3884	1949	961	3313	3312	3313	99.86	0.00	0.06	42.44	42.50	
2/02/2012	93.0	17.8	34.8	24.1	44.1	103.5	81.4	160.2	128.9	128.3	250.1	130.0	130.5	158.4	82.4	81.8	3347	3346	3346	3908	1973	985	3314	3313	3314	100.00	0.00	0.00	81.43	81.43	
3/02/2012	93.1	21.6	25.5	24.1	57.9	93.3	83.8	166.1	133.9	134.1	247.3	134.3	134.0	OL	OL	OL	3371	3370	3370	3932	1997	1009	OL	OL	OL	100.00	0.00	0.00	83.76	83.76	
4/02/2012	NA	0.0	111.2	24.2	0.0	98.1	83.9	168.2	119.4	98.8	249.6	132.1	130.7	194.0	122.8	123.5	3377	3377	3376	3953	2018	1030	3334	3333	3334	99.85	0.05	0.06	73.96	74.08	
5/02/2012	NA	21.5	24.5	24.1	81.9	88.1	85.0	OL	OL	OL	266.9	136.4	136.0	222.0	135.9	135.9	OL	OL	OL	3977	2042	1054	3358	3357	3358	100.00	0.00	0.00	85.00	85.00	
6/02/2012	NA	21.6	24.6	24.1	82.1	87.6	85.0	OL	OL	OL	251.7	136.2	135.9	204.3	135.9	136.1	OL	OL	OL	4001	2066	1078	3382	3381	3382	100.00	0.00	0.00	85.01	85.01	
7/02/2012	92.3	20.9	30.7	24.1	38.6	102.8	87.4	OL	OL	OL	237.2	139.8	139.7	185.6	139.7	139.7	OL	OL	OL	4025	2090	1102	3406	3405	3406	100.00	0.00	0.00	87.38	87.38	
8/02/2012	92.4	0.0	35.1	24.1	0.0	92.1	84.8	OL	OL	OL	230.0	136.5	135.6	177.2	135.8	135.8	OL	OL	OL	4033	2099	1110	3414	3414	3414	100.00	0.00	0.00	30.17	30.17	
9/02/2012	92.0	21.0	107.9	24.3	5.1	91.4	84.9	124.7	87.4	86.3	218.2	95.3	86.3	169.8	86.2	86.2	3387	3387	3387	4044	2109	1121	3425	3424	3425	100.00	0.00	0.00	36.88	36.88	
10/02/2012	91.7	21.0	24.9	24.2	68.3	91.9	85.3	140.4	93.5	86.7	220.9	96.7	86.7	175.6	86.7	86.7	3411	3411	3411	4068	2133	1145	3449	3448	3449	100.00	0.00	0.00	85.25	85.25	
11/02/2012	NA	20.9	25.3	24.2	65.9	92.2	86.2	147.0	95.2	87.6	220.7	96.0	87.8	173.9	87.6	87.6	3435	3435	3435	4092	2157	1169	3473	3472	3473	100.00	0.00	0.00	86.17	86.17	
12/02/2012	NA	17.8	34.5	24.1	63.4	85.5	80.2	150.7	117.0	110.5	220.0	118.3	113.4	177.2	83.1	83.0	3459	3459	3459	4116	2181	1193	3482	3482	3482	100.00	0.00	0.00	80.22	80.22	
13/02/2012	NA	0.0	34.8	24.0	0.0	88.2	81.8	165.5	130.9	131.0	235.9	131.5	131.0	OL	OL	OL	3474	3474	3473	4130	2196	1207	OL	OL	OL	100.00	0.00	0.00	49.54	49.54	
14/02/2012	92.2	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00
15/02/2012	92.6	0.0	91.3	24.3	0.0	91.8	84.7	120.5	91.2	87.0	216.2	91.8	89.0	158.1	87.6	87.4	3479	3479	3479	4136	2201	1213	3487	3487	3488	99.61	0.04	0.04	18.84	18.91	
16/02/2012	92.2	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00
17/02/2012	90.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00
18/02/2012	NA	20.1	94.6	24.3	4.7	91.4	84.8	133.8	88.4	86.3	225.6	95.1	88.8	179.1	86.0	86.1	3497	3497	3496	4153	2219	1230	3505	3505	3505	100.00	0.00	0.00	61.81	61.81	
19/02/2012	NA	21.1	24.9	24.2	80.6	87.8	85.0	139.7	89.5	86.5	229.4	97.1	87.8	185.6	86.5	86.4	3521	3521	3520	4177	2243	1254	3529	3529	3529	100.00	0.00	0.00	85.00	85.00	
20/02/2012	NA	0.0	46.5	24.3	0.0	87.5	84.8	140.0	88.3	86.1	227.8	94.9	86.5	184.8	86.6	86.6	3529	3528	3528	4185	2251	1262	3537	3537	3537	100.00	0.00	0.00	28.18	28.18	
21/02/2012	NA	21.2	99.6	24.3	5.4	87.0	81.4	132.1	85.8	82.9	219.0	90.9	83.2	177.2	82.7	82.7	3546	3546	3545	4202	2268	1279	3554	3554	3554	100.00	0.00	0.00	57.85	57.85	
22/02/2012	93.0	21.1	24.9	24.3	64.8	89.4	82.8	152.9	89.3	84.2	234.2	99.6	86.1	191.3	84.3	84.2	3570	3570	3569	4226	2292	1303	3578	3578	3578	100.00	0.00	0.00	82.77	82.77	
23/02/2012	93.0	0.0	45.8	24.3	0.0	86.9	84.8	151.3	88.9	86.0	231.7	100.3	86.3	186.1	86.7	86.7	3577	3577	3576	4233	2299	1310	3585	3585	3585	100.00	0.00	0.00	25.33	25.33	
24/02/2012	91.9	19.5	92.3	24.3	5.3	86.3	83.4	122.7	85.1	85.0	214.6	89.1	84.7	174.8	84.7	84.6	3584	3584	3583	4240	2306	1317	3592	3592	3592	100.00	0.00	0.00	23.38	23.38	
25/02/2012	NA	21.1	24.8	24.2	77.0	86.4	80.4	142.9	82.3	81.9	219.5	95.2	81.8	186.7	81.9	82.0	3608	3608	3607	4264	2330	1341	3616	3616	3616	100.00	0.00	0.00	80.45	80.45	
26/02/2012	NA	18.2	34.4	24.1	67.9	80.4	70.0	142.8	110.9	110.3	213.7	111.8	110.9	185.8	74.3	74.4	3632	3632	3631	4288	2354	1365	3617	3617	3617	100.00	0.00	0.00	69.97	69.97	
27/02/2012	NA	0.0	40.3	24.4	0.0	72.9	69.7	141.6	75.4	71.5	209.2	90.9	72.5	168.7	71.2	71.0	3650	3650	3650	4307	2372	1384	3636	3636	3636	100.00	0.00	0.00	53.34	53.34	
28/02/2012	92.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00
29/02/2012	92.9	19.6	75.4	24.4	0.3	82.7	79.7	109.4	81.7	79.8	192.0	84.3	81.2	152.8	80.8	79.0	3652	3652	3652	4309	2374	1386	3638	3637	3638	100.00	0.00	0.00	6.71	6.71	

Total [ML]: 0.09 0.15 1500.84 1501.09

Water Volume [%]:

Untreated: 0.01 %
Below Dose 0.01 %
To Dose 99.98 %

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm²
 2. UV Transmittance values determined via grab sample (average of branch 1 & 2)
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: **252.00**
License Number: **PWS-09-412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **February 2012**

Report Created: **Thursday, March 01, 2012**

Reactor: **UVR-300A**

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity										UV Lamp Status									% Volume Treated	Daily Totals				
	%	mJ/cm²			MLD			W/m²										Hours										to Validate	Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated			Below Dose	To Dose	Total	
1/02/2012	91.3	21.1	35.2	24.2	25.5	64.3	57.5	92.6	92.5	92.8	122.9	92.5	92.5	OL	OL	OL	2369	2369	2369	2374	2375	2375	OL	OL	OL	100.00	0.00	0.00	57.44	57.44		
2/02/2012	93.0	17.9	34.6	24.2	27.4	94.3	62.6	100.6	98.7	100.5	128.4	100.3	100.3	73.2	63.4	63.0	2393	2393	2393	2398	2399	2399	2381	2381	2381	100.00	0.00	0.00	62.56	62.56		
3/02/2012	93.1	20.9	28.1	24.2	31.3	88.4	57.8	93.4	93.1	93.2	126.8	93.2	93.1	OL	OL	OL	2417	2417	2417	2422	2423	2423	OL	OL	OL	100.00	0.00	0.00	57.80	57.80		
4/02/2012	NA	0.0	89.6	24.3	0.0	84.8	61.0	96.9	95.5	96.6	126.1	98.6	96.7	99.3	98.3	98.1	2429	2428	2429	2436	2436	2436	2402	2402	2402	99.86	0.03	0.05	57.13	57.21		
5/02/2012	NA	21.4	25.8	24.2	62.1	66.8	64.4	OL	OL	OL	135.4	103.5	103.5	103.5	103.5	103.5	OL	OL	OL	2460	2460	2460	2426	2426	2426	100.00	0.00	0.00	64.43	64.43		
6/02/2012	NA	21.3	24.8	24.2	59.9	67.2	63.7	OL	OL	OL	126.9	102.4	102.4	102.3	102.3	102.3	OL	OL	OL	2484	2484	2484	2450	2450	2450	100.00	0.00	0.00	63.70	63.70		
7/02/2012	92.3	17.8	35.0	24.2	34.8	76.1	60.4	73.6	63.2	83.4	119.1	96.7	96.2	96.8	96.2	96.2	2429	2429	2430	2508	2508	2508	2474	2474	2474	99.93	0.00	0.04	60.35	60.39		
8/02/2012	92.4	18.0	33.5	24.3	47.6	95.1	59.5	64.7	63.7	74.7	115.9	90.0	86.5	90.3	86.4	85.8	2436	2436	2437	2532	2532	2532	2498	2498	2498	100.00	0.00	0.00	59.52	59.52		
9/02/2012	92.0	20.0	46.7	24.5	0.0	69.8	56.4	65.0	58.2	66.3	112.9	74.3	58.0	76.8	58.0	59.4	2460	2460	2461	2556	2556	2556	2522	2522	2522	100.00	0.00	0.00	56.46	56.46		
10/02/2012	91.7	18.1	29.4	24.5	26.2	96.5	55.1	66.4	56.9	63.3	108.4	72.0	56.5	74.7	56.8	57.5	2484	2484	2485	2580	2580	2580	2546	2546	2546	100.00	0.00	0.00	55.11	55.11		
11/02/2012	NA	0.0	43.2	22.4	0.0	71.7	52.8	66.4	54.6	61.4	106.2	70.7	48.5	73.6	54.5	56.4	2501	2501	2502	2597	2598	2597	2564	2563	2563	99.88	0.00	0.05	37.89	37.93		
12/02/2012	NA	0.0	38.3	24.1	0.0	86.4	41.5	69.5	63.3	65.9	70.2	66.8	33.0	77.7	63.9	64.7	2502	2502	2502	2597	2598	2598	2564	2564	2564	96.51	0.00	0.03	0.75	0.78		
13/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
14/02/2012	92.2	0.0	92.8	24.5	0.0	70.1	53.9	104.4	86.9	89.8	106.9	90.9	65.4	88.4	87.7	86.1	2509	2509	2509	2597	2598	2598	2571	2571	2571	100.00	0.00	0.00	15.47	15.47		
15/02/2012	92.6	18.1	87.2	24.4	3.4	72.7	62.5	100.8	100.3	100.3	100.9	86.8	67.2	100.5	100.1	99.8	2520	2520	2520	2598	2599	OL	2582	2582	2582	100.00	0.00	0.00	28.00	28.00		
16/02/2012	92.2	0.0	72.2	24.3	0.0	76.1	61.6	86.0	86.2	85.1	94.1	62.4	63.5	85.7	86.0	85.1	2543	2543	2544	2607	2608	2608	2606	2605	2605	100.00	0.00	0.00	60.35	60.35		
17/02/2012	90.9	0.0	32.6	24.4	0.0	66.5	62.6	64.1	64.1	64.1	92.7	64.3	64.1	64.2	64.2	64.1	2557	2557	2557	2621	2622	2621	2619	2619	2619	100.00	0.00	0.00	35.40	35.40		
18/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
19/02/2012	NA	16.6	49.8	24.4	4.5	62.9	58.9	60.7	60.6	60.1	81.6	60.5	60.7	62.3	60.5	60.7	2573	2573	2574	2637	2638	2638	2636	2635	2635	100.00	0.00	0.00	40.42	40.42		
20/02/2012	NA	20.7	27.3	24.5	38.7	63.5	54.6	56.4	56.4	56.2	84.5	56.3	56.3	68.8	65.9	56.2	2597	2597	2598	2661	2662	2662	2660	2659	2659	100.00	0.00	0.00	54.65	54.65		
21/02/2012	NA	0.0	30.8	24.5	0.0	56.7	52.7	54.7	54.7	54.3	92.7	54.7	54.7	80.3	73.0	55.7	2604	2604	2605	2668	2669	2669	2667	2666	2666	99.66	0.03	0.03	15.28	15.33		
22/02/2012	93.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
23/02/2012	93.0	19.8	60.6	24.6	4.8	57.0	52.8	54.7	54.5	54.4	97.2	84.8	54.9	92.8	72.4	59.7	2621	2621	2622	2685	2686	2685	2683	2683	2683	100.00	0.00	0.00	36.84	36.84		
24/02/2012	91.9	0.0	38.6	24.6	0.0	61.5	53.7	55.3	55.3	55.3	102.9	86.7	55.3	91.6	71.1	60.5	2629	2629	2629	2693	2694	2693	2691	2691	2691	100.00	0.00	0.00	17.41	17.41		
25/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
26/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00
27/02/2012	NA	18.3	58.0	24.5	2.9	49.3	39.2	63.1	62.8	61.9	73.8	52.8	52.4	89.6	68.9	63.0	2635	2634	2635	2693	2694	2694	2697	2697	2696	100.00	0.00	0.00	9.30	9.30		
28/02/2012	92.3	18.3	34.6	24.4	44.6	74.7	60.8	67.2	67.2	66.9	104.3	85.7	65.1	91.9	69.9	67.1	2659	2658	2659	2714	2714	2714	2721	2721	2720	100.00	0.00	0.00	60.79	60.79		
29/02/2012	92.9	0.0	27.7	24.3	0.0	51.4	46.9	76.0	76.1	76.0	OL	OL	OL	89.4	76.3	76.1	2681	2681	2681	OL	OL	OL	2743	2743	2743	100.00	0.00	0.00	43.28	43.28		

Total [ML]: 0.06 0.19 1050.31 1050.56

Water Volume [%]:

Untreated: 0.01 %
Below Dose 0.02 %
To Dose 99.98 %

Notes:

1. UV Comparative Dose: 18.1 mJ/cm²
2. UV Transmittance values determined via grab sample (average of branch 1 & 2)
3. NR - No Result
4. NA - Not Analyzed
5. OL - Off Line
6. NS - No sample taken due to plant shutdown

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: **252.00**
License Number: **PWS-09-412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **February 2012**

Report Created: **Thursday, March 01, 2012**

Reactor: **UVR-400A**

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity										UV Lamp Status										% Volume Treated	Daily Totals									
	%	mJ/cm²			MLD			W/m²										Hours											to Validate Conditions	Water Volume [ML]								
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose			To Dose	Total							
1/02/2012	91.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
2/02/2012	93.0	0.0	47.2	22.1	0.0	87.9	62.0	73.9	62.5	39.3	67.0	74.3	70.5	78.4	86.8	79.2	1852	1852	1851	1985	1985	1986	2029	1007	2028	41.98	0.00	0.17	0.12	0.29								
3/02/2012	93.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
4/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
5/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
6/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
7/02/2012	92.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
8/02/2012	92.4	0.0	38.0	19.1	0.0	79.9	53.6	64.3	46.2	28.7	56.4	67.0	59.2	62.9	76.3	67.7	1852	1852	1851	1985	1985	1986	2029	1007	2037	32.68	0.00	0.17	0.08	0.25								
9/02/2012	92.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
10/02/2012	91.7	0.0	31.3	20.4	0.0	66.6	44.5	52.7	39.4	26.9	48.7	61.6	55.0	60.5	75.0	61.4	1852	1852	1851	1985	1985	1986	2029	1007	2037	29.45	0.00	0.17	0.07	0.24								
11/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
12/02/2012	NA	0.0	32.3	22.1	0.0	41.9	31.2	50.3	28.1	24.4	42.0	63.0	49.6	58.0	71.7	60.7	1852	1852	1852	1985	1985	1986	2029	1007	2037	100.00	0.00	0.00	0.08	0.08								
13/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
14/02/2012	92.2	18.0	63.9	24.3	0.0	57.7	53.8	117.8	82.6	81.3	70.6	85.6	89.7	97.9	113.4	137.8	1860	1860	1860	1985	1986	1986	2037	1007	2037	100.00	0.00	0.00	18.51	18.51								
15/02/2012	92.6	0.0	45.3	24.5	0.0	56.5	52.3	85.0	63.9	62.4	92.2	58.6	55.9	80.8	92.9	101.3	1873	1873	1873	1996	1996	1996	2050	1020	2050	99.84	0.02	0.02	28.84	28.89								
16/02/2012	92.2	0.0	42.4	20.4	0.0	66.9	62.2	65.3	62.2	43.4	73.1	66.1	65.7	68.4	79.6	77.3	1874	1874	1874	1996	1997	1996	2051	1020	2050	100.00	0.00	0.00	1.37	1.37								
17/02/2012	90.9	20.8	57.3	24.4	0.0	65.0	61.7	63.3	63.0	63.0	67.5	63.6	63.5	64.1	93.6	76.5	1885	1884	1884	2007	2007	2007	2061	1031	2061	100.00	0.00	0.00	26.96	26.96								
18/02/2012	NA	20.3	29.6	24.4	35.4	65.4	59.4	61.2	61.1	61.0	66.2	61.1	61.1	65.2	96.6	80.2	1909	1908	1908	2031	2031	2031	2085	1055	2085	100.00	0.00	0.00	59.46	59.46								
19/02/2012	NA	0.0	37.8	21.7	0.0	63.5	58.0	59.6	59.5	50.5	65.1	59.5	59.5	64.9	94.6	87.3	1916	1916	1916	2038	2039	2039	2093	1063	2092	99.78	0.00	0.04	18.28	18.32								
20/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
21/02/2012	NA	0.0	36.5	23.6	0.0	55.0	33.8	51.8	37.8	28.6	51.9	51.5	47.2	58.5	80.5	73.9	1916	1916	1916	2039	2039	2039	2093	1063	2093	100.00	0.00	0.00	0.22	0.22								
22/02/2012	93.0	20.4	63.9	24.6	4.2	55.3	52.5	54.5	54.3	54.1	58.0	54.5	54.3	61.5	91.1	85.7	1929	1929	1929	2051	2052	2051	2106	1075	2105	100.00	0.00	0.00	27.49	27.49								
23/02/2012	93.0	0.0	32.3	24.6	0.0	55.8	52.6	54.1	54.1	54.0	57.7	54.1	54.1	62.6	79.2	88.5	1936	1936	1936	2058	2059	2059	2113	1083	2113	100.00	0.00	0.00	16.02	16.02								
24/02/2012	91.9	0.0	55.1	22.7	0.0	59.9	56.1	58.0	57.8	53.1	57.7	57.8	57.7	60.8	85.3	85.0	1946	1946	1945	2068	2069	2068	2123	1092	2122	100.00	0.00	0.00	22.30	22.30								
25/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
26/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
27/02/2012	NA	0.0	35.7	17.5	0.0	38.2	32.8	36.5	32.5	20.9	43.9	45.6	35.7	51.6	69.9	72.5	1946	1946	1946	2068	2069	2069	2123	1093	2122	49.47	0.00	0.10	0.10	0.20								
28/02/2012	92.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00								
29/02/2012	92.9	0.0	33.0	24.1	0.0	47.6	42.9	38.2	31.6	24.3	68.5	68.6	66.2	111.5	81.4	82.3	1947	OL	OL	2071	2071	2071	2125	1095	2125	100.00	0.00	0.00	3.83	3.83								
Total [ML]:																																			0.02	0.67	223.73	224.42

Water Volume [%]:

Untreated: 0.01 %
Below Dose 0.30 %
To Dose 99.69 %

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm²
 2. UV Transmittance values determined via grab sample (average of branch 1 & 2)
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: **252.00**
License Number: **PWS-09-412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **February 2012**

Report Created: **Thursday, March 01, 2012**

Reactor: **UVR-500A**

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity										UV Lamp Status										% Volume Treated	Daily Totals									
	%	mJ/cm²			MLD			W/m²										Hours											to Validate	Water Volume [ML]								
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose			To Dose	Total							
1/02/2012	91.3	0.0	38.8	23.4	0.0	89.1	84.9	86.3	86.3	264.8	422.0	86.4	86.2	155.1	86.9	86.4	3768	4229	1467	3432	916	5117	3414	371	1949	95.03	0.00	1.53	29.29	30.82								
2/02/2012	93.0	0.0	85.4	24.0	0.0	92.1	83.0	84.4	84.2	299.5	99.5	90.4	84.2	157.3	84.8	84.3	3782	4243	1482	3446	930	5132	3429	385	1964	97.74	0.00	1.11	48.16	49.27								
3/02/2012	93.1	0.0	25.8	23.9	0.0	90.0	83.5	85.2	85.0	280.3	87.1	87.1	84.9	161.5	85.4	85.0	3794	4255	1493	3458	942	5143	3440	397	1975	98.99	0.00	0.41	39.99	40.40								
4/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
5/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
6/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
7/02/2012	92.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
8/02/2012	92.4	0.0	45.9	21.4	0.0	78.7	73.6	70.8	55.5	153.6	556.6	74.2	70.1	92.4	75.8	75.6	3794	4255	1494	3459	942	5144	3441	397	1976	100.00	0.00	0.00	1.39	1.39								
9/02/2012	92.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
10/02/2012	91.7	0.0	4.2	2.3	0.0	82.8	42.2	73.0	71.3	223.3	181.4	120.2	194.4	109.9	104.5	121.0	3795	4256	1494	3459	943	5144	3441	398	1976	0.00	0.00	0.39	0.00	0.39								
11/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
12/02/2012	NA	0.0	29.8	24.4	0.0	37.9	34.8	58.9	57.1	237.2	187.1	98.1	194.4	133.5	75.6	139.4	3799	4260	1499	3459	943	5144	3445	402	1981	99.60	0.00	0.02	6.11	6.13								
13/02/2012	NA	0.0	94.6	24.4	0.0	85.5	58.4	87.2	69.6	247.8	204.8	98.3	97.1	142.6	96.3	118.7	3780	4260	1499	3469	953	5154	3455	412	1991	98.69	0.09	0.22	23.67	23.98								
14/02/2012	92.2	0.0	33.7	24.3	38.9	95.1	72.4	85.8	85.5	257.0	154.8	85.9	85.6	142.9	85.9	88.0	3815	4275	1514	3493	977	5178	3479	436	2015	99.84	0.06	0.06	72.40	72.51								
15/02/2012	92.6	0.0	84.4	24.4	0.0	87.0	79.1	80.9	80.5	202.6	118.4	81.2	81.3	127.7	80.9	81.0	3833	4294	1532	3511	995	5197	3498	454	2033	100.00	0.00	0.00	60.13	60.13								
16/02/2012	92.2	0.0	40.2	24.4	0.0	79.5	75.8	77.2	77.1	175.0	112.6	77.2	77.1	134.7	77.5	77.5	3845	4306	1545	3524	1007	5209	3510	467	2045	100.00	0.00	0.00	39.08	39.08								
17/02/2012	90.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
18/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
19/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
20/02/2012	NA	17.4	56.2	24.2	4.2	87.1	83.6	84.9	84.7	122.1	85.4	85.1	85.2	120.9	84.8	85.0	3861	4322	1561	3540	1023	5225	3526	483	2062	100.00	0.00	0.00	55.63	55.63								
21/02/2012	NA	0.0	31.8	24.3	0.0	87.1	84.0	85.3	85.2	118.7	87.6	85.5	85.5	139.6	85.9	86.1	3869	4329	1568	3547	1031	5232	3533	490	2069	100.00	0.00	0.00	24.97	24.97								
22/02/2012	93.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
23/02/2012	93.0	0.0	52.2	23.4	0.0	87.0	63.9	65.0	54.8	100.3	79.4	71.8	78.4	106.7	72.5	81.0	3870	4331	1570	3549	1032	5234	3535	492	2070	100.00	0.00	0.00	4.48	4.48								
24/02/2012	91.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
25/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
26/02/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00							
27/02/2012	NA	14.3	27.0	24.6	3.4	73.8	30.7	32.6	31.3	64.7	56.6	33.0	48.2	116.0	35.1	82.6	3876	4337	1575	3554	1038	5239	3541	497	2076	97.14	0.00	0.20	6.79	6.99								
28/02/2012	92.3	15.3	25.7	24.4	38.3	77.5	56.2	58.8	57.7	65.9	67.6	58.3	60.3	145.5	58.4	93.8	3900	4361	1599	3578	1062	5263	3565	521	2100	99.31	0.00	0.39	55.85	56.24								
29/02/2012	92.9	0.0	32.6	24.3	0.0	77.9	74.1	75.5	75.5	75.8	76.7	75.5	75.5	158.5	75.7	83.4	3922	4383	1621	3600	1084	5286	3587	543	2122	100.00	0.00	0.00	68.79	68.79								
Total [ML]:																																			0.15	4.33	536.70	541.18

Water Volume [%]:

Untreated: 0.03 %
Below Dose 0.80 %
To Dose 99.17 %

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm²
 2. UV Transmittance values determined via grab sample (average of branch 1 & 2)
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: **252.00**
License Number: **PWS-09-412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **February 2012**

Report Created: **Thursday, March 01, 2012**

Reactor: **UVR-600A**

Date	Transmittance %	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]				
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total	
1/02/2012	91.3	17.7	91.8	24.1	5.7	90.5	84.9	84.8	84.0	84.7	133.5	133.1	133.1	135.0	133.1	133.1	1974	1974	1974	1951	1952	1952	761	2069	2069	100.00	0.00	0.00	54.19	54.19	
2/02/2012	93.0	0.0	93.9	24.2	0.0	100.5	82.9	84.0	82.3	83.3	130.6	129.3	130.4	132.8	130.2	129.2	1975	1975	1974	1961	1962	1962	770	2079	2079	100.00	0.00	0.00	33.65	33.65	
3/02/2012	93.1	15.9	93.1	24.1	8.7	89.4	84.9	83.9	80.4	83.4	134.8	134.2	134.3	135.6	134.3	134.3	1975	1975	1975	1973	1974	1974	783	2091	2091	99.86	0.00	0.06	42.94	43.00	
4/02/2012	NA	0.0	94.4	24.3	0.0	87.3	76.1	120.9	120.8	120.6	122.3	121.6	122.0	125.1	122.3	121.7	1985	1985	1985	1985	1986	1985	803	2112	2112	99.92	0.02	0.04	65.12	65.17	
5/02/2012	NA	18.8	33.5	24.2	77.0	82.2	79.6	108.7	80.8	83.0	118.6	110.4	118.3	125.9	112.4	105.2	1998	1997	1997	2009	2010	2009	827	2136	2136	100.00	0.00	0.00	79.57	79.57	
6/02/2012	NA	18.4	25.4	24.3	74.7	82.4	79.0	111.2	80.3	80.8	101.1	80.6	95.2	115.7	83.0	80.3	2022	2021	2021	2033	2034	2033	851	2160	2160	100.00	0.00	0.00	78.99	78.99	
7/02/2012	92.3	18.4	34.3	24.3	45.0	101.1	76.5	92.0	77.9	77.9	94.4	78.1	83.6	108.8	78.4	77.9	2046	2045	2045	2057	2058	2057	875	2184	2184	100.00	0.00	0.00	76.55	76.55	
8/02/2012	92.4	0.0	92.0	24.3	0.0	81.9	78.1	81.0	79.4	79.4	91.9	79.4	79.5	106.2	79.4	79.4	2069	2069	2069	2080	2081	2081	898	2207	2207	100.00	0.00	0.00	75.72	75.72	
9/02/2012	92.0	18.3	51.2	24.2	18.8	93.5	84.5	87.8	85.8	85.8	89.9	85.8	86.0	103.4	85.8	85.7	2093	2093	2093	2104	2105	2105	922	2231	2231	100.00	0.00	0.00	84.44	84.44	
10/02/2012	91.7	0.0	57.1	24.2	0.0	91.6	84.9	86.6	86.3	86.4	86.9	86.4	86.3	98.8	86.2	84.8	2117	2117	2116	2128	2129	2128	946	2255	2255	100.00	0.00	0.00	84.35	84.35	
11/02/2012	NA	18.4	25.3	24.1	74.8	93.6	84.2	87.3	85.5	85.5	85.9	85.5	85.5	98.6	85.5	78.5	2141	2141	2140	2152	2153	2152	970	2279	2279	100.00	0.00	0.00	84.18	84.18	
12/02/2012	NA	18.4	48.4	24.1	0.0	88.2	80.7	92.5	82.2	82.1	85.8	82.7	84.1	98.4	83.8	78.1	2165	2165	2164	2176	2177	2176	994	2303	2303	100.00	0.00	0.00	80.67	80.67	
13/02/2012	NA	18.3	27.4	24.1	59.0	89.7	83.4	98.9	84.9	84.7	88.5	84.8	85.7	103.6	85.0	83.8	2189	2189	2188	2200	2201	2200	1018	2327	2327	100.00	0.00	0.00	83.38	83.38	
14/02/2012	92.2	0.0	94.8	24.6	0.0	88.3	84.7	88.8	86.3	86.3	87.9	86.3	86.4	103.8	86.4	82.9	2198	2198	2198	2209	2210	2210	1027	2336	2336	100.00	0.00	0.00	31.74	31.74	
15/02/2012	92.6	0.0	94.8	24.7	0.0	86.4	80.0	130.2	129.4	129.4	112.3	95.9	112.8	138.3	129.3	127.0	2203	2203	2203	2209	2210	2210	1033	2342	2341	99.84	0.01	0.01	18.37	18.40	
16/02/2012	92.2	18.0	93.5	24.2	5.0	103.0	77.5	118.0	116.0	116.5	88.4	82.7	85.4	120.0	116.1	115.9	2215	2215	2215	2212	2213	2212	1045	2353	2353	100.00	0.00	0.00	37.61	37.61	
17/02/2012	90.9	18.1	25.0	24.2	77.6	87.7	84.9	86.5	86.1	86.1	86.2	86.1	86.5	86.1	86.2		2239	2239	2239	2236	2237	2236	1069	2377	2377	100.00	0.00	0.00	84.85	84.85	
18/02/2012	NA	18.3	26.1	24.2	61.2	88.7	84.6	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9		2263	2263	2263	2260	2261	2260	1093	2401	2401	100.00	0.00	0.00	84.57	84.57	
19/02/2012	NA	18.3	25.2	24.2	81.5	88.8	85.0	86.3	86.3	86.3	86.3	86.3	86.3	86.3	86.3		2287	2287	2287	2284	2285	2284	1117	2425	2425	100.00	0.00	0.00	84.99	84.99	
20/02/2012	NA	0.0	31.0	24.2	0.0	88.5	84.6	85.9	85.9	85.9	86.0	85.9	86.0	86.5	86.0	85.9	2295	2295	2295	2292	2293	2292	1125	2433	2433	100.00	0.00	0.00	28.43	28.43	
21/02/2012	NA	18.5	79.3	24.2	2.0	88.4	85.1	86.3	86.2	86.3	86.3	86.7	88.9	86.4	86.4		2312	2312	2312	2309	2310	2309	1142	2450	2450	100.00	0.00	0.00	60.06	60.06	
22/02/2012	93.0	18.2	25.2	24.2	68.9	87.3	83.6	84.9	84.9	84.9	92.9	84.9	107.3	116.2	90.9	84.9	2336	2336	2336	2333	2334	2333	1166	2474	2474	100.00	0.00	0.00	83.64	83.64	
23/02/2012	93.0	0.0	89.1	24.3	0.0	88.2	83.2	84.8	84.5	84.9	97.5	84.9	106.1	122.9	88.1	84.6	2359	2359	2359	2356	2357	2356	1189	2498	2497	100.00	0.00	0.00	79.89	79.89	
24/02/2012	91.9	18.4	25.1	24.2	79.7	89.7	85.0	86.3	86.3	86.3	97.3	86.3	98.7	120.1	86.5	86.3	2383	2383	2383	2380	2381	2380	1213	2522	2521	100.00	0.00	0.00	85.00	85.00	
25/02/2012	NA	18.2	25.0	24.2	81.6	87.3	84.6	87.6	85.9	85.9	98.8	85.9	99.3	122.9	86.6	85.9	2407	2407	2407	2404	2405	2404	1237	2546	2545	100.00	0.00	0.00	84.61	84.61	
26/02/2012	NA	17.9	25.1	24.2	73.1	86.3	75.8	85.0	77.2	77.2	105.6	91.2	104.9	119.3	97.0	91.1	2424	2424	2424	2428	2429	2428	1261	2570	2569	100.00	0.00	0.00	75.80	75.80	
27/02/2012	NA	0.0	38.5	24.1	0.0	78.2	70.6	OL	OL	OL	116.2	113.2	115.3	120.5	113.2	113.0	OL	OL	OL	2452	2453	2452	1285	2594	2593	100.00	0.00	0.00	70.42	70.42	
28/02/2012	92.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00
29/02/2012	92.9	18.8	67.9	24.4	4.0	73.4	70.4	72.1	70.8	70.7	92.2	72.7	78.5	101.3	81.9	72.4	2426	2426	2426	2454	2454	2454	1287	2595	2595	100.00	0.00	0.00	5.22	5.22	

Total [ML]: 0.03 0.11 1838.96 1839.10

Water Volume [%]:

Untreated: 0.00 %
Below Dose 0.01 %
To Dose 99.99 %

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm²
 2. UV Transmittance values determined via grab sample (average of branch 1 & 2)
 3. NR - No Result
 4. NA - Not Analyzed
 5. OL - Off Line
 6. NS - No sample taken due to plant shutdown

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\02-February

UV Monitoring Report – Monthly



Water System Code: 252.00
Licence Number: PWS-09-412 RR

Report Period: March 2012

Date	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]						
	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			
3/1/2012	0.00	0.00	0.00	0 00	0.00	0.00	81.49	81.49	0.00	0 00	2.01	2.01	0.00	0.00	44.35	44.35	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	72.67	72.67	0.00	0.00	200.52	200.52	100.0
3/2/2012	0.00	0.00	0.00	0 00	0.00	0.00	84.85	84.85	0.00	0 00	0.00	0.00	0.00	0.00	57.11	57.11	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	70.14	70.14	0.00	0.00	212.10	212.10	100.0
3/3/2012	0.00	0.23	0.02	0 25	0.00	0.00	85 07	85.07	0.00	0 00	0.00	0.00	0.00	0.04	4.32	4.36	0.00	0 00	44.00	44.00	0.00	0.00	84.28	84.28	0.00	0.27	217.69	217.96	99.9		
3/4/2012	0.00	0.00	0.00	0 00	0.00	0.00	85 00	85.00	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	47.97	47.97	0 00	0.00	84.99	84.99	0.00	0.00	217.97	217.97	100.0		
3/5/2012	0.00	0.00	0.00	0 00	0.00	0.00	84.98	84.98	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	48.02	48.02	0 00	0.00	84.99	84.99	0.00	0.00	217.98	217.98	100.0		
3/6/2012	0.01	0.00	19.08	19 09	0.00	0.00	66.13	66.13	0.00	0 00	13.16	13.16	0.00	0.00	0.00	0.00	0.00	0 00	53.98	53.98	0 00	0.00	66.47	66.47	0.01	0.00	218.83	218.83	100.0		
3/7/2012	0.00	0.00	84.95	84 95	0.00	0.00	0 00	0.00	0.00	0 00	60.55	60.55	0.00	0.00	0.00	0.00	0.00	0 00	75.66	75.66	0 00	0.00	0.00	0.00	0.00	0.00	221.17	221.17	100.0		
3/8/2012	0.00	0.06	33.95	34 01	0.00	0.00	50.84	50.84	0.00	0 00	59.40	59.40	0.00	0.15	0.61	0.75	0.00	0 00	64.89	64.89	0 00	0.00	10.24	10.24	0.00	0.21	219.93	220.14	99.9		
3/9/2012	0.00	0.00	20.65	20 65	0.00	0.00	65.70	65.70	0.00	0 00	49.54	49.54	0.00	0.56	9.68	10.24	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	74.97	74.97	0.00	0.56	220.54	221.10	99.7
3/10/2012	0.00	0.00	0.00	0 00	0.00	0.00	84.70	84.70	0.00	0 00	17.97	17.97	0.00	0.00	44.72	44.72	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	75.30	75.30	0.00	0.00	222.69	222.69	100.0
3/11/2012	0.00	0.00	0.00	0 00	0.00	0.00	84.93	84.93	0.00	0 00	61.57	61.57	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	77.78	77.78	0.00	0.00	224.28	224.28	100.0
3/12/2012	0.00	0.00	56.27	56 27	0.00	0.00	28.73	28.73	0.00	0 00	33.67	33.67	0.00	0.09	29.18	29.28	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	77.03	77.03	0.00	0.09	224.88	224.97	100.0
3/13/2012	0.00	0.00	32.52	32 52	0.00	0.03	52.37	52.40	0.00	0 00	30.19	30.19	0.00	0.00	32.69	32.70	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	77.11	77.11	0.00	0.03	224.89	224.92	100.0
3/14/2012	0.00	0.00	0.00	0 00	0.00	0.00	84.89	84.89	0.07	0 00	33.97	34.04	0.00	0.13	28.71	28.84	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	77.11	77.11	0.07	0.13	224.68	224.88	99.9
3/15/2012	0.00	0.00	25.05	25 05	0.00	0.00	59.69	59.69	0.00	0 00	13.90	13.90	0.00	0.00	49.60	49.60	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	76.24	76.24	0.00	0.00	224.48	224.49	100.0
3/16/2012	0.00	0.00	28.48	28.48	0.00	0.00	56.48	56.48	0.00	0 00	0.00	0.00	0.00	0.00	64.17	64.17	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	75.87	75.87	0.00	0.00	224.99	224.99	100.0
3/17/2012	0.00	0.00	77.25	77 25	0.03	0.00	1.96	2.00	0.00	0 00	63.74	63.74	0.00	0.24	1.71	1.95	0.00	0 03	0.80	0.82	0.00	0.00	79.02	79.02	0.03	0.27	224.48	224.78	99.9		
3/18/2012	0.00	0.33	81.92	82 25	0.00	0.00	0 00	0.00	0.00	0 00	62.93	62.93	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	79.73	79.73	0.00	0.33	224.59	224.92	99.9
3/19/2012	0.00	0.00	69.96	69 96	0.00	0.00	0 00	0.00	0.00	0 00	70.00	70.00	0.00	0.00	0.03	0.03	0.00	0 00	32.42	32.42	0 00	0.00	52.57	52.57	0.00	0.00	224.98	224.98	100.0		
3/20/2012	0.00	0.01	62.04	62 05	0.08	0.02	0.10	0.20	0.13	0 00	31.98	32.11	0.00	0.00	36.05	36.06	0.00	0 00	45.77	45.77	0 00	0.00	48.46	48.46	0.21	0.03	224.41	224.64	99.9		
3/21/2012	0.00	0.00	36.06	36 06	0.00	0.00	0 00	0.00	0.00	0 00	31.84	31.84	0.00	0.00	72.17	72.17	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	84.97	84.97	0.00	0.00	225.03	225.03	100.0
3/22/2012	0.00	0.00	52.89	52 89	0.00	0.00	0 00	0.00	0.00	0 00	59.63	59.63	0.00	0.00	22.95	22.95	0.00	0 02	2.76	2.78	0.00	0.00	84.48	84.48	0.00	0.02	222.71	222.73	100.0		
3/23/2012	0.00	0.00	70.96	70 96	0.00	0.00	0 00	0.00	0.00	0 00	64.24	64.24	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	83.98	83.98	0.00	0.00	219.18	219.18	100.0
3/24/2012	0.00	0.00	74.91	74 91	0.00	0.00	0 00	0.00	0.00	0 00	66.94	66.94	0.00	0.00	0.00	0.00	0.00	0 00	40.38	40.38	0 00	0.00	36.10	36.10	0.00	0.00	218.34	218.34	100.0		
3/25/2012	0.00	0.00	74.73	74.73	0.00	0.00	0 00	0.00	0.00	0 00	60.98	60.98	0.00	0.00	0.00	0.00	0.00	0 00	75.80	75.80	0.00	0.00	0.00	0.00	0.00	0.00	211.52	211.52	100.0		
3/26/2012	0.00	0.00	69.98	69 98	0.00	0.00	16.77	16.77	0.00	0 00	45.58	45.58	0.00	0.00	0.00	0.00	0.00	0 00	81.10	81.10	0 00	0.00	0.00	0.00	0.00	0.00	213.43	213.43	100.0		
3/27/2012	0.04	0.00	10.52	10 56	0.06	0.00	14.70	14.76	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0 00	15.78	15.82	0.00	0.00	0.00	0.00	0.14	0.00	41.00	41.15	99.7		
3/28/2012	0.00	0.00	39.22	39 22	0.00	0.00	17.71	17.71	0.00	0 00	20.84	20.84	0.00	0.00	0.00	0.00	0.00	0 00	17.99	17.99	0.00	0.00	30.36	30.36	0.00	0.00	126.13	126.13	100.0		
3/29/2012	0.00	0.00	79.71	79.71	0.00	0.00	0.52	0.52	0.00	0 00	56.48	56.48	0.00	0.00	33.55	33.55	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00	48.63	48.63	0.00	0.00	218.89	218.90	100.0
3/30/2012	0.00	0.00	81.03	81 03	0.00	0.00	0 00	0.00	0.00	0 00	56.78	56.78	0.00	0.00	44.71	44.71	0.00	0 05	35.20	35.25	0.00	0.00	0.00	0.00	0.00	0.00	217.72	217.76	100.0		
3/31/2012	0.00	0.00	74.70	74.70	0.00	0.00	0 00	0.00	0.00	0 00	58.26	58.26	0.00	0.00	0.00	0.00	0.00	0 00	81.00	81.00	0.00	0.00	0.00	0.00	0.00	0.00	213.95	213.95	100.0		

Total [ML] 0.05 0.63 1256.84 1257.52 0.17 0.05 1107.64 1107.86 0.20 0.00 1126.15 1126.35 0.01 1.21 576.31 577.53 0.04 0.10 763.53 763.67 0.00 0.00 1713.49 1713.49 0.48 1.98 6543.96 6546.42

Report Created: Monday, April 02, 2012

Water Volume [%]:

Untreated 0.01%
Below Dose 0.03%
To Dose 99.96%

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\03-2012

Notes 1. UV Comparative Dose: 18.1 mj/cm2

Submitted By (Print): D Minor

Signature: Original signed by D.Minor

UV Monitoring Report – Monthly



Water System Code: 252.00
Licence Number: PWS-09-412 RR

Reactor: UVR-100A
Report Period: March 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours										Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated		Below Dose	To Dose	Total	
3/1/2012	93.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1755	3887	4946	1753	4232	4232	474	582	3706	OL	0.00	0.00	0.00	0.00
3/2/2012	93.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1755	3887	4946	1753	4232	4232	474	582	3706	OL	0.00	0.00	0.00	0.00
3/3/2012	NA	13.6	20.1	15.0	37.3	59.0	52.1	28.1	41.4	32.3	136.7	85.0	80.0	130.1	81.5	102.0	1755	3887	4947	1753	4232	4232	474	582	3706	6.8	0.00	0.23	0.02	0.20
3/4/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1755	3887	4947	1753	4232	4232	474	582	3706	OL	0.00	0.00	0.00	0.00
3/5/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1755	3887	4947	1753	4232	4232	474	582	3706	OL	0.00	0.00	0.00	0.00
3/6/2012	92.9	0.0	57.6	24.2	1.8	108.8	84.4	125.6	103.0	131.1	136.1	133.0	134.8	137.2	131.8	150.2	1756	3887	4947	1758	4237	4238	480	588	3711	100.0	0.01	0.00	19.08	19.09
3/7/2012	92.8	18.3	25.0	24.1	80.4	90.0	85.0	86.9	104.7	134.3	128.0	122.6	122.4	123.6	123.0	123.2	1763	3895	4954	1782	4261	4262	504	612	3735	100.0	0.00	0.00	84.95	84.95
3/8/2012	92.3	17.3	33.1	23.2	41.6	88.9	84.9	86.9	89.3	100.8	109.8	86.3	81.1	91.6	87.2	86.8	1772	3904	4964	1792	4271	4271	514	621	3745	99.8	0.00	0.06	33.95	34.01
3/9/2012	93.0	20.6	62.5	24.3	8.6	89.2	81.6	114.7	113.8	138.8	156.4	129.5	131.3	134.5	129.2	142.3	1773	3904	4964	1798	4277	4277	520	627	3751	100.0	0.00	0.00	20.65	20.65
3/10/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1773	3904	4964	1798	4277	4277	520	627	3751	OL	0.00	0.00	0.00	0.00
3/11/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1773	3904	4964	1798	4277	4277	520	627	3751	OL	0.00	0.00	0.00	0.00
3/12/2012	NA	18.7	34.9	24.2	33.2	99.6	85.0	86.4	92.4	104.3	97.3	86.4	86.2	88.7	86.9	88.5	1788	3920	4980	1814	4293	4293	536	643	3767	100.0	0.00	0.00	56.27	56.27
3/13/2012	93.3	18.8	39.2	23.3	20.5	87.6	84.8	86.0	86.8	86.7	88.2	85.9	81.5	86.3	86.0	86.1	1798	3930	4989	1823	4302	4303	545	653	3776	100.0	0.00	0.00	32.52	32.52
3/14/2012	92.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1798	3930	4989	1823	4302	4303	545	653	3776	OL	0.00	0.00	0.00	0.00
3/15/2012	92.4	19.9	45.3	24.2	29.8	89.2	84.2	112.3	122.0	139.3	153.6	132.3	136.0	135.7	132.3	142.3	1798	3930	4990	1831	4309	4310	552	660	3783	100.0	0.00	0.00	25.05	25.05
3/16/2012	93.2	19.5	26.0	24.1	75.8	87.9	85.0	101.0	110.9	136.9	136.5	134.2	135.3	135.9	134.8	135.0	1798	3930	4990	1839	4317	4318	560	668	3791	100.0	0.00	0.00	28.48	28.48
3/17/2012	NA	18.5	39.0	24.2	16.2	105.3	79.5	85.4	91.8	102.6	86.0	80.9	81.2	85.8	81.4	81.3	1822	3954	5013	1862	4341	4341	583	691	3815	100.0	0.00	0.00	77.25	77.25
3/18/2012	NA	17.3	25.2	23.6	65.3	87.4	82.3	83.6	84.0	83.7	84.2	83.6	80.3	86.2	84.1	83.7	1846	3978	5037	1886	4365	4365	607	715	3839	99.6	0.00	0.33	81.92	82.25
3/19/2012	NA	18.5	25.7	24.1	54.2	79.4	70.0	71.5	71.8	71.4	71.9	71.5	71.4	83.5	72.0	71.7	1870	4002	5061	1910	4389	4389	631	739	3863	100.0	0.00	0.00	69.96	69.96
3/20/2012	93.6	0.0	56.0	24.2	2.1	90.4	70.0	74.0	74.2	75.2	118.9	92.0	101.9	109.3	92.5	104.5	1882	4013	5073	1931	4410	4410	653	761	3884	100.0	0.00	0.01	62.04	62.05
3/21/2012	93.9	0.0	29.2	24.1	2.4	73.0	69.9	143.9	105.1	137.0	117.9	111.6	111.9	113.1	111.5	111.6	1882	4013	5073	1944	4423	4423	665	773	3897	100.0	0.00	0.00	36.06	36.06
3/22/2012	94.2	19.1	46.7	24.3	12.0	84.4	78.2	84.0	88.3	129.9	84.4	79.9	79.9	97.5	80.4	80.4	1898	4030	16	1960	4439	4439	682	789	3913	100.0	0.00	0.00	52.89	52.89
3/23/2012	94.4	18.7	25.2	23.8	60.9	83.7	71.0	72.8	73.0	73.7	76.8	72.6	70.5	102.9	72.9	72.9	1922	4054	40	1984	4463	4463	706	813	3937	100.0	0.00	0.00	70.96	70.96
3/24/2012	NA	19.0	25.2	24.2	62.3	84.3	75.0	76.6	76.9	76.4	79.2	76.6	76.4	105.0	76.8	76.9	1946	4078	64	2008	4487	4487	730	837	3961	100.0	0.00	0.00	74.91	74.91
3/25/2012	NA	18.5	25.2	24.2	69.1	84.5	74.8	76.3	76.6	76.3	78.2	76.3	76.3	104.8	76.7	76.7	1970	4102	88	2032	4511	4511	754	861	3985	100.0	0.00	0.00	74.73	74.73
3/26/2012	NA	19.1	26.4	24.3	41.6	79.3	70.0	71.7	72.6	71.7	77.8	71.7	71.6	111.0	73.6	74.0	1994	4126	112	2056	4535	4535	778	885	4009	100.0	0.00	0.00	69.98	69.98
3/27/2012	94.9	0.0	25.2	23.7	8.6	57.4	54.0	74.4	76.3	74.5	79.1	56.2	56.1	118.7	78.3	78.6	2015	4147	133	2059	4538	4538	798	906	4030	99.6	0.04	0.00	10.52	10.56
3/28/2012	94.8	19.9	24.8	24.1	41.0	78.6	55.5	108.3	109.3	108.3	OL	OL	OL	147.2	109.4	114.2	2039	4171	157	2059	4538	4538	822	930	4054	100.0	0.00	0.00	39.22	39.22
3/29/2012	94.1	20.0	24.9	24.1	54.0	89.0	79.8	126.8	127.6	127.1	OL	OL	OL	142.1	127.9	128.7	2063	4195	181	2059	4538	4538	846	954	4078	100.0	0.00	0.00	79.71	79.71
3/30/2012	95.0	20.0	24.8	24.1	69.9	89.0	81.1	129.1	129.9	129.7	OL	OL	OL	141.6	130.1	135.3	2087	4219	205	2059	4538	4538	870	978	4102	100.0	0.00	0.00	81.03	81.03
3/31/2012	NA	19.7	24.8	24.0	70.8	79.3	74.7	119.0	119.7	126.1	OL	OL	OL	137.5	119.8	140.9	2111	4243	229	2059	4538	4538	894	1002	4126	100.0	0.00	0.00	74.70	74.70

Report Created: Monday, April 02, 2012

Total [ML]:0.050.631256.841257.52

Water Volume [%]:

Untreated0.00 %
Below Dose0.05 %
To Dose99.95 %

- Notes:
- UV Comparative Dose: 18.1 mJ/cm2
 - UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 - NR - No Result
 - NA - Not Analyzed
 - OL - Off Line

UV Monitoring Report – Monthly



Water System Code: 252.00
Licence Number: PWS-09-412 RR

Reactor: UVR-200A
Report Period: March 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours										Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
3/1/2012	93.0	21.3	24.7	24.3	74.9	86.5	81.5	141.3	83.6	83.0	209.2	92.6	83.5	183.1	83.2	82.9	3676	3676	3676	4333	2398	1410	3662	3661	3662	100.0	0.00	0.00	81.49	81.49
3/2/2012	93.1	21.2	33.1	24.3	38.3	97.4	84.8	143.6	86.8	86.3	208.5	93.7	86.7	183.2	86.6	86.3	3700	3700	3700	4357	2422	1434	3686	3685	3686	100.0	0.00	0.00	84.85	84.85
3/3/2012	NA	21.3	24.9	24.2	72.1	92.5	85.1	142.8	87.0	86.5	205.1	92.8	86.9	181.5	86.8	86.7	3724	3724	3724	4381	2446	1458	3710	3709	3710	100.0	0.00	0.00	85.07	85.07
3/4/2012	NA	21.4	24.6	24.2	82.8	87.4	85.0	143.8	87.0	86.4	202.0	92.4	86.9	181.3	86.8	86.6	3748	3748	3748	4405	2470	1482	3734	3733	3734	100.0	0.00	0.00	85.00	85.00
3/5/2012	NA	21.2	24.6	24.2	82.5	86.9	85.0	144.9	86.9	86.4	198.6	92.4	86.9	181.8	86.6	86.6	3772	3772	3772	4429	2494	1506	3758	3757	3758	100.0	0.00	0.00	84.98	84.98
3/6/2012	92.9	21.3	38.5	24.3	22.9	87.0	84.8	147.7	87.0	86.3	196.1	92.5	86.8	181.8	86.5	86.5	3791	3791	3790	4447	2513	1524	3776	3776	3776	100.0	0.00	0.00	66.13	66.13
3/7/2012	92.8	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3791	3791	3790	4447	2513	1524	3776	3776	3776	OL	0.00	0.00	0.00	0.00
3/8/2012	92.3	21.3	32.3	24.2	27.9	95.9	84.7	136.0	88.0	86.0	190.6	92.4	87.7	171.8	86.4	86.3	3806	3805	3805	4462	2527	1539	3791	3790	3791	100.0	0.00	0.00	50.84	50.84
3/9/2012	93.0	21.1	33.2	24.2	27.8	94.3	85.9	140.6	88.8	87.2	186.4	90.5	87.8	172.3	87.9	87.9	3824	3824	3823	4480	2546	1557	3809	3809	3809	100.0	0.00	0.00	65.70	65.70
3/10/2012	NA	21.1	25.8	24.2	64.8	94.1	84.7	146.6	86.6	86.1	189.9	91.7	86.5	180.2	86.4	86.3	3848	3848	3847	4504	2570	1581	3833	3833	3833	100.0	0.00	0.00	84.70	84.70
3/11/2012	NA	21.2	24.6	24.2	82.4	87.4	85.0	143.2	86.8	86.3	184.8	89.6	86.8	175.5	86.5	86.5	3871	3871	3870	4527	2593	1604	3856	3856	3856	100.0	0.00	0.00	84.93	84.93
3/12/2012	NA	0.0	38.2	24.2	2.0	86.9	84.7	145.0	86.2	86.0	186.7	91.6	87.3	178.0	86.2	86.1	3879	3879	3878	4535	2601	1612	3864	3864	3864	100.0	0.00	0.00	28.73	28.73
3/13/2012	93.3	17.8	24.6	24.2	38.0	91.5	84.9	135.7	88.0	86.2	178.8	88.3	86.7	170.5	87.0	86.7	3894	3894	3893	4550	2616	1627	3879	3879	3879	99.9	0.00	0.03	52.37	52.40
3/14/2012	92.4	21.2	24.7	24.2	77.3	87.8	84.9	139.6	86.9	86.3	179.0	87.4	86.6	168.9	86.5	86.5	3918	3918	3917	4574	2640	1651	3903	3903	3903	100.0	0.00	0.00	84.89	84.89
3/15/2012	92.4	21.3	29.1	24.3	50.6	87.0	84.8	139.4	86.1	86.0	180.5	87.5	86.7	112.4	86.0	86.4	3935	3935	3934	4591	2657	1668	3920	3920	3920	100.0	0.00	0.00	59.69	59.69
3/16/2012	93.2	20.7	29.0	24.3	13.4	95.2	84.9	135.7	87.7	86.0	178.1	90.9	87.4	86.7	85.8	86.2	3951	3951	3950	4607	2673	1684	3936	3936	3936	100.0	0.00	0.00	56.48	56.48
3/17/2012	NA	0.0	34.7	23.8	2.0	86.3	79.1	137.8	88.5	86.7	172.7	90.8	89.6	84.6	82.5	82.9	3951	3951	3951	4608	2673	1685	3937	3936	3937	98.3	0.03	0.00	1.96	2.00
3/18/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3951	3951	3951	4608	2673	1685	3937	3936	3937	OL	0.00	0.00	0.00	0.00
3/19/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3952	3951	3951	4608	2673	1685	3937	3936	3937	OL	0.00	0.00	0.00	0.00
3/20/2012	93.6	0.0	24.2	14.5	3.3	87.3	54.6	111.1	90.8	48.0	146.8	111.1	88.5	43.9	69.2	66.7	3952	3951	3951	4608	2674	1685	3937	3937	3937	51.4	0.08	0.02	0.10	0.20
3/21/2012	93.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3952	3951	3951	4608	2674	1685	3937	3937	3937	OL	0.00	0.00	0.00	0.00
3/22/2012	94.2	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3952	3951	3951	4608	2674	1685	3937	3937	3937	OL	0.00	0.00	0.00	0.00
3/23/2012	94.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3952	3951	3951	4608	2674	1685	3937	3937	3937	OL	0.00	0.00	0.00	0.00
3/24/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3952	3951	3951	4608	2674	1685	3937	3937	3937	OL	0.00	0.00	0.00	0.00
3/25/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3952	3951	3951	4608	2674	1685	3937	3937	3937	OL	0.00	0.00	0.00	0.00
3/26/2012	NA	19.8	32.8	24.3	8.5	79.4	76.7	119.1	78.3	77.4	173.3	80.0	79.8	156.6	79.8	79.7	3957	3957	3956	4613	2679	1690	3942	3942	3942	100.0	0.00	0.00	16.77	16.77
3/27/2012	94.9	0.0	24.7	23.7	6.4	79.1	75.5	138.2	78.1	78.1	174.7	80.2	77.9	150.5	78.0	78.0	3978	3978	3977	4634	2700	1712	3963	3963	3963	99.6	0.06	0.00	14.70	14.76
3/28/2012	94.8	0.0	32.8	24.4	0.0	80.4	77.3	169.7	83.6	79.1	211.0	110.4	85.7	111.1	78.6	78.6	3994	3993	3993	4650	2716	1727	3979	3979	3979	100.0	0.00	0.00	17.71	17.71
3/29/2012	94.1	0.0	34.9	23.2	2.5	79.3	63.4	127.9	106.0	63.9	175.5	148.8	102.8	120.2	64.2	75.6	3994	3994	3993	4650	2716	1727	3979	3979	3979	100.0	0.00	0.00	0.52	0.52
3/30/2012	95.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3994	3994	3993	4650	2716	1727	3979	3979	3979	OL	0.00	0.00	0.00	0.00
3/31/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3994	3994	3993	4650	2716	1727	3979	3979	3979	OL	0.00	0.00	0.00	0.00

Report Created: Monday, April 02, 2012

Total [ML]: 0.170.051107.641107.86

Water Volume [%]:

Untreated 0.02 %
Below Dose 0.00 %
To Dose 99.98 %

- Notes:
- 1. UV Comparative Dose: 18.1 mj/cm2
 - 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 - 3. NR - No Result
 - 4. NA - Not Analyzed
 - 5. OL - Off Line

UV Monitoring Report – Monthly



Water System Code: 252.00
Licence Number: PWS-09-412 RR

Reactor: UVR-300A
Report Period: March 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours									to Validated Conditions	Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
3/1/2012	93.0	18.2	31.5	24.8	17.2	46.1	41.3	67.6	68.0	63.7	76.5	74.2	62.0	83.8	78.1	1.6	2682	2682	2683	2715	2716	2715	2743	2743	2743	100.0	0.00	0.00	2.01	2.01
3/2/2012	93.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2682	2682	2683	2715	2716	2715	2743	2743	2743	OL	0.00	0.00	0.00	0.00
3/3/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2682	2682	2683	2715	2716	2715	2743	2743	2743	OL	0.00	0.00	0.00	0.00
3/4/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2682	2682	2683	2715	2716	2715	2743	2743	2743	OL	0.00	0.00	0.00	0.00
3/5/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2682	2682	2683	2715	2716	2715	2743	2743	2743	OL	0.00	0.00	0.00	0.00
3/6/2012	92.9	19.4	36.7	24.3	13.6	63.3	60.4	87.0	86.8	86.6	98.0	91.2	87.5	57.7	68.5	5.0	2687	2687	2688	2720	2721	2720	2745	2745	2745	100.0	0.00	0.00	13.16	13.16
3/7/2012	92.8	21.5	24.8	24.2	58.0	63.5	60.5	97.7	97.7	97.7	127.6	97.6	97.6	OL	OL	OL	2711	2711	2712	2744	2745	2744	2745	2745	2745	100.0	0.00	0.00	60.55	60.55
3/8/2012	92.3	21.3	31.1	24.2	31.9	63.0	59.4	96.2	96.2	96.3	135.4	96.5	96.3	OL	OL	OL	2735	2735	2736	2768	2769	2768	2745	2745	2745	100.0	0.00	0.00	59.40	59.40
3/9/2012	93.0	21.3	61.5	24.3	7.0	63.1	59.0	95.5	95.1	95.6	132.5	95.5	95.5	94.2	93.3	28.6	2756	2755	2756	2781	2782	2782	2752	2752	2752	100.0	0.00	0.00	49.54	49.54
3/10/2012	NA	21.8	43.3	24.3	37.3	68.5	60.7	97.1	96.7	97.5	94.5	83.2	83.5	97.3	96.7	29.4	2763	2763	2763	2782	2782	2782	2759	2759	2759	100.0	0.00	0.00	17.97	17.97
3/11/2012	NA	21.5	24.8	24.2	59.0	64.1	61.6	99.3	99.3	99.4	OL	OL	OL	99.3	99.2	99.3	2786	2786	2786	2782	2782	2782	2782	2782	2782	100.0	0.00	0.00	61.57	61.57
3/12/2012	NA	21.4	29.5	24.2	33.8	79.8	61.8	99.5	99.2	99.7	78.0	67.6	66.8	99.3	98.7	54.0	2799	2799	2799	2782	2783	2782	2796	2795	2795	100.0	0.00	0.00	33.67	33.67
3/13/2012	93.3	21.4	51.8	24.2	11.1	63.6	61.5	79.7	70.3	87.7	115.2	98.5	99.3	99.1	98.6	49.3	2799	2799	2800	2794	2795	2794	2807	2807	2807	100.0	0.00	0.00	30.19	30.19
3/14/2012	92.4	0.0	40.6	24.1	3.0	63.8	60.7	81.3	78.0	86.3	120.7	98.0	97.4	97.5	97.6	53.2	2800	2800	2800	2807	2808	2808	2820	2820	2820	99.8	0.07	0.00	33.97	34.04
3/15/2012	92.4	21.7	36.3	24.2	26.5	63.7	61.6	97.2	97.2	97.6	113.5	98.1	97.7	75.0	76.3	1.3	2805	2805	2806	2813	2814	2813	2821	2820	2820	100.0	0.00	0.00	13.90	13.90
3/16/2012	93.2	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2805	2805	2806	2813	2814	2813	2821	2820	2820	OL	0.00	0.00	0.00	0.00
3/17/2012	NA	21.2	46.7	24.2	12.4	77.8	66.3	93.3	93.2	93.5	123.1	93.5	93.6	79.0	79.0	23.9	2828	2828	2829	2836	2837	2836	2828	2828	2827	100.0	0.00	0.00	63.74	63.74
3/18/2012	NA	21.4	24.8	24.2	59.3	73.3	62.9	101.3	101.4	101.4	132.2	101.3	101.4	OL	OL	OL	2852	2852	2853	2860	2861	2860	2828	2828	2827	100.0	0.00	0.00	62.93	62.93
3/19/2012	NA	21.3	26.2	24.1	45.2	78.9	70.0	112.3	112.3	112.4	134.3	112.4	112.5	OL	OL	OL	2876	2876	2877	2884	2885	2884	2828	2828	2827	100.0	0.00	0.00	70.00	70.00
3/20/2012	93.6	0.0	40.5	24.1	5.1	86.2	70.2	109.3	109.3	109.8	134.3	110.0	110.2	82.0	81.5	2.7	2887	2887	2888	2895	2896	2895	2828	2828	2828	99.6	0.13	0.00	31.98	32.11
3/21/2012	93.9	21.2	46.5	24.4	21.2	73.4	65.5	76.6	76.4	76.7	122.3	71.6	68.9	75.7	75.8	36.9	2899	2899	2900	2904	2905	2905	2840	2840	2840	100.0	0.00	0.00	31.84	31.84
3/22/2012	94.2	19.2	50.5	24.2	13.1	86.4	63.9	110.4	110.9	111.2	127.3	95.9	96.2	102.4	102.6	95.8	2908	2908	2909	2917	2918	2918	2863	2862	2862	100.0	0.00	0.00	59.63	59.63
3/23/2012	94.4	21.6	25.0	24.2	53.6	75.4	64.2	OL	OL	OL	138.4	103.3	103.5	103.3	103.3	103.3	2908	2908	2909	2941	2942	2942	2887	2886	2886	100.0	0.00	0.00	64.24	64.24
3/24/2012	NA	21.5	25.0	24.2	51.0	75.3	67.0	OL	OL	OL	139.0	107.7	107.8	107.6	107.5	107.6	2908	2908	2909	2965	2966	2966	2911	2910	2910	100.0	0.00	0.00	66.94	66.94
3/25/2012	NA	21.7	25.0	24.2	55.2	70.7	61.0	OL	OL	OL	137.4	98.3	98.5	98.3	98.2	98.3	2908	2908	2909	2989	2990	2990	2935	2934	2934	100.0	0.00	0.00	60.98	60.98
3/26/2012	NA	21.6	25.3	24.2	43.1	61.6	58.2	OL	OL	OL	135.2	93.6	93.6	93.9	93.8	73.6	2908	2908	2909	3008	3009	3009	2953	2953	2953	100.0	0.00	0.00	45.58	45.58
3/27/2012	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2908	2908	2909	3008	3009	3009	2953	2953	2953	OL	0.00	0.00	0.00	0.00
3/28/2012	94.8	21.1	26.2	24.5	22.7	61.3	46.1	59.7	59.8	60.1	138.0	82.3	77.5	65.6	70.7	37.5	2917	2917	2918	3017	3018	3017	2962	2962	2962	100.0	0.00	0.00	20.84	20.84
3/29/2012	94.1	19.8	27.7	24.6	48.2	87.7	56.5	57.9	58.2	58.2	146.9	83.2	81.1	68.3	69.1	58.4	2941	2941	2942	3041	3042	3041	2986	2986	2986	100.0	0.00	0.00	56.48	56.48
3/30/2012	95.0	21.0	30.7	24.6	37.4	73.4	56.8	58.3	58.7	58.4	150.8	84.0	85.3	71.2	67.4	58.7	2965	2965	2966	3065	3066	3065	3010	3010	3010	100.0	0.00	0.00	56.78	56.78
3/31/2012	NA	21.0	26.2	24.5	55.0	61.7	58.3	59.8	60.1	59.8	150.0	81.3	85.0	71.5	63.2	60.2	2989	2989	2990	3089	3090	3089	3034	3034	3034	100.0	0.00	0.00	58.26	58.26

Report Created: Monday, April 02, 2012

Total [ML]: 0.20 0.00 1126.15 1126.35

Water Volume [%]:

Untreated 0.02 %
Below Dose 0.00 %
To Dose 99.98 %

- Notes:
- 1. UV Comparative Dose: 18.1 mJ/cm2
 - 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 - 3. NR - No Result
 - 4. NA - Not Analyzed
 - 5. OL - Off Line

UV Monitoring Report – Monthly



Water System Code: 252.00
Licence Number: PWS-09-412 RR

Reactor: UVR-400A
Report Period: March 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours										Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
3/1/2012	93.0	21.3	28.1	24.5	20.3	50.8	46.2	48.7	48.5	50.3	66.5	64.2	63.8	99.2	94.1	98.6	1956	1956	1946	2094	2094	2094	2148	1118	2148	100.0	0.00	0.00	44.35	44.35
3/2/2012	93.1	19.8	30.9	24.1	17.1	62.4	58.0	59.7	59.6	58.3	60.8	60.2	60.1	90.6	107.6	120.2	1980	1979	33	2117	2118	2118	2172	1142	2171	100.0	0.00	0.00	57.11	57.11
3/3/2012	NA	17.9	28.4	20.3	38.9	61.8	60.5	61.8	61.7	48.7	62.0	61.8	61.9	88.5	108.0	125.3	1981	1981	35	2119	2120	2119	2174	1143	2173	99.0	0.00	0.04	4.32	4.36
3/4/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1981	1981	35	2119	2120	2119	2174	1143	2173	OL	0.00	0.00	0.00	0.00
3/5/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1981	1981	35	2119	2120	2119	2174	1143	2173	OL	0.00	0.00	0.00	0.00
3/6/2012	92.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1981	1981	35	2119	2120	2119	2174	1143	2173	OL	0.00	0.00	0.00	0.00
3/7/2012	92.8	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1981	1981	35	2119	2120	2119	2174	1143	2173	OL	0.00	0.00	0.00	0.00
3/8/2012	92.3	6.1	26.3	20.4	4.0	42.8	40.0	38.1	30.1	20.3	64.9	60.0	58.2	72.1	92.5	109.5	1982	1981	35	2120	2120	2120	2174	1144	2174	80.5	0.00	0.15	0.61	0.75
3/9/2012	93.0	1.9	26.8	23.5	5.8	65.7	55.4	41.3	38.7	21.2	87.5	88.0	86.4	89.0	104.9	116.5	1982	1982	35	2124	2125	2124	2179	1149	2178	94.6	0.00	0.56	9.68	10.24
3/10/2012	NA	21.6	29.6	24.2	35.7	66.4	63.7	24.7	13.9	9.4	102.3	102.3	102.3	102.3	104.8	121.9	1982	1982	35	2141	2142	2141	2196	1165	2195	100.0	0.00	0.00	44.72	44.72
3/11/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1982	1982	35	2141	2142	2141	2196	1165	2195	OL	0.00	0.00	0.00	0.00
3/12/2012	NA	7.8	29.7	24.4	30.2	66.5	64.1	110.4	79.4	65.1	104.8	73.6	74.0	101.2	101.4	117.8	1993	1993	38	2152	2153	2152	2207	1176	2206	99.7	0.00	0.09	29.18	29.28
3/13/2012	93.3	19.5	36.5	23.6	18.6	66.3	64.1	74.9	65.4	62.7	80.0	65.4	65.4	84.1	81.0	76.9	2005	2005	21	2164	2165	2165	2219	1189	2218	100.0	0.00	0.00	32.69	32.70
3/14/2012	92.4	3.1	34.6	24.3	5.1	66.2	63.1	68.7	64.8	64.9	70.6	65.5	64.0	76.9	79.8	69.7	2016	2016	32	2175	2176	2176	2230	1200	2230	99.5	0.00	0.13	28.71	28.84
3/15/2012	92.4	18.4	37.4	24.3	3.1	66.0	63.8	82.0	74.0	68.5	66.2	65.6	69.2	73.6	75.0	66.1	2035	2035	50	2194	2195	2194	2249	1219	2248	100.0	0.00	0.00	49.60	49.60
3/16/2012	93.2	20.6	26.4	24.3	48.2	74.5	64.1	68.2	66.0	65.3	66.0	65.7	65.9	74.8	74.9	66.0	2059	2059	74	2218	2219	2218	2273	1243	2272	100.0	0.00	0.00	64.17	64.17
3/17/2012	NA	16.7	25.1	21.9	46.0	87.8	64.8	65.2	65.9	55.7	66.7	64.9	62.9	74.5	75.4	66.8	2060	2059	75	2219	2220	2219	2274	1243	2273	87.6	0.00	0.24	1.71	1.95
3/18/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2060	2059	75	2219	2220	2219	2274	1243	2273	OL	0.00	0.00	0.00	0.00
3/19/2012	NA	23.4	32.0	27.7	21.9	24.0	23.0	46.4	36.8	27.9	106.5	73.6	44.2	72.9	86.0	82.8	2060	2060	75	2219	2220	2219	2274	1243	2273	100.0	0.00	0.00	0.03	0.03
3/20/2012	93.6	0.0	41.1	24.8	3.5	89.6	72.0	98.0	76.7	75.7	107.1	75.8	77.5	99.0	95.8	120.5	2072	2072	87	2231	2232	2231	2286	1255	2285	100.0	0.00	0.00	36.05	36.06
3/21/2012	93.9	20.3	25.3	24.2	67.3	77.8	72.1	73.8	73.7	72.8	75.6	73.7	73.7	74.1	74.1	75.0	2096	2096	111	2255	2256	2255	2310	1279	2309	100.0	0.00	0.00	72.17	72.17
3/22/2012	94.2	19.6	41.2	22.2	3.4	72.8	66.3	68.2	67.7	59.6	69.7	68.1	67.9	68.5	69.3	70.3	2104	2104	120	2263	2264	2264	2318	1288	2317	100.0	0.00	0.00	22.95	22.95
3/23/2012	94.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2104	2104	120	2263	2264	2264	2318	1288	2317	OL	0.00	0.00	0.00	0.00
3/24/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2104	2104	120	2263	2264	2264	2318	1288	2317	OL	0.00	0.00	0.00	0.00
3/25/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2104	2104	120	2263	2264	2264	2318	1288	2317	OL	0.00	0.00	0.00	0.00
3/26/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2104	2104	120	2263	2264	2264	2318	1288	2317	OL	0.00	0.00	0.00	0.00
3/27/2012	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2104	2104	120	2263	2264	2264	2318	1288	2317	OL	0.00	0.00	0.00	0.00
3/28/2012	94.8	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2104	2104	120	2263	2264	2264	2318	1288	2317	OL	0.00	0.00	0.00	0.00
3/29/2012	94.1	21.2	55.4	24.3	11.5	85.2	81.3	85.0	83.4	82.1	113.7	86.2	87.5	83.8	83.9	98.5	2114	2114	130	2273	2274	2274	2328	1298	2327	100.0	0.00	0.00	33.55	33.55
3/30/2012	95.0	20.4	29.8	23.6	28.8	85.3	78.2	79.5	79.6	77.0	84.3	79.7	79.6	79.6	79.6	79.6	2128	2128	143	2287	2288	2287	2342	1311	2341	100.0	0.00	0.00	44.71	44.71
3/31/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2128	2128	143	2287	2288	2287	2342	1311	2341	OL	0.00	0.00	0.00	0.00

Report Created: Monday, April 02, 2012

Total [ML]:0.011.21576.31577.53

Water Volume [%]:

Untreated0.00 %
Below Dose0.21 %
To Dose99.79 %

- Notes:
- 1. UV Comparative Dose: 18.1 mJ/cm2
 - 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 - 3. NR - No Result
 - 4. NA - Not Analyzed
 - 5. OL - Off Line

UV Monitoring Report – Monthly



Water System Code: 252.00
Licence Number: PWS-09-412 RR

Reactor: UVR-500A
Report Period: March 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours										Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
3/1/2012	93.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3922	4383	1621	3600	1084	5286	3587	543	2122	OL	0.00	0.00	0.00	0.00
3/2/2012	93.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3922	4383	1621	3600	1084	5286	3587	543	2122	OL	0.00	0.00	0.00	0.00
3/3/2012	NA	20.1	26.1	24.6	31.0	51.2	47.6	49.4	49.2	50.4	76.7	50.6	64.2	158.9	59.1	104.3	3944	4405	1644	3623	1106	5308	3609	566	2144	100.0	0.00	0.00	44.00	44.00
3/4/2012	NA	21.0	30.0	24.7	44.3	51.6	48.0	49.8	49.8	49.9	98.5	65.9	84.1	166.4	65.7	131.9	3968	4429	1668	3647	1130	5332	3633	590	2168	100.0	0.00	0.00	47.97	47.97
3/5/2012	NA	21.2	26.7	24.3	43.8	51.6	48.0	77.1	77.2	77.2	112.0	75.3	93.4	164.8	77.9	142.9	3992	4453	1692	3647	1131	5333	3657	614	2192	100.0	0.00	0.00	48.02	48.02
3/6/2012	92.9	21.3	25.5	24.2	34.2	79.1	54.0	88.0	88.2	87.6	OL	OL	OL	166.7	88.0	146.7	4016	4477	1716	3647	1131	5333	3681	638	2216	100.0	0.00	0.00	53.98	53.98
3/7/2012	92.8	21.0	24.6	24.1	72.6	78.2	75.7	121.9	121.6	121.4	OL	OL	OL	164.5	121.6	130.8	4040	4501	1740	3647	1131	5333	3705	662	2240	100.0	0.00	0.00	75.66	75.66
3/8/2012	92.3	21.5	27.1	24.1	30.3	78.0	74.7	120.8	120.1	119.8	OL	OL	OL	160.1	120.1	122.2	4061	4522	1761	3647	1131	5333	3726	683	2261	100.0	0.00	0.00	64.89	64.89
3/9/2012	93.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4061	4522	1761	3647	1131	5333	3726	683	2261	OL	0.00	0.00	0.00	0.00
3/10/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4061	4522	1761	3647	1131	5333	3726	683	2261	OL	0.00	0.00	0.00	0.00
3/11/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4061	4522	1761	3647	1131	5333	3726	683	2261	OL	0.00	0.00	0.00	0.00
3/12/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4061	4522	1761	3647	1131	5333	3726	683	2261	OL	0.00	0.00	0.00	0.00
3/13/2012	93.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4061	4522	1761	3647	1131	5333	3726	683	2261	OL	0.00	0.00	0.00	0.00
3/14/2012	92.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4061	4522	1761	3647	1131	5333	3726	683	2261	OL	0.00	0.00	0.00	0.00
3/15/2012	92.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4061	4522	1761	3647	1131	5333	3726	683	2261	OL	0.00	0.00	0.00	0.00
3/16/2012	93.2	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4061	4522	1761	3647	1131	5333	3726	683	2261	OL	0.00	0.00	0.00	0.00
3/17/2012	NA	17.8	31.3	23.7	16.9	56.0	43.7	46.8	41.5	49.6	56.9	39.8	44.6	112.8	52.2	108.3	4062	4523	1761	3648	1132	5333	3727	683	2262	96.6	0.00	0.03	0.80	0.82
3/18/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4062	4523	1761	3648	1132	5333	3727	683	2262	OL	0.00	0.00	0.00	0.00
3/19/2012	NA	18.9	63.4	24.3	4.9	94.0	84.5	133.8	133.4	375.3	155.1	124.6	180.9	168.4	134.2	169.6	4062	4532	1770	3648	1132	5334	3736	693	2271	100.0	0.00	0.00	32.42	32.42
3/20/2012	93.6	19.7	30.8	24.3	17.4	89.9	77.6	80.5	79.8	218.6	175.8	81.5	86.3	137.7	79.8	83.8	23	4546	1785	3662	1146	5348	3750	707	2285	100.0	0.00	0.00	45.77	45.77
3/21/2012	93.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	23	4546	1785	3662	1146	5348	3750	707	2285	OL	0.00	0.00	0.00	0.00
3/22/2012	94.2	16.6	28.5	24.4	38.8	59.8	54.2	53.8	54.6	145.2	110.9	56.2	64.8	94.1	55.8	79.8	25	4547	1786	3664	1147	1	3751	708	2287	99.3	0.00	0.02	2.76	2.78
3/23/2012	94.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	25	4547	1786	3664	1147	1	3751	708	2287	OL	0.00	0.00	0.00	0.00
3/24/2012	NA	18.5	25.0	24.0	12.8	87.5	70.0	70.7	71.4	99.9	95.7	71.3	72.6	98.4	71.2	80.2	39	4561	1800	3678	1161	15	3765	722	2301	100.0	0.00	0.00	40.38	40.38
3/25/2012	NA	20.1	25.2	24.2	67.5	82.2	75.8	77.2	77.2	84.4	95.7	77.3	77.5	110.9	77.4	83.7	63	4585	1824	3702	1185	39	3789	746	2325	100.0	0.00	0.00	75.80	75.80
3/26/2012	NA	20.4	24.8	24.2	70.4	84.7	81.1	82.5	81.9	83.2	92.5	82.7	82.7	109.6	82.8	82.9	87	4609	1848	3726	1209	63	3813	770	2349	100.0	0.00	0.00	81.10	81.10
3/27/2012	94.9	0.0	24.7	23.7	2.7	84.4	80.9	83.2	83.1	83.4	93.6	83.3	83.3	115.8	83.2	83.2	107	4629	1868	3746	1229	83	3833	790	2369	99.7	0.04	0.00	15.78	15.82
3/28/2012	94.8	0.0	30.4	24.3	0.0	85.3	82.5	83.9	83.8	85.7	99.9	84.1	83.9	126.5	84.3	84.6	122	4645	1883	3761	1245	98	3849	805	2384	100.0	0.00	0.00	17.99	17.99
3/29/2012	94.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	122	4645	1883	3761	1245	98	3849	805	2384	OL	0.00	0.00	0.00	0.00
3/30/2012	95.0	15.5	24.9	24.2	62.9	85.5	81.9	82.9	82.8	86.1	90.3	85.1	84.5	114.5	83.9	84.4	132	4655	1894	3771	1255	109	3859	816	2394	99.9	0.00	0.05	35.20	35.25
3/31/2012	NA	20.5	25.0	24.3	77.9	83.3	81.0	82.5	82.4	83.1	94.0	82.9	82.5	100.5	82.8	85.6	156	4679	1918	3795	1279	133	3883	840	2418	100.0	0.00	0.00	81.00	81.00

Report Created: Monday, April 02, 2012

Total [ML]: 0.04 0.10 763.53 763.67

Water Volume [%]:

Untreated 0.01 %
Below Dose 0.01 %
To Dose 99.98 %

- Notes:
- 1. UV Comparative Dose: 18.1 mJ/cm2
 - 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 - 3. NR - No Result
 - 4. NA - Not Analyzed
 - 5. OL - Off Line

UV Monitoring Report – Monthly



Water System Code: 252.00
Licence Number: PWS-09-412 RR

Reactor: UVR-600A
Report Period: March 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours										Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
3/1/2012	93.0	19.4	25.2	24.4	67.8	78.6	72.7	96.1	74.2	74.1	95.9	78.4	93.9	107.8	84.2	74.1	2450	2450	2450	2478	2478	2478	1311	2619	2619	100.0	0.00	0.00	72.67	72.67
3/2/2012	93.1	19.6	26.2	24.4	52.9	101.4	70.2	115.1	71.7	71.6	97.3	79.5	96.2	111.2	83.7	71.7	2474	2474	2474	2502	2502	2502	1335	2643	2643	100.0	0.00	0.00	70.14	70.14
3/3/2012	NA	19.0	25.0	24.2	64.5	87.6	84.3	108.3	85.5	85.6	98.3	85.9	98.5	110.8	86.7	85.3	2498	2498	2498	2526	2526	2526	1359	2667	2667	100.0	0.00	0.00	84.28	84.28
3/4/2012	NA	19.0	25.0	24.3	82.4	87.5	85.0	102.6	86.3	86.3	98.3	86.2	98.8	111.7	86.6	86.0	2522	2522	2522	2550	2550	2550	1383	2691	2691	100.0	0.00	0.00	84.99	84.99
3/5/2012	NA	18.8	24.9	24.2	82.0	87.5	85.0	105.7	86.3	86.3	98.7	86.1	100.3	112.8	87.0	85.9	2546	2546	2546	2574	2574	2574	1407	2715	2715	100.0	0.00	0.00	84.99	84.99
3/6/2012	92.9	18.7	32.3	24.2	6.2	87.2	84.7	102.1	86.0	86.0	99.1	86.0	100.4	113.5	86.8	85.7	2565	2565	2565	2592	2593	2593	1425	2734	2734	100.0	0.00	0.00	66.47	66.47
3/7/2012	92.8	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2565	2565	2565	2592	2593	2593	1425	2734	2734	OL	0.00	0.00	0.00	0.00
3/8/2012	92.3	19.4	36.3	24.3	5.6	78.7	75.5	84.9	77.8	76.1	97.0	78.4	92.2	115.0	82.5	79.1	2568	2568	2568	2596	2597	2596	1429	2738	2737	100.0	0.00	0.00	10.24	10.24
3/9/2012	93.0	18.8	25.3	24.3	60.3	79.9	74.9	102.0	76.4	76.3	95.5	78.1	95.7	107.3	81.2	76.3	2592	2592	2592	2620	2621	2620	1453	2762	2761	100.0	0.00	0.00	74.97	74.97
3/10/2012	NA	18.4	27.9	24.3	66.0	93.8	75.3	108.4	76.8	76.7	97.5	78.4	100.4	111.9	83.8	76.6	2616	2616	2616	2644	2645	2644	1477	2786	2785	100.0	0.00	0.00	75.30	75.30
3/11/2012	NA	19.1	25.1	24.3	75.0	80.4	77.8	104.8	79.2	79.2	96.4	79.2	96.1	108.9	81.5	79.0	2639	2639	2639	2667	2668	2667	1500	2809	2808	100.0	0.00	0.00	77.78	77.78
3/12/2012	NA	19.1	25.0	24.3	67.7	93.6	77.1	107.0	78.5	78.4	96.0	78.4	96.0	111.0	80.3	78.2	2663	2663	2663	2691	2692	2691	1524	2833	2832	100.0	0.00	0.00	77.03	77.03
3/13/2012	93.3	19.0	25.1	24.3	73.2	80.5	77.1	102.5	78.6	78.5	95.6	78.5	93.8	110.1	80.9	78.4	2687	2687	2687	2715	2716	2715	1548	2857	2856	100.0	0.00	0.00	77.11	77.11
3/14/2012	92.4	18.8	25.1	24.3	67.1	80.8	77.1	100.0	78.6	78.5	94.6	78.5	90.8	108.8	79.5	78.4	2711	2711	2711	2739	2740	2739	1572	2881	2880	100.0	0.00	0.00	77.11	77.11
3/15/2012	92.4	18.9	25.1	24.3	69.3	80.5	76.2	100.3	77.7	77.6	94.0	77.6	90.3	109.3	79.3	77.5	2735	2735	2735	2763	2764	2763	1596	2905	2904	100.0	0.00	0.00	76.24	76.24
3/16/2012	93.2	18.9	26.5	24.3	58.5	85.5	75.9	100.7	77.3	77.2	95.9	77.2	91.2	111.7	79.9	77.1	2759	2759	2759	2787	2788	2787	1620	2929	2928	100.0	0.00	0.00	75.87	75.87
3/17/2012	NA	18.7	26.0	24.3	54.9	88.5	79.0	93.3	80.4	80.3	95.9	80.4	91.0	109.8	82.0	80.2	2783	2783	2783	2811	2812	2811	1644	2953	2952	100.0	0.00	0.00	79.02	79.02
3/18/2012	NA	18.9	25.0	24.3	76.2	87.4	79.7	101.8	81.2	81.1	98.7	81.0	91.5	112.5	83.0	80.8	2807	2807	2807	2835	2836	2835	1668	2977	2976	100.0	0.00	0.00	79.73	79.73
3/19/2012	NA	18.9	25.2	24.2	63.5	89.9	84.9	110.0	86.1	85.9	99.4	86.0	90.5	113.2	86.3	85.4	2822	2822	2822	2850	2850	2850	1683	2991	2991	100.0	0.00	0.00	52.57	52.57
3/20/2012	93.6	19.2	27.9	24.3	31.8	88.9	84.8	92.2	86.3	85.9	102.7	86.4	90.1	116.6	87.5	85.9	2836	2836	2835	2863	2864	2864	1696	3005	3005	100.0	0.00	0.00	48.46	48.46
3/21/2012	93.9	18.9	24.9	24.2	80.0	91.5	85.0	103.3	86.2	86.3	103.7	86.6	92.1	115.7	88.7	85.7	2860	2860	2859	2887	2888	2888	1720	3029	3029	100.0	0.00	0.00	84.97	84.97
3/22/2012	94.2	19.0	25.1	24.3	76.7	88.0	84.5	101.2	85.8	85.8	105.6	88.6	93.8	115.7	87.9	85.3	2884	2884	2883	2911	2912	2912	1744	3053	3053	100.0	0.00	0.00	84.48	84.48
3/23/2012	94.4	19.6	25.3	24.2	53.7	89.8	84.0	123.3	106.0	103.9	91.6	63.0	93.3	127.7	109.9	104.6	2908	2908	2907	2926	2927	2927	1768	3077	3077	100.0	0.00	0.00	83.98	83.98
3/24/2012	NA	20.0	29.3	24.1	3.2	87.7	84.8	135.5	135.3	135.2	OL	OL	OL	136.2	135.9	134.6	2918	2918	2918	2926	2927	2927	1779	3087	3087	100.0	0.00	0.00	36.10	36.10
3/25/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2918	2918	2918	2926	2927	2927	1779	3087	3087	OL	0.00	0.00	0.00	0.00
3/26/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2918	2918	2918	2926	2927	2927	1779	3087	3087	OL	0.00	0.00	0.00	0.00
3/27/2012	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2918	2918	2918	2926	2927	2927	1779	3087	3087	OL	0.00	0.00	0.00	0.00
3/28/2012	94.8	22.3	42.7	24.4	20.3	85.8	72.9	88.9	83.9	83.8	84.2	83.8	83.7	96.7	85.7	84.6	2927	2927	2927	2935	2936	2936	1779	3096	3096	100.0	0.00	0.00	30.36	30.36
3/29/2012	94.1	19.4	24.9	23.4	79.4	86.0	83.5	84.7	84.7	84.7	84.6	84.7	80.4	84.6	84.6	84.6	2941	2941	2941	2949	2950	2950	22	3110	3110	100.0	0.00	0.00	48.63	48.63
3/30/2012	95.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2941	2941	2941	2949	2950	2950	22	3110	3110	OL	0.00	0.00	0.00	0.00
3/31/2012	NA	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2941	2941	2941	2949	2950	2950	22	3110	3110	OL	0.00	0.00	0.00	0.00

Report Created: Monday, April 02, 2012

Total [ML]:0.000.001713.491713.49

Water Volume [%]:

Untreated0.00 %
Below Dose0.00 %
To Dose100.00 %

- Notes:
- 1. UV Comparative Dose: 18.1 mJ/cm2
 - 2. UV Transmittance values determined via grab samples (average of Branch 1 & 2).
 - 3. NR - No Result
 - 4. NA - Not Analyzed
 - 5. OL - Off Line



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code **252.00**
License Number **PWS 09 412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: April-2012

Report Created: **Friday, May 04, 2012**

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	
1/04/2012	94.34	0.00	0.00	5.91	5.91	0.00	0.00	78.60	78.60	0.00	0.00	68.07	68.07	0.00	0.00	0.00	0.00	0.00	0.00	6.11	6.11	0.00	0.03	55.26	55.28	0.00	0.03	213.95	213.97	99.99
2/04/2012	94.06	0.00	0.00	0.00	0.00	0.00	0.00	85.16	85.16	0.00	0.00	68.79	68.79	0.00	0.00	0.00	0.00	0.06	0.06	0.08	0.19	0.00	0.00	59.88	59.88	0.06	0.06	213.91	214.02	99.95
3/04/2012	94.05	0.00	0.03	7.70	7.73	0.00	0.00	83.32	83.32	0.00	0.00	43.48	43.48	0.00	0.12	41.03	41.16	0.00	0.00	0.00	0.00	0.00	0.00	38.31	38.31	0.00	0.15	213.84	214.00	99.93
4/04/2012	94.32	0.00	0.06	53.29	53.34	0.00	0.00	51.74	51.74	0.00	0.00	0.00	0.00	0.00	0.00	71.34	71.34	0.00	0.00	0.00	0.00	0.00	0.00	41.61	41.61	0.00	0.06	217.97	218.03	99.97
5/04/2012	94.64	0.00	0.06	78.31	78.37	0.00	0.00	14.00	14.00	0.00	0.00	23.25	23.25	0.00	0.00	46.24	46.24	0.00	0.00	0.00	0.00	0.00	0.00	61.65	61.65	0.00	0.06	223.44	223.51	99.97
6/04/2012	94.81	0.00	0.29	56.23	56.51	0.00	0.00	79.12	79.12	0.00	0.00	35.15	35.15	0.00	0.19	57.70	57.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	228.19	228.67	99.79
7/04/2012	94.84	0.00	0.11	68.51	68.62	0.00	0.00	44.57	44.57	0.00	0.22	29.33	29.56	0.00	0.18	43.86	44.04	0.00	0.00	3.20	3.20	0.00	0.00	40.84	40.84	0.00	0.51	230.32	230.83	99.78
8/04/2012	94.94	0.00	0.00	56.98	56.98	0.00	0.00	51.03	51.03	0.05	0.27	44.94	45.26	0.00	0.00	27.54	27.54	0.00	0.00	0.00	0.00	0.09	1.10	48.34	49.53	0.14	1.38	228.83	230.34	99.34
9/04/2012	94.93	0.00	0.00	6.07	6.07	0.00	0.00	67.33	67.33	0.00	0.00	62.22	62.22	0.00	0.03	14.26	14.29	0.00	0.00	39.07	39.07	0.00	6.64	34.25	40.89	0.00	6.66	223.21	229.87	97.10
10/04/2012	94.99	0.00	0.00	32.13	32.13	0.00	0.00	60.89	60.89	0.00	0.05	37.78	37.82	0.02	7.95	43.77	51.73	0.00	7.93	35.24	43.17	0.00	0.00	0.00	0.00	0.02	15.92	209.80	225.74	92.94
11/04/2012	94.01	0.00	0.00	29.34	29.34	0.00	0.00	39.74	39.74	0.00	0.09	33.38	33.47	0.00	0.00	18.01	18.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	120.47	120.56	99.92
12/04/2012	94.92	0.00	0.00	57.13	57.13	0.00	0.00	76.57	76.57	0.00	0.00	32.41	32.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.89	52.89	0.00	0.00	218.99	218.99	100.00
13/04/2012	95.01	0.06	0.06	50.58	50.70	0.06	0.06	69.63	69.74	0.02	0.02	11.60	11.63	0.02	0.13	53.15	53.30	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	0.16	0.26	189.94	190.36	99.78
14/04/2012	94.83	0.00	0.00	74.66	74.66	0.00	0.00	77.00	77.00	0.00	0.00	0.00	0.00	0.00	0.00	58.80	58.80	0.00	0.00	10.69	10.69	0.00	0.00	0.00	0.00	0.00	0.00	221.15	221.15	100.00
15/04/2012	93.68	0.00	0.00	59.52	59.52	0.00	0.00	80.98	80.98	0.00	0.00	38.47	38.47	0.00	0.00	0.00	0.00	0.00	0.00	48.12	48.12	0.00	0.00	0.00	0.00	0.00	0.00	227.09	227.09	100.00
16/04/2012	NR	0.00	0.00	64.86	64.86	0.00	0.00	84.95	84.95	0.00	0.00	52.80	52.80	0.00	0.00	22.73	22.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	225.34	225.34	100.00
17/04/2012	NR	0.00	0.00	78.62	78.62	0.00	0.00	85.02	85.02	0.00	0.00	0.00	0.00	0.00	0.00	67.97	67.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	231.61	231.61	100.00
18/04/2012	94.03	0.00	0.00	55.88	55.88	0.00	1.62	40.93	42.55	0.00	0.56	39.77	40.34	0.18	0.50	21.92	22.60	0.00	0.00	43.32	43.32	0.02	0.02	25.17	25.21	0.20	2.70	227.00	229.89	98.74
19/04/2012	94.00	0.00	0.00	62.45	62.45	0.00	0.00	0.00	0.00	0.00	0.00	51.13	51.13	0.00	0.00	38.40	38.40	0.00	0.00	56.50	56.50	0.00	0.00	17.59	17.59	0.00	0.00	226.07	226.07	100.00
20/04/2012	93.91	0.00	0.11	65.27	65.38	0.00	0.00	0.00	0.00	0.00	0.34	23.27	23.62	0.00	0.00	67.44	67.44	0.00	0.00	39.43	39.43	0.00	0.00	31.09	31.10	0.01	0.46	226.50	226.97	99.80
21/04/2012	93.53	0.00	0.00	32.15	32.15	0.00	0.00	44.17	44.17	0.00	0.00	0.00	0.00	0.00	0.00	75.97	75.97	0.00	0.00	0.00	0.00	0.00	0.00	75.11	75.11	0.00	0.00	227.40	227.40	100.00
22/04/2012	93.74	0.00	0.00	0.00	0.00	0.00	0.00	82.97	82.97	0.00	0.00	0.00	0.00	0.00	0.00	61.69	61.69	0.00	0.00	0.00	0.00	0.00	0.00	77.98	77.98	0.00	0.00	222.64	222.64	100.00
23/04/2012	93.61	0.00	0.00	25.63	25.63	0.00	0.00	54.53	54.53	0.00	0.00	29.85	29.85	0.00	0.00	30.25	30.25	0.00	0.00	0.00	0.00	0.00	0.00	80.30	80.30	0.00	0.00	220.55	220.56	100.00
24/04/2012	93.55	0.00	0.00	7.79	7.79	0.00	0.05	70.49	70.54	0.00	0.00	55.90	55.90	0.00	0.00	8.84	8.84	0.00	0.00	0.00	0.00	0.00	0.00	79.93	79.93	0.00	0.05	222.95	223.00	99.98
25/04/2012	93.96	0.00	0.00	43.90	43.90	0.00	0.00	33.10	33.10	0.00	0.00	10.38	10.38	0.00	0.00	55.40	55.40	0.00	0.00	0.00	0.00	0.00	0.00	78.19	78.19	0.00	0.00	220.96	220.96	100.00
26/04/2012	94.39	0.00	0.00	9.25	9.25	0.06	0.30	70.25	70.61	0.00	0.00	32.75	32.76	0.00	0.00	28.83	28.83	0.00	0.00	0.00	0.00	0.00	0.00	79.40	79.40	0.06	0.31	220.47	220.84	99.83
27/04/2012	94.67	0.00	0.00	26.84	26.84	0.00	0.00	50.22	50.22	0.00	0.00	61.84	61.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.07	80.07	0.00	0.00	218.97	218.97	100.00
28/04/2012	95.04	0.00	0.00	0.00	0.00	0.00	0.00	80.51	80.51	0.00	0.30	55.46	55.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.49	83.49	0.00	0.30	219.47	219.77	99.86
29/04/2012	95.14	0.00	0.00	0.00	0.00	0.00	0.00	79.58	79.58	0.00	0.04	57.93	57.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.05	82.05	0.00	0.04	219.56	219.60	99.98
30/04/2012	94.77	0.00	0.00	0.00	0.00	0.00	0.00	80.38	80.38	0.00	0.00	59.14	59.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.14	82.14	0.00	0.00	221.66	221.66	100.00
		0.06	0.72	1108.98	1109.75	0.11	2.03	1816.76	1818.90	0.07	1.91	1059.08	1061.06	0.22	9.09	955.15	964.46	0.06	7.99	281.75	289.80	0.11	7.79	1310.53	1318.43	0.64	29.51	6532.25	6562.40	

Water Volume [%]:

Untreated 0.01 %
Below Dose 0.45 %
To Dose 99.54 %

- Notes:** 1. UV Transmittance measured at Branch 1 Online Analyser
2. NR - No Result due to Online Analyser malfunction

Submitted By (Print): J.Hume

Signature: Original signed by J.Hume



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code 252.00
License Number PWS 09 412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: April-2012

Report Created: Friday, May 04, 2012

Reactor: UVR-100A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/04/2012	0.0	40.4	24.4	0.0	77.6	71.2	117.8	118.7	153.0	OL	OL	OL	140.7	116.2	149.1	2113	4245	231	2071	4550	4539	896	1004	4128	100.00	0.00	0.00	5.91	5.91		
2/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2113	4245	231	2071	4550	4539	896	1004	4128	OL	0.00	0.00	0.00	0.00		
3/04/2012	3.1	25.2	24.0	4.9	55.8	52.7	85.0	103.3	125.7	11.3	6.3	4.3	123.8	85.1	140.8	2116	4248	235	2071	4550	4539	900	1008	4131	99.64	0.00	0.03	7.70	7.73		
4/04/2012	0.0	59.6	24.3	0.0	94.1	63.7	112.0	124.0	147.6	46.1	37.9	70.5	137.2	106.8	142.8	2137	4269	255	2071	4550	4539	920	1028	4152	99.89	0.00	0.06	53.29	53.34		
5/04/2012	17.6	27.3	24.1	44.9	94.3	78.4	106.2	107.1	105.0	110.9	77.9	77.9	115.1	105.6	105.9	2161	4293	279	2071	4550	4550	944	1052	4176	99.92	0.00	0.06	78.31	78.37		
6/04/2012	13.8	26.1	24.0	47.9	127.1	56.5	58.2	59.9	56.8	100.8	58.2	58.2	97.0	60.5	58.2	2185	4317	303	2095	4574	4574	968	1076	4200	99.49	0.00	0.29	56.23	56.51		
7/04/2012	0.0	75.2	23.5	0.0	92.9	71.4	73.8	77.3	95.7	98.9	73.8	73.7	105.4	77.5	75.1	2208	4340	326	2118	4597	4597	991	1099	4223	99.84	0.00	0.11	68.51	68.62		
8/04/2012	18.3	43.3	24.4	35.3	130.8	57.0	58.9	61.1	58.6	97.9	58.8	58.9	115.8	62.9	60.1	2232	4364	350	2142	4621	4621	1015	1123	4247	100.00	0.00	0.00	56.98	56.98		
9/04/2012	0.0	40.7	24.2	0.0	83.9	55.5	57.1	61.9	56.1	101.7	57.2	57.2	142.2	68.9	63.2	2234	4366	353	2145	4623	4624	1018	1126	4249	100.00	0.00	0.00	6.07	6.07		
10/04/2012	18.2	51.3	24.6	4.4	46.9	33.7	59.1	81.5	46.6	95.0	46.6	56.3	150.4	86.5	92.2	2257	4389	376	2152	4631	4632	1041	1149	4272	100.00	0.00	0.00	32.13	32.13		
11/04/2012	0.0	38.3	24.5	0.0	66.4	50.4	61.9	100.6	51.6	98.5	53.0	64.2	139.7	88.4	132.7	2271	4403	390	2167	4645	4646	1055	1163	4286	100.00	0.00	0.00	29.34	29.34		
12/04/2012	17.7	33.7	24.3	30.5	60.6	57.1	93.8	123.1	79.8	124.2	59.8	96.9	150.0	92.7	154.4	2295	4427	414	2176	4655	4655	1079	1187	4310	100.00	0.00	0.00	57.13	57.13		
13/04/2012	0.0	96.8	25.3	0.0	76.7	57.0	113.7	129.8	115.2	108.0	62.3	92.7	147.7	97.4	152.5	2317	4449	435	2177	4655	4656	1100	1208	4332	99.76	0.06	0.06	50.58	50.70		
14/04/2012	19.6	27.9	24.1	44.2	115.3	74.6	123.4	130.0	164.2	OL	OL	OL	145.5	120.1	144.4	2341	4473	459	2177	4655	4656	1124	1232	4356	100.00	0.00	0.00	74.66	74.66		
15/04/2012	20.0	32.9	24.3	32.7	65.2	59.5	111.1	126.6	140.7	OL	OL	OL	145.8	95.8	134.4	2365	4497	483	2177	4655	4656	1148	1256	4380	100.00	0.00	0.00	59.52	59.52		
16/04/2012	19.7	27.7	24.2	48.2	83.3	64.9	116.2	125.2	125.9	OL	OL	OL	141.8	104.3	133.5	2389	4521	507	2177	4655	4656	1172	1280	4404	100.00	0.00	0.00	64.86	64.86		
17/04/2012	19.5	24.6	24.0	74.0	83.7	78.6	126.0	125.9	126.4	OL	OL	OL	135.9	125.8	130.8	2413	4545	531	2177	4655	4656	1196	1304	4428	100.00	0.00	0.00	78.62	78.62		
18/04/2012	19.7	37.7	26.7	28.8	113.7	55.9	108.5	119.4	114.2	OL	OL	OL	132.8	100.8	124.3	2437	4569	555	2177	4655	4656	1220	1328	4452	100.00	0.00	0.00	55.88	55.88		
19/04/2012	19.5	25.2	24.1	57.0	71.9	62.8	101.4	115.6	106.6	OL	OL	OL	131.1	100.9	122.8	2461	4593	579	2177	4655	4656	1244	1352	4476	100.00	0.00	0.00	62.45	62.45		
20/04/2012	0.0	40.4	24.2	0.0	76.2	65.9	98.5	114.8	113.2	117.8	74.1	74.4	132.0	93.2	130.7	2485	4616	603	2186	4665	4665	1268	1376	4500	99.83	0.00	0.11	65.27	65.38		
21/04/2012	0.0	37.2	24.1	0.0	76.1	72.8	115.6	116.4	132.5	143.0	74.8	74.8	129.3	113.5	132.9	2495	4627	614	2188	4666	4667	1279	1387	4510	100.00	0.00	0.00	32.15	32.15		
22/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2495	4627	614	2188	4666	4667	1279	1387	4510	OL	0.00	0.00	0.00	0.00		
23/04/2012	0.0	85.8	24.1	0.0	79.8	76.5	116.1	121.0	132.7	130.4	77.0	77.6	127.0	115.8	136.9	2503	4635	622	2189	4668	4668	1287	1395	4518	100.00	0.00	0.00	25.63	25.63		
24/04/2012	17.9	95.4	24.4	3.3	73.0	70.4	109.3	112.1	118.7	119.8	70.8	69.1	116.0	108.6	130.4	2506	4638	624	2189	4668	4669	1290	1397	4521	100.00	0.00	0.00	7.79	7.79		
25/04/2012	0.0	38.6	24.0	0.0	79.9	74.3	119.5	120.9	132.8	OL	OL	OL	130.0	119.0	135.7	2520	4652	639	2189	4668	4669	1304	1412	4535	100.00	0.00	0.00	43.90	43.90		
26/04/2012	0.0	75.4	24.3	0.0	78.3	75.1	113.1	120.0	129.4	122.7	75.1	75.4	123.5	112.3	136.1	2523	4655	642	2190	4669	4669	1307	1415	4538	100.00	0.00	0.00	9.25	9.25		
27/04/2012	0.0	94.3	24.1	0.0	76.8	74.9	119.1	120.6	131.3	128.2	74.2	74.9	130.1	118.6	134.9	2532	4664	650	2190	4669	4670	1316	1423	4547	100.00	0.00	0.00	26.84	26.84		
28/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2532	4664	650	2190	4669	4670	1316	1423	4547	OL	0.00	0.00	0.00	0.00		
29/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2532	4664	650	2190	4669	4670	1316	1423	4547	OL	0.00	0.00	0.00	0.00		
30/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2532	4664	650	2190	4669	4670	1316	1423	4547	OL	0.00	0.00	0.00	0.00		

Total [ML]: 0.06 0.72 1,108.98 1,109.75

Water Volume [%]:
Untreated 0.01 %
Below Dose 0.06 %
To Dose 99.93 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code **252.00**
License Number **PWS 09 412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: April-2012

Report Created: **Friday, May 04, 2012**

Reactor: **UVR-200A**

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume (ML)			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/04/2012	18.9	65.9	24.3	0.0	89.6	84.7	164.5	86.7	86.0	197.0	94.8	86.3	106.1	86.0	86.2	4016	4016	4015	4673	2738	1750	4001	4001	4002	100.00	0.00	0.00	78.60	78.60		
2/04/2012	21.2	25.0	24.3	75.0	88.8	85.2	181.1	96.8	86.6	203.5	103.7	88.1	114.2	86.6	86.6	4040	4040	4039	4697	2762	1774	4025	4025	4026	100.00	0.00	0.00	85.16	85.16		
3/04/2012	17.8	31.0	24.3	61.9	89.5	83.3	186.0	102.5	85.5	206.0	109.2	94.5	125.2	88.7	88.8	4062	4062	4061	4721	2786	1798	4049	4049	4050	100.00	0.00	0.00	83.32	83.32		
4/04/2012	0.0	33.8	24.1	0.0	87.7	78.0	OL	OL	OL	204.2	125.6	124.9	135.7	125.0	124.9	4062	4062	4061	4736	2802	1814	4065	4065	4065	100.00	0.00	0.00	51.74	51.74		
5/04/2012	21.1	93.7	24.4	4.0	87.2	83.7	156.8	99.2	84.8	199.8	104.0	85.8	131.3	85.1	84.9	4066	4066	4065	4741	2806	1818	4069	4069	4070	100.00	0.00	0.00	14.00	14.00		
6/04/2012	17.8	32.5	24.3	34.5	119.0	79.1	178.7	103.4	93.4	198.7	112.8	99.0	144.0	83.8	84.0	4090	4090	4089	4765	2830	1842	4086	4086	4086	100.00	0.00	0.00	79.12	79.12		
7/04/2012	0.0	42.6	24.3	0.0	95.6	79.8	178.5	95.9	83.6	196.1	112.0	87.7	136.8	81.5	81.5	4104	4103	4103	4778	2844	1855	4099	4099	4099	100.00	0.00	0.00	44.57	44.57		
8/04/2012	0.0	89.4	24.5	0.0	110.4	52.3	164.4	95.3	85.2	193.4	108.0	81.5	181.5	68.9	70.4	4111	4111	4111	4802	2867	1879	4123	4122	4123	100.00	0.00	0.00	51.03	51.03		
9/04/2012	21.5	31.1	24.2	32.8	132.1	67.3	OL	OL	OL	191.2	114.0	111.3	181.8	108.2	108.5	4111	4111	4111	4826	2891	1903	4147	4146	4147	100.00	0.00	0.00	67.33	67.33		
10/04/2012	21.7	25.0	24.2	48.1	69.4	60.9	OL	OL	OL	185.6	105.8	98.0	180.9	98.0	97.9	4111	4111	4111	4850	2915	1927	4171	4170	4171	100.00	0.00	0.00	60.89	60.89		
11/04/2012	0.0	66.1	24.2	0.0	88.3	71.2	85.0	76.7	76.3	169.5	100.0	89.0	167.1	89.0	88.7	4119	4119	4118	4863	2929	1940	4184	4184	4184	100.00	0.00	0.00	39.74	39.74		
12/04/2012	21.0	25.3	24.3	53.7	79.7	76.5	124.0	78.1	77.9	185.5	110.2	81.4	197.2	78.1	78.1	4143	4143	4142	4887	2953	1964	4208	4208	4208	100.00	0.00	0.00	76.57	76.57		
13/04/2012	0.0	78.2	24.3	0.0	89.3	75.1	140.3	79.3	77.6	187.3	110.3	85.5	202.1	78.0	78.5	4166	4165	4165	4909	2975	1986	4230	4229	4230	99.84	0.06	0.06	69.63	69.74		
14/04/2012	19.4	25.8	24.3	60.2	108.3	77.0	149.8	78.7	78.5	184.3	108.7	85.4	211.1	78.6	78.5	4190	4189	4189	4933	2999	2010	4254	4253	4254	100.00	0.00	0.00	77.00	77.00		
15/04/2012	21.0	25.2	24.3	56.6	90.5	81.0	163.2	82.7	82.6	182.6	109.1	85.6	207.6	82.5	82.5	4214	4213	4213	4957	3023	2034	4278	4277	4278	100.00	0.00	0.00	80.98	80.98		
16/04/2012	21.0	25.2	24.2	72.2	99.5	84.9	164.5	86.5	86.3	179.4	106.3	86.4	199.0	86.4	86.3	4238	4237	4237	4981	3047	2058	4302	4301	4302	100.00	0.00	0.00	84.95	84.95		
17/04/2012	21.1	24.9	24.2	80.9	90.2	85.0	164.5	86.6	86.4	174.0	102.3	86.4	192.4	86.4	86.4	4262	4261	4261	5005	3071	2082	4326	4325	4326	100.00	0.00	0.00	85.02	85.02		
18/04/2012	0.0	35.9	23.8	0.0	104.8	67.2	161.0	94.0	93.1	167.2	103.0	94.1	182.4	78.6	82.0	4277	4276	4276	5020	3086	2098	4331	4330	4331	96.20	0.00	1.62	40.93	42.55		
19/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4277	4267	4276	5020	3086	2098	4332	4330	4331	OL	0.00	0.00	0.00	0.00		
20/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4277	4267	4276	5020	3086	2098	4333	4330	4331	OL	0.00	0.00	0.00	0.00		
21/04/2012	19.3	110.7	24.3	5.3	83.2	79.0	202.3	127.6	125.9	303.5	162.7	132.0	209.0	80.1	92.0	4290	4290	4290	13	3100	2111	4334	4331	4331	100.00	0.00	0.00	44.17	44.17		
22/04/2012	19.5	29.3	24.1	69.0	91.5	83.0	131.8	100.8	101.0	235.2	120.8	100.5	195.0	86.1	35.2	4314	4314	4314	37	3124	2135	4347	4347	4347	100.00	0.00	0.00	82.97	82.97		
23/04/2012	0.0	112.1	24.3	0.0	90.5	81.7	165.4	110.4	109.0	245.1	143.8	111.9	156.3	86.3	37.7	4330	4330	4330	53	3140	2151	4355	4354	4355	100.00	0.00	0.00	54.53	54.53		
24/04/2012	0.0	34.9	23.6	0.0	81.8	79.1	125.2	93.9	94.5	187.4	113.7	93.6	112.3	80.2	72.2	4352	4351	4351	75	3161	2173	4371	4370	4371	99.93	0.00	0.05	70.49	70.54		
25/04/2012	19.5	112.1	24.3	3.8	83.3	80.4	199.2	131.9	128.4	248.2	164.8	135.3	222.7	88.2	110.9	4362	4361	4361	84	3171	2183	4372	4371	4371	100.00	0.00	0.00	33.10	33.10		
26/04/2012	0.0	91.1	24.3	0.0	83.6	80.1	167.5	110.0	104.1	245.7	144.5	111.9	127.4	80.5	72.0	4383	4383	4382	106	3192	2204	4387	4387	4387	99.49	0.06	0.30	70.25	70.61		
27/04/2012	0.0	82.3	24.4	0.0	89.2	78.0	193.3	107.7	89.1	265.7	123.7	107.4	135.1	79.5	78.1	4399	4398	4398	121	3208	2219	4402	4402	4402	100.00	0.00	0.00	50.22	50.22		
28/04/2012	21.0	25.0	24.2	74.8	82.9	80.5	172.8	86.0	81.9	258.9	100.0	84.1	122.8	81.9	81.8	4423	4422	4422	145	3232	2243	4426	4426	4426	100.00	0.00	0.00	80.51	80.51		
29/04/2012	19.4	24.7	22.9	69.0	82.8	79.6	152.2	81.1	74.6	255.6	108.8	81.0	163.8	81.1	81.1	4447	4446	4446	169	3256	2267	4450	4450	4450	100.00	0.00	0.00	79.58	79.58		
30/04/2012	20.5	30.5	24.1	37.2	86.1	80.4	156.3	82.0	81.4	283.9	117.7	81.8	210.2	81.9	82.4	4471	4470	4470	193	3280	2291	4474	4474	4474	100.00	0.00	0.00	80.38	80.38		

Total [ML]: 0.11 2.03 1,816.76 1,818.90

Water Volume [%]:

Untreated 0.01 %
Below Dose 0.11 %
To Dose 99.88 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code **252.00**
License Number **PWS 09 412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: April-2012

Report Created: **Friday, May 04, 2012**

Reactor: **UVR-300A**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/04/2012	18.8	30.8	24.4	39.5	85.4	68.1	69.5	69.7	69.6	152.1	79.9	88.3	73.9	70.0	69.6	3013	3013	3014	3113	3114	3113	3058	3058	3058	100.00	0.00	0.00	68.07	68.07
2/04/2012	20.8	26.8	24.4	49.4	73.8	68.8	70.2	70.6	70.3	149.8	78.0	88.5	74.1	70.3	70.2	3037	3037	3038	3137	3138	3137	3082	3082	3082	100.00	0.00	0.00	68.79	68.79
3/04/2012	0.0	32.0	24.5	0.0	73.2	66.5	67.7	73.1	67.9	149.8	77.7	88.1	74.2	67.9	68.0	3053	3053	3053	3152	3153	3153	3098	3098	3097	100.00	0.00	0.00	43.48	43.48
4/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3053	3053	3053	3152	3152	3153	3098	3098	3097	OL	0.00	0.00	0.00	0.00
5/04/2012	0.0	65.9	24.5	0.0	83.0	66.7	68.3	74.5	68.0	141.6	78.3	89.1	76.3	72.8	53.2	3061	3061	3062	3161	3162	3161	3106	3106	3106	100.00	0.00	0.00	23.25	23.25
6/04/2012	14.4	62.1	24.4	4.8	93.1	63.5	64.8	79.6	64.6	140.1	83.1	87.9	81.1	75.4	55.7	3075	3074	3075	3174	3175	3175	3119	3119	3119	100.00	0.00	0.00	35.15	35.15
7/04/2012	0.0	39.9	24.5	0.0	86.7	56.8	59.6	72.3	59.6	142.6	78.5	86.2	75.3	65.4	56.0	3087	3087	3088	3186	3187	3186	3132	3132	3132	99.24	0.00	0.22	29.33	29.56
8/04/2012	14.7	29.3	24.3	4.1	119.3	67.8	69.2	71.8	69.0	139.7	79.0	85.5	75.0	69.3	64.6	3103	3103	3104	3202	3203	3202	3148	3148	3148	99.29	0.05	0.27	44.94	45.26
9/04/2012	17.1	57.6	24.4	0.0	103.1	62.1	64.1	73.9	63.9	145.0	80.5	85.6	75.5	68.5	66.5	3127	3127	3128	3226	3227	3226	3172	3172	3172	100.00	0.00	0.00	62.22	62.22
10/04/2012	16.6	31.6	24.6	26.0	68.9	37.8	48.9	73.0	48.4	133.1	78.1	82.7	75.5	54.8	53.0	3151	3151	3152	3239	3240	3239	3196	3196	3196	99.88	0.00	0.05	37.78	37.82
11/04/2012	0.0	55.1	24.3	0.0	88.5	62.7	40.4	68.9	39.4	135.3	111.1	111.4	108.5	106.6	89.5	3157	3157	3158	3252	3252	3252	3209	3209	3208	99.73	0.00	0.09	33.38	33.47
12/04/2012	0.0	35.5	24.0	0.0	88.8	84.7	OL	OL	OL	140.9	135.4	135.4	135.3	110.0		3157	3157	3158	3261	3262	3261	3218	3218	3218	100.00	0.00	0.00	32.41	32.41
13/04/2012	0.0	57.6	24.3	0.0	88.5	71.6	49.0	62.2	43.3	124.8	114.4	115.3	113.3	114.2	78.2	3158	3157	3158	3265	3265	3265	3222	3222	3222	99.69	0.02	0.02	11.60	11.63
14/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3158	3157	3158	3265	3266	3265	3222	3222	3222	OL	0.00	0.00	0.00	0.00
15/04/2012	19.1	93.3	24.2	0.0	91.2	84.8	137.8	134.7	135.1	101.8	45.2	61.0	135.0	134.9	132.2	3168	3168	3169	3265	3266	3266	3233	3233	3233	100.00	0.00	0.00	38.47	38.47
16/04/2012	0.0	34.1	24.2	0.0	88.5	83.5	85.3	85.3	85.1	90.5	84.8	84.9	85.1	85.1	84.1	3184	3184	3184	3280	3281	3281	3248	3248	3248	100.00	0.00	0.00	52.80	52.80
17/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3184	3174	3184	3280	3281	3281	3248	3248	3248	OL	0.00	0.00	0.00	0.00
18/04/2012	0.0	96.0	23.9	0.0	76.7	66.6	96.7	92.6	87.5	75.8	73.6	60.4	95.4	93.9	91.5	3198	3198	3198	3288	3289	3289	3263	3263	3263	98.60	0.00	0.56	39.77	40.34
19/04/2012	21.3	27.5	24.3	34.0	82.5	51.3	94.3	83.3	83.4	OL	OL	OL	92.3	83.4	83.3	3222	3222	3222	3288	3289	3289	3287	3287	3287	100.00	0.00	0.00	51.13	51.13
20/04/2012	0.0	32.6	24.3	0.0	64.6	39.1	68.9	63.5	63.2	47.8	48.9	27.0	74.5	63.5	55.4	3236	3236	3237	3288	3289	3289	3302	3301	3301	98.53	0.00	0.34	23.27	23.62
21/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3236	3236	3237	3288	3289	3289	3302	3301	3301	OL	0.00	0.00	0.00	0.00
22/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3236	3236	3237	3288	3289	3289	3302	3301	3301	OL	0.00	0.00	0.00	0.00
23/04/2012	21.1	93.9	24.4	0.0	66.5	62.3	118.6	99.9	102.6	127.6	102.6	100.2	98.1	78.6	7.7	3248	3248	3248	3300	3301	3300	3302	3302	3301	99.99	0.00	0.00	29.85	29.85
24/04/2012	18.8	34.0	24.3	29.5	66.6	55.9	75.3	68.8	65.9	90.4	78.0	67.5	72.6	61.6	58.1	3272	3272	3272	3324	3325	3324	3321	3321	3320	100.00	0.00	0.00	55.90	55.90
25/04/2012	0.0	34.9	24.7	0.0	60.1	33.4	60.1	48.3	44.8	89.6	70.4	45.3	79.7	57.3	48.8	3279	3279	3280	3332	3332	3332	3325	3325	3324	100.00	0.00	0.00	10.38	10.38
26/04/2012	21.2	94.3	24.4	0.0	65.9	61.1	118.0	98.4	103.0	109.8	58.8	35.1	105.7	98.4	99.8	3292	3292	3293	3332	3333	3332	3338	3338	3337	99.97	0.00	0.00	32.75	32.76
27/04/2012	18.6	27.7	24.0	56.4	66.3	61.9	79.9	74.3	72.6	81.0	63.9	63.5	82.5	74.0	73.5	3316	3316	3317	3349	3350	3350	3362	3362	3361	100.00	0.00	0.00	61.84	61.84
28/04/2012	17.2	23.6	20.7	52.2	66.3	55.8	67.8	57.6	46.3	83.2	61.5	57.5	82.6	58.0	57.4	3340	3340	3341	3373	3374	3374	3386	3386	3385	99.45	0.00	0.30	55.46	55.77
29/04/2012	18.0	25.6	23.7	51.7	65.9	57.9	76.5	59.6	57.3	94.0	66.0	59.8	114.6	68.0	59.8	3364	3364	3365	3397	3398	3398	3410	3410	3409	99.93	0.00	0.04	57.93	57.97
30/04/2012	20.4	32.0	24.4	25.0	65.6	59.1	84.9	61.1	60.7	108.5	72.2	61.0	133.8	69.7	61.3	3388	3388	3389	3421	3422	3422	3434	3434	3433	100.00	0.00	0.00	59.14	59.14

Total [ML]: 0.07 1.91 1,059.08 1,061.06

Water Volume [%]:
Untreated 0.01 %
Below Dose 0.18 %
To Dose 99.81 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code 252.00
License Number PWS 09 412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: April-2012

Report Created: Friday, May 04, 2012

Reactor: UVR-400A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²										UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated		Below Dose	To Dose	Total	
1/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2143	2143	159	2298	2298	2298	2357	1327	2356	OL	0.00	0.00	0.00	0.00	
2/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2143	2143	159	2298	2298	2298	2357	1327	2356	OL	0.00	0.00	0.00	0.00	
3/04/2012	0.0	63.9	25.3	0.0	88.6	65.4	99.8	88.8	82.1	106.1	78.1	82.1	90.9	102.0	114.9	2143	2143	159	2298	2298	2298	2357	1327	2356	99.69	0.00	0.12	41.03	41.16	
4/04/2012	19.1	27.9	24.2	42.3	91.5	71.4	74.5	73.5	67.4	74.7	73.4	73.6	73.6	75.9	79.6	2167	2167	183	2322	2322	2322	2381	1351	2380	100.00	0.00	0.00	71.34	71.34	
5/04/2012	0.0	63.9	24.2	0.0	95.0	70.7	93.2	76.6	71.3	88.5	73.4	74.6	72.7	77.7	88.2	2183	2183	198	2337	2338	2338	2397	1366	2396	99.99	0.00	0.00	46.24	46.24	
6/04/2012	0.0	53.5	23.1	0.0	89.0	72.1	79.0	74.2	72.8	78.2	74.2	73.8	79.8	77.3	73.6	2202	2202	218	2357	2357	2357	2416	1386	2416	99.68	0.00	0.19	57.70	57.89	
7/04/2012	0.0	60.3	23.0	0.0	70.2	55.6	98.6	57.5	60.0	91.6	57.6	64.9	88.9	69.1	96.6	2221	2221	237	2376	2377	2376	2435	1405	2435	99.60	0.00	0.18	43.86	44.04	
8/04/2012	0.0	41.2	23.7	0.0	113.8	82.8	87.0	84.3	81.6	85.9	84.2	84.3	86.3	85.3	88.3	2229	2229	245	2384	2384	2384	2443	1413	2443	100.00	0.00	0.00	27.54	27.54	
9/04/2012	15.9	48.9	22.2	5.1	64.2	59.3	62.7	60.5	55.2	74.5	75.0	64.8	77.0	75.4	74.9	2233	2233	248	2390	2390	2390	2449	1419	2448	99.83	0.00	0.03	14.26	14.29	
10/04/2012	0.0	63.9	21.7	0.0	75.4	60.0	131.0	98.2	76.7	96.0	83.5	70.4	86.6	90.8	94.2	2241	2240	256	2410	2411	2411	2470	1439	2469	84.61	0.02	7.95	43.77	51.73	
11/04/2012	0.0	41.4	24.3	0.0	120.6	72.9	86.0	74.3	73.8	82.1	74.4	74.4	74.2	74.3	74.3	2247	2246	262	2416	2417	2417	2476	1445	2475	100.00	0.00	0.00	18.01	18.01	
12/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2247	2246	262	2416	2417	2417	2477	1445	2475	OL	0.00	0.00	0.00	0.00	
13/04/2012	0.0	63.9	23.6	0.0	88.3	75.4	99.1	77.0	75.5	93.9	79.1	77.2	77.3	77.4	90.7	2264	2263	279	2433	2434	2434	2493	1462	2492	99.72	0.02	0.13	53.15	53.30	
14/04/2012	0.0	38.6	23.6	0.0	83.6	67.2	75.5	68.8	68.3	85.6	68.7	68.9	68.7	68.8	73.1	2285	2284	300	2454	2455	2455	2514	1483	2513	100.00	0.00	0.00	58.80	58.80	
15/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2285	2284	300	2454	2455	2455	2514	1483	2513	OL	0.00	0.00	0.00	0.00	
16/04/2012	18.7	63.9	25.2	0.0	86.7	61.4	126.2	66.1	73.9	118.7	80.4	78.8	87.3	102.8	118.5	2294	2293	309	2463	2464	2464	2523	1492	2522	100.00	0.00	0.00	22.73	22.73	
17/04/2012	20.4	25.4	23.9	62.8	71.7	68.0	75.7	69.5	68.8	76.8	69.6	69.2	69.5	69.5	69.9	2318	2317	333	2487	2488	2488	2547	1516	2546	100.00	0.00	0.00	67.97	67.97	
18/04/2012	0.0	63.9	22.7	0.0	96.8	65.9	102.7	68.6	69.0	89.1	68.4	75.5	81.9	71.0	99.0	2326	2326	341	2495	2496	2495	2555	1525	2554	97.01	0.18	0.50	21.92	22.60	
19/04/2012	18.9	63.9	24.5	4.7	64.9	60.6	83.4	62.3	62.5	70.3	62.3	62.6	66.5	62.3	85.4	2341	2341	357	2511	2511	2511	2570	1540	2570	100.00	0.00	0.00	38.40	38.40	
20/04/2012	20.4	26.3	24.4	53.3	82.6	67.4	68.9	68.7	68.7	68.8	68.8	68.7	68.5	68.6	69.4	2365	2365	381	2535	2535	2535	2594	1564	2594	100.00	0.00	0.00	67.44	67.44	
21/04/2012	20.3	26.2	24.3	71.2	93.6	76.0	77.5	77.4	77.3	77.4	77.4	77.5	77.4	79.4	77.4	2389	2389	405	2559	2559	2559	2618	1588	2618	100.00	0.00	0.00	75.97	75.97	
22/04/2012	20.7	26.2	24.4	52.3	78.7	61.7	63.5	63.3	63.2	67.0	71.5	64.1	70.9	71.5	85.1	2413	2413	429	2583	2583	2583	2642	1612	2642	100.00	0.00	0.00	61.69	61.69	
23/04/2012	0.0	43.5	24.5	0.0	67.4	57.9	60.0	60.2	59.7	64.6	66.9	65.2	75.4	62.5	106.8	2426	2426	441	2595	2596	2595	2655	1625	2654	100.00	0.00	0.00	30.25	30.25	
24/04/2012	18.4	63.9	24.5	3.5	44.7	40.9	66.4	66.2	66.0	60.0	69.3	62.1	76.4	66.4	104.7	2431	2431	446	2595	2596	2596	2660	1630	2660	100.00	0.00	0.00	8.84	8.84	
25/04/2012	20.9	32.3	24.4	0.0	66.3	55.4	64.7	70.1	64.4	76.3	69.5	72.2	84.1	64.5	113.9	2455	2455	470	2612	2613	2612	2684	1654	2684	100.00	0.00	0.00	55.40	55.40	
26/04/2012	0.0	44.7	24.5	0.0	65.5	61.7	63.2	73.9	63.2	85.5	70.3	72.8	87.5	63.2	115.1	2466	2466	482	2623	2624	2623	2695	1665	2695	100.00	0.00	0.00	28.83	28.83	
27/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2466	2466	482	2623	2624	2623	2696	1665	2695	OL	0.00	0.00	0.00	0.00	
28/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2466	2466	482	2623	2624	2623	2697	1665	2695	OL	0.00	0.00	0.00	0.00	
29/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2466	2466	482	2623	2624	2623	2698	1665	2695	OL	0.00	0.00	0.00	0.00	
30/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2466	2466	482	2623	2624	2623	2699	1665	2695	OL	0.00	0.00	0.00	0.00	

Total [ML]: 0.22 9.09 955.15 964.46

Water Volume [%]:
Untreated 0.02 %
Below Dose 0.94 %
To Dose 99.03 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code 252.00
License Number PWS 09 412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: April-2012

Report Created: Friday, May 04, 2012

Reactor: UVR-500A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/04/2012	0.0	34.5	24.2	0.0	83.5	79.8	80.2	81.2	83.6	102.4	84.9	83.6	91.3	84.8	99.9	158	4681	1919	3797	1281	134	3885	842	2420	100.00	0.00	0.00	6.11	6.11		
2/04/2012	0.0	47.0	23.1	0.0	46.6	31.8	24.3	33.0	91.9	102.2	80.9	88.5	72.2	68.2	79.3	158	4681	1920	3797	1281	134	3885	842	2420	39.42	0.06	0.06	0.08	0.19		
3/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3797	1281	134	3885	842	2420	OL	0.00	0.00	0.00	0.00		
4/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3797	1281	134	3885	842	2420	OL	0.00	0.00	0.00	0.00		
5/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3797	1281	134	3885	842	2420	OL	0.00	0.00	0.00	0.00		
6/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3797	1281	134	3885	842	2420	OL	0.00	0.00	0.00	0.00		
7/04/2012	0.0	51.7	24.0	0.0	80.6	76.2	OL	OL	OL	121.3	119.5	120.9	120.5	118.8	120.4	158	4681	1920	3799	1282	136	3886	843	2421	100.00	0.00	0.00	3.20	3.20		
8/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3799	1282	136	3686	843	2421	OL	0.00	0.00	0.00	0.00		
9/04/2012	0.0	50.4	24.4	4.0	68.6	44.7	12.6	17.8	60.7	80.4	72.2	71.2	128.5	82.6	121.3	158	4681	1920	3820	1303	157	3907	864	2443	100.00	0.00	0.00	39.07	39.07		
10/04/2012	0.0	33.4	22.5	0.0	71.6	62.8	OL	OL	OL	100.9	100.9	94.5	177.1	101.6	167.6	158	4681	1920	3836	1320	173	3924	880	2459	81.62	0.00	7.93	35.24	43.17		
11/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3836	1320	173	3924	880	2459	OL	0.00	0.00	0.00	0.00		
12/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3836	1320	173	3924	880	2459	OL	0.00	0.00	0.00	0.00		
13/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3836	1320	173	3924	880	2459	OL	0.00	0.00	0.00	0.00		
14/04/2012	8.5	54.2	24.4	3.6	90.9	87.2	5.2	7.8	54.4	242.2	138.8	156.5	207.6	138.5	203.7	158	4681	1920	3839	1323	176	3927	883	2462	100.00	0.00	0.00	10.69	10.69		
15/04/2012	0.0	33.3	24.2	0.0	90.5	87.7	OL	OL	OL	159.7	140.5	140.7	156.9	140.3	146.9	158	4681	1920	3852	1336	189	3940	897	2475	100.00	0.00	0.00	48.12	48.12		
16/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3852	1336	189	3940	897	2475	OL	0.00	0.00	0.00	0.00		
17/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3852	1336	189	3940	897	2475	OL	0.00	0.00	0.00	0.00		
18/04/2012	12.2	54.1	24.1	7.9	91.8	51.9	OL	OL	OL	83.2	83.7	75.8	91.5	83.4	82.9	158	4681	1920	3872	1356	210	3960	917	2495	100.00	0.00	0.00	43.32	43.32		
19/04/2012	20.5	26.9	24.3	32.5	80.3	56.7	OL	OL	OL	90.5	91.2	89.2	99.4	92.5	91.0	158	4681	1920	3896	1380	234	3984	941	2519	100.00	0.00	0.00	56.50	56.50		
20/04/2012	0.0	29.0	24.2	0.0	69.2	66.3	OL	OL	OL	106.3	106.3	106.3	107.5	106.7	106.6	158	4681	1920	3911	1394	248	3998	955	2534	100.00	0.00	0.00	39.43	39.43		
21/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1394	248	3998	955	2534	OL	0.00	0.00	0.00	0.00		
22/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1394	248	3998	955	2534	OL	0.00	0.00	0.00	0.00		
23/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1394	248	3998	955	2534	OL	0.00	0.00	0.00	0.00		
24/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1394	248	3998	955	2534	OL	0.00	0.00	0.00	0.00		
25/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1394	248	3998	955	2534	OL	0.00	0.00	0.00	0.00		
26/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1394	248	3998	955	2534	OL	0.00	0.00	0.00	0.00		
27/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1394	248	3998	955	2534	OL	0.00	0.00	0.00	0.00		
28/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1394	248	3998	955	2534	OL	0.00	0.00	0.00	0.00		
29/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1394	248	3998	955	2534	OL	0.00	0.00	0.00	0.00		
30/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1394	248	3998	955	2534	OL	0.00	0.00	0.00	0.00		
Total [ML]:																											0.06	7.99	281.75	289.80	

Water Volume [%]:

Untreated 0.02 %
Below Dose 2.76 %
To Dose 97.22 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code 252.00
License Number PWS 09 412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: April-2012

Report Created: Friday, May 04, 2012

Reactor: UVR-600A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume (ML)			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Below Dose			
																										Untreated	Below Dose	To Dose	Total
1/04/2012	16.3	41.7	23.1	5.6	72.5	60.0	61.5	61.5	61.5	61.4	61.4	56.9	61.5	61.4	61.4	2963	2963	2963	2971	2972	2972	45	3132	3132	99.95	0.00	0.03	55.26	55.28
2/04/2012	21.7	26.6	24.2	41.5	62.8	59.9	61.5	61.4	61.4	61.4	61.4	60.7	61.3	61.6	61.4	2987	2987	2987	2995	2996	2996	69	3156	3156	100.00	0.00	0.00	59.88	59.88
3/04/2012	0.0	61.7	24.4	0.0	86.2	66.0	92.7	87.3	86.5	62.3	62.4	66.1	86.0	93.8	84.7	3001	3001	3001	3005	3006	3005	83	3170	3170	100.00	0.00	0.00	38.31	38.31
4/04/2012	19.6	77.4	24.4	0.0	88.7	81.5	111.4	87.4	87.2	82.6	82.7	96.7	83.0	82.8	82.7	3013	3013	3013	3017	3018	3018	95	3183	3182	100.00	0.00	0.00	41.61	41.61
5/04/2012	0.0	36.9	23.6	0.0	87.8	73.8	75.4	75.3	75.4	82.5	77.7	74.7	88.0	82.5	75.1	3033	3033	3033	3037	3038	3038	115	3203	3202	100.00	0.00	0.00	61.65	61.65
6/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3033	3033	3033	3037	3038	3038	115	3203	3202	OL	0.00	0.00	0.00	0.00
7/04/2012	18.4	84.8	23.8	0.0	92.4	84.8	90.6	94.4	84.7	110.3	94.8	111.4	130.3	95.3	86.5	3045	3045	3045	3049	3050	3049	127	3214	3214	100.00	0.00	0.00	40.84	40.84
8/04/2012	0.0	54.9	21.7	0.0	89.0	72.3	73.5	73.2	59.6	106.0	104.3	92.4	110.8	104.2	76.9	3050	3050	3050	3065	3066	3066	143	3231	3231	97.59	0.09	1.10	48.34	49.53
9/04/2012	0.0	37.6	20.2	0.0	88.1	54.2	57.5	53.1	42.7	62.6	67.5	54.0	91.0	73.1	54.4	3066	3065	3065	3084	3084	3084	161	3249	3249	83.77	0.00	6.64	34.25	40.89
10/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3066	3065	3065	3084	3084	3084	161	3249	3249	OL	0.00	0.00	0.00	0.00
11/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3066	3065	3065	3084	3084	3084	161	3249	3249	OL	0.00	0.00	0.00	0.00
12/04/2012	18.6	94.8	24.2	0.0	88.5	85.3	126.2	114.2	115.2	84.4	79.2	87.0	132.6	113.9	114.3	14	3080	3080	3091	3092	3091	176	3264	3264	100.00	0.00	0.00	52.89	52.89
13/04/2012	0.0	49.4	23.9	0.0	88.4	69.8	106.2	106.1	104.0	106.6	106.3	106.7	51.3	14.2	79.4	16	3082	3082	3093	3094	3093	176	3264	3264	100.00	0.00	0.00	5.00	5.00
14/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	16	3082	3082	3093	3094	3093	176	3264	3264	OL	0.00	0.00	0.00	0.00
15/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	16	3082	3082	3093	3094	3093	176	3264	3264	OL	0.00	0.00	0.00	0.00
16/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	16	3082	3082	3093	3094	3093	176	3264	3264	OL	0.00	0.00	0.00	0.00
17/04/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	16	3082	3082	3093	3094	3093	176	3264	3264	OL	0.00	0.00	0.00	0.00
18/04/2012	0.0	48.8	24.1	0.0	65.0	52.6	84.9	84.5	84.5	84.8	84.7	84.6	OL	OL	OL	28	3094	3094	3104	3105	3105	176	3264	3264	99.85	0.02	0.02	25.17	25.21
19/04/2012	0.0	31.7	23.8	0.0	56.0	51.1	82.7	82.5	80.5	82.5	82.5	82.5	OL	OL	OL	36	3102	3102	3113	3113	3113	176	3264	3264	100.00	0.00	0.00	17.59	17.59
20/04/2012	19.2	94.8	25.0	0.0	87.4	76.2	141.6	104.1	101.4	107.5	89.3	114.1	135.7	107.2	97.4	46	3112	3112	3118	3119	3119	186	3274	3274	99.99	0.00	0.00	31.09	31.10
21/04/2012	18.4	25.5	24.2	70.2	85.1	75.1	94.6	76.5	76.5	78.4	76.5	77.3	91.6	76.6	76.5	70	3136	3136	3142	3143	3143	210	3298	3298	100.00	0.00	0.00	75.11	75.11
22/04/2012	18.6	26.0	24.1	58.6	87.0	78.0	82.0	79.3	79.3	79.3	79.3	79.3	85.8	79.3	79.3	94	3160	3160	3166	3167	3167	234	3322	3322	100.00	0.00	0.00	77.98	77.98
23/04/2012	18.5	25.4	24.1	69.0	85.0	80.3	81.6	81.6	81.6	81.6	81.6	81.6	90.1	81.6	81.6	118	3184	3184	3190	3191	3191	258	3346	3346	100.00	0.00	0.00	80.30	80.30
24/04/2012	18.1	25.3	24.1	66.3	83.7	79.9	81.2	81.2	81.3	81.2	81.2	89.6	101.8	83.3	81.3	142	3208	3208	3214	3215	3215	282	3370	3370	100.00	0.00	0.00	79.93	79.93
25/04/2012	18.7	26.0	24.2	68.9	84.7	78.2	81.3	79.5	79.6	80.5	80.3	123.3	126.6	85.6	79.6	166	3232	3232	3238	3239	3239	306	3394	3394	100.00	0.00	0.00	78.19	78.19
26/04/2012	18.8	26.4	24.2	69.7	85.7	79.4	97.5	80.9	80.9	92.1	89.0	133.0	136.7	81.1	80.7	190	3256	3256	3262	3263	3263	330	3418	3418	100.00	0.00	0.00	79.40	79.40
27/04/2012	17.7	33.2	24.2	70.2	84.5	80.1	108.6	88.8	85.4	107.6	94.9	129.2	140.6	85.5	85.4	214	3280	3280	3285	3285	3285	354	3442	3442	100.00	0.00	0.00	80.07	80.07
28/04/2012	19.5	25.0	24.0	75.6	86.7	83.5	133.5	133.5	133.5	OL	OL	OL	141.2	133.5	133.5	238	3304	3304	3285	3285	3285	378	3466	3466	100.00	0.00	0.00	83.49	83.49
29/04/2012	19.5	24.8	24.0	77.6	86.7	82.1	131.2	131.2	131.2	OL	OL	OL	139.7	131.2	131.2	262	3328	3328	3285	3285	3285	402	3490	3490	100.00	0.00	0.00	82.05	82.05
30/04/2012	19.5	27.0	24.0	39.8	87.6	82.1	131.7	131.6	131.3	OL	OL	OL	136.4	131.3	131.3	286	3352	3352	3285	3285	3285	426	3514	3514	100.00	0.00	0.00	82.14	82.14

Total [ML]: 0.11 7.79 1,310.53 1,318.43

Water Volume [%]:

Untreated 0.01 %
Below Dose 0.59 %
To Dose 99.40 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\04-Apr



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
License Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: May 2012

Report Created: Friday, June 01, 2012

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	
1/05/2012	94.04	0.00	0.00	0.00	0.00	0.28	0.31	74.99	75.58	0.16	0.16	51.27	51.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.18	74.20	74.50	0.56	0.65	200.46	201.67	99.40
2/05/2012	94.59	0.00	0.00	0.00	0.00	0.00	0.00	97.04	97.04	0.00	0.00	57.44	57.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.11	79.11	0.00	0.00	233.59	233.59	100.00
3/05/2012	94.79	0.00	0.00	7.11	7.11	0.00	0.00	86.02	86.02	0.00	0.00	29.76	29.76	0.00	0.00	46.44	46.44	0.00	0.02	0.06	0.09	0.00	0.00	62.03	62.03	0.00	0.02	231.42	231.44	99.99
4/05/2012	95.32	0.00	0.00	26.44	26.44	0.00	0.00	84.89	84.89	0.00	0.00	0.00	0.00	0.00	0.00	40.98	40.98	0.00	0.02	0.10	0.12	0.00	0.00	81.55	81.55	0.00	0.02	233.95	233.98	99.99
5/05/2012	95.62	0.00	0.00	73.22	73.22	0.00	0.00	84.98	84.98	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	70.88	70.88	0.00	0.00	229.15	229.15	100.00
6/05/2012	95.66	0.00	0.00	70.00	70.00	0.00	0.00	85.01	85.01	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	70.00	70.00	0.00	0.00	225.01	225.01	100.00
7/05/2012	95.97	0.00	0.00	69.98	69.98	0.00	0.00	85.00	85.00	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	0.00	70.01	70.01	0.00	0.00	224.99	224.99	100.00
8/05/2012	95.95	0.00	0.14	46.27	46.42	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.53	23.53	0.00	0.00	70.04	70.04	0.00	0.14	224.84	224.99	99.94
9/05/2012	95.94	0.00	0.00	0.00	0.00	0.00	0.00	85.02	85.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.46	59.46	0.00	0.00	80.52	80.52	0.00	0.00	225.00	225.00	100.00
10/05/2012	95.86	0.00	0.00	0.00	0.00	0.00	0.00	82.23	82.23	0.00	0.00	0.00	0.00	0.00	0.00	33.19	33.19	0.00	0.00	30.04	30.04	0.00	0.00	79.57	79.57	0.00	0.00	225.03	225.03	100.00
11/05/2012	96.09	0.00	0.02	39.20	39.22	0.00	0.00	38.56	38.56	0.00	0.00	14.10	14.10	0.00	0.00	62.29	62.29	0.00	0.00	0.00	0.00	0.00	0.00	76.75	76.75	0.00	0.02	230.89	230.91	99.99
12/05/2012	96.35	0.00	0.00	74.43	74.43	0.00	0.00	0.00	0.00	0.00	0.00	80.53	80.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.70	83.70	0.00	0.00	238.65	238.65	100.00
13/05/2012	96.42	0.00	0.00	73.85	73.85	0.00	0.00	0.00	0.00	0.00	0.00	80.13	80.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.65	83.65	0.00	0.00	237.64	237.64	100.00
14/05/2012	96.00	0.00	0.00	73.53	73.53	0.00	0.00	53.05	53.05	0.00	0.28	10.42	10.70	0.00	0.00	29.55	29.55	0.00	0.00	19.52	19.52	0.00	0.00	51.85	51.85	0.00	0.28	237.91	238.20	99.88
15/05/2012	96.27	0.00	0.00	85.02	85.02	0.00	0.00	0.00	0.00	0.00	0.00	11.53	11.53	0.00	0.25	59.72	59.97	0.00	0.00	83.20	83.20	0.00	0.00	0.00	0.00	0.00	0.25	239.47	239.72	99.90
16/05/2012	96.22	0.00	0.00	41.93	41.93	0.00	0.00	43.11	43.11	0.00	0.00	35.01	35.01	0.00	0.05	37.63	37.67	0.00	0.00	84.75	84.75	0.00	0.00	0.00	0.00	0.00	0.05	242.43	242.47	99.98
17/05/2012	95.88	0.00	0.00	30.61	30.61	0.00	0.00	55.10	55.10	0.00	0.00	20.36	20.36	0.00	0.00	41.30	41.30	0.10	0.15	55.82	56.07	0.00	0.00	43.08	43.08	0.10	0.15	246.27	246.52	99.90
18/05/2012	95.72	0.00	0.00	73.34	73.34	0.00	0.00	80.88	80.88	0.00	0.00	21.54	21.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.07	77.07	0.00	0.00	252.84	252.84	100.00
19/05/2012	95.74	0.00	0.00	78.17	78.17	0.00	0.00	17.84	17.84	0.00	0.00	41.77	41.77	0.00	0.00	38.09	38.09	0.00	0.00	0.00	0.00	0.00	0.00	75.51	75.51	0.00	0.00	251.37	251.37	100.00
20/05/2012	95.70	0.00	0.00	82.93	82.93	0.00	0.00	0.00	0.00	0.00	0.00	43.47	43.47	0.00	0.00	26.08	26.08	0.00	0.00	0.00	0.00	0.00	0.00	72.78	72.78	0.00	0.00	225.27	225.27	100.00
21/05/2012	93.60	0.00	0.00	83.19	83.19	0.00	0.04	0.08	0.13	0.00	0.00	56.26	56.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	72.49	72.49	0.00	0.04	212.02	212.07	99.98
22/05/2012	96.68	0.00	0.00	75.68	75.68	0.00	0.05	26.40	26.46	0.00	0.00	38.08	38.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.75	76.75	0.00	0.05	216.91	216.97	99.98
23/05/2012	96.87	0.00	0.00	21.39	21.39	0.00	0.00	78.70	78.70	0.00	0.00	0.00	0.00	0.00	0.00	43.45	43.45	0.00	0.00	0.00	0.00	0.00	0.00	77.32	77.32	0.00	0.00	220.86	220.86	100.00
24/05/2012	96.88	0.00	0.00	0.00	0.00	0.00	0.00	84.64	84.64	0.00	0.00	0.00	0.00	0.00	0.00	61.85	61.85	0.00	0.00	0.00	0.00	0.00	0.00	72.55	72.55	0.00	0.00	219.04	219.04	100.00
25/05/2012	96.94	0.00	0.06	61.77	61.83	0.00	0.00	23.20	23.20	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	73.70	73.70	0.00	0.06	221.96	222.03	99.97
26/05/2012	97.10	0.00	0.00	84.98	84.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.36	65.36	0.00	0.00	0.00	0.00	0.00	0.00	75.13	75.13	0.00	0.00	225.48	225.48	100.00
27/05/2012	97.25	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.79	66.79	0.00	0.00	0.00	0.00	0.00	0.00	76.31	76.31	0.00	0.00	228.09	228.09	100.00
28/05/2012	97.17	0.00	0.00	84.97	84.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.93	67.93	0.00	0.00	0.00	0.00	0.00	0.00	77.89	77.89	0.00	0.00	230.80	230.80	100.00
29/05/2012	97.17	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.85	67.85	0.00	0.00	0.00	0.00	0.00	0.00	77.94	77.94	0.00	0.00	230.79	230.79	100.00
30/05/2012	97.22	0.00	0.00	80.93	80.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.74	73.74	0.00	0.00	0.00	0.00	0.00	0.00	75.46	75.46	0.00	0.00	230.14	230.14	100.00
31/05/2012	97.18	0.00	0.00	77.10	77.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.42	78.42	0.00	0.00	0.00	0.00	0.00	0.00	75.02	75.02	0.00	0.00	230.55	230.55	100.00
		0.00	0.23	1686.04	1686.27	0.28	0.41	1351.73	1352.42	0.16	0.44	591.67	592.26	0.00	0.30	1004.03	1004.33	0.10	0.20	356.49	356.79	0.12	0.18	2132.85	2133.15	0.66	1.75	7122.82	7125.22	

Water Volume [%]

Untreated: 0.01 %
Below Dose: 0.02 %
To Dose: 99.97 %

Notes 1. UV Transmittance measured at Branch 1 Online Analyser

Submitted By (Print) J.Hume

Signature Original signed by J.Hume



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
License Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: May 2012

Report Created: Friday, June 01, 2012

Reactor: UVR-100A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated		Below Dose	To Dose	Total	
1/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2535	4667	654	2191	4670	4670	1319	1427	4550	OL	0.00	0.00	0.00	0.00	
2/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2535	4667	654	2191	4670	4670	1319	1427	4550	OL	0.00	0.00	0.00	0.00	
3/05/2012	0.0	64.9	24.3	0.0	64.7	54.8	83.4	106.2	101.7	97.7	56.7	59.3	119.2	85.6	130.5	2535	4667	654	2191	4670	4670	1319	1427	4550	100.00	0.00	0.00	7.11	7.11	
4/05/2012	16.6	98.1	24.1	5.1	92.8	64.1	102.0	120.4	111.6	110.0	68.3	67.5	136.7	102.4	137.0	2545	4677	664	2191	4670	4671	1329	1437	4560	100.00	0.00	0.00	26.44	26.44	
5/05/2012	19.4	28.0	24.0	43.5	95.0	73.2	117.7	126.9	118.4	OL	OL	OL	146.6	117.4	145.3	2569	4701	688	2191	4670	4671	1353	1461	4584	100.00	0.00	0.00	73.22	73.22	
6/05/2012	19.2	27.8	24.0	66.7	73.4	70.0	112.5	126.8	112.3	OL	OL	OL	146.3	112.2	143.0	2593	4725	712	2191	4670	4671	1377	1485	4608	100.00	0.00	0.00	70.00	70.00	
7/05/2012	19.5	24.7	24.0	66.6	73.6	70.0	112.4	130.5	115.5	OL	OL	OL	148.9	112.2	146.4	2617	4749	736	2191	4670	4671	1401	1509	4632	100.00	0.00	0.00	69.98	69.98	
8/05/2012	0.0	42.5	24.1	0.0	74.3	69.5	112.4	130.1	119.0	105.2	12.9	59.4	150.4	111.6	144.6	2633	4765	752	2192	4670	4671	1417	1525	4648	99.69	0.00	0.14	46.27	46.42	
9/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2633	4765	752	2192	4670	4671	1417	1525	4648	OL	0.00	0.00	0.00	0.00	
10/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2633	4765	752	2192	4670	4671	1417	1525	4648	OL	0.00	0.00	0.00	0.00	
11/05/2012	0.0	101.8	24.3	0.0	81.1	76.3	122.3	134.4	148.9	103.6	35.9	73.4	136.7	121.4	142.6	2646	4778	764	2192	4671	4671	1430	1537	4661	99.94	0.00	0.02	39.20	39.22	
12/05/2012	18.4	25.0	23.9	70.7	79.4	74.4	117.6	118.5	116.9	96.9	73.6	73.1	119.0	117.1	117.0	2670	4802	788	2193	4672	4673	1454	1561	4685	100.00	0.00	0.00	74.43	74.43	
13/05/2012	18.6	44.2	24.2	27.2	81.5	73.9	80.1	100.4	75.3	111.4	75.3	75.3	125.0	80.0	78.5	2694	4826	812	2217	4696	4697	1478	1585	4709	100.00	0.00	0.00	73.85	73.85	
14/05/2012	17.4	43.6	24.2	0.0	101.3	73.5	87.3	105.0	77.3	110.0	75.3	75.6	148.4	95.3	99.6	2718	4850	836	2240	4719	4719	1502	1609	4733	100.00	0.00	0.00	73.53	73.53	
15/05/2012	17.7	34.5	24.1	77.7	88.1	85.0	106.7	118.1	88.4	121.6	85.7	86.5	167.2	111.7	146.0	2742	4874	860	2263	4742	4742	1526	1633	4757	100.00	0.00	0.00	85.02	85.02	
16/05/2012	0.0	44.7	24.0	0.0	88.2	84.9	135.9	136.2	135.8	OL	OL	OL	160.4	135.7	168.2	2754	4886	872	2263	4742	4742	1538	1645	4769	100.00	0.00	0.00	41.93	41.93	
17/05/2012	0.0	97.3	24.1	0.0	126.2	82.3	131.3	139.0	133.1	101.9	62.6	70.9	146.6	130.1	164.3	2763	4895	881	2264	4743	4743	1547	1654	4778	100.00	0.00	0.00	30.61	30.61	
18/05/2012	19.7	28.2	24.4	51.2	85.4	73.3	127.3	143.4	164.4	OL	OL	OL	152.0	119.3	156.5	2787	4919	905	2264	4743	4743	1571	1678	4802	100.00	0.00	0.00	73.34	73.34	
19/05/2012	19.3	27.7	24.7	51.2	95.1	78.1	134.3	143.0	166.3	OL	OL	OL	149.1	130.0	150.0	2811	4943	929	2264	4743	4743	1595	1702	4826	100.00	0.00	0.00	78.17	78.17	
20/05/2012	19.6	24.9	24.0	74.8	90.0	82.9	132.7	139.7	154.3	OL	OL	OL	146.6	132.6	149.7	2835	4967	953	2264	4743	4743	1619	1726	4850	100.00	0.00	0.00	82.93	82.93	
21/05/2012	19.4	27.6	24.0	43.4	87.2	83.2	133.0	138.3	151.4	OL	OL	OL	145.5	133.0	153.8	2859	4991	977	2264	4743	4743	1643	1750	4874	100.00	0.00	0.00	83.19	83.19	
22/05/2012	19.8	27.9	24.3	55.3	87.2	75.6	132.0	136.6	153.5	OL	OL	OL	146.8	125.4	156.0	2883	5015	1001	2264	4743	4743	1667	1774	4898	100.00	0.00	0.00	75.68	75.68	
23/05/2012	0.0	58.7	25.5	0.0	89.7	61.3	121.0	133.9	152.6	94.4	84.2	82.7	146.5	98.8	164.1	2891	5023	1010	2265	4744	4744	1675	1783	4906	100.00	0.00	0.00	21.39	21.39	
24/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2891	5023	1010	2265	4744	4744	1675	1783	4906	OL	0.00	0.00	0.00	0.00	
25/05/2012	17.4	77.6	24.1	3.6	90.9	85.0	130.5	139.1	153.8	112.1	82.0	85.7	148.8	127.6	163.9	2909	5041	1027	2270	4749	4749	1693	1800	4924	99.90	0.00	0.06	61.77	61.83	
26/05/2012	19.3	24.8	24.0	80.0	89.1	85.0	135.9	140.7	154.2	OL	OL	OL	150.5	135.9	159.5	2933	5065	1051	2270	4749	4749	1717	1824	4948	100.00	0.00	0.00	84.98	84.98	
27/05/2012	19.4	26.5	24.0	80.1	88.1	85.0	135.9	140.4	149.3	OL	OL	OL	149.9	135.9	154.5	2957	5089	1075	2270	4749	4749	1741	1848	4972	100.00	0.00	0.00	85.00	85.00	
28/05/2012	19.5	25.2	24.0	81.9	87.4	85.0	135.9	138.8	144.8	OL	OL	OL	149.4	135.9	154.9	2981	5113	1099	2270	4749	4749	1765	1872	4996	100.00	0.00	0.00	84.97	84.97	
29/05/2012	19.2	24.7	24.0	81.3	88.7	85.0	135.9	136.8	139.9	OL	OL	OL	146.6	135.9	148.9	3005	5137	1123	2270	4749	4749	1789	1896	5020	100.00	0.00	0.00	85.00	85.00	
30/05/2012	19.0	41.7	24.0	20.1	93.4	81.0	129.8	136.0	140.0	OL	OL	OL	147.7	129.6	152.7	3029	5161	1147	2270	4749	4749	1813	1920	5044	100.00	0.00	0.00	80.93	80.93	
31/05/2012	19.0	24.6	24.0	73.8	80.6	77.1	123.6	134.9	135.5	OL	OL	OL	147.7	123.4	149.7	3053	5185	1171	2270	4749	4749	1837	1944	5068	100.00	0.00	0.00	77.10	77.10	

Water Volume [%]

Untreated: 0.00 %
Below Dose 0.01 %
To Dose 99.99 %

Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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Total [ML] 0.00 0.23 1686.04 1686.27



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
License Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: May 2012
Reactor: UVR-200A
Report Created: Friday, June 01, 2012

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/05/2012	0.0	93.3	24.2	0.0	91.8	78.2	185.7	88.7	88.8	308.1	135.4	88.9	247.0	82.6	92.0	4493	4493	4492	216	3303	2314	4493	4493	4493	99.22	0.28	0.31	74.99	75.58
2/05/2012	21.3	37.9	24.3	43.2	109.2	97.0	141.7	98.3	98.2	292.1	156.3	120.6	264.2	98.3	98.7	4517	4517	4516	240	3327	2338	4517	4517	4517	100.00	0.00	0.00	97.04	97.04
3/05/2012	21.6	25.9	24.3	66.0	105.3	87.2	91.9	88.4	88.3	270.4	181.0	149.6	264.2	88.5	88.9	4541	4541	4540	264	3351	2362	4541	4541	4541	100.00	0.00	0.00	86.02	86.02
4/05/2012	21.4	26.2	24.3	53.5	96.9	84.9	86.5	86.4	86.2	286.4	195.0	139.8	264.4	86.2	87.1	4565	4565	4564	288	3375	2386	4565	4565	4565	100.00	0.00	0.00	84.89	84.89
5/05/2012	22.1	25.5	24.3	62.8	103.1	85.0	87.9	86.5	86.3	315.9	205.7	141.2	272.7	86.3	88.7	4589	4589	4588	312	3399	2410	4589	4589	4589	100.00	0.00	0.00	84.98	84.98
6/05/2012	23.7	24.8	24.3	82.0	88.1	85.0	101.2	86.6	86.4	318.1	205.3	141.3	273.4	86.3	91.1	4613	4613	4612	336	3423	2434	4613	4613	4613	100.00	0.00	0.00	85.01	85.01
7/05/2012	18.3	32.4	24.3	81.9	88.5	85.0	122.2	95.6	93.2	324.4	208.5	144.9	275.8	86.3	94.8	4637	4637	4636	360	3447	2458	4634	4634	4635	100.00	0.00	0.00	85.00	85.00
8/05/2012	17.7	34.7	24.1	72.9	108.1	85.0	138.7	135.4	135.1	324.8	209.1	145.2	185.4	86.8	85.3	4661	4661	4660	384	3471	2482	4635	4635	4635	100.00	0.00	0.00	85.00	85.00
9/05/2012	17.7	34.9	24.2	81.0	88.9	85.0	177.3	114.2	112.9	327.3	207.3	146.2	229.7	86.7	86.4	4685	4685	4684	408	3495	2506	4647	4647	4647	100.00	0.00	0.00	85.02	85.02
10/05/2012	22.1	25.4	24.3	58.2	87.7	82.2	88.5	83.8	83.6	318.2	204.7	145.0	246.9	83.7	84.3	4709	4709	4708	432	3519	2530	4671	4671	4671	100.00	0.00	0.00	82.23	82.23
11/05/2012	0.0	40.6	24.3	0.0	82.1	78.7	80.5	80.3	79.2	325.1	209.7	148.1	256.3	80.1	85.4	4721	4721	4720	444	3530	2542	4683	4683	4683	100.00	0.00	0.00	38.56	38.56
12/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4721	4721	4720	444	3530	2542	4683	4683	4683	OL	0.00	0.00	0.00	0.00
13/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4721	4721	4720	444	3530	2542	4683	4683	4683	OL	0.00	0.00	0.00	0.00
14/05/2012	0.0	55.6	24.3	0.0	92.9	84.4	147.8	88.0	85.9	312.5	204.4	146.4	252.7	86.1	90.1	4736	4736	4735	459	3545	2557	4698	4698	4698	100.00	0.00	0.00	53.05	53.05
15/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4736	4736	4735	459	3545	2557	4698	4698	4698	OL	0.00	0.00	0.00	0.00
16/05/2012	14.8	62.4	24.1	3.9	107.3	85.0	90.1	86.3	85.0	313.2	211.4	145.7	262.1	86.4	95.1	4748	4748	4747	471	3558	2569	4711	4710	4711	100.00	0.00	0.00	43.11	43.11
17/05/2012	0.0	54.2	24.0	0.0	126.2	84.4	85.9	85.7	83.8	305.3	210.5	147.3	258.5	85.7	91.2	4764	4764	4763	487	3573	2585	4726	4726	4726	100.00	0.00	0.00	55.10	55.10
18/05/2012	23.2	25.1	24.3	66.6	91.3	80.9	82.3	82.4	82.2	299.8	209.8	146.4	256.2	82.3	87.7	4788	4788	4787	511	3597	2609	4750	4750	4750	100.00	0.00	0.00	80.88	80.88
19/05/2012	0.0	38.6	24.1	0.0	83.9	81.0	82.3	82.3	81.0	301.4	208.6	144.8	254.2	82.4	86.9	4793	4793	4792	516	3603	2614	4756	4755	4756	100.00	0.00	0.00	17.84	17.84
20/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4793	4793	4792	516	3603	2614	4756	4755	4756	OL	0.00	0.00	0.00	0.00
21/05/2012	0.0	39.0	21.9	0.0	66.5	45.0	59.2	50.9	31.3	200.7	159.6	110.7	171.6	68.8	80.7	4793	4793	4792	516	3603	2614	4756	4755	4756	65.57	0.00	0.04	0.08	0.13
22/05/2012	17.8	108.3	24.4	3.9	81.5	78.7	198.3	118.6	109.3	298.3	210.6	162.9	259.3	124.0	127.7	4794	4793	4792	524	8	2622	4764	4763	4764	99.80	0.00	0.05	26.40	26.46
23/05/2012	0.0	113.1	24.1	0.0	96.2	83.1	155.8	106.5	119.9	255.5	174.6	133.2	257.9	131.4	131.5	4794	4794	4794	547	31	2645	4787	4786	4787	100.00	0.00	0.00	78.70	78.70
24/05/2012	21.6	25.6	24.0	62.9	88.8	84.7	OL	OL	OL	255.7	164.2	135.4	241.9	135.3	135.5	4794	4794	4794	571	55	2669	4811	4810	4811	100.00	0.00	0.00	84.64	84.64
25/05/2012	0.0	39.5	24.0	0.0	87.6	84.9	OL	OL	OL	269.2	161.9	135.9	241.4	135.7	135.8	4794	4794	4794	578	61	2676	4817	4817	4817	100.00	0.00	0.00	23.20	23.20
26/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4794	4794	4794	578	61	2676	4817	4817	4817	OL	0.00	0.00	0.00	0.00
27/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4794	4794	4794	578	61	2676	4817	4817	4817	OL	0.00	0.00	0.00	0.00
28/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4794	4794	4794	578	61	2676	4817	4817	4817	OL	0.00	0.00	0.00	0.00
29/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4794	4794	4794	578	61	2676	4817	4817	4817	OL	0.00	0.00	0.00	0.00
30/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4794	4794	4794	578	61	2676	4817	4817	4817	OL	0.00	0.00	0.00	0.00
31/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4794	4794	4794	578	61	2676	4817	4817	4817	OL	0.00	0.00	0.00	0.00

Water Volume [%]
Untreated: 0.02 %
Below Dose 0.03 %
To Dose 99.95 %

Total [ML] 0.28 0.41 1351.73 1352.42

Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
License Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: May 2012
Reactor: UVR-300A
Report Created: Friday, June 01, 2012

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/05/2012	0.0	82.4	24.4	0.0	62.4	54.2	109.0	82.0	74.4	131.1	87.4	63.7	142.1	82.5	74.9	3411	3411	3411	3436	3436	3436	3452	3451	3451	99.40	0.16	0.16	51.27	51.58
2/05/2012	21.1	39.8	24.2	19.2	68.0	57.5	129.5	92.7	92.6	150.6	103.1	92.7	OL	OL	OL	3435	3435	3435	3460	3460	3460	3452	3451	3451	100.00	0.00	0.00	57.44	57.44
3/05/2012	0.0	41.0	25.7	0.0	99.3	56.3	134.9	97.4	100.1	156.4	109.2	101.2	OL	OL	OL	3448	3448	3448	3473	3473	3473	3452	3451	3451	100.00	0.00	0.00	29.76	29.76
4/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3448	3448	3448	3473	3473	3473	3452	3451	3451	OL	0.00	0.00	0.00	0.00
5/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3448	3448	3448	3473	3473	3473	3452	3451	3451	OL	0.00	0.00	0.00	0.00
6/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3448	3448	3448	3473	3473	3473	3452	3451	3451	OL	0.00	0.00	0.00	0.00
7/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3448	3448	3448	3473	3473	3473	3452	3451	3451	OL	0.00	0.00	0.00	0.00
8/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3448	3448	3448	3473	3473	3473	3452	3451	3451	OL	0.00	0.00	0.00	0.00
9/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3448	3448	3448	3473	3473	3473	3452	3451	3451	OL	0.00	0.00	0.00	0.00
10/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3448	3448	3448	3473	3473	3473	3452	3451	3451	OL	0.00	0.00	0.00	0.00
11/05/2012	18.8	88.6	24.3	5.6	84.8	80.8	135.0	120.2	122.4	105.4	108.1	105.6	134.0	116.3	115.6	3452	3452	3452	3474	3475	3474	3456	3456	3455	100.00	0.00	0.00	14.10	14.10
12/05/2012	21.1	25.7	24.1	75.5	86.3	80.5	144.8	128.8	128.8	OL	OL	OL	137.1	128.8	128.8	3476	3476	3476	3474	3475	3474	3480	3480	3479	100.00	0.00	0.00	80.53	80.53
13/05/2012	21.0	40.0	24.1	28.2	94.1	80.2	142.8	128.4	128.4	OL	OL	OL	138.0	128.3	128.3	3500	3500	3500	3474	3475	3474	3504	3504	3503	100.00	0.00	0.00	80.13	80.13
14/05/2012	0.0	42.6	23.9	0.0	87.3	81.1	137.6	128.9	129.2	51.3	52.5	44.0	135.1	128.7	128.4	3503	3503	3504	3474	3475	3474	3507	3507	3507	97.35	0.00	0.28	10.42	10.70
15/05/2012	21.4	95.3	24.8	0.0	72.4	69.1	133.2	111.0	110.6	154.4	125.1	113.9	122.6	93.2	84.5	3507	3507	3508	3478	3479	3478	3507	3507	3507	100.00	0.00	0.00	11.53	11.53
16/05/2012	0.0	41.3	24.1	0.0	77.6	71.5	137.3	108.3	111.3	138.4	112.2	108.4	91.3	78.3	74.7	3519	3519	3519	3490	3491	3490	3509	3509	3509	100.00	0.00	0.00	35.01	35.01
17/05/2012	0.0	69.7	24.1	0.0	94.0	77.1	136.1	78.0	96.9	109.5	89.3	77.0	88.2	78.5	78.2	3525	3525	3526	3496	3497	3497	3516	3515	3515	100.00	0.00	0.00	20.36	20.36
18/05/2012	16.3	49.9	24.2	6.9	64.4	59.2	131.7	61.4	60.4	104.6	87.3	58.6	84.4	71.4	61.9	3534	3534	3535	3505	3506	3505	3524	3524	3524	100.00	0.00	0.00	21.54	21.54
19/05/2012	18.2	34.5	24.6	33.2	54.6	41.8	136.0	56.3	54.5	119.9	96.9	57.3	101.7	76.9	64.6	3544	3544	3544	3529	3530	3529	3548	3548	3548	100.00	0.00	0.00	41.77	41.77
20/05/2012	0.0	79.2	24.4	0.0	59.0	43.8	131.1	74.3	84.3	143.9	114.2	72.0	107.5	82.6	68.5	3564	3564	20	3553	3554	3553	3553	3553	3552	100.00	0.00	0.00	43.47	43.47
21/05/2012	21.0	26.8	24.1	42.7	59.1	56.3	134.3	90.6	90.7	156.4	117.8	90.6	OL	OL	OL	3588	3588	44	3577	3578	3577	3553	3553	3552	100.00	0.00	0.00	56.26	56.26
22/05/2012	0.0	41.5	24.1	0.0	60.5	57.3	134.2	92.2	92.3	158.3	117.8	92.2	OL	OL	OL	3604	3604	60	3593	3594	3593	3553	3553	3552	100.00	0.00	0.00	38.08	38.08
23/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3604	3604	60	3593	3594	3593	3553	3553	3552	OL	0.00	0.00	0.00	0.00
24/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3604	3604	60	3593	3594	3593	3553	3553	3552	OL	0.00	0.00	0.00	0.00
25/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3604	3604	60	3593	3594	3593	3553	3553	3552	OL	0.00	0.00	0.00	0.00
26/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3604	3604	60	3593	3594	3593	3553	3553	3552	OL	0.00	0.00	0.00	0.00
27/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3604	3604	60	3593	3594	3593	3553	3553	3552	OL	0.00	0.00	0.00	0.00
28/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3604	3604	60	3593	3594	3593	3553	3553	3552	OL	0.00	0.00	0.00	0.00
29/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3604	3604	60	3593	3594	3593	3553	3553	3552	OL	0.00	0.00	0.00	0.00
30/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3604	3604	60	3593	3594	3593	3553	3553	3552	OL	0.00	0.00	0.00	0.00
31/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3604	3604	60	3593	3594	3593	3553	3553	3552	OL	0.00	0.00	0.00	0.00
Total [ML]																										0.16	0.44	591.67	592.26

Water Volume [%]
Untreated: 0.03 %
Below Dose 0.07 %
To Dose 99.90 %

Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line
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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
License Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: May 2012
Reactor: UVR-400A
Report Created: Friday, June 01, 2012

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Water Volume [ML]			
																										Untreated	Below Dose	To Dose	Total
1/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2482	2482	498	2639	2640	2640	2712	1681	2711	OL	0.00	0.00	0.00	0.00
2/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2482	2482	498	2639	2640	2640	2712	1681	2711	OL	0.00	0.00	0.00	0.00
3/05/2012	20.6	63.9	24.4	4.4	91.4	70.0	71.7	75.6	70.9	101.4	77.5	78.2	93.0	80.2	119.7	2482	2482	498	2639	2640	2640	2712	1681	2711	100.00	0.00	0.00	46.44	46.44
4/05/2012	0.0	39.0	23.8	0.0	72.8	69.6	69.4	77.8	71.0	108.2	77.1	75.2	95.2	74.7	121.9	2497	2496	512	2654	2654	2654	2726	1695	2725	100.00	0.00	0.00	40.98	40.98
5/05/2012	0.0	45.3	26.1	0.0	68.1	40.8	37.5	63.6	41.6	80.9	82.1	69.0	77.0	67.0	100.6	2497	2497	512	2654	2654	2654	2726	1696	2725	100.00	0.00	0.00	0.07	0.07
6/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2497	2497	512	2654	2654	2654	2726	1696	2725	OL	0.00	0.00	0.00	0.00
7/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2497	2497	512	2654	2654	2654	2726	1696	2725	OL	0.00	0.00	0.00	0.00
8/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2497	2497	512	2654	2654	2654	2726	1696	2725	OL	0.00	0.00	0.00	0.00
9/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2497	2497	512	2654	2654	2654	2726	1696	2725	OL	0.00	0.00	0.00	0.00
10/05/2012	21.0	63.9	26.1	4.6	89.9	72.8	138.0	98.5	76.5	122.4	87.0	84.8	103.7	97.2	121.0	2508	2508	523	2665	2665	2665	2737	1707	2736	100.00	0.00	0.00	33.19	33.19
11/05/2012	0.0	33.9	24.2	0.0	82.5	75.3	111.5	76.7	76.1	86.4	76.9	76.6	77.1	77.0	78.2	2527	2527	543	2684	2685	2685	2757	1726	2756	100.00	0.00	0.00	62.29	62.29
12/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2527	2527	543	2684	2685	2685	2757	1726	2756	OL	0.00	0.00	0.00	0.00
13/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2527	2527	543	2684	2685	2685	2757	1726	2756	OL	0.00	0.00	0.00	0.00
14/05/2012	0.0	63.9	25.7	0.0	109.5	75.0	143.4	88.9	75.4	129.8	85.3	88.5	113.1	105.3	138.8	2537	2537	553	2694	2695	2694	2766	1736	2766	99.99	0.00	0.00	29.55	29.55
15/05/2012	0.0	32.2	24.2	0.0	75.0	71.8	98.4	73.2	72.7	101.2	81.4	81.3	99.0	85.3	96.5	2553	2553	569	2714	2715	2714	2786	1756	2786	99.58	0.00	0.25	59.72	59.97
16/05/2012	17.1	57.0	24.4	0.0	78.8	73.6	82.4	74.9	76.0	75.7	75.3	75.1	81.2	75.1	83.9	2566	2566	581	2726	2727	2727	2799	1768	2798	99.88	0.00	0.05	37.63	37.67
17/05/2012	0.0	43.2	23.7	0.0	95.7	79.2	80.8	80.8	77.4	80.5	80.7	80.8	80.7	80.7	83.5	2578	2578	594	2739	2740	2739	2811	1781	2811	100.00	0.00	0.00	41.30	41.30
18/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2578	2578	594	2739	2740	2739	2811	1781	2811	OL	0.00	0.00	0.00	0.00
19/05/2012	18.4	52.4	24.7	2.8	53.3	48.8	51.0	50.4	50.4	50.5	51.4	50.7	61.5	70.8	112.3	2597	2597	613	2758	2758	2758	2830	1800	2829	100.00	0.00	0.00	38.09	38.09
20/05/2012	0.0	34.5	24.7	0.0	70.9	48.4	50.0	50.1	50.0	50.0	67.1	55.9	73.6	71.6	142.3	2610	2610	626	2771	2771	2771	2843	1813	2842	100.00	0.00	0.00	26.08	26.08
21/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2610	2610	626	2771	2771	2771	2843	1813	2842	OL	0.00	0.00	0.00	0.00
22/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2610	2610	626	2771	2771	2771	2843	1813	2842	OL	0.00	0.00	0.00	0.00
23/05/2012	17.4	55.6	24.5	4.1	64.7	61.5	63.1	63.2	63.0	63.2	84.3	72.4	96.2	65.6	157.7	2627	2627	643	2788	2788	2788	2860	1830	2859	100.00	0.00	0.00	43.45	43.45
24/05/2012	18.7	33.0	24.5	42.6	67.5	61.9	77.5	64.0	63.8	63.8	86.1	77.1	106.4	64.0	157.8	2651	2651	667	2811	2812	2812	2884	1854	2883	100.00	0.00	0.00	61.85	61.85
25/05/2012	23.7	25.3	24.5	60.7	69.3	63.3	65.7	64.8	64.8	65.0	84.6	72.6	108.5	64.8	149.4	2675	2675	691	2835	2836	2836	2908	1878	2907	100.00	0.00	0.00	63.30	63.30
26/05/2012	23.8	25.1	24.5	60.7	69.3	65.3	67.0	66.8	66.8	66.9	83.3	70.5	111.4	66.9	148.3	2699	2699	715	2859	2860	2860	2932	1902	2931	100.00	0.00	0.00	65.36	65.36
27/05/2012	23.8	25.2	24.5	64.1	69.3	66.8	68.4	68.2	68.2	68.3	81.4	70.2	114.0	68.3	148.8	2723	2723	739	2883	2884	2884	2956	1926	2955	100.00	0.00	0.00	66.79	66.79
28/05/2012	23.7	25.3	24.5	65.1	70.5	67.9	69.5	69.4	69.3	69.5	79.7	69.8	116.4	69.5	147.5	2747	2747	763	2907	2908	2908	2980	1950	2979	100.00	0.00	0.00	67.93	67.93
29/05/2012	23.9	25.2	24.5	64.4	70.7	67.9	69.4	69.3	69.3	69.4	77.9	69.3	115.6	69.4	145.2	2771	2771	787	2931	2932	2932	3004	1974	3003	100.00	0.00	0.00	67.85	67.85
30/05/2012	22.6	48.4	24.4	0.0	91.0	73.8	75.4	76.6	75.3	75.5	79.6	75.5	117.7	75.5	146.7	2795	2795	811	2955	2956	2956	3028	1998	3027	100.00	0.00	0.00	73.74	73.74
31/05/2012	23.7	25.3	24.4	75.1	82.9	78.4	79.8	79.8	79.8	79.9	79.8	79.8	116.3	79.9	143.6	2819	2819	835	2979	2980	2980	3052	2022	3051	100.00	0.00	0.00	78.42	78.42
Total [ML]																									0.00	0.30	1004.03	1004.33	

Water Volume [%]

Untreated: 0.00 %
Below Dose 0.03 %
To Dose 99.97 %

Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
License Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: May 2012

Report Created: Friday, June 01, 2012

Reactor: UVR-500A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1395	248	3998	955	2534	OL	0.00	0.00	0 00	0.00
2/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1395	248	3998	955	2534	OL	0.00	0.00	0 00	0.00
3/05/2012	0.0	29.5	20.8	0.0	35.5	22.8	OL	OL	OL	55.5	33.6	88.1	80.2	48.2	85.1	158	4681	1920	3911	1395	248	3998	955	2534	74.40	0.00	0.02	0 06	0.09
4/05/2012	0.0	27.3	19.7	0.0	34.5	28.0	OL	OL	OL	91.2	32.0	164.8	132.7	79.8	128.2	158	4681	1920	3911	1395	248	3999	955	2534	81.71	0.00	0.02	0 10	0.12
5/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1395	248	3999	955	2534	OL	0.00	0.00	0 00	0.00
6/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1395	248	3999	955	2534	OL	0.00	0.00	0 00	0.00
7/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	158	4681	1920	3911	1395	248	3999	955	2534	OL	0.00	0.00	0 00	0.00
8/05/2012	19.7	119.2	24.8	5.0	77.5	69.5	130.2	111.5	372.5	262.2	139.0	151.2	184.3	74.0	140.3	167	4689	1928	3919	1403	256	3999	956	2534	100 00	0.00	0.00	23 53	23.53
9/05/2012	20.5	25.8	24.1	49.4	75.5	59.5	95.9	95.9	178.7	182.7	96.0	95.9	OL	OL	OL	191	4713	1952	3943	1427	280	3999	956	2534	100 00	0.00	0.00	59.46	59.46
10/05/2012	0.0	30.4	24.2	0.0	61.4	54.9	88.8	88.7	91.9	168.7	89.9	88.4	OL	OL	OL	204	4726	1965	3956	1440	294	3999	956	2534	100 00	0.00	0.00	30.04	30.04
11/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	204	4726	1965	3956	1440	294	3999	956	2534	OL	0.00	0.00	0 00	0.00
12/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	204	4726	1965	3956	1440	294	3999	956	2534	OL	0.00	0.00	0 00	0.00
13/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	204	4726	1965	3956	1440	294	3999	956	2534	OL	0.00	0.00	0 00	0.00
14/05/2012	18.8	57.6	24.2	3.2	87.1	80.8	81.6	81.6	81.9	114.2	82.3	82.0	174.4	81.7	80.8	210	4732	1971	3962	1446	299	4005	962	2540	100 00	0.00	0.00	19 52	19.52
15/05/2012	20.3	25.1	24.2	75.0	87.6	83.2	84.7	84.6	84.6	165.6	102.8	84.7	231.6	84.7	84.6	234	4756	1995	3986	1470	323	4029	986	2564	100 00	0.00	0.00	83 20	83.20
16/05/2012	20.4	25.5	24.2	71.8	88.7	84.7	86.3	86.2	86.1	204.4	106.2	86.4	266.9	86.9	86.2	258	4780	2019	4010	1494	347	4053	1010	2588	100 00	0.00	0.00	84.75	84.75
17/05/2012	0.0	91.6	24.4	0.0	110.7	81.8	92.2	89.2	89.0	269.3	117.9	112.6	284.1	98.3	86.4	274	4797	2035	4027	1510	364	4067	1024	2603	99.55	0.10	0.15	55 82	56.07
18/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
19/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
20/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
21/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
22/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
23/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
24/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
25/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
26/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
27/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
28/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
29/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
30/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
31/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	274	4797	2035	4027	1510	364	4067	1024	2603	OL	0.00	0.00	0 00	0.00
Total [ML]																										0.10	0.20	356.49	356.79

Water Volume [%]

Untreated: 0.03 %
Below Dose 0.06 %
To Dose 99.92 %

- Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
License Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: May 2012
Reactor: UVR-600A
Report Created: Friday, June 01, 2012

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/05/2012	0.0	28.9	24.1	0.0	88.9	78.3	131.5	130.9	129.5	16.7	11.9	23.8	137.4	129.0	127.8	308	3374	3374	3285	3286	3285	449	3536	3536	99.60	0.12	0.18	74.20	74.50		
2/05/2012	18.9	35.7	24.0	33.2	98.1	79.1	127.3	126.7	126.7	OL	OL	OL	135.0	126.6	126.7	332	3398	3398	3285	3286	3285	473	3560	3560	100.00	0.00	0.00	79.11	79.11		
3/05/2012	0.0	94.8	24.1	0.0	83.4	79.0	126.7	126.3	126.3	44.1	49.1	58.0	138.3	126.2	126.0	351	3417	3417	3285	3286	3285	491	3579	3579	100.00	0.00	0.00	62.03	62.03		
4/05/2012	18.2	33.1	24.1	57.1	110.3	81.6	91.8	91.9	92.4	84.0	83.3	83.2	101.3	91.7	92.1	375	3441	3441	3305	3305	3305	515	3603	3603	100.00	0.00	0.00	81.55	81.55		
5/05/2012	18.1	31.7	24.1	37.8	89.5	70.9	72.3	72.3	71.7	72.3	72.3	72.3	96.6	72.4	72.3	399	3465	3465	3329	3329	3329	539	3627	3627	100.00	0.00	0.00	70.88	70.88		
6/05/2012	18.2	25.3	24.2	66.1	74.3	70.0	71.6	71.4	71.4	71.4	71.4	71.8	116.6	75.9	71.5	423	3489	3489	3353	3353	3353	563	3651	3651	100.00	0.00	0.00	70.00	70.00		
7/05/2012	15.1	34.4	24.2	67.1	74.1	70.0	92.3	81.0	81.2	72.4	71.2	93.8	154.8	98.0	88.4	447	3513	3513	3372	3372	3372	587	3675	3675	100.00	0.00	0.00	70.01	70.01		
8/05/2012	19.4	26.6	24.0	44.0	88.7	70.0	114.5	112.3	112.2	OL	OL	OL	159.9	112.6	112.3	471	3537	3537	3372	3372	3372	611	3699	3699	100.00	0.00	0.00	70.04	70.04		
9/05/2012	19.6	25.2	24.0	63.9	89.0	80.5	135.3	128.8	128.8	OL	OL	OL	158.0	129.0	128.7	495	3561	3561	3372	3372	3372	635	3723	3723	100.00	0.00	0.00	80.52	80.52		
10/05/2012	18.1	27.8	24.0	47.8	89.6	79.6	138.3	127.6	127.5	OL	OL	OL	152.1	127.4	127.4	519	3585	3585	3372	3372	3372	659	3747	3747	100.00	0.00	0.00	79.57	79.57		
11/05/2012	19.8	25.1	24.0	67.2	86.8	76.8	144.7	123.0	122.9	OL	OL	OL	154.9	123.0	122.9	543	3609	3609	3372	3372	3372	683	3771	3771	100.00	0.00	0.00	76.75	76.75		
12/05/2012	19.8	24.9	24.0	77.5	87.5	83.7	142.3	133.8	133.8	OL	OL	OL	155.0	133.8	133.8	567	3633	3633	3372	3372	3372	707	3795	3795	100.00	0.00	0.00	83.70	83.70		
13/05/2012	19.6	30.0	24.0	53.7	94.4	83.7	137.1	133.8	133.8	OL	OL	OL	153.8	133.8	133.7	591	3657	3657	3372	3372	3372	731	3819	3819	100.00	0.00	0.00	83.65	83.65		
14/05/2012	0.0	39.9	24.0	0.0	100.0	84.8	135.8	135.7	135.6	OL	OL	OL	146.7	135.7	135.5	606	3672	3672	3372	3372	3372	746	3834	3834	100.00	0.00	0.00	51.85	51.85		
15/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	606	3672	3672	3372	3372	3372	746	3834	3834	OL	0.00	0.00	0.00	0.00		
16/05/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	606	3672	3672	3372	3372	3372	746	3834	3834	OL	0.00	0.00	0.00	0.00		
17/05/2012	19.0	94.8	24.4	0.0	121.9	84.4	130.3	109.5	112.6	109.0	86.5	98.6	140.5	110.0	108.7	618	3684	3684	3379	3380	3379	759	3846	3846	100.00	0.00	0.00	43.08	43.08		
18/05/2012	16.5	27.1	24.2	57.4	89.8	77.0	82.1	81.0	78.6	91.0	85.0	83.8	115.4	83.9	78.4	642	3708	3708	3403	3404	3403	783	3870	3870	100.00	0.00	0.00	77.07	77.07		
19/05/2012	18.8	26.9	24.3	68.3	85.0	75.5	77.6	77.0	77.0	93.7	84.7	96.0	128.8	83.0	77.2	666	3732	3732	3427	3428	3427	807	3894	3894	100.00	0.00	0.00	75.51	75.51		
20/05/2012	17.9	34.5	24.1	65.0	90.2	72.8	104.2	101.8	101.8	95.6	83.3	132.7	154.3	109.1	106.2	690	3756	3756	3436	3436	3436	831	3918	3918	100.00	0.00	0.00	72.78	72.78		
21/05/2012	19.5	24.9	24.0	60.9	75.9	72.5	122.1	116.3	116.2	OL	OL	OL	155.8	116.2	116.2	714	3780	3780	3436	3436	3436	855	3942	3942	100.00	0.00	0.00	72.49	72.49		
22/05/2012	19.8	24.9	24.0	70.2	85.0	76.7	140.8	122.8	122.8	OL	OL	OL	155.3	122.8	122.8	738	3804	3804	3436	3436	3436	879	3966	3966	100.00	0.00	0.00	76.75	76.75		
23/05/2012	19.5	24.9	24.0	65.8	85.2	77.3	160.2	123.7	125.9	OL	OL	OL	157.2	123.7	123.7	762	3828	3828	3436	3436	3436	903	3990	3990	100.00	0.00	0.00	77.32	77.32		
24/05/2012	19.7	30.2	24.1	46.9	78.2	72.5	150.6	116.9	118.6	OL	OL	OL	156.1	116.8	116.4	786	3852	3852	3436	3436	3436	927	4014	4014	100.00	0.00	0.00	72.55	72.55		
25/05/2012	19.5	25.0	24.0	69.0	77.1	73.7	143.4	118.1	118.0	OL	OL	OL	153.6	118.0	118.0	810	3876	3876	3436	3436	3436	951	4038	4038	100.00	0.00	0.00	73.70	73.70		
26/05/2012	19.6	25.0	24.0	70.0	79.8	75.1	138.6	120.3	120.3	OL	OL	OL	152.4	120.3	120.3	834	3900	3900	3436	3436	3436	975	4062	4062	100.00	0.00	0.00	75.13	75.13		
27/05/2012	19.7	24.9	24.1	72.7	80.0	76.3	134.2	122.1	122.1	OL	OL	OL	151.9	122.1	122.1	858	3924	3924	3436	3436	3436	999	4086	4086	100.00	0.00	0.00	76.31	76.31		
28/05/2012	19.4	24.9	24.0	73.8	81.8	77.9	130.9	124.7	124.7	OL	OL	OL	151.3	124.7	124.7	882	3948	3948	3436	3436	3436	1023	4110	4110	100.00	0.00	0.00	77.89	77.89		
29/05/2012	19.6	25.0	24.0	74.4	81.7	78.0	128.9	124.8	124.8	OL	OL	OL	148.4	124.8	124.8	906	3972	3972	3436	3436	3436	1047	4134	4134	100.00	0.00	0.00	77.94	77.94		
30/05/2012	19.6	45.6	24.1	8.2	83.9	75.5	128.3	121.0	120.9	OL	OL	OL	149.5	120.9	120.9	930	3996	3996	3436	3436	3436	1071	4158	4158	100.00	0.00	0.00	75.46	75.46		
31/05/2012	19.5	25.0	24.1	69.5	79.5	75.0	121.0	120.1	120.1	OL	OL	OL	148.7	120.1	120.1	954	4020	4020	3436	3436	3436	1095	4182	4182	100.00	0.00	0.00	75.02	75.02		
Total [ML]																										0.12	0.18	2132.85	2133.15		

Water Volume [%]
Untreated: 0.01 %
Below Dose 0.01 %
To Dose 99.99 %

Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line
N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\05-May



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: June 2012Report Created: Tuesday, July 03, 2012

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	
1/06/2012	97.28	0.00	0.00	76.44	76.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.86	77.86	0.00	0.00	33.93	33.93	0.00	0.00	42.80	42.80	0.00	0.00	231.03	231.03	100.00
2/06/2012	97.25	0.00	0.00	76.67	76.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.28	78.28	0.00	0.00	76.05	76.05	0.00	0.00	0.00	0.00	0.00	0.00	231.01	231.01	100.00
3/06/2012	97.21	0.00	0.00	78.61	78.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	58.14	58.19	0.00	0.00	69.15	69.15	0.00	0.11	24.60	24.71	0.00	0.16	230.51	230.67	99.93
4/06/2012	97.23	0.00	0.00	72.42	72.42	0.00	0.00	0.00	0.00	0.00	0.00	77.57	77.57	0.00	0.00	0.00	0.00	0.00	0.00	80.21	80.21	0.00	0.00	2.64	2.64	0.00	0.00	232.84	232.84	100.00
5/06/2012	97.22	0.00	0.00	71.41	71.41	0.00	0.00	0.00	0.00	0.00	0.00	57.23	57.23	0.00	0.00	41.53	41.53	0.00	0.00	76.87	76.87	0.00	0.00	0.00	0.00	0.00	0.00	247.04	247.04	100.00
6/06/2012	97.22	0.00	0.00	72.28	72.28	0.00	0.00	0.00	0.00	0.00	0.00	42.96	42.96	0.00	0.00	70.90	70.90	0.00	0.00	75.22	75.22	0.00	0.03	0.03	0.06	0.00	0.03	261.38	261.42	99.99
7/06/2012	97.17	0.00	0.00	73.86	73.86	0.00	0.00	0.00	0.00	0.00	0.00	44.01	44.01	0.00	0.00	72.13	72.13	0.00	0.00	76.88	76.88	0.00	0.00	0.00	0.00	0.00	0.00	266.88	266.88	100.00
8/06/2012	97.15	0.00	0.00	76.11	76.11	0.00	0.00	0.00	0.00	0.00	0.00	44.47	44.47	0.00	0.00	73.58	73.58	0.00	0.00	77.44	77.44	0.00	0.00	0.00	0.00	0.00	0.00	271.60	271.60	100.00
9/06/2012	97.11	0.00	0.00	71.94	71.94	0.00	0.00	0.00	0.00	0.00	0.00	42.71	42.71	0.00	0.00	70.58	70.58	0.00	0.00	75.08	75.08	0.00	0.00	0.00	0.00	0.00	0.00	260.31	260.31	100.00
10/06/2012	96.99	0.03	0.26	40.68	40.97	0.00	0.00	26.97	26.97	0.02	0.02	60.19	60.23	0.00	0.00	23.33	23.33	0.02	0.02	72.36	72.40	0.00	0.00	0.00	0.00	0.07	0.30	223.53	223.89	99.84
11/06/2012	97.05	0.00	0.00	0.00	0.00	0.00	0.00	72.82	72.82	0.00	0.00	73.08	73.08	0.00	0.00	0.00	0.00	0.00	0.00	74.11	74.11	0.00	0.00	0.00	0.00	0.00	0.00	220.00	220.00	100.00
12/06/2012	97.14	0.00	0.00	0.00	0.00	0.00	0.00	72.71	72.71	0.00	0.00	72.58	72.58	0.06	0.06	0.41	0.52	0.14	0.14	43.19	43.47	0.00	0.00	30.68	30.68	0.20	0.20	219.57	219.97	99.82
13/06/2012	97.14	0.00	0.01	0.00	0.01	0.00	0.00	73.77	73.77	0.00	0.00	73.58	73.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.70	75.70	0.00	0.01	223.05	223.06	99.99
14/06/2012	97.11	0.00	0.00	0.00	0.00	0.00	0.00	76.92	76.92	0.00	0.00	76.16	76.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.33	77.33	0.00	0.00	230.40	230.40	100.00
15/06/2012	96.98	0.00	0.00	0.00	0.00	0.00	0.00	74.94	74.94	0.00	0.00	74.96	74.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.37	77.37	0.00	0.00	227.28	227.28	100.00
16/06/2012	96.94	0.00	0.00	19.56	19.56	0.00	0.00	57.70	57.70	0.00	0.00	78.70	78.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.80	78.80	0.00	0.00	234.76	234.76	100.00
17/06/2012	96.94	0.00	0.00	74.68	74.68	0.00	0.00	0.00	0.00	0.00	0.00	80.26	80.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.35	79.35	0.00	0.00	234.29	234.29	100.00
18/06/2012	96.90	0.00	0.00	73.43	73.43	0.00	0.00	0.00	0.00	0.00	0.00	79.92	79.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.82	80.82	0.00	0.00	234.18	234.18	100.00
19/06/2012	96.89	0.00	0.00	73.01	73.01	0.00	0.00	0.00	0.00	0.00	0.00	79.85	79.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.12	81.12	0.00	0.00	233.98	233.98	100.00
20/06/2012	97.02	0.00	0.00	72.39	72.39	0.00	0.00	0.00	0.00	0.00	0.00	79.19	79.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.38	80.38	0.00	0.00	231.96	231.96	100.00
21/06/2012	97.09	0.00	0.00	72.48	72.48	0.00	0.00	0.00	0.00	0.00	0.00	79.19	79.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.31	80.31	0.00	0.00	231.98	231.98	100.00
22/06/2012	97.15	0.00	0.00	72.53	72.53	0.00	0.00	0.00	0.00	0.00	0.00	79.05	79.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.34	80.34	0.00	0.00	231.92	231.92	100.00
23/06/2012	96.96	0.00	0.00	76.69	76.69	0.00	0.00	0.00	0.00	0.00	0.00	24.33	24.33	0.00	0.00	54.63	54.63	0.00	0.00	0.00	0.00	0.00	0.00	79.84	79.84	0.00	0.00	235.49	235.49	100.00
24/06/2012	97.11	0.00	0.00	78.83	78.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.29	80.29	0.00	0.00	56.34	56.34	0.00	0.00	21.34	21.34	0.00	0.00	236.81	236.81	100.00
25/06/2012	96.99	0.00	0.00	83.21	83.21	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	0.00	0.00	76.21	76.21	0.00	0.00	82.58	82.58	0.00	0.19	0.01	0.20	0.00	0.19	242.25	242.44	99.92
26/06/2012	96.49	0.00	0.00	63.31	63.31	0.00	0.00	58.14	58.14	0.00	0.00	0.00	0.00	0.00	0.00	61.79	61.79	0.00	0.00	74.28	74.28	0.00	0.00	0.00	0.00	0.00	0.00	257.51	257.51	100.00
27/06/2012	96.77	0.00	0.00	54.52	54.52	0.00	0.11	82.50	82.61	0.00	0.00	0.00	0.00	0.00	0.00	59.25	59.25	0.00	0.00	72.99	72.99	0.00	0.00	0.00	0.00	0.00	0.11	269.26	269.37	99.96
28/06/2012	96.78	0.00	0.00	62.01	62.01	0.00	0.00	84.83	84.83	0.00	0.00	0.00	0.00	0.00	0.00	41.33	41.33	0.00	0.00	62.80	62.80	0.00	0.00	22.86	22.86	0.00	0.00	273.84	273.84	100.00
29/06/2012	96.93	0.00	0.00	74.52	74.52	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.04	40.04	0.00	0.00	75.41	75.41	0.00	0.00	274.97	274.97	100.00
30/06/2012	96.85	0.00	0.00	75.40	75.40	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.50	40.50	0.00	0.00	75.85	75.85	0.00	0.00	276.74	276.74	100.00
		0.03	0.28	1737.00	1737.31	0.00	0.11	851.29	851.40	0.02	0.02	1320.23	1320.27	0.06	0.11	940.23	940.39	0.16	0.16	1260.03	1260.34	0.00	0.33	1167.60	1167.93	0.26	1.01	7276.38	7277.65	

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

Submitted By (Print): A.Weremy

Signature: Original signed by A.Weremy



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: June 2012
Reactor: UVR-100A
Report Created: Tuesday, July 03, 2012

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Water Volume [ML]			
																										Untreated	Below Dose	To Dose	Total
1/06/2012	19.2	24.6	24.0	70.3	79.5	76.4	122.7	134.6	133.9	OL	OL	OL	147.4	122.4	149.2	3077	5209	1195	2270	4749	4750	1861	1968	5092	100.00	0.00	0.00	76.44	76.44
2/06/2012	19.5	27.0	24.0	74.0	78.8	76.7	122.8	136.0	140.0	OL	OL	OL	149.4	122.7	154.9	3101	5233	1219	2270	4749	4750	1885	1992	5116	100.00	0.00	0.00	76.67	76.67
3/06/2012	19.4	30.7	24.0	42.0	103.4	78.6	126.0	136.1	143.6	OL	OL	OL	151.9	125.8	162.2	3125	5257	1243	2270	4749	4750	1909	2016	5140	100.00	0.00	0.00	78.61	78.61
4/06/2012	18.8	27.6	24.2	52.6	84.6	72.4	120.6	135.9	142.4	OL	OL	OL	151.7	117.0	169.4	3149	5281	1267	2270	4749	4750	1933	2040	5164	100.00	0.00	0.00	72.42	72.42
5/06/2012	19.4	26.7	24.1	63.1	79.0	71.4	118.5	135.3	135.0	OL	OL	OL	148.2	114.5	158.4	3173	5305	1291	2270	4749	4750	1957	2064	5188	100.00	0.00	0.00	71.41	71.41
6/06/2012	19.7	25.3	24.1	67.1	76.4	72.3	117.3	136.9	128.1	OL	OL	OL	141.7	115.8	148.8	3197	5329	1315	2270	4749	4750	1981	2088	5212	100.00	0.00	0.00	72.28	72.28
7/06/2012	19.4	27.9	24.1	69.3	81.9	73.9	118.8	138.0	128.9	OL	OL	OL	140.8	118.3	151.2	3221	5353	1339	2270	4749	4750	2005	2112	5236	100.00	0.00	0.00	73.86	73.86
8/06/2012	19.6	27.5	24.0	72.2	81.5	76.1	121.9	136.0	125.7	OL	OL	OL	139.1	121.9	148.0	3245	5377	1363	2270	4749	4750	2029	2136	5260	100.00	0.00	0.00	76.11	76.11
9/06/2012	19.5	25.2	24.1	66.3	79.1	71.9	116.9	135.4	124.9	OL	OL	OL	140.2	115.3	145.4	3269	5401	1387	2270	4749	4750	2053	2160	5284	100.00	0.00	0.00	71.94	71.94
10/06/2012	0.0	38.2	24.0	0.0	88.6	68.6	113.5	135.4	125.7	51.1	28.5	3.4	139.2	110.4	148.2	3283	5415	1402	2270	4749	4750	2067	2175	5298	99.29	0.03	0.26	40.68	40.97
11/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3283	5415	1402	2270	4749	4750	2067	2175	5298	OL	0.00	0.00	0.00	0.00
12/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3283	5415	1402	2270	4749	4750	2067	2175	5298	OL	0.00	0.00	0.00	0.00
13/06/2012	0.0	17.9	9.7	0.0	21.0	11.3	103.5	90.1	107.6	95.7	60.0	5.6	109.0	68.2	104.2	3283	5415	1402	2270	4749	4750	2067	2175	5298	0.00	0.00	0.01	0.00	0.01
14/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3283	5415	1402	2270	4749	4750	2067	2175	5298	OL	0.00	0.00	0.00	0.00
15/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3283	5415	1402	2270	4749	4750	2067	2175	5298	OL	0.00	0.00	0.00	0.00
16/06/2012	17.8	88.4	24.2	4.7	77.4	74.8	117.8	132.9	131.9	122.5	73.2	158.1	139.3	116.5	180.3	3290	7	1408	2271	1	4750	2073	2181	7	100.00	0.00	0.00	19.56	19.56
17/06/2012	19.3	24.6	24.0	71.2	77.7	74.7	119.7	128.8	131.6	OL	OL	OL	145.9	119.6	178.5	3314	31	1432	2271	1	4750	2097	2205	31	100.00	0.00	0.00	74.68	74.68
18/06/2012	18.8	28.2	24.1	39.4	95.9	73.4	118.0	126.1	124.5	OL	OL	OL	141.3	117.7	164.3	3338	55	1456	2271	1	4750	2121	2229	55	100.00	0.00	0.00	73.43	73.43
19/06/2012	19.5	25.0	24.0	67.0	75.7	73.0	117.3	123.5	118.5	OL	OL	OL	135.8	117.0	152.6	3362	79	1480	2271	1	4750	2145	2253	79	100.00	0.00	0.00	73.01	73.01
20/06/2012	19.4	24.9	24.0	67.8	74.6	72.4	116.3	122.5	116.1	OL	OL	OL	133.1	116.0	146.5	3386	103	1504	2271	1	4750	2169	2277	103	100.00	0.00	0.00	72.39	72.39
21/06/2012	19.6	24.8	24.0	67.7	74.7	72.5	116.5	122.1	116.2	OL	OL	OL	132.3	116.2	142.2	3410	127	1528	2271	1	4750	2193	2301	127	100.00	0.00	0.00	72.48	72.48
22/06/2012	19.5	27.6	24.0	46.7	91.0	72.5	116.5	123.6	116.3	OL	OL	OL	134.9	116.2	145.1	3434	151	1552	2271	1	4750	2217	2325	151	100.00	0.00	0.00	72.53	72.53
23/06/2012	19.7	27.1	24.0	69.3	80.9	76.7	123.1	125.4	122.8	OL	OL	OL	133.4	122.8	146.4	3458	175	1576	2271	1	4750	2241	2349	175	100.00	0.00	0.00	76.69	76.69
24/06/2012	19.8	27.2	24.0	76.4	82.4	78.8	126.4	126.3	126.2	OL	OL	OL	133.6	126.2	146.2	3482	199	1600	2271	1	4750	2265	2373	199	100.00	0.00	0.00	78.83	78.83
25/06/2012	18.9	29.2	24.0	34.8	101.5	83.2	133.4	133.3	133.1	OL	OL	OL	135.2	133.1	143.0	3506	223	1624	2271	1	4750	2289	2397	223	100.00	0.00	0.00	83.21	83.21
26/06/2012	19.7	27.3	24.2	49.8	88.3	63.2	112.5	122.1	105.2	OL	OL	OL	127.9	101.6	136.0	3530	247	1648	2271	1	4750	2313	2421	247	100.00	0.00	0.00	63.31	63.31
27/06/2012	19.8	39.3	24.4	20.4	95.1	54.5	104.7	119.0	95.0	OL	OL	OL	129.5	89.4	140.0	3554	271	1672	2271	1	4750	2337	2445	271	100.00	0.00	0.00	54.52	54.52
28/06/2012	19.5	26.1	24.2	53.9	77.9	62.0	109.2	118.7	102.8	OL	OL	OL	128.1	99.8	139.9	3578	295	1696	2271	1	4750	2361	2469	295	100.00	0.00	0.00	62.01	62.01
29/06/2012	19.7	24.7	24.0	70.9	77.8	74.5	119.6	120.1	119.4	OL	OL	OL	127.4	119.4	139.7	3602	319	1720	2271	1	4750	2385	2493	319	100.00	0.00	0.00	74.52	74.52
30/06/2012	19.3	24.7	24.0	71.0	78.8	75.4	121.0	121.1	120.8	OL	OL	OL	127.3	120.8	139.6	3626	343	1744	2271	1	4750	2409	2517	343	100.00	0.00	0.00	75.40	75.40

Water Volume [%]:
Untreated: 0.00 %
Below Dose 0.02 %
To Dose 99.98 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: June 2012

Report Created: Tuesday, July 03, 2012

Reactor: UVR-200A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4803	4803	4803	587	70	2685	4818	4818	4818	OL	0.00	0.00	0.00	0.00
2/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4803	4803	4803	587	70	2685	4818	4818	4818	OL	0.00	0.00	0.00	0.00
3/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4803	4803	4803	587	70	2685	4818	4818	4818	OL	0.00	0.00	0.00	0.00
4/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4803	4803	4803	587	70	2685	4818	4818	4818	OL	0.00	0.00	0.00	0.00
5/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4803	4803	4803	587	70	2685	4818	4818	4818	OL	0.00	0.00	0.00	0.00
6/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4803	4803	4803	587	70	2685	4818	4818	4818	OL	0.00	0.00	0.00	0.00
7/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4803	4803	4803	587	70	2685	4818	4818	4818	OL	0.00	0.00	0.00	0.00
8/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4803	4803	4803	587	70	2685	4818	4818	4818	OL	0.00	0.00	0.00	0.00
9/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4803	4803	4803	587	70	2685	4818	4818	4818	OL	0.00	0.00	0.00	0.00
10/06/2012	18.0	92.7	24.2	3.3	76.5	72.8	113.4	112.6	143.6	330.5	176.5	136.2	84.2	74.1	114.5	4803	4803	4803	587	70	2685	4818	4818	4818	100.00	0.00	0.00	26.97	26.97
11/06/2012	21.3	32.4	24.2	70.7	76.1	72.8	155.1	116.7	149.6	294.6	224.9	188.1	OL	OL	OL	4827	4827	4827	611	94	2709	4818	4818	4818	100.00	0.00	0.00	72.82	72.82
12/06/2012	21.6	34.2	24.5	47.8	87.8	72.7	212.3	118.5	150.7	290.4	231.1	201.3	OL	OL	OL	4851	4851	4851	635	118	2733	4818	4818	4818	100.00	0.00	0.00	72.71	72.71
13/06/2012	21.6	34.7	24.6	61.2	80.8	74.0	247.9	121.9	142.0	313.3	220.4	191.1	OL	OL	OL	4875	4875	4875	659	142	2757	4818	4818	4818	100.00	0.00	0.00	73.77	73.77
14/06/2012	21.5	28.6	24.2	73.4	82.4	76.9	244.4	123.3	131.1	252.7	204.9	171.3	OL	OL	OL	4899	4899	4899	683	166	2781	4818	4818	4818	100.00	0.00	0.00	76.92	76.92
15/06/2012	21.5	31.1	24.5	59.0	81.5	75.0	245.2	122.8	127.2	245.4	212.6	178.2	OL	OL	OL	4923	4923	4923	707	190	2805	4818	4818	4818	100.00	0.00	0.00	74.94	74.94
16/06/2012	0.0	50.8	24.2	0.0	81.9	78.0	243.5	125.0	127.6	256.0	194.5	163.3	OL	OL	OL	4941	4941	4940	725	208	2823	4818	4818	4818	100.00	0.00	0.00	57.70	57.70
17/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4941	4941	4940	725	208	2823	4818	4818	4818	OL	0.00	0.00	0.00	0.00
18/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4941	4941	4940	725	208	2823	4818	4818	4818	OL	0.00	0.00	0.00	0.00
19/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4941	4941	4940	725	208	2823	4818	4818	4818	OL	0.00	0.00	0.00	0.00
20/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4941	4941	4940	725	208	2823	4818	4818	4818	OL	0.00	0.00	0.00	0.00
21/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4941	4941	4940	725	208	2823	4818	4818	4818	OL	0.00	0.00	0.00	0.00
22/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4941	4941	4940	725	208	2823	4818	4818	4818	OL	0.00	0.00	0.00	0.00
23/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4941	4941	4940	725	208	2823	4818	4818	4818	OL	0.00	0.00	0.00	0.00
24/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4941	4941	4940	725	208	2823	4818	4818	4818	OL	0.00	0.00	0.00	0.00
25/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4941	4941	4940	725	208	2823	4818	4818	4818	OL	0.00	0.00	0.00	0.00
26/06/2012	18.2	97.5	24.3	6.2	86.6	81.2	226.0	120.1	118.9	241.7	152.4	137.3	242.9	118.9	119.2	4946	4945	4945	742	225	2840	4835	4835	4836	100.00	0.00	0.00	58.14	58.14
27/06/2012	0.0	61.2	24.8	0.0	93.9	84.1	19.8	5.4	3.0	227.4	161.2	141.7	275.7	146.2	150.2	4946	4945	4945	765	249	2863	4859	4859	4859	99.87	0.00	0.11	82.50	82.61
28/06/2012	22.7	24.6	24.1	81.0	96.8	84.8	OL	OL	OL	213.4	144.1	135.9	211.4	135.7	135.7	4946	4945	4945	789	273	2887	4883	4883	4883	100.00	0.00	0.00	84.83	84.83
29/06/2012	21.9	24.6	24.1	81.4	88.8	85.0	OL	OL	OL	186.2	136.2	135.9	164.4	136.0	136.0	4946	4945	4945	813	297	2911	4907	4907	4907	100.00	0.00	0.00	84.99	84.99
30/06/2012	21.2	24.6	24.1	81.5	88.8	85.0	OL	OL	OL	163.7	136.2	135.9	168.4	136.0	136.0	4946	4945	4945	837	321	2935	4931	4931	4931	100.00	0.00	0.00	85.00	85.00

Water Volume [%]:
Untreated: 0.00 %
Below Dose 0.01 %
To Dose 99.99 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: June 2012
Reactor: UVR-300A
Report Created: Tuesday, July 03, 2012

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]				
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Water Volume [ML]				
																										Untreated	Below Dose	To Dose	Total	
1/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3627	3627	84	3595	3596	3595	3576	3576	3576	OL	0.00	0.00	0.00	0.00
2/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3627	3627	84	3595	3596	3595	3576	3576	3576	OL	0.00	0.00	0.00	0.00
3/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3627	3627	84	3595	3596	3595	3576	3576	3576	OL	0.00	0.00	0.00	0.00
4/06/2012	18.5	90.3	24.0	6.9	91.1	79.4	144.1	123.8	123.7	113.8	68.4	69.8	130.2	124.3	123.4	3627	3627	84	3595	3596	3595	3576	3576	3576	100.00	0.00	0.00	77.57	77.57	
5/06/2012	18.4	32.2	26.1	35.1	88.1	57.2	140.7	108.0	100.8	OL	OL	OL	133.8	106.0	100.8	3651	3651	108	3595	3596	3595	3600	3600	3600	100.00	0.00	0.00	57.23	57.23	
6/06/2012	22.9	28.4	24.4	37.8	47.3	43.0	98.4	70.6	69.7	OL	OL	OL	131.0	81.7	82.8	3675	3675	132	3595	3596	3595	3624	3624	3624	100.00	0.00	0.00	42.96	42.96	
7/06/2012	22.6	27.5	24.3	38.3	49.1	44.0	71.5	71.3	71.3	OL	OL	OL	128.4	79.7	83.4	3699	3699	156	3595	3596	3595	3648	3648	3648	100.00	0.00	0.00	44.01	44.01	
8/06/2012	21.7	26.8	24.3	39.0	49.1	44.5	72.1	72.0	72.0	OL	OL	OL	126.3	76.8	82.3	3723	3723	180	3595	3596	3595	3672	3672	3672	100.00	0.00	0.00	44.47	44.47	
9/06/2012	21.9	26.7	24.3	37.3	48.5	42.7	69.3	69.3	69.3	OL	OL	OL	125.2	73.8	81.1	3747	3747	204	3595	3596	3595	3696	3696	3696	100.00	0.00	0.00	42.71	42.71	
10/06/2012	0.0	83.4	24.3	0.0	89.0	61.9	72.4	72.6	74.0	144.4	115.9	74.9	125.5	74.8	82.6	3771	3771	227	3610	3611	3610	3720	3720	3719	99.93	0.02	0.02	60.19	60.23	
11/06/2012	21.1	25.8	24.2	67.8	76.1	73.1	74.6	74.5	75.3	156.5	118.5	76.8	126.4	74.5	83.1	3795	3795	251	3634	3635	3634	3744	3744	3743	100.00	0.00	0.00	73.08	73.08	
12/06/2012	21.0	54.0	24.2	24.0	76.4	72.6	107.7	96.2	96.2	158.2	118.3	101.2	119.1	74.4	82.3	3819	3819	275	3658	3659	3658	3756	3756	3755	100.00	0.00	0.00	72.58	72.58	
13/06/2012	21.3	25.9	24.0	64.9	80.4	73.8	136.7	118.3	118.2	157.4	119.8	118.3	OL	OL	OL	3843	3843	299	3682	3683	3682	3756	3756	3755	100.00	0.00	0.00	73.58	73.58	
14/06/2012	21.0	25.2	24.0	69.4	81.3	76.2	136.7	122.0	122.0	156.9	122.1	122.0	OL	OL	OL	3867	3867	323	3706	3707	3706	3756	3756	3755	100.00	0.00	0.00	76.16	76.16	
15/06/2012	20.9	25.4	24.0	60.5	82.4	75.0	135.0	120.2	120.1	154.9	121.6	120.1	OL	OL	OL	3891	3891	347	3730	3731	3730	3756	3756	3755	100.00	0.00	0.00	74.96	74.96	
16/06/2012	21.1	25.2	24.0	72.4	84.3	78.7	133.6	125.9	125.9	154.4	125.9	125.9	OL	OL	OL	3915	3915	371	3754	3755	3754	3756	3756	3755	100.00	0.00	0.00	78.70	78.70	
17/06/2012	21.0	25.3	24.0	75.1	84.7	80.3	130.7	128.4	128.4	152.5	128.4	128.4	OL	OL	OL	3939	3939	395	3778	3779	3778	3756	3756	3755	100.00	0.00	0.00	80.26	80.26	
18/06/2012	21.0	33.7	24.0	30.2	101.8	79.9	129.5	128.0	128.0	150.2	128.5	128.1	OL	OL	OL	3963	3963	419	3802	3803	3802	3756	3756	3755	100.00	0.00	0.00	79.92	79.92	
19/06/2012	21.0	25.0	24.0	74.9	83.6	79.9	127.8	127.8	127.8	147.3	127.8	127.8	OL	OL	OL	3987	3987	443	3826	3827	3826	3756	3756	3755	100.00	0.00	0.00	79.85	79.85	
20/06/2012	21.2	25.1	24.0	74.0	82.8	79.2	126.7	126.7	126.7	145.3	126.7	126.7	OL	OL	OL	4011	4011	467	3850	3851	3850	3756	3756	3755	100.00	0.00	0.00	79.19	79.19	
21/06/2012	21.1	25.9	24.0	74.7	82.8	79.2	126.7	126.7	126.8	143.8	126.7	126.7	OL	OL	OL	4035	4035	491	3874	3875	3874	3756	3756	3755	100.00	0.00	0.00	79.19	79.19	
22/06/2012	21.1	25.9	24.0	49.2	95.7	79.0	126.5	126.5	126.5	146.2	126.5	126.5	OL	OL	OL	4059	4059	515	3898	3899	3898	3756	3756	3755	100.00	0.00	0.00	79.05	79.05	
23/06/2012	0.0	38.7	24.0	0.0	83.5	78.2	125.4	125.3	125.3	147.3	125.4	125.4	OL	OL	OL	4066	4066	523	3905	3906	3906	3756	3756	3755	100.00	0.00	0.00	24.33	24.33	
24/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4066	4066	523	3905	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00	
25/06/2012	0.0	65.9	38.2	0.0	44.6	30.9	103.3	73.5	74.9	108.7	108.7	80.5	88.6	58.4	5.2	4067	4066	523	3906	3906	3906	3756	3756	3756	100.00	0.00	0.00	0.24	0.24	
26/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3756	OL	0.00	0.00	0.00	0.00	
27/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3756	OL	0.00	0.00	0.00	0.00	
28/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3756	OL	0.00	0.00	0.00	0.00	
29/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3756	OL	0.00	0.00	0.00	0.00	
30/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3756	OL	0.00	0.00	0.00	0.00	

Water Volume [%]:
Untreated: 0.00 %
Below Dose 0.00 %
To Dose 100.0 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: June 2012
Reactor: UVR-400A
Report Created: Tuesday, July 03, 2012

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/06/2012	23.7	25.1	24.4	68.9	81.3	77.8	79.2	79.2	79.2	79.3	79.3	79.2	116.0	79.2	143.4	2843	2843	859	3003	3004	3004	3076	2046	3075	100.00	0.00	0.00	77.86	77.86
2/06/2012	23.8	25.0	24.4	75.6	81.0	78.3	79.7	79.7	79.6	79.7	79.7	79.7	118.2	79.6	147.3	2867	2867	883	3027	3028	3028	3100	2070	3099	100.00	0.00	0.00	78.28	78.28
3/06/2012	0.0	50.0	22.5	0.0	92.1	78.3	80.0	79.8	79.6	72.2	80.0	79.8	121.7	77.1	150.1	2885	2885	901	3045	3046	3046	3118	2088	3117	99.91	0.00	0.05	58.14	58.19
4/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2885	2885	901	3045	3046	3046	3118	2088	3117	OL	0.00	0.00	0.00	0.00
5/06/2012	17.8	58.4	26.4	5.9	73.8	68.6	119.1	84.4	72.9	90.0	78.3	81.8	108.3	95.7	129.8	2900	2899	915	3060	3061	3060	3132	2102	3132	100.00	0.00	0.00	41.53	41.53
6/06/2012	23.4	25.8	24.4	62.7	75.5	70.9	74.3	72.3	72.2	72.3	72.3	72.4	72.5	72.5	73.5	2924	2923	939	3084	3085	3084	3156	2126	3156	100.00	0.00	0.00	70.90	70.90
7/06/2012	23.2	25.7	24.4	65.0	78.7	72.1	73.6	73.6	73.5	73.6	73.6	73.6	73.5	88.4	79.7	2948	2947	963	3108	3109	3108	3180	2150	3180	100.00	0.00	0.00	72.13	72.13
8/06/2012	23.4	25.7	24.4	68.2	78.2	73.6	75.1	75.1	75.0	75.1	75.0	75.0	78.1	98.9	88.6	2972	2971	987	3132	3133	3132	3204	2174	3204	100.00	0.00	0.00	73.58	73.58
9/06/2012	23.3	25.8	24.4	64.0	77.4	70.5	72.0	72.0	71.9	71.9	71.9	72.0	90.1	102.4	102.8	2996	2995	1011	3156	3157	3156	3228	2198	3228	100.00	0.00	0.00	70.58	70.58
10/06/2012	0.0	63.9	24.6	0.0	73.8	68.3	70.3	69.8	69.6	69.9	70.3	76.1	102.4	106.9	133.2	3004	3004	1019	3164	3165	3164	3237	2206	3236	100.00	0.00	0.00	23.33	23.33
11/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1019	3164	3165	3164	3237	2206	3236	OL	0.00	0.00	0.00	0.00
12/06/2012	0.0	54.3	27.5	0.0	80.8	60.4	80.1	66.8	63.5	86.3	88.7	93.8	104.2	97.1	133.9	3004	3004	1020	3164	3165	3165	3237	2207	3236	78.40	0.06	0.06	0.41	0.52
13/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1020	3164	3165	3165	3237	2207	3236	OL	0.00	0.00	0.00	0.00
14/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1020	3164	3165	3165	3237	2207	3236	OL	0.00	0.00	0.00	0.00
15/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1020	3164	3165	3165	3237	2207	3236	OL	0.00	0.00	0.00	0.00
16/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1020	3164	3165	3165	3237	2207	3236	OL	0.00	0.00	0.00	0.00
17/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1020	3164	3165	3165	3237	2207	3236	OL	0.00	0.00	0.00	0.00
18/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1020	3164	3165	3165	3237	2207	3236	OL	0.00	0.00	0.00	0.00
19/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1020	3164	3165	3165	3237	2207	3236	OL	0.00	0.00	0.00	0.00
20/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1020	3164	3165	3165	3237	2207	3236	OL	0.00	0.00	0.00	0.00
21/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1020	3164	3165	3165	3237	2207	3236	OL	0.00	0.00	0.00	0.00
22/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3004	3004	1020	3164	3165	3165	3237	2207	3236	OL	0.00	0.00	0.00	0.00
23/06/2012	21.7	63.9	24.4	3.9	82.0	79.2	80.7	80.5	82.1	106.7	81.2	89.6	108.4	108.8	137.6	3021	3021	1036	3181	3182	3181	3253	2223	3253	100.00	0.00	0.00	54.63	54.63
24/06/2012	23.7	25.1	24.4	76.8	84.3	80.3	81.6	81.6	81.6	83.0	81.6	81.6	83.4	96.3	102.2	3045	3045	1060	3205	3206	3205	3277	2247	3277	100.00	0.00	0.00	80.29	80.29
25/06/2012	22.4	47.2	24.4	8.4	85.2	76.2	77.7	77.8	77.7	77.7	77.6	77.7	77.8	91.6	96.1	3069	3069	1084	3229	3230	3229	3301	2271	3301	100.00	0.00	0.00	76.21	76.21
26/06/2012	18.0	33.0	25.3	51.4	79.4	61.8	93.1	76.7	78.9	84.6	72.0	77.5	97.7	90.6	123.9	3093	3093	1108	3246	3247	3247	3325	2295	3325	100.00	0.00	0.00	61.79	61.79
27/06/2012	21.4	46.8	26.3	0.0	74.1	59.2	101.4	71.3	74.0	89.1	68.3	78.8	104.3	85.5	127.8	3117	3117	1132	3270	3271	3270	3349	2319	3349	100.00	0.00	0.00	59.25	59.25
28/06/2012	0.0	46.1	26.2	0.0	63.0	59.2	98.8	70.9	70.9	83.4	65.3	76.0	100.6	80.6	121.5	3133	3133	1149	3287	3287	3287	3366	2336	3366	100.00	0.00	0.00	41.33	41.33
29/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3133	3133	1149	3287	3287	3287	3366	2336	3366	OL	0.00	0.00	0.00	0.00
30/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3133	3133	1149	3287	3287	3287	3366	2336	3366	OL	0.00	0.00	0.00	0.00

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

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: June 2012
Reactor: UVR-500A
Report Created: Tuesday, July 03, 2012

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²										UV Lamp Status Hours										% Volume Treated to Validate	Daily Totals			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Conditions	Water Volume [ML]					
																										Untreated	Below Dose	To Dose	Total		
1/06/2012	0.0	102.0	25.0	0.0	78.2	74.5	162.1	125.4	117.9	299.4	154.9	146.7	133.5	79.6	76.7	285	4808	2046	4038	1521	375	4069	1025	2604	100.00	0.00	0.00	33.93	33.93		
2/06/2012	15.9	34.6	24.2	72.1	78.2	76.0	135.6	120.2	118.6	275.7	135.2	145.5	230.5	78.0	76.7	309	4832	2070	4062	1545	399	4070	1027	2606	100.00	0.00	0.00	76.05	76.05		
3/06/2012	18.3	35.0	24.2	34.8	84.9	69.0	136.6	116.8	110.0	280.1	137.9	138.1	179.6	82.3	74.6	333	4856	2094	4086	1569	423	4071	1027	2606	100.00	0.00	0.00	69.15	69.15		
4/06/2012	20.7	26.6	24.1	37.1	88.5	80.2	153.8	129.2	128.4	310.7	158.0	133.3	OL	OL	OL	357	4867	2118	4096	1593	447	4071	1027	2606	100.00	0.00	0.00	80.21	80.21		
5/06/2012	21.1	25.7	24.1	69.6	86.0	76.9	171.4	125.6	123.3	312.4	163.6	127.0	OL	OL	OL	381	37	2142	38	1617	471	4071	1027	2606	100.00	0.00	0.00	76.87	76.87		
6/06/2012	21.0	28.3	24.1	36.3	78.5	75.2	165.9	129.0	120.7	300.5	165.1	122.5	OL	OL	OL	405	61	2166	62	1641	495	4071	1027	2606	100.00	0.00	0.00	75.22	75.22		
7/06/2012	21.1	27.0	24.1	73.8	81.1	76.9	163.1	129.6	123.4	296.9	165.9	123.7	OL	OL	OL	429	85	2190	86	1665	519	4071	1027	2606	100.00	0.00	0.00	76.88	76.88		
8/06/2012	21.0	26.8	24.1	74.7	80.6	77.4	160.9	126.9	124.4	292.0	163.7	124.4	OL	OL	OL	453	109	2214	110	1689	543	4071	1027	2606	100.00	0.00	0.00	77.44	77.44		
9/06/2012	21.1	26.3	24.1	71.7	79.3	75.1	161.2	125.0	122.2	291.6	162.8	120.6	OL	OL	OL	477	133	2238	134	1713	567	4071	1027	2606	100.00	0.00	0.00	75.08	75.08		
10/06/2012	0.0	111.9	24.6	0.0	85.5	73.5	161.4	126.1	147.7	291.6	162.9	119.2	256.4	102.6	100.1	496	151	2257	157	1737	591	9	10	2616	99.95	0.02	0.02	72.36	72.40		
11/06/2012	21.0	24.8	24.1	69.7	77.6	74.1	OL	OL	OL	293.0	161.1	119.2	281.2	119.0	147.1	496	151	2257	181	1761	615	33	34	2640	100.00	0.00	0.00	74.11	74.11		
12/06/2012	0.0	112.7	24.4	0.0	76.5	73.7	114.7	101.4	155.1	292.0	161.2	118.9	272.5	118.7	157.0	496	151	2257	196	1775	629	47	48	2654	99.35	0.14	0.14	43.19	43.47		
13/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
14/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
15/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
16/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
17/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
18/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
19/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
20/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
21/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
22/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
23/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	496	151	2257	196	1775	629	47	48	2654	OL	0.00	0.00	0.00	0.00		
24/06/2012	20.7	113.1	24.2	3.5	80.3	77.9	98.7	90.0	130.6	254.4	151.2	125.1	246.2	124.7	141.2	496	152	2257	213	1793	646	65	65	2671	100.00	0.00	0.00	56.34	56.34		
25/06/2012	21.0	47.4	24.1	0.0	89.1	82.6	OL	OL	OL	257.7	157.8	132.6	254.1	132.4	139.0	496	152	2257	237	1817	670	89	89	2695	100.00	0.00	0.00	82.58	82.58		
26/06/2012	21.0	26.2	24.1	63.9	89.3	74.3	OL	OL	OL	242.1	145.3	119.4	252.6	119.3	133.8	496	152	2257	261	1841	694	113	113	2719	100.00	0.00	0.00	74.28	74.28		
27/06/2012	21.0	44.7	24.2	11.9	84.9	73.0	OL	OL	OL	245.1	143.5	117.6	243.7	117.7	135.8	496	152	2257	285	1865	718	137	137	2743	100.00	0.00	0.00	72.99	72.99		
28/06/2012	21.1	33.2	24.7	29.2	76.1	62.7	OL	OL	OL	243.2	141.9	107.2	184.1	111.6	134.3	496	152	2257	309	1889	742	161	161	2767	100.00	0.00	0.00	62.80	62.80		
29/06/2012	21.8	33.0	25.8	36.9	44.6	40.1	OL	OL	OL	233.0	141.9	71.0	199.6	98.3	136.3	496	152	2257	333	1913	766	185	185	2791	100.00	0.00	0.00	40.04	40.04		
30/06/2012	21.9	32.8	26.0	37.1	44.0	40.4	OL	OL	OL	235.4	139.1	72.6	204.5	98.8	137.7	496	152	2257	357	1937	790	209	209	2815	100.00	0.00	0.00	40.50	40.50		

Water Volume [%]:
Untreated: 0.01 %
Below Dose 0.01 %
To Dose 99.97 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: June 2012

Report Created: Tuesday, July 03, 2012

Reactor: UVR-600A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/06/2012	0.0	43.1	24.1	0.0	79.6	75.8	123.8	122.4	122.0	OL	OL	OL	146.5	122.0	121.4	968	4034	4034	3436	3437	3436	1108	4196	4196	100.00	0.00	0.00	42.80	42.80
2/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	968	4034	4034	3436	3437	3436	1108	4196	4196	OL	0.00	0.00	0.00	0.00
3/06/2012	0.8	26.8	23.9	4.6	98.4	95.0	151.3	151.3	151.2	11.3	9.2	1.5	153.8	151.0	150.9	974	4040	4040	3436	3437	3436	1114	4202	4202	99.57	0.00	0.11	24.60	24.71
4/06/2012	0.0	45.2	24.6	0.0	98.1	85.7	146.5	144.8	139.5	OL	OL	OL	152.9	142.0	136.8	975	4041	4041	3436	3437	3436	1115	4203	4203	100.00	0.00	0.00	2.64	2.64
5/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	975	4041	4041	3436	3437	3436	1115	4203	4203	OL	0.00	0.00	0.00	0.00
6/06/2012	0.0	32.0	21.1	0.0	50.8	30.8	89.4	83.9	87.9	35.1	19.3	58.1	214.5	79.1	74.9	975	4041	4041	3436	3437	3436	1115	4203	4203	44.32	0.00	0.03	0.03	0.06
7/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	975	4041	4041	3436	3437	3436	1115	4203	4203	OL	0.00	0.00	0.00	0.00
8/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	975	4041	4041	3436	3437	3436	1115	4203	4203	OL	0.00	0.00	0.00	0.00
9/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	975	4041	4041	3436	3437	3436	1115	4203	4203	OL	0.00	0.00	0.00	0.00
10/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	975	4041	4041	3436	3437	3436	1115	4203	4203	OL	0.00	0.00	0.00	0.00
11/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	975	4041	4041	3436	3437	3436	1115	4203	4203	OL	0.00	0.00	0.00	0.00
12/06/2012	19.6	94.8	24.4	0.0	78.6	74.7	184.7	131.5	149.9	135.0	40.4	32.9	165.5	119.5	119.4	985	4051	4051	3436	3437	3436	1125	4213	4213	100.00	0.00	0.00	30.68	30.68
13/06/2012	19.7	24.8	24.1	69.5	82.2	76.0	157.4	121.7	121.7	OL	OL	OL	147.2	121.7	121.6	1009	4075	4075	3436	3437	3436	1149	4237	4237	100.00	0.00	0.00	75.70	75.70
14/06/2012	19.7	25.1	24.0	72.2	81.9	77.3	142.4	123.7	123.7	OL	OL	OL	142.8	123.7	123.7	1033	4099	4099	3436	3437	3436	1173	4261	4261	100.00	0.00	0.00	77.33	77.33
15/06/2012	19.8	25.0	24.0	64.0	83.8	77.4	142.1	123.8	123.9	OL	OL	OL	141.5	123.8	123.8	1057	4123	4123	3436	3437	3436	1197	4285	4285	100.00	0.00	0.00	77.37	77.37
16/06/2012	18.7	24.9	24.1	74.4	84.0	78.8	141.2	126.1	127.2	OL	OL	OL	143.6	126.1	126.1	1081	4147	4147	3436	3437	3436	1221	4309	4309	100.00	0.00	0.00	78.80	78.80
17/06/2012	19.7	25.0	24.0	76.1	84.6	79.3	143.1	126.9	126.9	OL	OL	OL	151.3	126.9	126.9	1105	4171	4171	3436	3437	3436	1245	4333	4333	100.00	0.00	0.00	79.35	79.35
18/06/2012	19.7	30.9	24.1	40.5	102.7	80.8	138.6	129.5	129.5	OL	OL	OL	157.4	129.4	129.4	1129	4195	4195	3436	3437	3436	1269	4357	4357	100.00	0.00	0.00	80.82	80.82
19/06/2012	19.8	24.8	24.0	76.6	84.8	81.1	146.0	129.8	129.7	OL	OL	OL	150.2	129.7	129.7	1153	4219	4219	3436	3437	3436	1293	4381	4381	100.00	0.00	0.00	81.12	81.12
20/06/2012	19.8	24.9	24.0	76.3	83.6	80.4	136.5	128.6	128.6	OL	OL	OL	145.0	128.6	128.6	1177	4243	4243	3436	3437	3436	1317	4405	4405	100.00	0.00	0.00	80.38	80.38
21/06/2012	19.4	25.0	24.0	76.6	83.1	80.3	137.8	128.5	128.5	OL	OL	OL	143.0	128.5	128.5	1201	4267	4267	3436	3437	3436	1341	4429	4429	100.00	0.00	0.00	80.31	80.31
22/06/2012	19.7	25.0	24.0	61.1	91.7	80.3	145.1	128.5	128.5	OL	OL	OL	145.6	128.5	128.5	1225	4291	4291	3436	3437	3436	1365	4453	4453	100.00	0.00	0.00	80.34	80.34
23/06/2012	19.7	24.8	24.0	76.3	85.2	79.9	133.9	127.8	127.7	OL	OL	OL	144.8	127.8	127.8	1249	4315	4315	3436	3437	3436	1389	4477	4477	100.00	0.00	0.00	79.84	79.84
24/06/2012	0.0	44.6	24.1	0.0	81.8	76.7	123.9	123.0	123.0	OL	OL	OL	146.5	122.9	122.9	1256	4322	4321	3436	3437	3436	1396	4484	4483	100.00	0.00	0.00	21.34	21.34
25/06/2012	0.0	32.3	14.8	0.0	58.7	46.3	84.9	91.2	89.3	61.8	65.7	18.8	194.1	85.7	78.4	1256	4322	4322	3436	3437	3437	1396	4484	4483	7.17	0.00	0.19	0.01	0.20
26/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1256	4322	4322	3436	3437	3437	1396	4484	4483	OL	0.00	0.00	0.00	0.00
27/06/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1256	4322	4322	3436	3437	3437	1396	4484	4483	OL	0.00	0.00	0.00	0.00
28/06/2012	20.2	94.8	24.5	0.8	77.9	75.4	174.2	120.9	141.9	147.0	129.2	141.1	198.7	89.9	93.3	1263	4329	4329	3444	3444	3444	1396	4484	4483	100.00	0.00	0.00	22.86	22.86
29/06/2012	19.0	24.7	24.0	72.3	78.3	75.4	124.5	120.9	120.7	125.3	120.8	123.1	OL	OL	OL	1287	4353	4353	3468	3468	3468	1396	4484	4483	100.00	0.00	0.00	75.41	75.41
30/06/2012	19.5	24.8	24.0	72.6	78.6	75.8	121.4	121.6	121.4	124.5	121.5	124.4	OL	OL	OL	1311	4377	4377	3492	3492	3492	1396	4484	4483	100.00	0.00	0.00	75.85	75.85

Water Volume [%]:
Untreated: 0.00 %
Below Dose 0.03 %
To Dose 99.97 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\06-June



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: July 12

Report Created: Wednesday, August 01, 2012

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	
1/07/2012	96.89	0.00	0.00	71.97	71.97	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.42	39.42	0.00	0.00	73.55	73.55	0.00	0.00	269.94	269.94	100.00
2/07/2012	96.73	0.00	0.00	70.41	70.41	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.04	39.04	0.00	0.00	72.55	72.55	0.00	0.00	267.00	267.00	100.00
3/07/2012	96.64	0.12	0.18	70.82	71.11	0.07	0.33	39.41	39.81	0.00	0.00	0.00	0.00	0.00	0.00	41.34	41.34	0.00	0.00	43.40	43.40	0.00	0.00	73.60	73.60	0.19	0.51	268.57	269.27	99.74
4/07/2012	96.45	0.00	0.00	70.96	70.96	0.00	0.05	0.22	0.27	0.00	0.00	0.00	0.00	0.00	0.00	76.74	76.74	0.00	0.00	47.50	47.50	0.00	0.00	75.02	75.02	0.00	0.05	270.24	270.29	99.98
5/07/2012	96.65	0.00	0.00	83.73	83.73	0.00	0.03	1.60	1.63	0.00	0.00	0.00	0.00	0.00	0.00	72.78	72.78	0.00	0.00	41.72	41.72	0.00	0.00	74.40	74.40	0.00	0.03	274.24	274.27	99.99
6/07/2012	97.04	0.00	0.16	54.95	55.11	0.00	0.00	24.10	24.10	0.00	0.00	0.00	0.00	0.00	0.00	77.59	77.59	0.00	0.00	43.21	43.21	0.00	0.00	77.65	77.65	0.00	0.16	277.50	277.66	99.94
7/07/2012	97.03	0.00	0.00	84.94	84.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.94	83.94	0.00	0.00	38.82	38.82	0.00	0.00	69.90	69.90	0.00	0.00	277.59	277.59	100.00
8/07/2012	97.07	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	38.47	38.47	0.00	0.00	69.74	69.74	0.00	0.00	278.22	278.22	100.00
9/07/2012	96.99	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.99	84.99	0.00	0.00	38.84	38.84	0.00	0.00	70.26	70.26	0.00	0.00	279.09	279.09	100.00
10/07/2012	96.78	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.01	85.01	0.00	0.00	38.94	38.94	0.00	0.00	70.15	70.15	0.00	0.00	279.09	279.09	100.00
11/07/2012	96.63	0.00	0.00	84.97	84.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.89	84.89	0.00	0.00	43.72	43.72	0.00	0.00	79.19	79.19	0.00	0.00	292.77	292.77	100.00
12/07/2012	96.82	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	46.98	46.98	0.00	0.00	85.00	85.00	0.00	0.00	301.99	301.99	100.00
13/07/2012	97.00	0.00	0.00	85.23	85.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.65	81.65	0.00	0.00	50.00	50.00	0.00	0.00	84.95	84.95	0.00	0.00	301.84	301.84	100.00
14/07/2012	96.83	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.68	82.68	0.00	0.00	57.82	57.82	0.00	0.00	85.01	85.01	0.00	0.00	310.52	310.52	100.00
15/07/2012	96.76	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.98	75.98	0.00	0.00	49.35	49.35	0.00	0.00	84.68	84.68	0.00	0.00	294.99	294.99	100.00
16/07/2012	96.71	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.03	62.03	0.00	0.00	38.66	38.66	0.00	0.00	71.95	71.95	0.00	0.00	257.63	257.63	100.00
17/07/2012	96.17	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.22	58.22	0.00	0.00	35.70	35.70	0.00	0.00	66.05	66.05	0.00	0.00	244.97	244.97	100.00
18/07/2012	96.33	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.32	58.32	0.00	0.00	36.32	36.32	0.00	0.00	66.85	66.85	0.00	0.00	246.28	246.28	100.00
19/07/2012	96.68	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.09	66.09	0.00	0.00	42.00	42.00	0.00	0.00	77.86	77.86	0.00	0.00	270.95	270.95	100.00
20/07/2012	96.77	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.48	66.48	0.00	0.00	42.54	42.54	0.00	0.00	79.03	79.03	0.00	0.00	273.06	273.06	100.00
21/07/2012	96.64	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.44	66.44	0.00	0.00	42.64	42.64	0.00	0.00	78.91	78.91	0.00	0.00	272.98	272.98	100.00
22/07/2012	96.63	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.07	67.07	0.00	0.00	42.89	42.89	0.00	0.00	79.33	79.33	0.00	0.00	274.28	274.28	100.00
23/07/2012	96.73	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.28	67.28	0.00	0.00	43.09	43.09	0.00	0.00	79.63	79.63	0.00	0.00	275.00	275.00	100.00
24/07/2012	96.72	0.00	0.00	85.02	85.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70.02	70.02	0.00	0.00	44.49	44.49	0.00	0.00	82.25	82.25	0.00	0.00	281.77	281.77	100.00
25/07/2012	96.72	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70.72	70.72	0.00	0.00	44.40	44.40	0.00	0.00	82.28	82.28	0.00	0.00	282.40	282.40	100.00
26/07/2012	96.52	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.03	68.03	0.00	0.00	44.50	44.50	0.00	0.00	81.83	81.83	0.00	0.00	279.34	279.34	100.00
27/07/2012	96.60	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70.22	70.22	0.00	0.00	28.74	28.74	0.00	0.00	83.56	83.56	0.00	0.00	286.19	286.19	100.00
28/07/2012	96.61	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.51	68.51	0.00	0.00	0.00	0.00	0.00	0.00	84.99	84.99	0.00	0.00	291.39	291.39	100.00
29/07/2012	96.59	0.00	0.21	66.54	66.75	0.00	0.00	20.95	20.95	0.01	0.01	48.06	48.08	0.00	0.00	40.89	40.89	0.07	0.09	6.92	7.08	0.00	0.71	73.22	73.94	0.09	1.02	256.58	257.68	99.57
30/07/2012	96.52	0.00	0.20	55.55	55.74	0.00	0.00	85.46	85.46	0.00	0.00	69.94	69.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	84.80	84.91	0.00	0.30	295.75	296.05	99.90
31/07/2012	95.94	0.00	0.07	52.19	52.26	0.00	0.00	79.60	79.60	0.00	0.00	69.03	69.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	76.73	76.83	0.00	0.17	277.55	277.72	99.94
		0.12	0.81	2467.20	2468.14	0.07	0.41	421.35	421.83	0.01	0.01	258.59	258.60	0.00	0.00	1917.91	1917.91	0.07	0.09	1149.95	1150.11	0.00	0.92	2394.71	2395.63	0.28	2.24	8609.71	8612.23	

Water Volume [%]:

Untreated: 0.00 %
Below Dose: 0.03 %
To Dose: 99.97 %

Submitted By (Print): A.Weremy

Signature: Original signed by A.Weremy



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT UV REPORT

Report Period: **July 2012**

Report Created: **Wednesday, August 01, 2012**

Reactor: **UVR-100A**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/07/2012	19.5	24.8	24.0	67.1	78.2	72.0	115.6	118.3	115.4	OL	OL	OL	126.6	115.4	137.7	3650	367	1768	2282	11	4751	2433	2541	367	100.00	0.00	0.00	71.97	71.97
2/07/2012	19.3	24.8	24.1	67.1	74.1	70.4	113.1	115.8	112.9	OL	OL	OL	124.9	112.9	136.5	3674	391	1792	2282	11	4751	2457	2565	391	100.00	0.00	0.00	70.41	70.41
3/07/2012	0.0	35.7	24.0	0.0	105.4	71.3	114.9	118.9	114.6	17.8	5.8	0.9	125.7	114.3	139.0	3698	414	1816	2282	11	4751	2481	2589	414	99.58	0.12	0.18	70.82	71.11
4/07/2012	19.4	28.4	24.1	33.0	91.1	71.0	114.2	118.3	114.1	OL	OL	OL	125.8	113.8	141.8	3722	438	1840	2282	11	4751	2505	2613	438	100.00	0.00	0.00	70.96	70.96
5/07/2012	19.2	39.7	24.2	22.7	95.6	83.7	135.5	135.7	135.5	OL	OL	OL	135.8	134.8	145.5	3746	462	1864	2282	11	4751	2529	2637	462	100.00	0.00	0.00	83.73	83.73
6/07/2012	0.0	90.6	24.0	0.0	107.6	84.7	133.4	135.0	135.9	243.2	137.4	147.7	152.1	134.3	180.8	3752	468	1870	2282	11	10	2545	2653	478	99.72	0.00	0.16	54.95	55.11
7/07/2012	19.7	25.0	24.0	56.8	95.4	84.9	OL	OL	OL	226.8	135.9	136.1	161.4	135.8	177.9	3752	468	1870	2306	35	34	2569	2677	502	100.00	0.00	0.00	84.94	84.94
8/07/2012	20.0	27.4	24.0	83.0	87.1	85.0	OL	OL	OL	225.7	135.9	139.7	160.7	135.9	189.0	3752	468	1870	2330	59	58	2593	2701	526	100.00	0.00	0.00	85.00	85.00
9/07/2012	19.9	24.4	24.0	83.0	86.9	85.0	OL	OL	OL	229.6	135.9	150.7	160.0	135.9	200.7	3752	468	1870	2354	83	82	2617	2725	550	100.00	0.00	0.00	85.00	85.00
10/07/2012	20.0	25.4	24.0	82.9	86.9	85.0	OL	OL	OL	235.3	136.0	148.4	160.3	135.9	196.6	3752	468	1870	2378	107	106	2641	2749	574	100.00	0.00	0.00	84.99	84.99
11/07/2012	19.8	24.9	24.0	74.6	91.7	85.0	OL	OL	OL	230.3	135.9	140.3	158.9	135.8	187.0	3752	468	1870	2402	131	130	2665	2773	598	100.00	0.00	0.00	84.97	84.97
12/07/2012	19.9	25.5	24.0	81.2	88.8	85.0	OL	OL	OL	227.9	136.0	139.9	159.6	135.9	188.4	3752	468	1870	2426	155	154	2689	2797	622	100.00	0.00	0.00	85.01	85.01
13/07/2012	19.2	27.3	24.0	59.1	115.6	85.2	OL	OL	OL	226.9	136.4	141.1	160.9	136.3	190.3	3752	468	1870	2450	179	178	2713	2821	646	100.00	0.00	0.00	85.23	85.23
14/07/2012	19.7	27.1	24.0	80.4	90.6	85.0	OL	OL	OL	223.9	136.0	142.1	159.8	135.9	190.9	3752	468	1870	2474	203	202	2737	2845	670	100.00	0.00	0.00	85.01	85.01
15/07/2012	19.8	27.4	24.0	80.1	89.6	85.0	OL	OL	OL	221.3	135.9	140.5	158.5	135.9	187.9	3752	468	1870	2498	227	226	2761	2869	694	100.00	0.00	0.00	84.99	84.99
16/07/2012	20.0	24.5	24.0	81.6	87.8	85.0	OL	OL	OL	219.0	135.9	138.0	157.7	135.9	186.3	3752	468	1870	2522	251	250	2785	2893	718	100.00	0.00	0.00	84.99	84.99
17/07/2012	19.9	24.4	24.0	81.8	86.9	85.0	OL	OL	OL	210.9	135.9	139.9	151.7	135.9	188.9	3752	468	1870	2546	275	274	2809	2917	742	100.00	0.00	0.00	85.00	85.00
18/07/2012	19.9	26.3	24.0	83.0	87.0	85.0	OL	OL	OL	211.8	135.9	143.2	152.9	135.9	193.6	3752	468	1870	2570	299	298	2833	2941	766	100.00	0.00	0.00	84.99	84.99
19/07/2012	19.9	26.9	24.0	82.7	91.0	85.0	OL	OL	OL	217.6	135.9	145.4	155.5	135.9	195.4	3752	468	1870	2594	323	322	2857	2965	790	100.00	0.00	0.00	85.00	85.00
20/07/2012	19.9	26.9	24.0	82.8	87.4	85.0	OL	OL	OL	215.2	135.9	136.6	153.0	135.9	173.4	3752	468	1870	2618	347	346	2881	2989	814	100.00	0.00	0.00	85.01	85.01
21/07/2012	19.9	24.4	24.0	82.8	87.5	85.0	OL	OL	OL	212.4	135.9	135.9	151.5	135.9	169.6	3752	468	1870	2642	371	370	2905	3013	838	100.00	0.00	0.00	84.99	84.99
22/07/2012	19.9	25.1	24.0	82.8	87.4	85.0	OL	OL	OL	208.3	135.9	135.9	149.5	135.9	169.9	3752	468	1870	2666	395	394	2929	3037	862	100.00	0.00	0.00	84.99	84.99
23/07/2012	19.9	24.4	24.0	82.8	87.3	85.0	OL	OL	OL	207.1	135.9	136.0	149.0	135.9	170.3	3752	468	1870	2690	419	418	2953	3061	886	100.00	0.00	0.00	85.01	85.01
24/07/2012	19.9	24.4	24.0	81.9	88.4	85.0	OL	OL	OL	201.4	135.9	136.0	145.8	135.9	169.0	3752	468	1870	2714	443	442	2977	3085	910	100.00	0.00	0.00	85.02	85.02
25/07/2012	19.9	27.2	24.0	82.9	87.9	85.0	OL	OL	OL	196.8	135.9	135.9	142.9	135.9	165.9	3752	468	1870	2738	467	466	3001	3109	934	100.00	0.00	0.00	84.99	84.99
26/07/2012	19.9	26.7	24.0	72.2	101.7	85.0	OL	OL	OL	191.5	135.9	135.9	139.9	135.9	161.4	3752	468	1870	2762	491	490	3025	3133	958	100.00	0.00	0.00	84.99	84.99
27/07/2012	19.9	24.5	24.0	81.8	87.8	85.0	OL	OL	OL	189.8	135.9	135.9	138.9	135.9	159.6	3752	468	1870	2786	515	514	3049	3157	982	100.00	0.00	0.00	85.00	85.00
28/07/2012	19.9	24.4	24.0	82.7	87.8	85.0	OL	OL	OL	185.7	135.9	135.9	136.4	135.9	156.5	3752	468	1870	2810	539	538	3073	3181	1006	100.00	0.00	0.00	85.00	85.00
29/07/2012	0.0	39.8	24.5	0.0	113.8	73.2	17.0	36.5	127.0	181.8	126.1	126.9	133.7	120.4	155.9	3752	469	1870	2832	561	560	3095	3203	1028	99.68	0.00	0.21	66.54	66.75
30/07/2012	11.7	27.5	24.4	45.1	59.2	55.8	18.5	36.6	104.6	183.8	103.8	108.6	137.2	90.8	160.5	3752	469	1871	2856	585	584	3119	3227	1052	99.65	0.00	0.20	55.55	55.74
31/07/2012	8.2	27.6	24.5	48.6	56.5	52.3	10.7	36.6	101.1	175.7	99.6	104.5	131.0	84.9	154.6	3752	469	1871	2880	609	608	3143	3251	1076	99.57	0.00	0.07	52.19	52.26
Total [ML]:																									0.12	0.81	2467.20	2468.14	

Water Volume [%]:
Untreated: 0.00 %
Below Dose: 0.03 %
To Dose: 99.96 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT UV REPORT

Report Period: **July 2012**

Report Created: **Wednesday, August 01, 2012**

Reactor: **UVR-200A**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²												UV Lamp Status Hours								% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/07/2012	21.1	24.6	24.1	81.2	88.6	85.0	OL	OL	OL	148.9	136.2	135.9	181.0	135.9	136.0	4946	4945	4945	861	345	2959	4955	4955	4955	100.00	0.00	0.00	85.01	85.01		
2/07/2012	21.7	24.6	24.1	80.9	88.9	85.0	OL	OL	OL	140.1	136.3	135.9	191.3	135.9	136.1	4946	4945	4945	885	369	2983	4979	4979	4979	100.00	0.00	0.00	84.99	84.99		
3/07/2012	0.0	66.1	24.0	0.0	105.3	84.6	58.3	24.8	15.0	135.2	135.6	135.2	207.9	134.6	135.0	4946	4946	4945	897	380	2995	4990	4990	4990	99.00	0.07	0.33	39.41	39.81		
4/07/2012	0.0	54.5	24.6	0.0	98.3	73.9	79.7	47.0	36.6	132.5	139.0	127.8	161.0	98.8	115.3	4946	4946	4945	867	380	2995	4991	4990	4991	82.01	0.00	0.05	0.22	0.27		
5/07/2012	0.0	55.8	24.3	0.0	102.7	72.8	81.1	55.5	43.0	121.3	137.5	138.0	178.6	110.6	117.9	4946	4946	4945	867	381	2996	4991	4991	4991	97.96	0.00	0.03	1.60	1.63		
6/07/2012	0.0	52.9	24.3	0.0	101.1	69.0	55.7	27.9	21.4	128.7	146.8	148.9	230.5	110.6	114.9	4946	4946	4945	906	390	3004	5000	4999	5000	100.00	0.00	0.00	24.10	24.10		
7/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
8/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
9/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
10/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
11/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
12/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
13/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
14/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
15/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
16/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
17/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
18/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
19/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
20/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
21/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
22/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
23/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
24/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
25/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
26/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
27/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
28/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4946	4946	4945	906	390	3004	5000	4999	5000	OL	0.00	0.00	0.00	0.00	0.00	
29/07/2012	0.0	108.9	24.6	0.0	88.7	80.4	184.2	173.7	133.2	123.2	79.0	63.0	261.7	125.7	146.9	7	6	7	907	390	3005	6	7	6	100.00	0.00	0.00	20.95	20.95		
30/07/2012	23.2	24.9	24.1	70.3	88.7	85.5	181.1	153.7	136.7	OL	OL	OL	299.1	136.6	137.1	31	30	31	907	390	3005	30	31	30	100.00	0.00	0.00	85.46	85.46		
31/07/2012	21.5	24.6	24.1	74.9	85.8	79.6	163.7	127.5	127.6	OL	OL	OL	255.8	127.5	127.6	55	54	55	907	390	3005	54	55	54	100.00	0.00	0.00	79.60	79.60		
Total [ML]:																											0.07	0.41	421.35	421.83	

Water Volume [%]:
Untreated: 0.02 %
Below Dose 0.10 %
To Dose 99.89 %

- Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
 2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT UV REPORT

Report Period: **July 2012**

Report Created: **Wednesday, August 01, 2012**

Reactor: **UVR-300A**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
2/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
3/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
4/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
5/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
6/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
7/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
8/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
9/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
10/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
11/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
12/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
13/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
14/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
15/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
16/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
17/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
18/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
19/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
20/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
21/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
22/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
23/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
24/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
25/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
26/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4067	4066	523	3906	3906	3906	3756	3756	3755	OL	0.00	0.00	0.00	0.00		
27/07/2012	0.0	93.9	24.5	6.0	56.8	52.4	142.4	94.5	84.0	27.6	91.6	19.7	122.4	88.9	89.1	4075	4075	532	3906	3907	3906	3765	3765	3764	100.00	0.00	0.00	18.66	18.66		
28/07/2012	21.3	25.8	24.1	49.4	58.3	52.9	129.5	85.6	85.4	OL	OL	OL	113.5	85.4	85.3	4099	4099	556	3906	3907	3906	3789	3789	3788	100.00	0.00	0.00	52.90	52.90		
29/07/2012	0.0	87.7	24.3	0.0	83.1	53.9	123.3	89.2	86.9	52.0	46.2	56.4	111.2	88.6	89.1	4121	4121	577	3906	3907	3907	3810	3810	3810	99.97	0.01	0.01	48.06	48.06		
30/07/2012	20.9	25.3	24.0	60.1	78.2	70.0	125.1	112.1	112.2	OL	OL	OL	115.2	112.2	112.2	4145	4145	601	3906	3907	3907	3834	3834	3834	100.00	0.00	0.00	69.94	69.94		
31/07/2012	21.1	25.3	24.0	64.8	73.2	69.0	119.4	110.7	110.8	OL	OL	OL	111.2	110.7	110.7	4169	4169	625	3906	3907	3907	3858	3858	3858	100.00	0.00	0.00	69.03	69.03		
Total [ML]:																											0.01	0.01	258.59	258.60	

Water Volume [%]:
Untreated: 0.00 %
Below Dose: 0.00 %
To Dose: 99.99 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: July 2012

Report Created: Wednesday, August 01, 2012

Reactor: UVR-400A

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3133	3133	1149	3287	3287	3287	3366	2336	3366	OL	0.00	0.00	0.00	0.00
2/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3133	3133	1149	3287	3287	3287	3366	2336	3366	OL	0.00	0.00	0.00	0.00
3/07/2012	18.7	63.9	24.6	3.8	106.8	75.8	119.8	78.4	78.9	117.6	80.9	93.1	117.4	96.3	147.8	3147	3146	1162	3300	3300	3300	3379	2349	3379	100.00	0.00	0.00	41.34	41.34
4/07/2012	20.6	31.2	24.9	58.0	83.2	76.7	129.6	80.9	83.3	114.4	80.1	96.8	109.4	92.9	140.4	3171	3170	1186	3324	3324	3324	3403	2373	3403	100.00	0.00	0.00	76.74	76.74
5/07/2012	21.1	59.9	26.5	20.5	95.4	72.8	132.9	83.8	83.5	108.2	81.6	101.7	106.5	96.6	141.9	3195	3194	1210	3348	3348	3348	3427	2397	3427	100.00	0.00	0.00	72.78	72.78
6/07/2012	19.9	62.3	25.4	8.8	111.6	77.6	133.6	86.1	83.8	103.2	82.6	105.8	110.5	100.7	150.3	3219	3218	1234	3372	3372	3372	3451	2421	3451	100.00	0.00	0.00	77.59	77.59
7/07/2012	21.5	33.6	24.6	52.7	94.1	84.0	129.0	86.4	87.1	91.7	86.0	99.8	111.3	102.3	153.6	3243	3242	1258	3396	3396	3396	3475	2445	3475	100.00	0.00	0.00	83.94	83.94
8/07/2012	23.7	24.9	24.4	82.7	87.5	85.0	112.0	86.3	86.3	86.3	86.3	86.7	111.0	101.8	153.4	3267	3266	1282	3420	3420	3420	3499	2469	3499	100.00	0.00	0.00	85.00	85.00
9/07/2012	23.8	25.1	24.4	81.7	87.7	85.0	99.7	86.3	86.3	86.3	86.3	86.3	109.2	100.8	151.0	3291	3290	1306	3444	3444	3444	3523	2493	3523	100.00	0.00	0.00	84.99	84.99
10/07/2012	23.7	25.0	24.4	82.1	87.5	85.0	93.0	86.3	86.3	86.3	86.3	86.3	108.2	98.7	148.4	3315	3314	1330	3468	3468	3468	3547	2517	3547	100.00	0.00	0.00	85.01	85.01
11/07/2012	23.7	25.1	24.4	72.8	88.4	84.9	88.9	86.3	86.2	86.2	86.2	86.2	107.0	95.3	144.8	3339	3338	1354	3492	3492	3492	3571	2541	3571	100.00	0.00	0.00	84.99	84.99
12/07/2012	23.6	25.1	24.4	81.7	88.6	85.0	90.2	86.3	86.3	86.3	86.3	86.3	109.9	97.2	149.7	3363	3362	1378	3516	3516	3516	3595	2565	3595	100.00	0.00	0.00	85.00	85.00
13/07/2012	22.4	59.1	24.4	13.9	87.8	81.6	91.1	83.3	83.0	83.0	83.0	84.6	110.2	97.4	149.7	3387	3386	1402	3540	3540	3540	3619	2589	3619	100.00	0.00	0.00	81.65	81.65
14/07/2012	23.5	25.2	24.4	75.7	89.9	82.7	91.8	84.1	84.0	84.2	84.0	85.2	109.9	96.6	148.9	3411	3410	1426	3564	3564	3564	3643	2613	3643	100.00	0.00	0.00	82.68	82.68
15/07/2012	23.5	25.4	24.4	67.7	85.1	76.0	90.2	79.3	77.5	77.5	77.4	82.6	108.7	93.6	147.1	3435	3434	1450	3588	3588	3588	3667	2637	3667	100.00	0.00	0.00	75.98	75.98
16/07/2012	23.3	25.6	24.5	55.0	75.2	62.0	87.3	74.1	70.8	63.8	64.2	80.9	106.2	91.5	144.7	3459	3458	1474	3612	3612	3612	3691	2661	3691	100.00	0.00	0.00	62.03	62.03
17/07/2012	23.7	28.2	24.6	54.9	61.8	58.2	87.3	73.6	70.7	59.9	60.2	81.3	103.3	90.0	140.1	3483	3482	1498	3636	3636	3636	3715	2685	3715	100.00	0.00	0.00	58.22	58.22
18/07/2012	23.7	29.5	24.6	54.8	62.1	58.3	89.2	72.9	73.8	60.0	60.2	83.6	104.0	89.6	141.0	3507	3506	1522	3660	3660	3660	3739	2709	3739	100.00	0.00	0.00	58.32	58.32
19/07/2012	23.5	30.0	24.5	56.1	74.8	66.1	94.3	75.4	77.9	67.8	68.8	88.9	105.8	90.7	143.2	3531	3530	1546	3684	3684	3684	3763	2733	3763	100.00	0.00	0.00	66.09	66.09
20/07/2012	23.5	26.3	24.5	62.6	90.7	66.5	90.8	71.7	69.6	68.1	68.0	82.4	102.8	85.9	136.2	3555	3554	1570	3708	3708	3708	3787	2757	3787	100.00	0.00	0.00	66.48	66.48
21/07/2012	23.5	25.6	24.5	62.8	70.0	66.5	88.7	70.6	67.9	68.0	67.9	80.0	101.8	84.5	134.1	3579	3578	1594	3732	3732	3732	3811	2781	3811	100.00	0.00	0.00	66.44	66.44
22/07/2012	23.4	25.6	24.5	63.2	70.6	67.1	87.8	69.4	68.5	68.6	68.5	79.5	99.7	83.1	131.9	3603	3602	1618	3756	3756	3756	3835	2805	3835	100.00	0.00	0.00	67.07	67.07
23/07/2012	23.4	25.7	24.5	62.4	71.0	67.3	85.9	68.8	68.7	68.8	68.7	78.6	98.6	81.2	131.3	3627	3626	1642	3780	3780	3780	3859	2829	3859	100.00	0.00	0.00	67.28	67.28
24/07/2012	23.5	25.4	24.4	63.7	73.9	70.9	84.2	71.5	71.4	71.5	71.5	76.4	95.8	79.7	126.9	3651	3650	1666	3804	3804	3804	3883	2853	3883	100.00	0.00	0.00	70.02	70.02
25/07/2012	23.5	25.7	24.4	65.7	74.4	70.7	81.5	72.1	72.1	72.1	72.1	73.6	93.4	77.4	122.5	3675	3674	1690	3828	3828	3828	3907	2877	3907	100.00	0.00	0.00	70.72	70.72
26/07/2012	0.0	63.9	24.4	0.0	74.7	69.8	98.9	71.3	71.7	71.2	71.3	82.2	91.6	78.6	121.9	3698	3698	1713	3851	3851	3851	3931	2901	3930	100.00	0.00	0.00	68.03	68.03
27/07/2012	20.7	26.4	24.4	54.0	75.2	70.2	103.4	71.7	71.8	71.7	71.7	82.3	91.0	77.1	120.6	3722	3722	1737	3875	3875	3875	3955	2925	3954	100.00	0.00	0.00	70.22	70.22
28/07/2012	23.6	25.1	24.5	64.9	74.5	68.5	91.8	70.0	69.9	70.0	70.0	73.1	87.9	73.5	115.4	3746	3746	1761	3899	3899	3899	3979	2949	3978	100.00	0.00	0.00	68.51	68.51
29/07/2012	32.7	32.1	32.1	0.0	72.3	64.6	87.9	73.7	73.1	67.9	67.9	70.9	85.9	75.3	111.8	3761	3761	1777	3911	3911	3911	3994	2964	3993	100.00	0.00	0.00	40.99	40.99
30/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3761	3761	1777	3911	3911	3911	3994	2964	3993	OL	0.00	0.00	0.00	0.00
31/07/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3761	3761	1777	3911	3911	3911	3994	2964	3993	OL	0.00	0.00	0.00	0.00
Total [ML]:																									0.00	0.00	1917.91	1917.91	

Water Volume [%]:
Untreated: 0.00 %
Below Dose: 0.00 %
To Dose: 100.00 %

- Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
 2. OL - Off Line

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WATER TREATMENT PLANT UV REPORT

Report Created: **Wednesday, August 01, 2012**

Reactor: UVR-500A

Water Volume [%]:
Untreated:
Below Dose
To Dose

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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

WATER TREATMENT PLANT UV REPORT

Report Period: **July 2012**

Report Created: **Wednesday, August 01, 2012**

Reactor: **UVR-600A**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Unreated	Below Dose	To Dose	Total
1/07/2012	19.7	24.8	24.0	69.9	78.1	73.5	118.7	117.9	117.8	133.1	117.9	130.9	OL	OL	OL	1335	4401	4401	3516	3516	3516	1396	4484	4483	100.00	0.00	0.00	73.55	73.55
2/07/2012	19.8	25.2	24.1	69.3	75.1	72.6	123.4	116.4	116.5	140.1	117.4	146.8	OL	OL	OL	1359	4425	4425	3540	3540	3540	1396	4484	4483	100.00	0.00	0.00	72.55	72.55
3/07/2012	19.8	32.8	24.2	45.6	98.7	73.6	148.7	118.6	140.4	142.8	123.8	143.1	OL	OL	OL	1383	4449	4449	3564	3564	3564	1396	4484	4483	100.00	0.00	0.00	73.60	73.60
4/07/2012	19.9	29.4	24.2	54.0	79.7	75.0	170.0	120.5	149.7	143.0	126.5	142.9	OL	OL	OL	1407	4473	4473	3588	3588	3588	1396	4484	4483	100.00	0.00	0.00	75.02	75.02
5/07/2012	19.9	41.1	24.6	32.4	88.8	74.4	179.1	122.1	152.0	143.7	128.4	143.5	OL	OL	OL	1431	4497	4497	3612	3612	3612	1396	4484	4483	100.00	0.00	0.00	74.40	74.40
6/07/2012	19.5	49.7	24.3	11.2	106.5	77.7	176.4	125.5	151.5	146.1	131.6	143.3	OL	OL	OL	1455	4521	4521	3636	3636	3636	1396	4484	4483	100.00	0.00	0.00	77.65	77.65
7/07/2012	20.1	32.1	25.3	46.2	88.1	69.9	175.1	120.2	145.6	145.8	130.3	142.8	OL	OL	OL	1479	4545	4545	3660	3660	3660	1396	4484	4483	100.00	0.00	0.00	69.90	69.90
8/07/2012	19.7	27.9	25.2	64.6	74.3	69.7	169.9	119.0	139.5	145.2	129.4	144.0	OL	OL	OL	1503	4569	4569	3684	3684	3684	1396	4484	4483	100.00	0.00	0.00	69.74	69.74
9/07/2012	19.5	27.3	24.6	64.5	75.7	70.3	165.9	115.3	131.5	143.7	127.6	156.1	OL	OL	OL	1527	4593	4593	3708	3708	3708	1396	4484	4483	100.00	0.00	0.00	70.26	70.26
10/07/2012	19.6	27.3	24.5	64.1	75.9	70.2	161.3	114.6	126.4	141.1	124.8	154.8	OL	OL	OL	1551	4617	4617	3732	3732	3732	1396	4484	4483	100.00	0.00	0.00	70.15	70.15
11/07/2012	19.0	28.4	24.1	52.2	88.3	79.2	151.1	127.4	131.6	139.1	131.5	153.7	OL	OL	OL	1575	4641	4641	3756	3756	3756	1396	4484	4483	100.00	0.00	0.00	79.19	79.19
12/07/2012	19.8	24.9	24.0	80.6	88.8	85.0	141.9	135.9	135.9	137.8	135.9	155.5	OL	OL	OL	1599	4665	4665	3780	3780	3780	1396	4484	4483	100.00	0.00	0.00	85.00	85.00
13/07/2012	19.7	43.1	24.0	30.6	92.6	84.9	141.2	135.8	135.8	138.4	135.8	156.7	OL	OL	OL	1623	4689	4689	3804	3804	3804	1396	4484	4483	100.00	0.00	0.00	84.95	84.95
14/07/2012	19.4	24.8	24.0	81.1	88.5	85.0	140.1	135.9	135.9	137.8	135.9	157.1	OL	OL	OL	1647	4713	4713	3828	3828	3828	1396	4484	4483	100.00	0.00	0.00	85.01	85.01
15/07/2012	19.9	24.9	24.0	80.9	88.1	84.7	146.9	135.4	135.4	136.4	135.4	156.9	OL	OL	OL	1671	4737	4737	3852	3852	3852	1396	4484	4483	100.00	0.00	0.00	84.68	84.68
16/07/2012	19.7	26.6	24.3	63.2	86.5	72.0	136.8	117.5	123.2	133.8	122.8	156.1	OL	OL	OL	1695	4761	4761	3876	3876	3876	1396	4484	4483	100.00	0.00	0.00	71.95	71.95
17/07/2012	20.1	26.1	24.4	62.7	68.6	66.0	142.5	107.6	121.8	130.1	114.8	155.6	OL	OL	OL	1719	4785	4785	3900	3900	3900	1396	4484	4483	100.00	0.00	0.00	66.05	66.05
18/07/2012	20.1	26.2	24.4	63.1	70.8	66.7	151.6	108.6	128.6	131.0	115.0	155.2	OL	OL	OL	1743	4809	4809	3924	3924	3924	1396	4484	4483	100.00	0.00	0.00	66.65	66.65
19/07/2012	19.8	25.8	24.1	65.7	86.7	77.9	163.3	124.7	136.8	135.2	127.5	154.2	OL	OL	OL	1767	4833	4833	3948	3948	3948	1396	4484	4483	100.00	0.00	0.00	77.86	77.86
20/07/2012	19.7	24.8	24.0	75.7	82.9	79.0	148.6	126.5	127.4	133.2	126.5	145.5	OL	OL	OL	1791	4857	4857	3972	3972	3972	1396	4484	4483	100.00	0.00	0.00	79.03	79.03
21/07/2012	19.8	24.8	24.0	75.6	81.9	78.9	148.3	126.3	126.3	132.1	126.3	143.2	OL	OL	OL	1815	4881	4881	3996	3996	3996	1396	4484	4483	100.00	0.00	0.00	78.91	78.91
22/07/2012	19.6	24.9	24.0	75.9	82.4	79.3	144.0	127.0	127.0	131.7	127.0	142.0	OL	OL	OL	1839	4905	4905	4020	4020	4020	1396	4484	4483	100.00	0.00	0.00	79.33	79.33
23/07/2012	19.7	24.8	24.0	76.5	82.7	79.6	142.0	127.4	127.4	131.2	127.4	142.5	OL	OL	OL	1863	4929	4929	4044	4044	4044	1396	4484	4483	100.00	0.00	0.00	79.63	79.63
24/07/2012	19.6	24.8	24.0	76.2	86.1	82.3	140.7	131.6	131.6	132.4	131.6	140.5	OL	OL	OL	1887	4953	4953	4068	4068	4068	1396	4484	4483	100.00	0.00	0.00	82.25	82.25
25/07/2012	19.6	24.8	24.0	78.2	85.4	82.3	133.2	131.6	131.6	131.8	131.6	138.2	OL	OL	OL	1911	4977	4977	4092	4092	4092	1396	4484	4483	100.00	0.00	0.00	82.28	82.28
26/07/2012	18.9	25.0	24.0	58.9	91.4	81.8	131.9	130.9	130.9	131.2	130.9	135.9	OL	OL	OL	1935	5001	5001	4116	4116	4116	1396	4484	4483	100.00	0.00	0.00	81.83	81.83
27/07/2012	19.4	24.9	24.0	78.9	99.5	83.6	133.6	133.6	133.6	133.7	133.6	136.3	OL	OL	OL	1959	5025	5025	4140	4140	4140	1396	4484	4483	100.00	0.00	0.00	83.56	83.56
28/07/2012	19.5	24.6	24.0	81.8	88.3	85.0	135.9	135.9	135.9	135.9	135.9	135.9	OL	OL	OL	1983	5049	5049	4164	4164	4164	1396	4484	4483	100.00	0.00	0.00	84.99	84.99
29/07/2012	0.0	41.9	24.3	0.0	108.2	81.5	133.9	131.9	131.8	135.9	132.7	136.4	6.1	1.0	0.0	2005	5071	5071	4186	4186	4186	1397	4484	4483	99.04	0.00	0.71	73.94	73.94
30/07/2012	1.5	25.6	24.0	65.4	94.6	84.8	136.4	135.7	135.7	136.2	135.7	138.1	175.7	2.4	0.1	2029	5095	5095	4209	4209	4209	1398	4484	4483	99.88	7.00	0.11	84.60	84.91
31/07/2012	0.9	24.8	23.9	71.7	83.0	76.8	125.0	123.0	123.0	123.7	123.0	126.8	105.3	1.6	0.0	2053	5119	5119	4233	4234	4234	1399	4485	4483	99.87	0.00	0.10	76.73	76.83
Total [ML]:																									0.00	0.92	2394.71	2395.63	

Water Volume [%]:

Untreated: 0.00 %
Below Dose: 0.04 %
To Dose: 99.96 %

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm²
 2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\07-July



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code 252.00
Licence Number PWS 09 412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: August 2012

Report Created: Saturday, September 01, 2012

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]								
		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					
1/08/2012	96.43	0.00	0.00	51.26	51.26	0.00	0.00	78.15	78.15	0.00	0.00	68.45	68.45	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	75.34	75.34	0.00	0.00	273.20	273.20	100.00	
2/08/2012	96.51	0.00	0.00	51.46	51.46	0.00	0.00	78.94	78.94	0.00	0.00	68.65	68.65	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	75.96	75.96	0.00	0.00	275.02	275.02	100.00	
3/08/2012	96.46	0.00	0.00	44.13	44.13	0.00	0.00	81.56	81.56	0.00	0.00	64.93	64.93	0.00	0.00	7.94	7.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.96	75.96	0.00	0.00	274.52	274.52	100.00	
4/08/2012	96.38	0.00	0.00	20.85	20.85	0.00	0.00	85.53	85.53	0.00	0.00	44.97	44.97	0.00	0.00	67.07	67.07	0.00	0.00	0.00	0.00	0.00	0.01	0.01	45.74	45.75	0.01	0.01	264.16	264.17	100.00			
5/08/2012	96.43	0.00	0.00	58.57	58.57	0.00	0.00	79.92	79.92	0.00	0.00	80.25	80.25	0.00	0.00	7.45	7.45	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	226.20	226.20	100.00	
6/08/2012	96.42	0.00	0.00	54.90	54.90	0.00	0.00	76.41	76.41	0.00	0.00	84.60	84.60	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	0.00	0.00	215.90	215.91	100.00		
7/08/2012	NR	0.00	0.00	59.10	59.10	0.00	0.00	82.41	82.41	0.00	0.00	50.32	50.32	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	34.65	34.65	0.00	0.00	226.47	226.48	100.00	
8/08/2012	NR	0.00	0.00	54.56	54.56	0.00	0.00	80.21	80.21	0.00	0.00	4.74	4.74	0.00	0.00	22.62	22.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.43	80.43	0.00	0.00	242.55	242.55	100.00	
9/08/2012	95.98	0.00	0.00	40.89	40.89	0.00	0.00	67.91	67.91	0.00	0.00	0.00	0.00	0.00	0.00	69.50	69.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.58	75.58	0.00	0.00	253.87	253.93	99.98	
10/08/2012	95.95	0.00	0.00	39.50	39.50	0.00	0.00	66.46	66.46	0.00	0.00	0.00	0.00	0.00	0.00	81.41	81.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.69	77.69	0.00	0.00	265.07	265.07	100.00	
11/08/2012	96.21	0.00	0.00	39.44	39.44	0.00	0.00	66.15	66.15	0.00	0.00	0.00	0.00	0.00	0.00	81.90	81.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.38	77.38	0.00	0.00	264.88	264.88	100.00	
12/08/2012	96.33	0.00	0.00	39.80	39.80	0.00	0.00	66.85	66.85	0.00	0.00	0.00	0.00	0.00	0.00	82.83	82.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.36	78.36	0.00	0.00	267.83	267.83	100.00	
13/08/2012	96.39	0.00	0.00	45.35	45.35	0.00	0.00	66.38	66.38	0.00	0.00	11.51	11.51	0.00	0.00	72.53	72.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	72.24	72.24	0.00	0.00	245.84	246.02	99.93	
14/08/2012	96.29	0.00	0.00	67.20	67.20	0.00	0.00	0.00	0.00	0.00	0.00	40.48	40.48	0.00	0.00	65.57	65.57	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	69.71	69.71	0.00	0.00	243.02	243.02	100.00	
15/08/2012	96.13	0.09	0.09	39.03	39.21	0.00	0.00	12.32	12.32	0.00	0.00	46.69	46.69	0.00	0.00	70.52	70.52	0.00	0.00	41.49	41.49	0.00	0.00	0.00	0.00	0.00	33.51	33.51	0.09	0.09	243.57	243.75	99.93	
16/08/2012	96.38	0.00	0.00	0.00	0.00	0.00	0.00	30.00	30.00	0.00	0.00	54.10	54.10	0.00	0.00	76.83	76.83	0.00	0.00	81.01	81.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	241.94	241.94	100.00	
17/08/2012	96.10	0.00	0.00	0.00	0.00	0.00	0.00	31.28	31.28	0.00	0.00	53.05	53.05	0.00	0.00	75.91	75.91	0.00	0.00	79.78	79.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	240.02	240.02	100.00	
18/08/2012	96.02	0.00	0.00	0.00	0.00	0.00	0.00	56.10	56.10	0.00	0.00	43.38	43.38	0.00	0.00	68.77	68.77	0.00	0.00	71.75	71.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	240.00	240.00	100.00	
19/08/2012	96.36	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.00	42.02	42.02	0.00	0.00	67.34	67.34	0.00	0.00	70.67	70.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	240.03	240.03	100.00	
20/08/2012	95.71	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.00	42.09	42.09	0.00	0.00	67.40	67.40	0.00	0.00	70.52	70.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	240.01	240.01	100.00	
21/08/2012	95.38	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.00	42.15	42.15	0.00	0.00	67.19	67.19	0.00	0.00	70.63	70.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	239.96	239.96	100.00	
22/08/2012	95.91	0.00	0.00	13.80	13.80	0.01	0.12	44.80	44.93	0.03	0.03	45.54	45.60	0.02	0.02	60.74	60.78	0.03	0.03	70.88	70.94	0.00	0.00	0.79	0.79	0.09	0.20	236.54	236.83	99.88	0.00	236.54	236.83	99.88
23/08/2012	96.74	0.00	0.00	80.86	80.86	0.00	0.00	0.00	0.00	0.00	0.00	43.85	43.85	0.00	0.00	70.66	70.66	0.00	0.00	75.71	75.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	271.08	271.08	100.00	
24/08/2012	96.29	0.00	0.00	83.25	83.25	0.00	0.00	0.00	0.00	0.00	0.00	45.09	45.09	0.00	0.00	71.31	71.31	0.00	0.00	76.55	76.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	276.20	276.20	100.00	
25/08/2012	96.03	0.00	0.00	83.90	83.90	0.00	0.00	0.00	0.00	0.00	0.00	45.91	45.91	0.00	0.00	71.78	71.78	0.00	0.00	77.23	77.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	278.82	278.82	100.00	
26/08/2012	96.11	0.00	0.00	84.18	84.18	0.00	0.00	0.00	0.00	0.00	0.00	46.34	46.34	0.00	0.00	71.88	71.88	0.00	0.00	77.57	77.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	279.97	279.97	100.00	
27/08/2012	96.28	0.00	0.00	81.28	81.28	0.00	0.00	0.00	0.00	0.00	0.00	44.74	44.74	0.00	0.00	70.71	70.71	0.00	0.00	75.85	75.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	272.58	272.58	100.00	
28/08/2012	96.10	0.00	0.00	25.30	25.30	0.03	0.03	56.41	56.48	0.03	0.03	38.19	38.26	0.02	0.02	69.00	69.03	0.04	0.04	74.12	74.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.12	263.02	263.26	99.91
29/08/2012	95.84	0.00	0.00	0.00	0.00	0.00	0.00	84.57	84.57	0.00	0.00	40.51	40.51	0.00	0.00	70.96	70.96	0.00	0.00	74.74	74.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	270.78	270.78	100.00	
30/08/2012	96.07	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	44.67	44.67	0.00	0.00	71.06	71.06	0.00	0.00	75.98	75.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	276.71	276.71	100.00	
31/08/2012	96.15	0.00	0.00	0.00	0.00	0.00	0.00	84.71	84.71	0.00	0.00	44.27	44.27	0.00	0.00	70.58	70.58	0.00	0.00	75.47	75.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	275.03	275.03	100.00	
		0.09	0.09	1158.60	1158.78	0.05	0.33	1619.89	1620.27	0.07	0.07	1281.49	1281.62	0.03	0.09	1751.46	1751.59	0.07	0.07	1240.03	1240.17	0.01	0.01	873.35	873.36	0.31	0.65	7924.82	7925.79					

Water Volume [%]:

Untreated 0.00 %
Below Dose 0.01 %
To Dose 99.99 %

Notes: 1. NR No Result due to Online Analyser malfunction

Submitted By (Print): D.Minor

Signature: Original signed by D.Minor



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code **252.00**
Licence Number **PWS 09 412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **August 2012**

Report Created: **Saturday, September 01, 2012**

Reactor: **UVR-100A**

Date	UV Dose			Reactor Flow			Average UV Lamp Intensity										UV Lamp Status										% Volume Treated to Validate Conditions	Daily Totals			
	mJ/cm ²			MLD			W/m ²										Hours											Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/08/2012	20.1	28.4	25.0	48.8	53.7	51.3	OL	OL	OL	181.5	102.3	107.1	135.8	86.3	161.8	3762	479	1881	2904	633	632	3187	3275	1100	100.00	0.00	0.00	51.26	51.26		
2/08/2012	19.7	28.6	24.8	49.2	53.4	51.5	OL	OL	OL	183.1	103.3	108.4	135.3	85.8	163.9	3762	479	1881	2928	657	656	3191	3299	1124	100.00	0.00	0.00	51.46	51.46		
3/08/2012	0.0	42.0	24.7	0.0	53.7	51.4	OL	OL	OL	178.0	98.1	103.4	132.8	84.9	161.1	3762	479	1881	2948	678	676	3212	3319	1145	100.00	0.00	0.00	44.13	44.13		
4/08/2012	17.9	106.7	33.1	4.5	58.7	50.7	272.5	143.9	164.7	224.9	133.8	134.1	239.0	11.0	175.0	3762	479	1881	2958	688	686	3212	3319	1145	100.00	0.00	0.00	20.85	20.85		
5/08/2012	20.7	32.3	26.8	47.6	67.4	58.6	270.0	128.8	133.4	209.7	122.8	108.8	OL	OL	OL	3786	503	1905	2982	712	710	3212	3319	1145	100.00	0.00	0.00	58.57	58.57		
6/08/2012	22.3	29.4	27.2	51.9	57.6	54.9	259.6	123.6	117.9	205.4	119.5	105.5	OL	OL	OL	3810	527	1929	3006	736	734	3212	3319	1145	100.00	0.00	0.00	54.90	54.90		
7/08/2012	21.1	30.9	26.2	45.8	63.0	59.1	262.7	124.7	120.0	207.7	120.6	106.7	OL	OL	OL	3834	551	1953	3030	760	758	3212	3319	1145	100.00	0.00	0.00	59.10	59.10		
8/08/2012	19.9	32.2	27.6	44.5	78.5	54.6	258.4	123.0	117.7	204.7	118.9	105.5	OL	OL	OL	3858	575	1977	3054	784	782	3212	3319	1145	100.00	0.00	0.00	54.56	54.56		
9/08/2012	24.4	46.9	33.0	0.0	50.9	40.9	258.0	122.6	115.6	204.1	118.6	105.1	OL	OL	OL	3882	599	2001	3078	808	806	3212	3319	1145	100.00	0.00	0.00	40.89	40.89		
10/08/2012	27.9	36.2	34.0	37.0	41.5	39.5	260.2	121.7	116.3	203.9	118.5	107.8	OL	OL	OL	3906	623	2025	3102	832	830	3212	3319	1145	100.00	0.00	0.00	39.50	39.50		
11/08/2012	27.7	37.2	35.1	37.5	41.7	39.4	268.3	124.1	118.2	206.5	121.0	113.2	OL	OL	OL	3930	647	2049	3126	856	854	3212	3319	1145	100.00	0.00	0.00	39.44	39.44		
12/08/2012	28.8	39.2	36.3	36.3	42.0	39.8	274.9	126.3	123.6	210.2	122.8	121.0	OL	OL	OL	3954	671	2073	3150	880	878	3212	3319	1145	100.00	0.00	0.00	39.80	39.80		
13/08/2012	21.1	40.7	36.0	34.0	70.4	45.3	275.7	127.8	131.0	211.3	122.7	126.5	OL	OL	OL	3978	695	2097	3174	904	902	3212	3319	1145	100.00	0.00	0.00	45.35	45.35		
14/08/2012	21.3	27.8	26.1	64.5	70.0	67.2	270.6	127.9	145.7	207.9	121.7	125.0	OL	OL	OL	4002	719	2121	3198	928	926	3212	3319	1145	100.00	0.00	0.00	67.20	67.20		
15/08/2012	0.0	103.3	25.7	0.0	68.9	66.7	262.9	125.1	145.8	203.0	118.2	116.6	231.6	70.2	62.9	4016	733	2135	3212	942	940	3212	3320	1146	99.54	0.09	0.09	39.03	39.21		
16/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4016	733	2135	3212	942	940	3212	3320	1146	OL	0.00	0.00	0.00	0.00		
17/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4016	733	2135	3212	942	940	3212	3320	1146	OL	0.00	0.00	0.00	0.00		
18/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4016	733	2135	3212	942	940	3212	3320	1146	OL	0.00	0.00	0.00	0.00		
19/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4016	733	2135	3212	942	940	3212	3320	1146	OL	0.00	0.00	0.00	0.00		
20/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4016	733	2135	3212	942	940	3212	3320	1146	OL	0.00	0.00	0.00	0.00		
21/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4016	733	2135	3212	942	940	3212	3320	1146	OL	0.00	0.00	0.00	0.00		
22/08/2012	17.9	106.0	24.4	3.8	79.5	70.4	229.3	118.0	130.3	182.4	113.4	113.1	209.1	66.4	81.1	4021	738	2139	3217	947	945	3213	3321	1146	100.00	0.00	0.00	13.80	13.80		
23/08/2012	19.8	27.7	24.2	60.5	88.5	80.8	264.8	131.7	141.9	201.5	131.0	130.7	OL	OL	OL	4045	762	2163	3241	971	969	3213	3321	1146	100.00	0.00	0.00	80.86	80.86		
24/08/2012	19.6	24.4	24.0	80.5	86.4	83.3	248.3	133.2	134.0	190.0	133.1	133.1	OL	OL	OL	4069	786	2187	3265	995	993	3213	3321	1146	100.00	0.00	0.00	83.25	83.25		
25/08/2012	19.7	24.4	23.9	81.0	86.0	83.9	238.0	134.2	134.2	182.9	134.2	134.2	OL	OL	OL	4093	810	2211	3289	1019	1017	3213	3321	1146	100.00	0.00	0.00	83.90	83.90		
26/08/2012	19.8	25.1	24.0	82.3	86.1	84.2	232.0	134.6	134.6	179.0	134.6	134.6	OL	OL	OL	4117	834	2235	3313	1043	1041	3213	3321	1146	100.00	0.00	0.00	84.18	84.18		
27/08/2012	19.7	25.3	24.0	78.5	85.7	81.3	229.6	130.0	130.1	175.7	130.0	130.0	OL	OL	OL	4141	858	2259	3337	1067	1065	3213	3321	1146	100.00	0.00	0.00	81.28	81.28		
28/08/2012	0.0	45.0	24.0	0.0	84.0	81.8	235.9	131.1	131.1	180.5	131.0	131.0	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	100.00	0.00	0.00	25.30	25.30		
29/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0.00	0.00	0.00		
30/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0.00	0.00	0.00		
31/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0.00	0.00	0.00		
Total [ML]:																												0.09	0.09	1158.60	1158.78

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

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

N \Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\08-August



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code **252.00**
Licence Number **PWS 09 412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **August 2012**

Report Created: **Saturday, September 01, 2012**

Reactor: **UVR-200A**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose	To Dose	Total			
							OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL					OL	OL	OL
1/08/2012	21.3	24.5	24.2	75.1	80.9	78.1	194.7	125.1	125.2	OL	OL	OL	250.0	125.1	125.3	79	78	79	911	395	3009	78	79	78	100.00	0.00	0.00	78.15	78.15		
2/08/2012	21.9	24.5	24.1	76.6	81.2	78.9	220.8	126.3	126.5	OL	OL	OL	252.4	126.4	126.3	103	102	103	911	395	3009	102	103	102	100.00	0.00	0.00	78.94	78.94		
3/08/2012	21.3	24.5	24.1	74.3	101.6	81.6	209.8	130.6	130.6	OL	OL	OL	241.7	130.7	130.8	127	126	127	911	395	3009	126	127	126	100.00	0.00	0.00	81.56	81.56		
4/08/2012	19.2	37.8	24.2	5.7	100.2	85.5	201.9	139.4	134.7	79.5	79.2	79.0	246.3	129.0	136.8	151	150	151	911	395	3009	150	151	150	100.00	0.00	0.00	85.53	85.53		
5/08/2012	17.8	33.6	24.0	70.2	90.0	79.9	240.3	140.6	127.8	77.7	77.8	77.7	299.2	126.8	130.0	175	174	175	912	396	3010	174	175	174	100.00	0.00	0.00	79.92	79.92		
6/08/2012	21.4	24.7	24.0	72.6	81.4	76.4	256.0	140.1	122.4	OL	OL	OL	286.0	122.3	123.5	199	198	199	912	396	3010	198	199	198	100.00	0.00	0.00	76.41	76.41		
7/08/2012	21.5	24.8	24.0	69.3	86.9	82.4	255.6	142.3	131.7	OL	OL	OL	275.0	131.8	132.2	223	222	223	912	396	3010	222	223	222	100.00	0.00	0.00	82.41	82.41		
8/08/2012	21.6	24.6	24.0	72.6	89.9	80.2	249.5	140.5	128.6	OL	OL	OL	249.3	128.4	128.7	247	246	247	912	396	3010	246	247	246	100.00	0.00	0.00	80.21	80.21		
9/08/2012	21.4	43.2	24.2	0.0	84.6	67.9	236.5	137.7	112.7	OL	OL	OL	217.9	109.1	118.8	271	270	271	912	396	3010	270	271	270	100.00	0.00	0.00	67.91	67.91		
10/08/2012	21.4	25.0	24.1	63.7	69.2	66.5	232.6	137.1	107.5	OL	OL	OL	182.2	106.7	115.4	295	294	295	912	396	3010	294	295	294	100.00	0.00	0.00	66.46	66.46		
11/08/2012	21.6	26.8	24.1	64.1	68.6	66.2	234.6	138.3	108.2	OL	OL	OL	144.6	106.2	116.3	319	318	319	912	396	3010	318	319	318	100.00	0.00	0.00	66.15	66.15		
12/08/2012	21.4	26.5	24.1	62.8	69.2	66.9	239.5	141.1	112.0	OL	OL	OL	111.4	107.3	118.1	343	342	343	912	396	3010	342	343	342	100.00	0.00	0.00	66.85	66.85		
13/08/2012	0.0	27.0	24.1	0.0	67.2	61.9	239.4	141.4	112.3	17.3	33.1	8.4	99.5	99.6	117.8	360	360	360	912	396	3010	359	360	359	99.59	0.00	0.18	44.20	44.38		
14/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	360	360	360	912	396	3010	359	360	359	OL	0.00	0.00	0.00	0.00		
15/08/2012	21.5	72.6	36.6	0.0	70.9	30.5	226.0	180.2	125.8	56.1	133.8	165.5	254.1	92.9	141.1	370	369	370	913	396	3011	369	370	369	99.98	0.00	0.00	12.32	12.32		
16/08/2012	31.2	39.3	36.2	28.4	31.9	30.0	243.8	169.7	103.6	OL	OL	OL	186.9	90.1	128.7	394	393	394	913	396	3011	393	394	393	100.00	0.00	0.00	30.00	30.00		
17/08/2012	22.0	38.4	33.9	28.5	51.7	31.3	241.2	159.4	94.4	OL	OL	OL	158.2	83.7	122.5	418	417	418	913	396	3011	417	418	417	100.00	0.00	0.00	31.28	31.28		
18/08/2012	21.5	27.5	24.2	49.2	61.9	56.1	241.8	153.8	93.6	OL	OL	OL	141.7	90.4	118.5	442	441	442	913	396	3011	441	442	441	100.00	0.00	0.00	56.10	56.10		
19/08/2012	21.3	24.8	24.1	57.5	62.2	60.0	253.7	152.1	96.7	OL	OL	OL	131.5	96.5	117.7	466	465	466	913	396	3011	465	466	465	100.00	0.00	0.00	60.00	60.00		
20/08/2012	21.5	24.8	24.1	57.6	62.3	60.0	253.5	144.6	96.7	OL	OL	OL	118.7	96.5	112.8	490	489	490	913	396	3011	489	490	489	100.00	0.00	0.00	60.00	60.00		
21/08/2012	21.6	24.9	24.1	57.5	62.4	60.0	249.0	138.7	96.7	OL	OL	OL	109.2	96.5	108.6	514	513	514	913	396	3011	513	514	513	100.00	0.00	0.00	60.00	60.00		
22/08/2012	0.0	39.0	23.9	0.0	79.3	59.5	243.9	144.3	95.7	39.6	129.7	67.7	110.2	95.1	113.7	532	531	532	914	397	3012	531	532	531	99.71	0.01	0.12	44.80	44.93		
23/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	532	531	532	914	397	3012	531	532	531	OL	0.00	0.00	0.00	0.00		
24/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	532	531	532	914	397	3012	531	532	531	OL	0.00	0.00	0.00	0.00		
25/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	532	531	532	914	397	3012	531	532	531	OL	0.00	0.00	0.00	0.00		
26/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	532	531	532	914	397	3012	531	532	531	OL	0.00	0.00	0.00	0.00		
27/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	532	531	532	914	397	3012	531	532	531	OL	0.00	0.00	0.00	0.00		
28/08/2012	0.0	111.1	24.2	0.0	89.5	82.6	228.5	164.7	148.5	83.9	59.9	98.9	269.2	126.0	133.2	548	548	549	916	400	3014	548	549	548	99.88	0.03	0.03	56.41	56.48		
29/08/2012	21.6	26.8	24.1	68.9	88.4	84.6	154.7	148.0	142.9	OL	OL	OL	232.4	135.2	135.3	572	572	573	916	400	3014	572	573	572	100.00	0.00	0.00	84.57	84.57		
30/08/2012	21.3	27.1	24.0	82.8	87.6	85.0	135.9	140.2	135.9	OL	OL	OL	214.6	135.9	135.9	596	596	597	916	400	3014	596	597	596	100.00	0.00	0.00	85.00	85.00		
31/08/2012	21.4	27.6	24.0	82.4	87.2	85.0	136.1	139.6	135.9	OL	OL	OL	209.4	135.9	136.0	620	620	621	916	400	3014	620	621	620	100.00	0.00	0.00	84.71	84.71		
Total [ML]:																									0.05	0.33	1619.89	1620.27			

Water Volume [%]:

Untreated 0.00 %
Below Dose 0.02 %
To Dose 99.98 %

- Notes:**
1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

N Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\08-August



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code **252.00**
Licence Number **PWS 09 412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **August 2012**

Report Created: **Saturday, September 01, 2012**

Reactor: **UVR-300A**

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²										UV Lamp Status Hours										% Volume Treated to Validate	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Conditions	Untreated	Below Dose		To Dose	Total	
																											Unmet	Met			
1/08/2012	21.3	25.7	24.0	64.9	71.0	68.4	123.0	109.8	109.9	OL	OL	OL	110.5	109.8	109.8	4193	4193	649	3908	3909	3909	3882	3882	3882	100.00	0.00	0.00	68.45	68.45		
2/08/2012	21.3	25.3	24.0	65.8	71.1	68.6	123.5	110.1	110.2	OL	OL	OL	110.7	110.1	110.1	4217	4217	673	3908	3909	3909	3906	3906	3906	100.00	0.00	0.00	68.65	68.65		
3/08/2012	21.2	27.3	24.0	36.9	71.0	64.9	120.4	106.2	104.5	OL	OL	OL	105.5	104.4	105.5	4241	4241	697	3908	3909	3909	3930	3930	3930	100.00	0.00	0.00	64.93	64.93		
4/08/2012	0.0	85.4	24.2	0.0	58.6	45.2	119.6	79.3	70.0	56.6	95.5	82.3	107.1	71.0	70.4	4330	4329	786	3971	3972	3971	3955	3955	3955	100.00	0.00	0.00	4.74	4.74		
5/08/2012	20.6	26.6	24.0	34.7	94.8	80.2	134.2	130.9	128.3	132.6	133.2	128.5	OL	OL	OL	4289	4288	745	3932	3933	3933	3952	3952	3952	100.00	0.00	0.00	80.25	80.25		
6/08/2012	21.1	25.5	24.0	78.2	89.8	84.6	135.3	135.3	135.3	139.6	135.3	135.3	OL	OL	OL	4313	4312	769	3956	3957	3957	3952	3952	3952	100.00	0.00	0.00	84.60	84.60		
7/08/2012	0.0	30.2	24.0	0.0	91.4	84.7	135.6	135.5	135.4	141.3	135.6	135.5	OL	OL	OL	4327	4327	783	3971	3971	3971	3952	3952	3952	100.00	0.00	0.00	50.32	50.32		
8/08/2012	OL	OL	OL	OL	OL	OL	119.6	79.3	70.0	56.6	95.5	82.3	107.1	71.0	70.4	4330	4329	786	3971	3972	3971	3955	3955	3955	OL	0.00	0.00	0.00	0.00		
9/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4330	4329	786	3971	3972	3971	3955	3955	3955	OL	0.00	0.00	0.00	0.00		
10/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4330	4329	786	3971	3972	3971	3955	3955	3955	OL	0.00	0.00	0.00	0.00		
11/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4330	4329	786	3971	3972	3971	3955	3955	3955	OL	0.00	0.00	0.00	0.00		
12/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4330	4329	786	3971	3972	3971	3955	3955	3955	OL	0.00	0.00	0.00	0.00		
13/08/2012	18.6	89.1	24.5	4.9	44.1	40.5	121.8	77.9	66.0	39.4	19.2	86.5	110.4	69.2	66.6	4336	4336	793	3971	3972	3971	3962	3962	3961	100.00	0.00	0.00	11.51	11.51		
14/08/2012	21.3	26.0	24.4	35.4	44.0	40.4	121.4	77.8	65.8	OL	OL	OL	110.5	67.5	76.7	4360	4360	817	3971	3972	3971	3996	3986	3985	100.00	0.00	0.00	40.48	40.48		
15/08/2012	21.1	26.8	24.3	35.2	68.2	46.7	119.9	83.3	75.8	OL	OL	OL	110.0	76.1	83.0	4384	4384	841	3971	3972	3971	4010	4010	4009	100.00	0.00	0.00	46.69	46.69		
16/08/2012	21.1	26.2	24.2	47.9	59.5	54.1	121.4	87.2	87.3	OL	OL	OL	111.5	87.2	87.3	4408	4408	865	3971	3972	3971	4034	4034	4033	100.00	0.00	0.00	54.10	54.10		
17/08/2012	21.2	26.0	24.2	42.8	57.7	53.0	115.7	85.5	85.6	OL	OL	OL	107.4	85.5	85.6	4432	4432	889	3971	3972	3971	4058	4058	4057	100.00	0.00	0.00	53.05	53.05		
18/08/2012	21.3	25.9	24.3	37.3	47.9	43.4	113.8	73.9	70.4	OL	OL	OL	106.0	70.3	77.5	4456	4456	913	3971	3972	3971	4082	4082	4081	100.00	0.00	0.00	43.38	43.38		
19/08/2012	21.2	26.0	24.3	38.3	45.6	42.0	115.7	74.9	68.3	OL	OL	OL	108.4	68.2	78.4	4480	4480	937	3971	3972	3971	4106	4106	4105	100.00	0.00	0.00	42.02	42.02		
20/08/2012	21.0	26.0	24.3	37.8	45.7	42.1	110.8	71.6	68.4	OL	OL	OL	103.4	68.3	74.4	4504	4504	961	3971	3972	3971	4130	4130	4129	100.00	0.00	0.00	42.09	42.09		
21/08/2012	21.2	26.5	24.3	36.9	45.8	42.1	105.9	69.1	68.4	OL	OL	OL	99.5	68.4	71.4	4528	4528	985	3971	3972	3971	4154	4154	4153	100.00	0.00	0.00	42.15	42.15		
22/08/2012	0.0	83.8	24.4	0.0	103.8	47.6	111.3	74.4	72.7	108.2	95.9	82.1	103.7	74.1	76.0	4551	4551	1008	3977	3978	3977	4174	4174	4173	99.86	0.03	0.03	45.54	45.60		
23/08/2012	21.1	30.7	24.4	35.3	52.3	43.9	118.0	75.0	71.2	130.4	105.3	93.0	OL	OL	OL	4575	4575	1032	4001	4002	4001	4174	4174	4173	100.00	0.00	0.00	43.85	43.85		
24/08/2012	21.0	31.7	24.4	39.9	50.4	45.1	111.8	73.8	73.2	132.7	102.7	93.9	OL	OL	OL	4599	4599	1056	4025	4026	4025	4174	4174	4173	100.00	0.00	0.00	45.09	45.09		
25/08/2012	20.9	29.5	24.3	39.5	51.3	45.9	109.2	74.3	74.4	133.1	101.0	93.3	OL	OL	OL	4623	4623	1080	4049	4050	4049	4174	4174	4173	100.00	0.00	0.00	45.91	45.91		
26/08/2012	20.8	30.1	24.3	40.1	51.0	46.4	107.7	75.0	75.1	133.0	100.2	93.0	OL	OL	OL	4647	4647	1104	4073	4074	4073	4174	4174	4173	100.00	0.00	0.00	46.34	46.34		
27/08/2012	20.6	29.3	24.3	39.1	50.4	44.7	106.4	72.4	72.5	132.9	100.1	93.2	OL	OL	OL	4671	4671	1128	4097	4098	4097	4174	4174	4173	100.00	0.00	0.00	44.74	44.74		
28/08/2012	0.0	81.9	24.4	0.0	49.7	44.6	106.7	72.4	72.1	132.8	99.9	93.6	4.3	55.9	48.2	4692	4692	1149	4118	4118	4118	4174	4174	4173	99.83	0.03	0.03	38.19	38.26		
29/08/2012	0.0	85.7	24.4	0.0	49.1	43.7	103.1	71.2	70.8	128.0	96.7	90.8	58.5	53.5	53.6	4714	4714	1171	4140	4141	4140	4174	4174	4174	100.00	0.00	0.00	40.51	40.51		
30/08/2012	21.0	30.0	24.3	38.6	50.1	44.7	102.7	72.4	72.4	130.6	96.9	91.3	OL	OL	OL	4738	4738	1195	4164	4165	4164	4174	4174	4174	100.00	0.00	0.00	44.67	44.67		
31/08/2012	21.0	29.4	24.3	38.7	48.9	44.4	102.6	71.9	72.0	131.3	96.8	91.0	OL	OL	OL	4762	4762	1219	4188	4189	4188	4174	4174	4174	100.00	0.00	0.00	44.27	44.27		
Total [ML]:																									0.07	0.07	1281.49	1281.62			

Water Volume [%]:

Untreated 0.01 %
Below Dose 0.01 %
To Dose 99.99 %

- Notes:**
1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\08-August



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code **252.00**
Licence Number **PWS 09 412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **August 2012**

Report Created: **Saturday, September 01, 2012**

Reactor: **UVR-400A**

Date	UV Dose mJ/cm²			Reactor Flow			Average UV Lamp Intensity										UV Lamp Status										% Volume Treated to Validate Conditions	Daily Totals				
	Min.	Max.	Avg.	MLD			W/m²										Hours											Untreated	Water Volume [ML]			
				Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Below Dose	To Dose			Total			
1/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3765	3765	1780	3914	3915	3914	3997	2967	3997	OL	0.00	0.00	0.00	0.00	0.00
2/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3765	3765	1780	3914	3915	3914	3997	2967	3997	OL	0.00	0.00	0.00	0.00	0.00
3/08/2012	19.7	60.4	30.4	0.0	58.1	55.8	141.0	107.5	66.7	98.7	80.1	106.6	121.9	119.4	161.2			3765	3765	1780	3914	3915	3914	3997	2967	3997	100.00	0.00	0.00	7.94	7.94	
4/08/2012	19.0	58.1	27.5	0.0	89.6	67.2	127.7	95.3	81.8	122.5	78.4	88.9	122.2	113.5	148.4			3789	3789	1804	3938	3939	3938	4021	2991	4021	100.00	0.00	0.00	67.07	67.07	
5/08/2012	0.0	53.1	24.5	0.0	77.2	71.9	117.5	80.1	73.5	115.1	73.5	77.6	119.0	108.5	136.4			3791	3791	1807	3940	3941	3941	4024	2994	4023	100.00	0.00	0.00	7.45	7.45	
6/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3791	3791	1807	3940	3941	3941	4024	2994	4023	OL	0.00	0.00	0.00	0.00	0.00
7/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3791	3791	1807	3940	3941	3941	4024	2994	4023	OL	0.00	0.00	0.00	0.00	0.00
8/08/2012	23.7	63.9	27.1	0.0	49.5	46.6	139.6	99.3	83.4	29.2	87.2	16.2	123.4	120.2	152.2			3803	3803	1818	3941	3941	3941	4036	3005	4035	100.00	0.00	0.00	22.62	22.62	
9/08/2012	17.3	40.4	24.9	0.0	90.8	69.6	123.6	85.8	80.3	109.9	79.7	80.5	116.7	109.4	130.7			3827	3827	1842	3958	3959	3959	4060	3029	4059	99.91	0.00	0.06	69.50	69.56	
10/08/2012	23.8	25.0	24.4	77.1	84.9	81.4	108.1	82.7	82.7	98.6	82.7	82.7	104.3	94.2	112.3			3851	3851	1866	3982	3983	3983	4084	3053	4083	100.00	0.00	0.00	81.41	81.41	
11/08/2012	23.8	25.0	24.4	78.7	85.7	81.9	100.4	83.2	83.2	86.5	83.2	83.2	92.8	89.4	103.2			3875	3875	1890	4006	4007	4007	4108	3077	4107	100.00	0.00	0.00	81.90	81.90	
12/08/2012	23.7	25.1	24.4	76.1	86.4	82.8	95.1	84.1	84.1	84.2	84.2	84.2	86.1	90.5	102.2			3899	3899	1914	4030	4031	4031	4132	3101	4131	100.00	0.00	0.00	82.83	82.83	
13/08/2012	23.7	25.5	24.4	62.2	82.4	72.5	88.6	74.1	73.8	75.8	73.8	73.8	86.0	91.1	102.9			3923	3923	1938	4054	4055	4055	4156	3125	4155	100.00	0.00	0.00	72.53	72.53	
14/08/2012	23.6	25.4	24.5	59.0	69.0	65.6	82.3	67.1	67.0	71.4	67.0	67.0	87.0	90.5	102.0			3947	3947	1962	4078	4079	4079	4180	3149	4179	100.00	0.00	0.00	65.57	65.57	
15/08/2012	23.0	25.7	24.5	57.7	84.6	70.5	78.9	72.2	72.1	74.3	72.1	72.2	87.9	90.3	103.5			3971	3971	1986	4102	4103	4103	4204	3173	4203	100.00	0.00	0.00	70.52	70.52	
16/08/2012	23.1	25.5	24.4	71.9	82.3	76.9	79.1	78.2	78.2	78.2	78.2	78.2	90.2	92.2	106.4			3995	3995	2012	4126	4127	4127	4228	3197	4227	100.00	0.00	0.00	76.83	76.83	
17/08/2012	23.3	25.6	24.4	68.2	81.6	75.9	77.3	77.3	77.3	77.3	77.3	77.3	85.7	87.3	100.9			4019	4019	2034	4150	4151	4151	4252	3221	4251	100.00	0.00	0.00	75.91	75.91	
18/08/2012	23.5	25.6	24.5	64.1	73.4	68.8	71.3	70.2	70.2	70.2	70.2	70.2	84.5	85.9	100.1			4043	4043	2058	4174	4175	4175	4276	3245	4275	100.00	0.00	0.00	68.77	68.77	
19/08/2012	23.6	25.6	24.5	63.4	71.4	67.3	71.5	68.8	68.8	68.8	68.8	68.8	84.4	86.9	101.4			4067	4067	2082	4198	4199	4199	4300	3269	4299	100.00	0.00	0.00	67.34	67.34	
20/08/2012	23.5	25.5	24.5	63.6	71.1	67.4	70.3	68.8	68.8	68.8	68.8	68.8	81.8	84.6	99.6			4091	4091	2106	4222	4223	4223	4324	3293	4323	100.00	0.00	0.00	67.40	67.40	
21/08/2012	23.5	25.7	24.5	63.2	70.8	67.2	69.2	68.6	68.6	68.6	68.6	68.6	78.5	80.6	95.6			4115	4115	2130	4246	4247	4247	4348	3317	4347	100.00	0.00	0.00	67.19	67.19	
22/08/2012	0.0	63.9	24.5	0.0	78.5	70.7	77.0	72.7	72.3	73.7	72.5	72.8	86.1	84.1	103.4			4136	4135	2151	4267	4267	4267	4368	3338	4368	99.95	0.02	0.02	60.74	60.78	
23/08/2012	20.6	26.6	24.4	60.4	81.6	70.6	112.9	72.1	72.1	88.9	72.7	79.6	113.5	98.7	133.0			4160	4159	2175	4291	4291	4291	4392	3362	4392	100.00	0.00	0.00	70.66	70.66	
24/08/2012	20.1	25.5	24.4	66.7	75.9	71.3	113.5	72.7	72.7	85.4	72.8	75.9	108.5	98.4	127.5			4184	4183	2199	4315	4315	4315	4416	3386	4416	100.00	0.00	0.00	71.31	71.31	
25/08/2012	23.3	25.5	24.4	67.6	76.1	71.8	106.0	73.2	73.2	76.8	73.2	73.2	96.7	88.3	111.4			4208	4207	2223	4339	4339	4339	4440	3410	4440	100.00	0.00	0.00	71.78	71.78	
26/08/2012	23.4	25.5	24.4	67.7	75.9	71.9	95.6	73.3	73.3	73.3	73.3	73.3	85.7	82.3	101.3			4232	4231	2247	4363	4363	4363	4464	3434	4464	100.00	0.00	0.00	71.88	71.88	
27/08/2012	23.4	25.5	24.4	65.6	75.5	70.8	86.9	72.2	72.2	72.2	72.2	72.2	82.0	80.5	96.8			4256	4255	2271	4387	4387	4387	4488	3458	4488	100.00	0.00	0.00	70.71	70.71	
28/08/2012	0.0	63.9	24.5	0.0	83.3	71.5	90.8	73.3	73.2	73.9	73.2	73.5	87.9	84.0	103.4			4279	4279	2294	4410	4410	4410	4511	3481	4511	99.95	0.02	0.02	69.00	69.03	
29/08/2012	23.0	26.3	24.4	56.4	88.4	71.0	100.1	72.6	72.4	72.8	72.5	72.4	88.6	86.5	104.3			4302	4303	2318	4434	4435	4434	4535	3505	4535	100.00	0.00	0.00	70.96	70.96	
30/08/2012	23.3	25.5	24.4	66.5	75.5	71.1	87.6	72.5	72.5	72.5	72.6	72.6	74.6	79.3	90.3			4327	4327	2342	4458	4458	4458	4559	3529	4559	100.00	0.00	0.00	71.06	71.06	
31/08/2012	23.5	25.5	24.4	66.8	74.4	70.8	82.5	72.3	72.2	72.4	72.3	72.3	72.3	78.3	89.4			4351	4351	2366	4482	4483	4482	4583	3553	4583	100.00	0.00	0.00	70.58	70.58	
Total [ML]:																											0.03	0.09	1751.46	1751.59		

Water Volume [%]:

Untreated 0.00 %
Below Dose 0.01 %
To Dose 99.99 %

- Notes:**
1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

N Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\08-August



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code **252.00**
Licence Number **PWS 09 412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **August 2012**

Report Created: **Saturday, September 01, 2012**

Reactor: **UVR-500A**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose	To Dose	Total			
							OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL					OL	OL	OL
1/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
2/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
3/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
4/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
5/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
6/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
7/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
8/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
9/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
10/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
11/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
12/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
13/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	509	165	2258	1013	2592	1446	858	853	3464	OL	0.00	0.00	0.00	0.00		
14/08/2012	0.0	118.0	71.4	0.0	35.9	26.0	113.9	101.7	92.0	180.4	129.6	194.5	154.8	114.4	108.7	509	165	2258	1013	2592	1446	858	853	3464	100.00	0.00	0.00	0.07	0.07		
15/08/2012	21.2	82.3	24.8	4.7	87.0	78.9	132.2	127.3	407.8	257.4	141.5	139.3	165.8	116.6	122.5	509	165	2270	1013	2592	1446	858	858	3464	100.00	0.00	0.00	41.49	41.49		
16/08/2012	20.9	24.8	24.1	77.1	86.5	81.0	129.6	129.6	311.8	243.9	133.9	130.1	OL	OL	OL	533	189	2294	1037	2616	1470	858	858	3464	100.00	0.00	0.00	81.01	81.01		
17/08/2012	20.8	24.7	24.1	71.1	83.5	79.8	127.9	127.7	250.8	221.0	127.9	128.0	OL	OL	OL	557	213	2318	1061	2640	1494	858	858	3464	100.00	0.00	0.00	79.78	79.78		
18/08/2012	21.0	24.7	24.2	67.5	74.9	71.8	115.3	115.0	220.6	195.2	116.4	115.3	OL	OL	OL	581	237	2342	1085	2664	1518	858	858	3464	100.00	0.00	0.00	71.75	71.75		
19/08/2012	23.4	24.7	24.2	68.1	73.1	70.7	113.5	113.3	216.8	158.0	113.3	113.5	OL	OL	OL	605	261	2366	1109	2688	1542	858	858	3464	100.00	0.00	0.00	70.67	70.67		
20/08/2012	23.6	24.7	24.2	67.6	72.9	70.5	113.3	113.2	210.2	138.3	113.1	113.3	OL	OL	OL	629	285	2390	1133	2712	1566	858	858	3464	100.00	0.00	0.00	70.52	70.52		
21/08/2012	23.7	24.8	24.2	67.8	72.7	70.7	113.4	113.4	200.5	133.6	113.3	113.4	OL	OL	OL	653	309	2414	1157	2736	1593	858	858	3464	100.00	0.00	0.00	70.63	70.63		
22/08/2012	0.0	76.6	24.2	0.0	86.5	75.0	113.5	110.9	211.3	156.1	120.8	113.7	74.3	74.4	68.4	676	331	2437	1179	2759	1613	858	858	3464	99.91	0.03	0.03	70.88	70.94		
23/08/2012	17.9	34.7	24.2	68.6	85.6	75.7	113.7	108.0	240.3	205.2	122.5	84.4	108.1	108.2	108.5	700	355	2461	1187	2767	1620	882	882	3488	100.00	0.00	0.00	75.71	75.71		
24/08/2012	21.0	34.1	24.2	72.9	80.1	76.5	112.6	107.6	245.9	146.6	92.4	78.5	113.4	107.9	108.3	724	379	2485	1196	2775	1629	906	906	3512	100.00	0.00	0.00	76.55	76.55		
25/08/2012	20.7	25.3	24.4	73.6	80.2	77.2	90.3	78.6	245.4	161.9	92.6	78.9	93.2	79.7	77.9	748	403	2509	1220	2799	1653	930	930	3536	100.00	0.00	0.00	77.23	77.23		
26/08/2012	21.1	25.2	24.4	74.3	80.4	77.5	86.0	79.0	240.7	163.0	91.0	79.2	92.5	83.2	66.7	772	427	2533	1244	2823	1677	954	954	3560	100.00	0.00	0.00	77.57	77.57		
27/08/2012	21.4	26.0	24.4	72.6	79.8	75.8	81.8	77.4	232.0	172.7	106.1	77.9	91.6	85.4	55.4	796	451	2557	1268	2847	1701	978	978	3584	100.00	0.00	0.00	75.85	75.85		
28/08/2012	0.0	110.6	24.5	0.0	80.8	75.1	86.3	77.1	244.5	165.3	103.3	78.6	98.7	93.3	46.6	819	475	2581	1291	2871	1724	1002	1002	3608	99.90	0.04	0.04	74.12	74.19		
29/08/2012	21.2	27.2	24.4	90.9	80.9	74.7	91.0	76.2	270.0	161.2	98.8	79.4	119.1	94.6	40.5	843	499	2605	1315	2895	1748	1026	1026	3632	100.00	0.00	0.00	74.74	74.74		
30/08/2012	22.3	25.2	24.4	72.6	79.7	76.0	83.9	77.5	257.0	151.1	93.5	77.6	126.7	89.6	29.1	867	523	2629	1339	2919	1772	1050	1050	3656	100.00	0.00	0.00	75.98	75.98		
31/08/2012	21.2	25.2	24.4	72.6	78.3	75.7	81.6	77.4	250.5	146.6	91.6	77.4	128.8	87.7	21.8	891	547	2653	1363	2943	1796	1074	1074	3680	100.00	0.00	0.00	75.47	75.47		
Total [ML]:																									0.07	0.07	1240.03	1240.17			

Water Volume [%]:

Untreated 0.01 %
Below Dose 0.01 %
To Dose 99.99 %

- Notes:**
1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

N Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\08-August



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code **252.00**
Licence Number **PWS 09 412 RR**

WATER TREATMENT PLANT UV REPORT

Report Period: **August 2012**

Report Created: **Saturday, September 01, 2012**

Reactor: **UVR-600A**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose	To Dose	Total			
							1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3							
1/08/2012	17.6	24.8	23.9	71.4	78.8	75.4	139.9	120.7	120.7	122.7	120.7	129.9	OL	OL	OL	2077	5143	5143	4257	4258	4258	1407	10	4485	100.00	0.00	0.00	75.34	75.34		
2/08/2012	17.5	24.8	23.8	73.2	78.7	76.0	141.3	121.6	121.6	123.0	121.6	130.6	OL	OL	OL	2101	5167	5167	4281	4282	4282	1407	10	4485	100.00	0.00	0.00	75.96	75.96		
3/08/2012	17.1	24.7	23.8	70.8	78.9	75.9	133.9	121.6	121.6	121.9	121.6	127.5	OL	OL	OL	2125	5191	5191	4305	4306	4306	1407	10	4485	100.00	0.00	0.00	75.96	75.96		
4/08/2012	0.0	74.5	23.9	0.0	150.0	76.2	135.8	121.1	121.1	122.1	121.6	130.6	181.5	81.0	1.1	2139	5205	5205	4320	4321	4320	1407	10	4485	99.98	0.01	0.01	45.74	45.74		
5/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	0	10	9	10	1407	10	4485	OL	0.00	0.00	0.00	0.00		
6/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	0	10	9	10	1407	10	4485	OL	0.00	0.00	0.00	0.00		
7/08/2012	0.0	94.8	24.3	0.0	90.4	84.7	143.4	103.1	133.4	147.9	135.4	136.3	163.3	134.2	134.2	2140	1	0	10	9	10	1407	10	4485	100.00	0.00	0.00	34.65	34.65		
8/08/2012	19.5	24.8	24.0	73.5	87.7	80.5	OL	OL	OL	132.2	128.7	140.3	145.5	128.7	128.8	2140	1	0	34	33	34	1431	34	33	100.00	0.00	0.00	80.43	80.43		
9/08/2012	19.5	47.6	24.1	0.0	84.6	75.6	OL	OL	OL	122.6	121.2	130.4	136.6	121.1	121.1	2140	1	0	58	57	58	1455	58	57	100.00	0.00	0.00	75.58	75.58		
10/08/2012	19.3	24.9	24.0	73.2	80.9	77.7	OL	OL	OL	124.4	124.3	128.5	134.5	124.3	124.4	2140	1	0	82	81	82	1479	82	81	100.00	0.00	0.00	77.69	77.69		
11/08/2012	19.5	24.8	24.0	74.1	80.6	77.4	OL	OL	OL	124.0	123.9	133.1	133.9	123.8	123.8	2140	1	0	106	105	106	1503	106	105	100.00	0.00	0.00	77.38	77.38		
12/08/2012	19.5	24.9	24.0	72.8	81.8	78.3	OL	OL	OL	125.5	125.4	146.7	136.5	125.4	125.4	2140	1	0	130	129	130	1527	130	129	100.00	0.00	0.00	78.36	78.36		
13/08/2012	19.5	24.8	24.1	68.0	78.8	72.2	OL	OL	OL	119.1	115.8	155.3	138.7	115.7	115.7	2140	1	0	154	153	154	1551	154	153	100.00	0.00	0.00	72.24	72.24		
14/08/2012	19.6	28.8	24.1	44.7	72.6	69.7	OL	OL	OL	118.2	111.9	146.3	141.3	111.8	111.7	2140	1	0	178	177	178	1575	178	177	100.00	0.00	0.00	69.71	69.71		
15/08/2012	0.0	42.1	24.1	0.0	93.9	69.3	OL	OL	OL	115.8	111.3	136.7	142.8	111.2	111.2	2140	1	0	189	189	190	1587	189	189	100.00	0.00	0.00	33.51	33.51		
16/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	0	189	189	190	1587	189	189	OL	0.00	0.00	0.00	0.00		
17/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	0	189	189	190	1587	189	189	OL	0.00	0.00	0.00	0.00		
18/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	0	189	189	190	1587	189	189	OL	0.00	0.00	0.00	0.00		
19/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	0	189	189	190	1587	189	189	OL	0.00	0.00	0.00	0.00		
20/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	0	189	189	190	1587	189	189	OL	0.00	0.00	0.00	0.00		
21/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	0	189	189	190	1587	189	189	OL	0.00	0.00	0.00	0.00		
22/08/2012	0.0	72.3	26.1	0.0	93.0	65.6	79.1	69.4	79.5	118.6	101.6	105.4	163.0	85.3	82.7	2140	1	1	190	189	190	1587	190	189	100.00	0.00	0.00	0.79	0.79		
23/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00		
24/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00		
25/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00		
26/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00		
27/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00		
28/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00		
29/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00		
30/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00		
31/08/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00		
Total [ML]:																											0.01	0.01	873.35	873.36	

Water Volume [%]:

Untreated 0.00 %
Below Dose 0.00 %
To Dose 100.0 %

- Notes:**
1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

N \Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\08-August



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: September 2012

Report Created: Monday, October 01, 2012

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]								
	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		
1/09/2012	96.46	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	45.14	45.14	0.00	0.00	71.30	71.30	0.00	0.00	76.46	76.46	0.00	0.00	0.00	0.00	0.00	0.00	277.90	277.90	100.00
2/09/2012	96.72	0.00	0.00	0.00	0.00	0.00	0.00	85.01	85.01	0.00	0.00	43.74	43.74	0.00	0.00	69.51	69.51	0.00	0.00	74.60	74.60	0.00	0.00	0.00	0.00	0.00	0.00	272.86	272.86	100.00
3/09/2012	96.59	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	42.90	42.90	0.00	0.00	69.96	69.96	0.00	0.00	73.58	73.58	0.00	0.00	0.00	0.00	0.00	0.00	271.43	271.43	100.00
4/09/2012	96.49	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	42.71	42.71	0.00	0.00	68.61	68.61	0.00	0.00	73.67	73.67	0.00	0.00	0.00	0.00	0.00	0.00	269.99	269.99	100.00
5/09/2012	96.92	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	44.61	44.61	0.00	0.00	69.19	69.19	0.00	0.00	75.13	75.13	0.00	0.00	0.00	0.00	0.00	0.00	273.93	273.93	100.00
6/09/2012	96.95	0.00	0.00	0.00	0.00	0.00	0.00	84.85	84.85	0.00	0.00	42.65	42.65	0.00	0.00	67.79	67.79	0.00	0.00	73.09	73.09	0.00	0.00	0.00	0.00	0.00	0.00	268.38	268.38	100.00
7/09/2012	96.82	0.00	0.00	0.00	0.00	0.00	0.00	82.76	82.76	0.00	0.00	40.91	40.91	0.00	0.00	66.16	66.16	0.00	0.00	70.31	70.31	0.00	0.00	0.00	0.00	0.00	0.00	260.14	260.14	100.00
8/09/2012	96.65	0.00	0.00	0.00	0.00	0.00	0.00	83.42	83.42	0.00	0.00	14.01	14.01	0.00	0.00	74.25	74.25	0.00	0.00	74.24	74.24	0.00	0.00	0.00	0.00	0.00	0.00	245.93	245.93	100.00
9/09/2012	96.92	0.00	0.00	0.00	0.00	0.00	0.00	84.94	84.94	0.00	0.00	0.00	0.00	0.00	0.00	80.09	80.09	0.00	0.00	75.81	75.81	0.00	0.00	0.00	0.00	0.00	0.00	240.84	240.84	100.00
10/09/2012	97.04	0.00	0.00	0.00	0.00	0.00	0.00	76.95	76.95	0.00	0.00	27.68	27.68	0.00	0.00	69.85	69.85	0.00	0.00	72.79	72.79	0.00	0.00	0.00	0.00	0.00	0.00	247.27	247.27	100.00
11/09/2012	97.07	0.00	0.00	0.00	0.00	0.00	0.00	73.15	73.15	0.00	0.00	39.59	39.59	0.00	0.00	65.04	65.04	0.00	0.00	72.25	72.25	0.00	0.00	0.00	0.00	0.00	0.00	250.03	250.03	100.00
12/09/2012	96.98	0.00	0.00	0.00	0.00	0.00	0.00	73.54	73.54	0.00	0.00	39.93	39.93	0.00	0.00	65.45	65.45	0.00	0.00	72.93	72.93	0.00	0.00	0.00	0.00	0.00	0.00	251.85	251.85	100.00
13/09/2012	97.11	0.00	0.00	0.00	0.00	0.00	0.00	77.74	77.74	0.00	0.00	41.50	41.50	0.00	0.00	68.41	68.41	0.00	0.00	73.33	73.33	0.00	0.00	0.00	0.00	0.00	0.00	260.98	260.98	100.00
14/09/2012	97.24	0.00	0.00	0.00	0.00	0.00	0.00	79.24	79.24	0.00	0.00	41.98	41.98	0.00	0.00	69.43	69.43	0.00	0.00	73.38	73.38	0.00	0.00	0.00	0.00	0.00	0.00	264.03	264.03	100.00
15/09/2012	97.23	0.00	0.00	0.00	0.00	0.00	0.00	79.33	79.33	0.00	0.00	41.96	41.96	0.00	0.00	69.45	69.45	0.00	0.00	73.34	73.34	0.00	0.00	0.00	0.00	0.00	0.00	264.08	264.08	100.00
16/09/2012	97.10	0.00	0.00	0.00	0.00	0.00	0.00	78.75	78.75	0.00	0.00	41.88	41.88	0.00	0.00	68.87	68.87	0.00	0.00	73.44	73.44	0.00	0.00	0.00	0.00	0.00	0.00	262.94	262.94	100.00
17/09/2012	97.09	0.00	0.00	0.00	0.00	0.00	0.00	79.53	79.53	0.00	0.00	41.81	41.81	0.00	0.00	69.54	69.54	0.00	0.00	73.03	73.03	0.00	0.00	0.00	0.00	0.00	0.00	263.91	263.91	100.00
18/09/2012	97.02	0.00	0.00	0.00	0.00	0.00	0.00	78.17	78.17	0.00	0.00	41.56	41.56	0.00	0.00	68.48	68.48	0.00	0.00	72.68	72.68	0.00	0.00	0.00	0.00	0.00	0.00	260.88	260.88	100.00
19/09/2012	97.28	0.00	0.00	25.83	25.83	0.00	0.00	80.43	80.43	0.00	0.00	24.22	24.22	0.00	0.00	40.16	40.16	0.00	0.00	59.47	59.47	0.00	0.00	29.88	29.88	0.00	0.00	259.99	259.99	100.00
20/09/2012	97.43	0.00	0.00	65.64	65.64	0.00	0.00	68.97	68.97	0.00	0.00	14.17	14.17	0.00	0.00	0.00	0.00	0.00	0.00	39.67	39.67	0.00	0.00	70.86	70.86	0.00	0.00	259.30	259.30	100.00
21/09/2012	97.41	0.00	0.00	58.91	58.91	0.00	0.00	80.74	80.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.32	40.32	0.00	0.00	66.68	66.68	0.00	0.00	246.66	246.66	100.00
22/09/2012	97.24	0.00	0.00	57.66	57.66	0.00	0.00	78.92	78.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.43	42.43	0.00	0.00	63.07	63.07	0.00	0.00	242.08	242.08	100.00
23/09/2012	97.11	0.00	0.00	62.42	62.42	0.00	0.00	83.53	83.53	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.06	0.00	0.00	23.57	23.57	0.00	0.06	59.55	59.61	0.03	0.09	229.08	229.19	99.95
24/09/2012	96.94	0.00	0.00	62.98	62.98	0.00	0.00	84.18	84.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.69	22.69	0.00	0.00	59.14	59.14	0.00	0.00	228.98	228.98	100.00
25/09/2012	96.78	0.00	0.00	54.48	54.48	0.00	0.00	74.33	74.33	0.00	0.00	0.00	0.00	0.00	0.00	48.83	48.83	0.00	0.00	6.04	6.04	0.00	0.00	44.80	44.80	0.00	0.00	228.48	228.48	100.00
26/09/2012	97.08	0.00	0.00	43.00	43.00	0.00	0.00	65.13	65.13	0.00	0.00	0.00	0.00	0.00	0.00	55.74	55.74	0.00	0.00	0.00	0.00	0.00	0.00	74.15	74.15	0.00	0.00	238.03	238.03	100.00
27/09/2012	96.95	0.00	0.00	42.89	42.89	0.00	0.00	65.12	65.12	0.00	0.00	0.00	0.00	0.00	0.00	55.81	55.81	0.00	0.00	0.00	0.00	0.00	0.00	74.21	74.21	0.00	0.00	238.04	238.04	100.00
28/09/2012	96.59	0.00	0.00	19.22	19.22	0.00	0.00	75.62	75.62	0.00	0.00	0.00	0.00	0.00	0.00	68.03	68.03	0.00	0.00	0.64	0.64	0.00	0.00	75.33	75.33	0.00	0.00	238.83	238.83	100.00
29/09/2012	96.64	0.00	0.00	0.00	0.00	0.00	0.00	84.81	84.81	0.00	0.00	0.00	0.00	0.00	0.00	80.38	80.38	0.00	0.00	0.00	0.00	0.00	0.00	78.39	78.39	0.00	0.00	243.57	243.57	100.00
30/09/2012	96.69	0.00	0.00	0.00	0.00	0.00	0.00	85.02	85.02	0.00	0.00	0.00	0.00	0.00	0.00	83.58	83.58	0.00	0.00	0.00	0.00	0.00	0.00	78.98	78.98	0.00	0.00	247.58	247.58	100.00
		0.00	0.00	493.03	493.03	0.00	0.00	2384.20	2384.20	0.00	0.00	712.95	712.95	0.03	0.03	1683.90	1683.95	0.00	0.00	1558.88	1558.88	0.00	0.06	775.06	775.12	0.03	0.09	7608.01	7608.13	

Water Volume [%]

Untreated: 0.00 %
Below Dose 0.00 %
To Dose 100.00 %

Submitted By (Print) D.Minor

Signature Original submitted by D.Minor



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: September 2012

Report Created: Monday, October 01, 2012

Reactor: UVR-100A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals				
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Water Volume [ML]				
																										Untreated	Below Dose	To Dose	Total	
1/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
2/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
3/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
4/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
5/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
6/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
7/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
8/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
9/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
10/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
11/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
12/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
13/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
14/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
15/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
16/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
17/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
18/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4148	865	2267	3344	1074	1073	3213	3321	1146	OL	0.00	0 00	0.00	0.00
19/09/2012	17.8	83.0	24.4	3.5	64.8	61.6	206.1	113.8	103.7	172.0	109.4	99.9	171.4	17.0	49.7	4159	875	2277	3355	1084	1083	3213	3321	1146	100.00	0.00	0 00	25.83	25.83	
20/09/2012	19.6	32.4	24.2	37.7	81.1	65.7	229.5	115.9	111.6	180.8	113.2	105.7				4183	899	2301	3379	1108	1107	3213	3321	1146	100.00	0.00	0 00	65.64	65.64	
21/09/2012	19.7	26.9	24.2	55.8	64.5	58.9	231.7	110.0	104.5	179.1	105.4	94.9				4207	923	2325	3403	1132	1131	3213	3321	1146	100.00	0.00	0 00	58.91	58.91	
22/09/2012	19.3	25.9	24.2	54.2	60.2	57.7	228.5	107.1	96.7	174.3	102.4	92.9				4231	947	2349	3427	1156	1155	3213	3321	1146	100.00	0.00	0 00	57.66	57.66	
23/09/2012	18.8	25.3	24.1	52.9	64.7	62.4	221.9	104.5	100.5	170.5	101.3	100.3				4255	971	2373	3451	1180	1179	3213	3321	1146	100.00	0.00	0 00	62.42	62.42	
24/09/2012	19.2	25.7	24.1	60.6	65.1	63.0	215.9	102.1	101.4	167.0	101.2	101.2				4279	995	2397	3475	1204	1203	3213	3321	1146	100.00	0.00	0 00	62.98	62.98	
25/09/2012	19.6	30.9	25.3	32.4	70.6	54.5	215.1	104.1	92.6	167.1	101.5	95.5				4303	1019	2421	3499	1228	1227	3213	3321	1146	100.00	0.00	0 00	54.48	54.48	
26/09/2012	21.1	29.7	27.4	41.3	45.0	43.0	225.4	107.0	83.5	171.9	101.8	91.0				4327	1043	2445	3523	1252	1251	3213	3321	1146	100.00	0.00	0 00	43.00	43.00	
27/09/2012	22.3	30.2	28.7	41.1	45.3	42.9	232.1	109.8	89.8	176.8	103.3	92.2				4351	1067	2469	3547	1276	1275	3213	3321	1146	100.00	0.00	0 00	42.89	42.89	
28/09/2012	0.0	42.9	28.7	0.0	45.3	42.7	227.5	108.7	89.1	174.7	101.7	90.2				4361	1078	2480	3557	1287	1285	3213	3321	1146	100.00	0.00	0 00	19.22	19.22	
29/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4361	1078	2480	3557	1287	1285	3213	3321	1146	OL	0.00	0 00	0.00	0.00
30/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4361	1078	2480	3557	1287	1285	3213	3321	1146	OL	0.00	0 00	0.00	0.00
Total [ML]																											0.00	0 00	493.03	493.03

Water Volume [%]

Untreated: 0.00 %
Below Dose 0.00 %
To Dose 100.00 %

Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\09-September



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: September 2012

Report Created: Monday, October 01, 2012

Reactor: UVR-200A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours												% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose	To Dose		Total			
1/09/2012	21.2	24.7	24.1	82.8	87.6	85.0	136.0	143.9	135.9	OL	OL	OL	195.6	135.9	135.9	644	644	645	916	400	3014	644	645	644	100.00	0.00	0.00	85.00	85.00			
2/09/2012	21.3	24.6	24.1	82.6	87.3	85.0	136.0	146.6	135.9	OL	OL	OL	172.1	136.0	136.0	668	668	669	916	400	3014	668	669	668	100.00	0.00	0.00	85.01	85.01			
3/09/2012	21.2	24.5	24.0	81.9	87.3	85.0	135.9	145.2	135.9	OL	OL	OL	203.1	135.9	135.9	692	692	693	916	400	3014	692	693	692	100.00	0.00	0.00	85.00	85.00			
4/09/2012	21.4	24.5	24.0	82.9	87.2	85.0	135.9	143.3	135.9	OL	OL	OL	202.7	135.9	135.9	716	716	717	916	400	3014	716	716	716	100.00	0.00	0.00	85.00	85.00			
5/09/2012	18.8	24.7	24.1	82.8	87.0	85.0	112.8	143.6	127.4	104.6	97.5	86.2	204.5	111.1	122.4	740	740	741	928	412	3026	740	740	740	100.00	0.00	0.00	85.00	85.00			
6/09/2012	20.9	24.7	24.2	82.6	86.7	84.9	86.3	142.5	115.2	150.8	86.7	86.3	201.8	86.2	103.0	764	764	765	952	436	3050	764	764	764	100.00	0.00	0.00	84.85	84.85			
7/09/2012	21.0	24.9	24.3	79.6	86.7	82.8	84.2	141.6	117.5	155.0	86.6	87.0	201.2	84.1	103.6	788	788	789	976	460	3074	788	788	788	100.00	0.00	0.00	82.76	82.76			
8/09/2012	20.8	28.2	24.2	52.8	87.6	83.4	84.8	137.2	113.6	144.9	86.4	87.4	195.2	84.8	100.6	812	812	813	1000	484	3098	812	812	812	100.00	0.00	0.00	83.42	83.42			
9/09/2012	20.7	24.9	24.2	81.3	89.3	84.9	86.3	135.0	111.2	138.4	86.5	86.4	193.6	86.3	99.1	836	836	837	1024	508	3122	836	836	836	100.00	0.00	0.00	84.94	84.94			
10/09/2012	20.9	25.0	24.3	70.4	88.3	77.0	78.4	136.2	111.5	134.7	79.7	78.6	190.9	78.4	98.4	860	860	861	1048	532	3146	860	860	860	100.00	0.00	0.00	76.95	76.95			
11/09/2012	20.8	25.0	24.3	70.3	76.5	73.1	74.6	139.8	113.3	134.6	85.9	77.3	188.2	74.6	99.5	884	884	885	1072	556	3170	884	884	884	100.00	0.00	0.00	73.15	73.15			
12/09/2012	20.8	25.0	24.3	70.7	76.5	73.6	75.0	136.7	108.3	127.0	98.7	79.1	181.7	75.1	97.3	908	908	909	1096	580	3194	908	908	908	100.00	0.00	0.00	73.54	73.54			
13/09/2012	20.6	24.9	24.3	71.1	82.3	77.7	79.2	136.8	109.0	126.1	84.6	79.2	174.4	79.3	96.1	932	932	933	1120	604	3218	932	932	932	100.00	0.00	0.00	77.74	77.74			
14/09/2012	20.6	24.9	24.3	76.4	82.7	79.2	80.6	135.7	106.1	125.0	80.8	80.8	161.7	80.8	94.9	956	956	957	1144	628	3242	956	956	956	100.00	0.00	0.00	79.24	79.24			
15/09/2012	20.6	24.9	24.3	76.5	83.0	79.3	80.7	134.4	104.6	121.1	80.9	80.9	160.9	80.9	94.4	980	980	981	1168	652	3266	980	980	980	100.00	0.00	0.00	79.33	79.33			
16/09/2012	20.7	24.9	24.3	74.6	83.0	78.8	80.1	133.4	104.4	118.8	80.3	80.3	160.3	80.3	93.8	1004	1004	1005	1192	676	3290	1004	1004	1004	100.00	0.00	0.00	78.75	78.75			
17/09/2012	20.6	24.9	24.2	76.5	83.1	79.5	80.9	133.3	103.8	118.1	81.1	81.1	158.0	81.1	93.6	1028	1028	1029	1216	700	3314	1028	1028	1028	100.00	0.00	0.00	79.53	79.53			
18/09/2012	20.7	24.9	24.3	74.9	82.1	78.2	79.5	136.2	108.3	122.3	79.8	79.7	163.8	79.7	96.2	1052	1052	1053	1240	724	3338	1052	1052	1052	100.00	0.00	0.00	78.17	78.17			
19/09/2012	18.9	24.9	23.6	59.2	91.1	80.4	78.4	136.2	107.8	120.3	82.0	82.0	161.6	82.0	95.7	1076	1076	1077	1264	748	3362	1076	1076	1076	100.00	0.00	0.00	80.43	80.43			
20/09/2012	0.0	68.3	24.0	0.0	90.9	82.6	171.3	133.7	127.6	146.3	105.2	125.8	171.7	84.2	106.1	1096	1096	1097	1284	768	3382	1096	1097	1096	100.00	0.00	0.00	68.97	68.97			
21/09/2012	21.0	27.9	24.3	76.5	87.6	80.7	191.0	130.7	87.4	91.7	97.3	85.4	146.9	82.2	82.4	1120	1120	1121	1308	792	3406	1120	1121	1120	100.00	0.00	0.00	80.74	80.74			
22/09/2012	21.1	24.9	24.3	74.6	81.9	78.9	163.6	125.7	80.4	80.4	92.5	80.4	135.5	80.4	80.5	1144	1144	1145	1332	816	3430	1144	1145	1144	100.00	0.00	0.00	78.92	78.92			
23/09/2012	21.0	24.8	24.2	73.0	86.1	83.5	157.2	121.8	84.9	85.0	89.8	85.1	132.5	85.0	85.1	1168	1168	1169	1356	840	3454	1168	1169	1168	100.00	0.00	0.00	83.53	83.53			
24/09/2012	21.0	25.0	24.2	82.2	86.4	84.2	156.2	117.7	85.5	85.6	87.7	85.6	125.9	85.6	85.6	1192	1192	1193	1380	864	3478	1192	1193	1192	100.00	0.00	0.00	84.18	84.18			
25/09/2012	17.8	34.8	24.2	46.0	87.6	74.3	157.5	116.2	87.0	83.3	80.2	80.0	124.6	86.7	88.4	1216	1216	1217	1398	881	3496	1216	1217	1216	100.00	0.00	0.00	74.33	74.33			
26/09/2012	21.5	24.7	24.1	63.2	67.0	65.1	169.1	123.8	104.7	OL	OL	OL	122.3	104.7	104.8	1240	1240	1241	1398	881	3496	1240	1241	1240	100.00	0.00	0.00	65.13	65.13			
27/09/2012	21.6	24.7	24.1	62.7	67.2	65.1	180.4	127.8	104.7	OL	OL	OL	124.4	104.7	107.4	1264	1264	1265	1398	881	3496	1264	1265	1264	100.00	0.00	0.00	65.12	65.12			
28/09/2012	21.3	24.6	24.1	63.3	86.9	75.6	192.7	131.6	121.6	OL	OL	OL	131.2	121.3	127.1	1288	1288	1289	1398	881	3496	1288	1289	1288	100.00	0.00	0.00	75.62	75.62			
29/09/2012	21.4	24.5	24.1	80.9	88.8	84.8	203.4	135.6	135.6	OL	OL	OL	135.7	135.6	135.8	1312	1312	1313	1398	881	3496	1312	1313	1312	100.00	0.00	0.00	84.81	84.81			
30/09/2012	21.4	24.5	24.1	80.7	89.1	85.0	210.8	135.9	135.9	OL	OL	OL	136.2	135.9	136.1	1336	1336	1337	1398	881	3496	1336	1337	1336	100.00	0.00	0.00	85.02	85.02			

Water Volume [%]

Untreated: 0.00 %
Below Dose 0.00 %
To Dose 100.00 %

Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\09-September



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: September 2012

Report Created: Monday, October 01, 2012

Reactor: UVR-300A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Water Volume [ML]			
																										Untreated	Below Dose	To Dose	Total
1/09/2012	21.1	30.0	24.3	39.0	50.1	45.2	106.4	73.1	73.2	134.6	99.5	93.5	OL	OL	OL	4786	4786	1243	4212	4213	4212	4174	4174	4174	100.00	0.00	0.00	45.14	45.14
2/09/2012	21.0	31.2	24.4	37.8	49.2	43.7	108.4	71.1	71.0	138.2	100.8	95.0	OL	OL	OL	4810	4810	1267	4236	4237	4236	4174	4174	4174	100.00	0.00	0.00	43.74	43.74
3/09/2012	21.2	30.3	24.4	37.9	47.5	42.9	106.1	69.7	69.6	135.2	98.7	93.4	OL	OL	OL	4834	4834	1291	4260	4261	4260	4174	4174	4174	100.00	0.00	0.00	42.90	42.90
4/09/2012	20.9	31.0	24.4	37.6	46.6	42.7	104.8	69.3	69.3	134.7	97.1	91.9	OL	OL	OL	4858	4858	1315	4284	4285	4284	4174	4174	4174	100.00	0.00	0.00	42.71	42.71
5/09/2012	21.1	29.6	24.3	38.9	49.2	44.6	105.1	72.3	72.3	135.7	97.9	92.6	OL	OL	OL	4882	4882	1339	4308	4309	4308	4174	4174	4174	100.00	0.00	0.00	44.61	44.61
6/09/2012	21.0	29.6	24.4	37.6	48.6	42.6	104.8	69.2	69.2	134.5	96.9	91.3	OL	OL	OL	4906	4906	1363	4332	4333	4332	4174	4174	4174	100.00	0.00	0.00	42.65	42.65
7/09/2012	21.1	31.4	24.4	35.7	45.2	40.9	105.0	67.1	66.4	135.1	96.1	91.1	OL	OL	OL	4930	4930	1387	4356	4357	4356	4174	4174	4174	100.00	0.00	0.00	40.91	40.91
8/09/2012	0.0	32.7	24.5	0.0	43.6	39.8	104.9	66.1	64.9	135.5	95.3	89.9	OL	OL	OL	4939	4939	1395	4364	4365	4365	4174	4174	4174	100.00	0.00	0.00	14.01	14.01
9/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4939	4939	1395	4364	4365	4365	4174	4174	4174	OL	0.00	0.00	0.00	0.00
10/09/2012	18.4	81.3	24.5	3.3	44.7	39.9	104.9	65.4	59.1	105.7	78.0	77.8	99.8	62.5	59.2	4955	4955	1412	4369	4370	4369	4191	4191	4190	100.00	0.00	0.00	27.68	27.68
11/09/2012	21.2	26.5	24.3	35.3	43.5	39.6	105.0	64.9	64.5	OL	OL	OL	102.1	64.4	64.5	4979	4979	1436	4369	4370	4369	4215	4215	4214	100.00	0.00	0.00	39.59	39.59
12/09/2012	20.9	26.5	24.3	35.4	43.8	39.9	102.4	64.9	65.0	OL	OL	OL	100.7	64.9	64.9	5003	5003	1460	4369	4370	4369	4239	4239	4238	100.00	0.00	0.00	39.93	39.93
13/09/2012	20.9	26.4	24.3	36.1	46.1	41.5	100.5	67.4	67.4	OL	OL	OL	100.7	67.4	67.4	5027	5027	1484	4369	4370	4369	4263	4263	4262	100.00	0.00	0.00	41.50	41.50
14/09/2012	20.8	27.0	24.3	36.6	46.4	41.9	100.2	68.0	68.1	OL	OL	OL	100.2	68.0	68.0	5051	5051	1508	4369	4370	4369	4287	4287	4286	100.00	0.00	0.00	41.98	41.98
15/09/2012	20.6	26.7	24.3	37.0	46.8	41.9	100.0	68.0	68.1	OL	OL	OL	99.8	68.0	68.0	5075	5075	1532	4369	4370	4369	4311	4311	4310	100.00	0.00	0.00	41.96	41.96
16/09/2012	20.6	26.6	24.3	36.7	46.5	41.9	99.1	68.0	68.0	OL	OL	OL	99.5	68.0	68.0	5099	5099	1556	4369	4370	4369	4335	4335	4334	100.00	0.00	0.00	41.88	41.88
17/09/2012	20.8	26.3	24.3	36.5	46.1	41.8	98.4	67.9	67.9	OL	OL	OL	100.1	67.9	68.0	5123	5123	1580	4369	4370	4369	4359	4359	4358	100.00	0.00	0.00	41.81	41.81
18/09/2012	21.0	26.5	24.3	35.9	45.9	41.6	101.3	67.4	67.5	OL	OL	OL	102.4	67.4	68.1	5147	5147	1604	4369	4370	4369	4383	4383	4382	100.00	0.00	0.00	41.56	41.56
19/09/2012	0.0	28.8	24.3	0.0	46.1	41.6	102.0	67.6	67.6	OL	OL	OL	103.1	67.6	68.4	5161	5161	1618	4369	4370	4369	4397	4397	4396	100.00	0.00	0.00	24.22	24.22
20/09/2012	0.0	60.6	24.2	0.0	87.3	82.0	105.5	83.0	82.9	106.3	85.3	83.7	104.2	83.1	83.2	5	4	1622	4373	4374	4373	4401	4401	4401	100.00	0.00	0.00	14.17	14.17
21/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
22/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
23/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
24/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
25/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
26/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
27/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
28/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
29/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
30/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00

Total [ML] 0.00 0.00 712.95 712.95

Water Volume [%]

Untreated: 0.00 %
Below Dose 0.00 %
To Dose 100.00 %

Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: September 2012

Report Created: Monday, October 01, 2012

Reactor: UVR-400A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Water Volume [ML]			
																										Untreated	Below Dose	To Dose	Total
1/09/2012	23.4	25.6	24.4	66.9	75.8	71.3	82.5	72.7	72.7	72.8	72.7	72.7	74.0	81.0	92.6	4375	4375	2390	4506	4507	4506	4607	3577	4607	100.00	0.00	0.00	71.30	71.30
2/09/2012	23.4	25.5	24.5	64.5	75.6	69.5	83.2	71.0	70.9	71.0	71.0	71.0	76.6	81.8	95.9	4399	4399	2414	4530	4531	4530	4631	3601	4631	100.00	0.00	0.00	69.51	69.51
3/09/2012	23.5	25.4	24.5	65.8	74.0	70.0	81.3	71.4	71.4	71.6	71.4	71.4	75.2	80.4	93.5	4423	4423	2438	4554	4555	4554	4655	3625	4655	100.00	0.00	0.00	69.96	69.96
4/09/2012	23.6	25.5	24.5	64.7	72.1	68.6	79.8	70.0	70.0	70.2	70.1	70.1	74.6	78.6	92.8	4447	4447	2462	4578	4579	4578	4679	3649	4679	100.00	0.00	0.00	68.61	68.61
5/09/2012	23.4	25.6	24.5	65.0	73.6	69.2	79.6	70.6	70.6	70.8	70.7	70.6	74.5	78.1	93.9	4471	4471	2486	4602	4603	4602	4703	3673	4703	100.00	0.00	0.00	69.19	69.19
6/09/2012	23.5	25.7	24.5	63.5	72.5	67.8	76.6	69.2	69.2	69.4	69.2	69.2	73.9	77.7	93.5	4495	4495	2510	4626	4627	4626	4727	3697	4727	100.00	0.00	0.00	67.79	67.79
7/09/2012	23.6	25.6	24.5	61.8	70.5	66.1	76.1	67.6	67.6	67.8	67.6	67.6	74.5	77.3	94.6	4519	4519	2534	4650	4651	4650	4751	3721	4751	100.00	0.00	0.00	66.16	66.16
8/09/2012	23.0	26.2	24.4	49.3	84.0	74.2	79.5	75.7	75.5	75.7	75.6	75.6	78.9	79.5	92.2	4543	4543	2558	4674	4675	4674	4775	3745	4775	100.00	0.00	0.00	74.25	74.25
9/09/2012	23.7	25.1	24.4	76.2	84.2	80.1	81.5	81.5	81.5	81.6	81.5	81.6	81.5	81.5	90.2	4567	4567	2582	4698	4699	4698	4799	3769	4799	100.00	0.00	0.00	80.09	80.09
10/09/2012	23.3	25.7	24.5	60.4	85.5	69.8	76.1	71.1	71.0	71.2	71.2	71.2	76.2	75.7	89.7	4591	4591	2606	4722	4723	4722	4823	3793	4823	100.00	0.00	0.00	69.85	69.85
11/09/2012	23.5	25.5	24.5	61.4	69.6	65.1	73.6	66.6	66.5	66.7	66.6	66.6	73.7	72.9	90.4	4615	4615	2630	4746	4747	4746	4847	3817	4847	100.00	0.00	0.00	65.04	65.04
12/09/2012	23.5	25.5	24.5	62.2	69.4	65.5	72.0	67.0	66.9	67.1	67.0	67.1	71.0	70.8	86.0	4639	4639	2654	4770	4771	4770	4871	3841	4871	100.00	0.00	0.00	65.45	65.45
13/09/2012	23.2	25.7	24.5	62.1	74.1	68.4	71.3	70.0	69.8	70.0	69.9	70.0	71.4	70.9	85.3	4663	4663	2678	4794	4795	4794	4895	3865	4895	100.00	0.00	0.00	68.41	68.41
14/09/2012	23.2	25.9	24.4	64.1	74.0	69.4	70.9	70.9	70.8	71.0	70.9	70.9	71.3	70.9	81.4	4687	4687	2702	4818	4819	4818	4919	3889	4919	100.00	0.00	0.00	69.43	69.43
15/09/2012	23.3	25.7	24.4	63.5	74.9	69.4	71.0	70.9	70.8	71.0	70.9	71.0	71.5	70.8	79.9	4711	4711	2726	4842	4843	4842	4943	3913	4943	100.00	0.00	0.00	69.45	69.45
16/09/2012	23.2	25.8	24.4	62.6	73.5	68.9	70.4	70.3	70.2	70.4	70.4	70.4	71.9	70.3	79.6	4735	4735	2750	4866	4867	4866	4967	3937	4967	100.00	0.00	0.00	68.87	68.87
17/09/2012	23.2	25.7	24.4	64.1	74.0	69.5	71.1	70.9	70.9	71.0	71.0	71.0	71.7	70.9	78.4	4759	4759	2774	4890	4891	4890	4991	3961	4991	100.00	0.00	0.00	69.54	69.54
18/09/2012	23.1	25.7	24.4	62.3	73.2	68.5	70.1	70.0	69.9	70.0	70.0	70.0	74.0	70.3	80.2	4783	4783	2798	4914	4915	4914	5015	3985	5015	100.00	0.00	0.00	68.48	68.48
19/09/2012	0.0	38.0	24.5	0.0	76.7	67.9	69.3	69.3	69.3	69.3	69.3	69.3	73.9	69.7	79.3	4797	4797	2812	4928	4929	4928	5030	3999	5029	100.00	0.00	0.00	40.16	40.16
20/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4797	4797	2812	4928	4929	4928	5030	3999	5029	OL	0.00	0.00	0.00	0.00
21/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4797	4797	2812	4928	4929	4928	5030	3999	5029	OL	0.00	0.00	0.00	0.00
22/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4797	4797	2812	4928	4929	4928	5030	3999	5029	OL	0.00	0.00	0.00	0.00
23/09/2012	0.0	54.3	26.2	0.0	20.9	16.8	85.3	44.5	31.3	57.9	47.9	29.4	58.9	44.0	50.6	4797	4797	2812	4928	4929	4928	5030	3999	5029	0.00	0.03	0.03	0.00	0.06
24/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4797	4797	2812	4928	4929	4928	5030	3999	5029	OL	0.00	0.00	0.00	0.00
25/09/2012	17.6	59.0	24.5	5.1	93.5	66.0	68.2	68.1	67.1	77.7	68.0	67.8	80.3	74.6	80.3	4815	4815	2830	18	18	18	18	4017	18	100.00	0.00	0.00	48.83	48.83
26/09/2012	23.9	25.4	24.6	53.8	58.0	55.8	57.5	57.4	57.3	78.4	57.3	57.5	77.8	67.3	78.8	4839	4839	2854	42	42	42	42	4041	42	100.00	0.00	0.00	55.74	55.74
27/09/2012	23.9	25.3	24.6	53.9	58.4	55.8	57.5	57.4	57.4	83.1	57.3	57.5	78.4	68.4	79.6	4863	4863	2878	66	66	66	66	4065	66	100.00	0.00	0.00	55.81	55.81
28/09/2012	22.4	25.2	24.5	54.1	80.7	68.1	70.0	70.4	70.2	83.7	69.9	69.9	78.1	75.3	78.6	4887	4887	2902	90	90	90	90	4089	90	100.00	0.00	0.00	68.03	68.03
29/09/2012	23.6	25.2	24.4	75.1	85.9	80.4	81.9	81.8	81.7	82.9	81.7	81.8	81.7	81.7	81.8	4911	4911	2926	114	114	114	114	4113	114	100.00	0.00	0.00	80.38	80.38
30/09/2012	22.8	25.2	24.2	77.3	89.5	83.6	85.0	85.0	83.8	84.9	84.9	85.0	84.9	84.9	84.9	4935	4935	2950	138	138	138	138	4137	138	100.00	0.00	0.00	83.58	83.58

Total [ML] 0.03 0.03 1683.90 1683.95

Water Volume [%]

Untreated: 0.00 %
Below Dose 0.00 %
To Dose 100.00 %

- Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: September 2012

Report Created: Monday, October 01, 2012

Reactor: UVR-500A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Water Volume [ML]			
																										Untreated	Below Dose	To Dose	Total
1/09/2012	23.7	25.2	24.4	72.9	79.3	76.4	83.5	78.1	261.2	147.9	93.9	78.1	138.8	88.9	17.5	915	571	2677	1387	2967	1820	1098	1098	3704	100.00	0.00	0.00	76.46	76.46
2/09/2012	23.7	25.2	24.4	71.2	78.8	74.6	85.8	76.1	265.1	150.3	94.6	76.3	149.4	91.0	14.3	939	595	2701	1411	2991	1844	1122	1122	3728	100.00	0.00	0.00	74.60	74.60
3/09/2012	23.6	25.3	24.4	69.9	78.5	73.6	84.7	75.2	255.9	144.8	92.5	75.2	150.8	87.5	11.2	963	619	2725	1435	3015	1868	1146	1146	3752	100.00	0.00	0.00	73.58	73.58
4/09/2012	23.7	25.3	24.4	70.9	76.6	73.7	80.7	75.3	244.5	141.4	90.1	75.3	146.9	86.2	9.1	987	643	2749	1459	3039	1892	1170	1170	3776	100.00	0.00	0.00	73.67	73.67
5/09/2012	23.6	25.2	24.4	71.6	78.0	75.1	78.6	76.7	233.9	140.6	89.3	76.7	143.7	84.8	7.4	1011	667	2773	1483	3063	1916	1194	1194	3800	100.00	0.00	0.00	75.13	75.13
6/09/2012	23.5	25.2	24.4	69.9	77.1	73.1	74.7	74.7	209.8	137.3	88.3	74.7	134.7	83.6	6.3	1035	691	2797	1507	3087	1940	1218	1218	3824	100.00	0.00	0.00	73.09	73.09
7/09/2012	23.6	25.3	24.4	66.0	75.3	70.3	74.6	71.9	203.7	137.1	88.0	72.0	130.3	83.3	5.7	1059	715	2821	1531	3111	1964	1242	1242	3848	100.00	0.00	0.00	70.31	70.31
8/09/2012	23.0	26.2	24.4	54.3	80.6	74.2	77.8	75.9	195.9	132.8	85.0	75.8	122.7	80.1	4.7	1083	739	2845	1555	3135	1988	1266	1266	3872	100.00	0.00	0.00	74.24	74.24
9/09/2012	23.2	25.3	24.4	72.0	79.6	75.8	77.4	77.3	185.8	130.1	83.2	77.4	116.8	78.1	4.1	1107	763	2869	1579	3159	2012	1290	1290	3896	100.00	0.00	0.00	75.81	75.81
10/09/2012	23.4	25.5	24.4	66.8	79.0	72.8	74.5	74.4	179.7	130.1	83.9	74.4	114.7	78.4	3.6	1131	787	2893	1603	3183	2036	1314	1314	3920	100.00	0.00	0.00	72.79	72.79
11/09/2012	23.5	25.5	24.4	67.2	75.2	72.3	73.9	73.8	176.8	132.9	86.2	73.9	113.4	79.8	3.4	1155	811	2917	1627	3207	2060	1338	1338	3944	100.00	0.00	0.00	72.25	72.25
12/09/2012	23.3	25.4	24.4	68.3	75.5	72.9	74.5	74.5	163.9	128.0	84.3	74.5	105.3	76.0	2.8	1179	835	2941	1651	3231	2084	1362	1362	3968	100.00	0.00	0.00	72.93	72.93
13/09/2012	23.1	25.4	24.4	69.1	77.3	73.4	74.9	74.9	149.7	128.1	82.6	74.8	101.0	75.6	2.5	1203	859	2965	1675	3255	2108	1386	1386	3992	100.00	0.00	0.00	73.33	73.33
14/09/2012	23.2	25.5	24.4	68.9	76.7	73.4	75.0	75.0	114.7	123.3	80.8	74.9	94.2	75.1	1.9	1227	883	2989	1699	3279	2132	1410	1410	4016	100.00	0.00	0.00	73.38	73.38
15/09/2012	23.3	25.3	24.4	69.0	77.0	73.3	74.8	74.8	86.4	121.8	79.1	74.8	89.1	74.9	1.4	1251	907	3013	1723	3303	2156	1434	1434	4040	100.00	0.00	0.00	73.34	73.34
16/09/2012	23.2	25.6	24.3	68.6	76.7	73.4	74.9	74.9	75.4	122.2	77.6	74.9	85.9	75.1	1.2	1275	931	3037	1747	3327	2180	1458	1458	4064	100.00	0.00	0.00	73.44	73.44
17/09/2012	23.2	25.6	24.3	68.2	76.6	73.1	74.6	74.6	74.7	121.4	77.6	74.6	82.1	74.7	1.2	1299	955	3061	1771	3351	2204	1482	1482	4088	100.00	0.00	0.00	73.03	73.03
18/09/2012	23.1	25.6	24.3	68.4	76.1	72.7	74.2	74.2	74.3	127.7	80.6	74.2	83.4	74.6	1.2	1323	979	3085	1795	3375	2228	1506	1506	4112	100.00	0.00	0.00	72.68	72.68
19/09/2012	21.9	36.8	24.7	27.7	76.1	59.3	68.2	62.2	66.3	125.5	79.7	64.6	80.6	73.9	1.2	1347	1003	3109	1819	3399	2252	1530	1530	4136	100.00	0.00	0.00	59.47	59.47
20/09/2012	21.3	28.7	24.9	31.1	46.4	39.7	42.1	41.5	43.1	115.5	72.8	42.6	75.4	73.6	1.6	1371	1027	3133	1843	3423	2276	1554	1554	4160	100.00	0.00	0.00	39.67	39.67
21/09/2012	21.7	27.8	24.8	34.2	47.9	40.3	42.1	42.0	42.1	116.6	68.5	42.1	67.4	71.0	1.6	1395	1051	3157	1867	3447	2300	1578	1578	4184	100.00	0.00	0.00	40.32	40.32
22/09/2012	22.4	28.1	24.7	35.3	47.3	42.4	44.1	44.1	44.1	116.5	65.6	44.1	63.0	67.9	1.5	1419	1075	3181	1891	3471	2324	1602	1602	4208	100.00	0.00	0.00	42.43	42.43
23/09/2012	0.0	64.3	25.5	0.0	45.5	23.7	30.3	30.4	27.7	114.3	64.9	33.9	64.3	72.4	1.4	1443	1099	3204	1915	3495	2348	1625	1626	4232	100.00	0.00	0.00	23.57	23.57
24/09/2012	24.4	27.0	25.4	20.1	25.2	22.7	25.8	26.0	25.9	100.1	59.6	26.5	59.7	73.0	1.3	1467	1123	3228	1939	3519	2372	1649	1650	4256	100.00	0.00	0.00	22.69	22.69
25/09/2012	0.0	38.2	25.2	0.0	69.9	23.0	27.1	27.0	26.6	98.1	59.3	26.5	56.4	73.2	1.1	1473	1129	3235	1946	3525	2379	1656	1656	4262	100.00	0.00	0.00	6.04	6.04
26/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1473	1129	3235	1946	3525	2379	1656	1656	4262	OL	0.00	0.00	0.00	0.00
27/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1473	1129	3235	1946	3525	2379	1656	1656	4262	OL	0.00	0.00	0.00	0.00
28/09/2012	0.0	74.8	26.8	0.0	78.8	67.8	67.6	62.4	178.5	130.5	99.4	90.7	90.1	87.3	60.9	1474	1130	3235	1946	3526	2397	1656	1657	4262	100.00	0.00	0.00	0.64	0.64
29/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1474	1130	3235	1946	3526	2397	1656	1657	4262	OL	0.00	0.00	0.00	0.00
30/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1474	1130	3235	1946	3526	2397	1656	1657	4262	OL	0.00	0.00	0.00	0.00

Total [ML] 0.00 0.00 1558.88 1558.88

Water Volume [%]

Untreated: 0.00 %
Below Dose 0.00 %
To Dose 100.00 %

- Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: September 2012

Report Created: Monday, October 01, 2012

Reactor: UVR-600A

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Water Volume [ML]					
																									Untreated		Below Dose	To Dose	Total	
1/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
2/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
3/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
4/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
5/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
6/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
7/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
8/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
9/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
10/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
11/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
12/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
13/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
14/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
15/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
16/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
17/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
18/09/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2140	1	1	190	189	190	1587	190	189	OL	0.00	0.00	0.00	0.00
19/09/2012	18.3	73.5	24.4	5.6	76.6	72.7	93.9	74.0	74.2	127.7	110.6	129.0	141.3	84.7	76.3	2150	11	11	200	199	200	1597	200	199	100.00	0.00	0.00	29.88	29.88	
20/09/2012	17.9	27.5	24.2	49.7	78.2	70.8	109.1	75.2	75.2	117.9	110.8	117.3	137.4	103.9	100.1	2158	19	19	224	223	224	1621	224	223	100.00	0.00	0.00	70.86	70.86	
21/09/2012	19.3	25.8	24.1	59.5	75.4	66.7	OL	OL	OL	107.0	107.0	107.0	130.2	107.0	107.0	2158	19	19	248	247	248	1645	248	247	100.00	0.00	0.00	66.68	66.68	
22/09/2012	19.5	25.4	24.1	57.1	70.1	63.1	OL	OL	OL	101.3	101.3	101.3	123.5	101.3	101.3	2158	19	19	272	271	272	1669	272	271	100.00	0.00	0.00	63.07	63.07	
23/09/2012	14.7	30.5	24.4	45.9	90.6	59.6	77.9	60.9	60.8	71.1	63.7	63.8	126.9	74.6	63.8	2181	41	41	296	295	296	1693	296	295	99.90	0.00	0.06	59.55	59.61	
24/09/2012	17.9	25.5	24.4	56.9	61.1	59.1	101.0	60.7	60.7	63.6	60.6	61.2	127.6	71.5	60.8	2205	65	65	320	319	320	1717	320	319	100.00	0.00	0.00	59.14	59.14	
25/09/2012	0.0	66.1	24.3	0.0	87.6	67.4	106.9	71.8	68.8	71.4	69.1	71.6	125.1	74.0	69.3	2221	82	81	336	335	336	1733	336	335	100.00	0.00	0.00	44.80	44.80	
26/09/2012	18.7	25.4	24.2	69.8	76.5	74.1	120.4	90.1	75.5	75.6	75.5	75.7	129.5	75.7	75.5	2245	106	105	360	359	360	1757	360	359	100.00	0.00	0.00	74.15	74.15	
27/09/2012	18.8	25.5	24.3	69.8	77.0	74.2	123.1	97.8	75.5	76.2	75.5	77.2	131.7	75.8	75.5	2269	130	129	384	383	384	1781	384	383	100.00	0.00	0.00	74.21	74.21	
28/09/2012	0.0	83.3	24.3	0.0	80.3	75.9	123.0	96.4	77.2	77.9	77.3	77.6	128.1	77.3	77.3	2293	153	153	408	407	408	1805	408	407	100.00	0.00	0.00	75.33	75.33	
29/09/2012	15.6	25.6	24.2	73.9	82.5	78.4	131.5	93.5	79.7	81.3	80.1	80.1	127.3	79.7	79.7	2317	177	177	432	431	432	1829	432	431	100.00	0.00	0.00	78.39	78.39	
30/09/2012	14.9	25.5	24.2	74.4	84.9	79.0	106.4	91.3	80.4	81.0	80.4	80.4	124.7	80.4	80.4	2341	201	201	456	455	456	1853	456	455	100.00	0.00	0.00	78.98	78.98	

Total [ML] 0.00 0 06 775.06 775.12

Water Volume [%]

Untreated: 0.00 %
Below Dose 0.01 %
To Dose 99.99 %

- Notes 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\09-September



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: **October 2012**

Report Created: **Thursday, November 01, 2012**

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	
1/10/2012	97.00	0.00	0.00	0.00	0.00	0.00	0.00	85.02	85.02	0.00	0.00	0.00	0.00	0.00	0.00	84.95	84.95	0.00	0.00	0.00	0.00	0.00	0.00	79.04	79.04	0.00	0.00	249.00	249.00	100.00
2/10/2012	96.90	0.00	0.00	19.66	19.66	0.00	1.09	62.80	63.89	0.00	0.00	0.00	0.00	0.00	0.00	75.50	75.50	0.00	0.00	1.68	1.68	0.17	0.17	81.01	81.35	0.17	1.26	240.65	242.08	99.41
3/10/2012	96.81	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.44	77.44	0.00	0.00	0.00	0.00	0.00	0.00	85.02	85.02	0.00	0.00	247.46	247.46	100.00
4/10/2012	96.87	0.00	0.03	81.64	81.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	76.66	76.68	0.00	0.00	0.00	0.00	0.01	0.01	80.59	80.60	0.01	0.05	238.89	238.95	99.98
5/10/2012	97.21	0.00	0.00	78.73	78.73	0.00	0.00	0.00	0.00	0.00	0.06	74.44	74.50	0.00	0.00	9.86	9.86	0.00	0.00	0.00	0.00	0.00	0.00	82.43	82.43	0.00	0.06	245.46	245.52	99.98
6/10/2012	97.32	0.00	0.00	72.85	72.85	0.00	0.00	0.00	0.00	0.00	0.00	78.42	78.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.87	80.87	0.00	0.00	232.14	232.14	100.00
7/10/2012	97.32	0.00	0.00	69.87	69.87	0.00	0.00	0.00	0.00	0.00	0.00	75.20	75.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.95	77.95	0.00	0.00	223.03	223.03	100.00
8/10/2012	97.31	0.00	0.00	68.13	68.13	0.00	0.00	0.00	0.00	0.00	0.00	73.79	73.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.79	76.79	0.00	0.00	218.71	218.71	100.00
9/10/2012	97.30	0.00	0.00	66.29	66.29	0.00	0.00	0.00	0.00	0.00	0.00	71.96	71.96	0.00	0.00	0.11	0.11	0.00	0.00	56.20	56.20	0.00	0.00	17.33	17.33	0.00	0.00	211.89	211.89	100.00
10/10/2012	97.08	0.00	0.00	68.93	68.93	0.00	0.00	0.00	0.00	0.00	0.00	62.10	62.10	0.00	0.00	15.66	15.66	0.00	0.00	73.77	73.77	0.00	0.00	0.00	0.00	0.00	0.00	220.46	220.46	100.00
11/10/2012	97.13	0.00	0.00	71.32	71.32	0.00	0.00	0.00	0.00	0.03	0.03	37.26	37.32	0.00	0.00	42.12	42.12	0.00	0.00	74.26	74.26	0.00	0.00	0.00	0.00	0.03	0.03	224.96	225.02	99.97
12/10/2012	96.95	0.00	0.00	76.49	76.49	0.00	0.00	0.00	0.00	0.00	0.06	59.17	59.23	0.00	0.03	42.47	42.51	0.00	0.00	49.22	49.22	0.00	0.00	0.00	0.00	0.00	0.09	227.36	227.45	99.96
13/10/2012	96.94	0.00	0.20	42.87	43.07	0.00	0.00	38.55	38.55	0.00	0.15	53.33	53.48	0.00	0.00	38.59	38.59	0.00	0.07	41.85	41.92	0.00	0.00	0.00	0.00	0.00	0.42	215.20	215.61	99.81
14/10/2012	97.13	0.00	0.00	30.18	30.18	0.00	0.00	61.38	61.38	0.02	0.06	25.04	25.12	0.00	0.00	34.47	34.47	0.00	0.03	57.55	57.58	0.00	0.00	16.30	16.30	0.02	0.10	224.91	225.03	99.95
15/10/2012	97.18	0.00	0.00	18.25	18.25	0.00	0.00	62.00	62.00	0.00	0.20	35.63	35.83	0.00	0.16	46.10	46.26	0.00	0.00	58.95	58.95	0.00	0.00	0.00	0.00	0.00	0.36	220.92	221.29	99.84
16/10/2012	97.13	0.00	0.05	52.15	52.20	0.57	0.61	46.39	47.56	0.00	0.00	32.13	32.14	0.00	0.06	56.00	56.07	0.00	0.00	43.38	43.38	0.00	0.00	0.00	0.00	0.57	0.72	230.05	231.35	99.44
17/10/2012	96.81	0.00	0.00	36.42	36.42	0.00	0.00	71.56	71.56	0.00	0.00	60.58	60.58	0.00	1.12	39.88	41.01	0.00	0.00	25.63	25.63	0.00	0.10	0.36	0.46	0.00	1.22	234.42	235.64	99.48
18/10/2012	96.81	0.48	0.48	1.06	2.02	0.00	0.28	35.65	35.93	0.00	0.05	59.89	59.93	0.00	0.03	45.20	45.23	0.00	0.00	68.81	68.81	0.01	0.01	22.16	22.18	0.49	0.85	232.77	234.10	99.43
19/10/2012	96.78	0.00	0.00	35.56	35.56	0.00	0.00	0.00	0.00	0.00	0.00	40.79	40.79	0.00	0.00	40.03	40.03	0.00	0.00	44.58	44.58	0.00	0.06	70.57	70.63	0.00	0.06	231.53	231.59	99.97
20/10/2012	96.77	0.00	0.00	58.97	58.97	0.00	0.00	26.07	26.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.00	57.00	0.00	0.00	84.92	84.92	0.00	0.00	226.97	226.97	100.00
21/10/2012	96.82	0.00	0.23	27.37	27.60	0.00	0.00	71.46	71.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.23	50.23	0.00	0.00	76.54	76.54	0.00	0.23	225.61	225.84	99.90
22/10/2012	96.88	0.08	0.12	31.42	31.62	0.00	0.00	18.10	18.10	0.17	0.23	37.22	37.62	0.00	0.09	17.91	18.00	0.00	0.00	53.08	53.08	0.00	0.00	71.82	71.82	0.25	0.44	229.56	230.25	99.70
23/10/2012	96.84	0.00	0.07	0.00	0.07	0.00	0.10	0.22	0.32	0.98	1.58	62.82	65.37	0.00	0.00	25.43	25.43	0.00	0.00	61.96	61.96	0.00	0.11	76.41	76.52	0.98	1.85	226.85	229.68	98.77
24/10/2012	96.78	0.02	0.02	0.13	0.16	0.09	0.51	41.80	42.41	0.00	0.00	78.03	78.03	0.00	0.00	0.00	0.00	0.00	0.00	31.85	31.85	0.00	0.00	77.14	77.14	0.11	0.53	228.95	229.59	99.72
25/10/2012	96.61	0.00	0.00	41.74	41.74	0.00	0.00	38.74	38.74	0.00	0.00	64.94	64.94	0.00	0.13	0.26	0.39	0.00	0.00	0.00	0.00	0.00	0.00	77.12	77.12	0.00	0.13	222.79	222.92	99.94
26/10/2012	96.59	0.00	0.00	83.40	83.40	0.00	0.00	0.00	0.00	0.00	0.00	23.59	23.59	0.00	0.09	36.45	36.54	0.00	0.00	0.00	0.00	0.00	0.05	77.93	77.99	0.00	0.15	221.37	221.51	99.93
27/10/2012	96.83	0.00	0.00	28.79	28.79	0.00	0.00	51.69	51.69	0.00	0.00	0.00	0.00	0.00	0.00	48.98	48.98	0.00	0.00	0.00	0.00	0.00	0.00	73.70	73.70	0.00	0.00	203.15	203.15	100.00
28/10/2012	96.69	0.00	0.00	0.00	0.00	0.00	0.00	76.57	76.57	0.00	0.00	0.00	0.00	0.00	0.00	44.46	44.46	0.00	0.00	0.00	0.00	0.00	0.00	66.22	66.22	0.00	0.00	187.25	187.25	100.00
29/10/2012	96.57	0.00	0.00	48.09	48.09	0.00	0.00	24.02	24.02	0.00	0.00	31.25	31.25	0.00	0.00	14.67	14.67	0.25	0.25	26.24	26.73	0.00	0.00	40.47	40.47	0.25	0.25	184.75	185.24	99.73
30/10/2012	96.52	0.00	0.00	69.94	69.94	0.00	0.00	0.00	0.00	0.00	0.00	45.67	45.67	0.00	0.00	0.00	0.00	0.00	0.00	69.41	69.41	0.00	0.00	0.00	0.00	0.00	0.00	185.02	185.02	100.00
31/10/2012	96.48	0.00	0.00	72.54	72.54	0.00	0.00	0.00	0.00	0.00	0.00	52.65	52.65	0.00	0.00	0.00	0.00	0.00	0.00	59.82	59.82	0.00	0.00	0.00	0.00	0.00	0.00	185.01	185.01	100.00
Water Volume [%]:		0.58	1.19	1437.80	1439.57	0.66	2.59	812.02	815.28	1.20	2.41	1235.89	1239.50	0.00	1.74	913.23	914.96	0.25	0.35	1005.47	1006.07	0.18	0.50	1492.68	1493.36	2.87	8.79	6897.09	6908.74	

Untreated: 0.04 %
Below Dose 0.13 %
To Dose 99.83 %

Submitted By (Print): A.Weremy

Signature: Original signed by A.Weremy



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: **October 2012**

Report Created: **Thursday, November 01, 2012**

Reactor: **UVR-100A**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²									UV Lamp Status Hours									% Volume to Validate Conditions	Daily Totals Water Volume [ML]				
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total	
1/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4361	1078	2480	3557	1287	1285	3213	3321	1146	OL	0.00	0.00	0.00	0.00	
2/10/2012	17.1	53.7	24.1	3.5	91.6	84.6	193.7	108.0	93.5	167.0	117.5	112.2	215.7	106.2	103.2	4365	1082	2483	3563	1293	1291	3219	3327	1152	100.00	0.00	0.00	19.66	19.66	
3/10/2012	19.9	26.8	24.0	82.7	87.2	85.0	OL	OL	OL	165.8	135.9	135.9	255.7	135.9	136.2	4365	1082	2483	3587	1317	1315	3243	3351	1176	100.00	0.00	0.00	85.00	85.00	
4/10/2012	0.0	92.0	24.1	0.0	98.3	83.2	87.7	69.8	70.1	159.6	133.4	133.4	256.9	133.1	143.0	4365	1082	2484	3611	1340	1339	3266	3374	1200	99.96	0.00	0.03	81.64	81.67	
5/10/2012	19.8	27.7	24.0	74.2	86.2	78.7	OL	OL	OL	158.0	126.0	126.0	261.6	126.0	141.3	4365	1082	2484	3635	1364	1363	3290	3398	1224	100.00	0.00	0.00	78.73	78.73	
6/10/2012	19.9	24.8	24.0	66.7	78.8	72.9	OL	OL	OL	156.4	116.7	116.8	257.5	116.7	133.4	4365	1082	2484	3659	1388	1387	3314	3422	1248	100.00	0.00	0.00	72.85	72.85	
7/10/2012	19.9	24.8	24.1	65.3	73.3	69.9	OL	OL	OL	158.1	112.0	112.1	259.1	112.0	134.7	4365	1082	2484	3683	1412	1411	3338	3446	1272	100.00	0.00	0.00	69.87	69.87	
8/10/2012	19.9	26.5	24.1	66.0	72.3	68.1	OL	OL	OL	158.2	109.3	109.3	260.3	109.3	136.6	4365	1082	2484	3707	1436	1435	3362	3470	1296	100.00	0.00	0.00	68.13	68.13	
9/10/2012	19.9	25.0	24.1	50.7	74.8	66.3	OL	OL	OL	153.2	106.5	106.5	253.9	106.4	133.0	4365	1082	2484	3731	1460	1459	3386	3494	1320	100.00	0.00	0.00	66.29	66.29	
10/10/2012	19.9	27.3	24.1	60.5	74.9	68.9	OL	OL	OL	150.2	110.5	110.7	248.6	110.6	131.7	4365	1082	2484	3755	1484	1483	3410	3518	1344	100.00	0.00	0.00	68.93	68.93	
11/10/2012	19.9	24.7	24.1	61.3	75.5	71.3	OL	OL	OL	146.8	114.3	114.5	243.9	114.3	129.3	4365	1082	2484	3779	1508	1507	3434	3542	1368	100.00	0.00	0.00	71.32	71.32	
12/10/2012	20.0	27.0	24.0	61.7	83.6	76.5	OL	OL	OL	143.6	122.6	122.7	237.0	122.5	129.6	4365	1082	2484	3803	1532	1531	3458	3566	1392	100.00	0.00	0.00	76.49	76.49	
13/10/2012	0.0	63.5	25.3	0.0	131.1	53.6	27.0	20.6	10.5	142.0	105.2	96.5	228.5	104.1	134.2	4365	1082	2484	3822	1552	1550	3478	3586	1411	99.53	0.00	0.20	42.87	43.07	
14/10/2012	0.0	31.2	24.7	0.0	53.2	39.9	OL	OL	OL	141.1	80.0	66.9	227.4	81.7	136.6	4365	1082	2484	3840	1570	1568	3496	3604	1429	100.00	0.00	0.00	30.18	30.18	
15/10/2012	17.9	106.3	35.4	3.1	45.5	38.9	272.2	135.0	113.3	203.9	123.1	119.1	230.4	46.8	181.5	4377	1094	2495	3851	1581	1580	3496	3604	1429	100.00	0.00	0.00	18.25	18.25	
16/10/2012	16.6	34.4	24.7	28.8	77.6	52.2	270.6	115.8	73.5	180.5	104.0	80.4	208.0	73.4	76.2	4401	1118	2519	3875	1605	1604	3504	3611	1437	99.90	0.00	0.05	52.15	52.20	
17/10/2012	0.0	54.0	24.2	0.0	55.6	52.1	248.8	107.3	51.8	165.6	93.1	77.8	211.0	84.4	83.5	4405	1122	2524	3892	1622	1620	3521	3628	1454	100.00	0.00	0.00	36.42	36.42	
18/10/2012	0.0	107.2	41.6	0.0	69.4	41.6	220.3	128.1	123.4	186.3	105.6	127.7	181.1	73.1	147.1	4406	1123	2524	3893	1623	1621	3521	3629	1455	52.67	0.48	0.48	1.06	2.02	
19/10/2012	19.6	106.8	24.6	6.4	100.7	81.1	259.8	137.6	136.2	190.9	133.8	136.9	231.7	45.5	166.0	4417	1134	2535	3904	1634	1632	3522	3629	1455	100.00	0.00	0.00	35.56	35.56	
20/10/2012	0.0	47.3	23.5	0.0	88.2	85.0	176.5	106.4	103.9	135.0	104.7	106.0	170.7	86.2	86.0	4433	1150	2552	3921	1650	1649	3533	3640	1466	100.00	0.00	0.00	58.97	58.97	
21/10/2012	16.2	49.8	22.0	2.9	68.3	63.9	130.6	99.4	84.2	100.7	56.4	56.0	160.5	96.8	96.6	4444	1161	2562	3922	1652	1651	3543	3651	1476	99.17	0.00	0.23	27.37	27.60	
22/10/2012	0.0	25.8	22.4	0.0	65.9	53.0	149.4	87.0	75.9	OL	OL	OL	168.3	85.6	85.6	4458	1175	2576	3922	1652	1651	3557	3665	1490	99.37	0.08	0.12	31.42	31.62	
23/10/2012	0.0	16.0	11.3	0.0	64.9	38.5	96.6	76.8	51.8	95.2	43.9	11.7	39.0	26.0	28.2	4458	1175	2577	3923	1652	1651	3557	3665	1490	0.00	0.00	0.07	0.00	0.07	
24/10/2012	0.0	99.6	39.7	0.0	62.9	39.0	149.2	98.8	105.3	114.4	55.0	80.7	95.5	62.7	89.4	4458	1175	2577	3923	1653	1651	1	3665	1491	76.92	0.02	0.02	0.13	0.16	
25/10/2012	17.9	99.0	24.4	1.2	88.7	84.9	261.3	121.3	126.2	126.8	123.8	124.5	195.9	124.0	134.2	4462	1179	2580	3935	1664	1663	12	3677	1503	100.00	0.00	0.00	41.74	41.74	
26/10/2012	0.0	50.4	23.9	0.0	87.7	85.0	171.3	87.2	89.1	92.1	86.2	85.1	127.4	86.4	84.3	4485	1202	2604	3958	1688	1686	36	3701	1526	100.00	0.00	0.00	83.40	83.40	
27/10/2012	0.0	37.8	23.3	0.0	83.5	80.2	155.2	81.7	81.6	97.8	81.6	77.2	154.3	81.6	81.6	4494	1211	2612	3967	1697	1695	45	3709	1535	100.00	0.00	0.00	28.79	28.79	
28/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4494	1211	2612	3967	1697	1695	45	3709	1535	OL	0.00	0.00	0.00	0.00	0.00
29/10/2012	13.3	53.3	23.9	4.7	79.1	70.1	135.4	71.9	71.8	104.9	73.4	70.4	179.1	71.6	71.5	4511	1227	2629	3984	1713	1712	61	3726	1551	100.00	0.00	0.00	48.09	48.09	
30/10/2012	18.5	25.1	24.2	67.2	72.2	69.9	154.1	71.6	71.5	123.2	76.2	71.4	204.3	71.4	71.6	4535	1251	2653	4008	1737	1736	85	3750	1575	100.00	0.00	0.00	69.94	69.94	
31/10/2012	18.3	25.1	24.1	67.7	76.2	72.5	171.3	74.2	74.4	139.1	76.9	74.0	188.3	74.6	79.7	4559	1275	2677	4032	1761	1760	109	3774	1599	100.00	0.00	0.00	72.54	72.54	
Total [ML]:																									0.58	1.19	1437.80	1439.57		

Water Volume [%]:

Untreated: 0.04 %
Below Dose 0.08 %
To Dose 99.88 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\10-October



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: **October 2012**
Reactor: **UVR-200A**

Report Created: **Thursday, November 01, 2012**

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/10/2012	21.4	24.5	24.0	80.9	90.0	85.0	217.2	135.9	135.9	OL	OL	OL	136.3	135.9	136.1	1360	1360	1361	1398	881	3496	1360	1361	1360	100.00	0.00	0.00	85.02	85.02
2/10/2012	0.0	40.8	23.9	0.0	96.6	82.9	218.3	132.9	132.5	83.3	58.2	21.7	135.1	131.9	132.3	1379	1379	1379	1398	882	3496	1378	1379	1378	98.29	0.00	1.09	62.80	63.89
3/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1379	1379	1379	1398	882	3496	1378	1379	1378	OL	0.00	0.00	0.00	0.00
4/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1379	1379	1379	1398	882	3496	1378	1379	1378	OL	0.00	0.00	0.00	0.00
5/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1379	1379	1379	1398	882	3496	1378	1379	1378	OL	0.00	0.00	0.00	0.00
6/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1379	1379	1379	1398	882	3496	1378	1379	1378	OL	0.00	0.00	0.00	0.00
7/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1379	1379	1379	1398	882	3496	1378	1379	1378	OL	0.00	0.00	0.00	0.00
8/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1379	1379	1379	1398	882	3496	1378	1379	1378	OL	0.00	0.00	0.00	0.00
9/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1379	1379	1379	1398	882	3496	1378	1379	1379	OL	0.00	0.00	0.00	0.00
10/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1379	1379	1379	1398	882	3496	1378	1379	1379	OL	0.00	0.00	0.00	0.00
11/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1379	1379	1379	1398	882	3496	1378	1379	1379	OL	0.00	0.00	0.00	0.00
12/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1379	1379	1379	1398	882	3496	1378	1379	1379	OL	0.00	0.00	0.00	0.00
13/10/2012	0.0	67.6	24.6	0.0	131.7	60.0	228.6	132.9	119.9	228.0	205.9	60.9	265.1	74.3	100.5	1395	1394	1395	1414	897	3512	1394	1395	1394	100.00	0.00	0.00	38.55	38.55
14/10/2012	20.0	27.2	24.1	49.8	71.9	61.4	196.9	86.8	67.5	178.5	171.9	61.8	262.3	71.2	86.7	1419	1418	1419	1438	921	3536	1418	1419	1418	100.00	0.00	0.00	61.38	61.38
15/10/2012	18.0	27.0	22.1	49.8	66.6	62.0	128.6	74.0	60.8	86.5	69.7	57.9	248.9	68.4	83.1	1443	1442	1443	1462	945	3560	1442	1443	1442	100.00	0.00	0.00	62.00	62.00
16/10/2012	0.0	100.4	22.6	0.0	87.9	64.7	93.6	107.5	96.8	61.2	61.2	66.8	249.2	87.8	105.5	1460	1460	1460	1474	958	3572	1460	1460	1460	97.53	0.57	0.61	46.39	47.56
17/10/2012	19.9	31.5	24.0	54.4	77.1	71.5	85.9	86.6	84.4	72.1	72.4	73.7	117.8	82.8	83.7	1484	1484	1484	1493	976	3591	1484	1484	1484	100.00	0.00	0.00	71.56	71.56
18/10/2012	0.0	32.4	23.2	0.0	73.8	53.0	49.9	56.1	54.6	54.7	67.9	55.9	95.4	54.9	53.9	1501	1500	1501	1509	993	3607	1500	1501	1500	99.22	0.00	0.28	35.65	35.93
19/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1501	1500	1501	1509	993	3607	1500	1501	1500	OL	0.00	0.00	0.00	0.00
20/10/2012	18.3	114.0	24.3	3.7	107.5	85.0	228.3	144.8	136.2	184.9	22.3	172.4	241.2	134.7	135.8	1508	1508	1508	1509	993	3607	1507	1508	1507	100.00	0.00	0.00	26.07	26.07
21/10/2012	19.6	34.4	23.7	50.4	86.9	71.5	104.6	82.8	84.0	83.3	81.4	72.1	133.5	80.1	81.5	1532	1532	1532	1530	1014	3628	1531	1532	1531	100.00	0.00	0.00	71.46	71.46
22/10/2012	0.0	29.1	21.4	0.0	60.1	51.0	71.0	53.5	43.3	58.2	56.4	56.4	124.7	56.5	56.6	1539	1539	1540	1539	1022	3637	1540	1541	1540	100.00	0.00	0.00	18.10	18.10
23/10/2012	0.0	64.4	25.3	0.0	92.3	54.3	74.8	105.8	32.4	148.2	121.7	153.6	191.0	87.0	123.0	1540	1539	1540	1539	1023	3637	1540	1541	1540	69.10	0.00	0.10	0.22	0.32
24/10/2012	0.0	61.9	24.2	5.9	92.0	73.7	129.9	137.3	75.0	206.2	93.0	142.0	275.3	74.9	99.2	1554	1553	1554	1553	1036	3651	1554	1555	1554	98.58	0.09	0.51	41.80	42.41
25/10/2012	0.0	38.0	24.3	0.0	78.0	74.6	136.7	82.0	76.0	173.7	93.5	76.3	257.2	76.3	76.4	1566	1566	1566	1565	1049	3663	1567	1567	1567	100.00	0.00	0.00	38.74	38.74
26/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1566	1566	1566	1565	1049	3663	1567	1567	1567	OL	0.00	0.00	0.00	0.00
27/10/2012	20.4	82.5	24.2	6.0	85.5	80.4	126.4	82.2	81.9	164.3	99.3	81.7	241.3	81.8	81.8	1582	1581	1582	1581	1064	3679	1582	1583	1582	100.00	0.00	0.00	51.69	51.69
28/10/2012	21.1	24.8	24.2	73.8	80.6	76.6	143.4	78.1	81.1	187.7	111.5	78.0	250.9	78.1	78.2	1606	1605	1606	1605	1088	3703	1606	1607	1606	100.00	0.00	0.00	76.57	76.57
29/10/2012	0.0	107.8	24.4	0.0	77.6	75.4	160.1	77.3	100.5	215.3	120.4	76.9	265.8	77.7	85.0	1613	1613	1613	1612	1096	3711	1614	1615	1614	100.00	0.00	0.00	24.02	24.02
30/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1613	1613	1613	1612	1096	3711	1614	1615	1614	OL	0.00	0.00	0.00	0.00
31/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1613	1613	1613	1612	1096	3711	1614	1615	1614	OL	0.00	0.00	0.00	0.00
Total [ML]:																									0.66	2.59	812.02	815.28	

Water Volume [%]:

Untreated: 0.08 %
Below Dose 0.32 %
To Dose 99.60 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: **October 2012**
Reactor: **UVR-300A**

Report Created: **Thursday, November 01, 2012**

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
2/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
3/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
4/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5	4	1622	4373	4374	4373	4401	4401	4401	OL	0.00	0.00	0.00	0.00
5/10/2012	14.9	48.4	23.9	5.9	89.2	84.2	86.7	85.4	83.7	110.5	85.7	85.6	94.1	85.6	85.5	26	26	1643	4394	4395	4395	4422	4422	4422	99.92	0.00	0.06	74.44	74.50
6/10/2012	20.0	25.6	23.8	69.6	87.3	78.4	88.1	79.8	77.8	117.7	85.3	79.8	96.2	79.9	79.8	50	50	1667	4418	4419	4419	4446	4446	4446	100.00	0.00	0.00	78.42	78.42
7/10/2012	20.6	25.9	24.2	69.5	79.7	75.2	89.0	76.6	76.4	121.7	89.1	76.6	96.7	76.7	76.6	74	74	1691	4442	4443	4443	4470	4470	4470	100.00	0.00	0.00	75.20	75.20
8/10/2012	20.7	25.6	24.2	68.6	79.7	73.8	89.6	75.2	75.1	123.5	90.9	75.2	97.0	75.3	75.2	98	98	1715	4466	4467	4467	4494	4494	4494	100.00	0.00	0.00	73.79	73.79
9/10/2012	18.3	30.2	24.1	33.4	87.2	71.9	87.5	73.4	72.2	121.2	89.3	73.5	82.5	73.4	73.4	122	122	1739	4490	4491	4491	4518	4518	4518	100.00	0.00	0.00	71.96	71.96
10/10/2012	0.0	88.4	23.8	0.0	83.7	77.4	101.3	80.5	76.5	129.5	100.5	82.5	86.0	78.8	79.5	141	141	1759	4510	4510	4510	4538	4537	4537	100.00	0.00	0.00	62.10	62.10
11/10/2012	0.0	64.9	24.0	0.0	83.0	78.7	84.7	80.5	78.6	103.8	84.6	80.4	82.6	79.9	79.8	153	153	1762	4521	4522	4521	4549	4549	4549	99.84	0.03	0.03	37.26	37.32
12/10/2012	0.0	65.8	23.8	0.0	83.9	70.7	72.4	72.1	70.7	94.1	78.1	72.0	82.2	72.2	72.3	173	173	28	4541	4542	4542	4569	4569	4569	99.90	0.00	0.06	59.17	59.23
13/10/2012	0.0	92.6	23.7	0.0	90.3	65.3	90.9	84.3	82.6	114.5	94.9	85.2	74.9	65.2	65.4	193	192	48	4561	4562	4561	4581	4581	4581	99.73	0.00	0.15	53.33	53.48
14/10/2012	0.0	80.1	23.7	0.0	70.9	52.2	73.8	65.1	63.1	92.1	77.0	65.1	85.0	68.1	67.8	204	204	60	4573	4573	4573	4587	4587	4586	99.69	0.02	0.06	25.04	25.12
15/10/2012	0.0	35.1	23.6	0.0	69.3	44.1	62.6	60.9	58.2	94.4	74.8	60.7	73.7	59.0	58.3	224	224	79	4592	4593	4592	4594	4593	4593	99.44	0.00	0.20	35.63	35.83
16/10/2012	18.1	79.4	24.2	0.0	105.5	61.0	74.8	70.9	71.9	92.8	80.3	70.3	80.2	70.0	69.5	236	236	92	4605	4605	4605	4603	4603	4602	99.99	0.00	0.00	32.13	32.14
17/10/2012	16.5	29.5	24.0	36.3	96.0	60.6	66.9	65.4	61.2	98.9	94.6	92.8	93.8	92.8	92.6	240	239	95	4629	4629	4629	4627	4627	4626	100.00	0.00	0.00	60.58	60.58
18/10/2012	11.3	27.3	24.2	37.1	97.3	59.9	49.4	39.5	20.8	98.8	96.7	96.5	96.4	96.4	96.3	240	240	95	4653	4653	4653	4651	4651	4650	99.92	0.00	0.05	59.89	59.93
19/10/2012	0.0	33.2	24.2	0.0	76.2	62.1	OL	OL	OL	102.3	100.1	100.0	100.0	99.7	99.8	240	240	95	4668	4669	4669	4667	4666	4666	100.00	0.00	0.00	40.79	40.79
20/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	240	240	95	4668	4669	4669	4667	4666	4666	OL	0.00	0.00	0.00	0.00
21/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	240	240	95	4668	4669	4669	4667	4666	4666	OL	0.00	0.00	0.00	0.00
22/10/2012	0.0	93.9	24.3	4.2	102.2	84.5	116.9	110.9	108.9	113.3	94.3	98.6	111.9	112.6	110.5	250	250	106	4674	4675	4675	4677	4677	4677	98.93	0.17	0.23	37.22	37.32
23/10/2012	0.0	72.3	24.0	0.0	89.0	70.8	84.4	78.5	70.9	101.3	85.3	79.0	87.4	87.2	79.0	3081	3081	3081	4687	4688	4687	4690	4690	4689	96.09	0.98	1.58	62.82	65.67
24/10/2012	16.4	34.8	24.3	42.2	88.3	78.0	82.5	82.3	82.2	97.5	83.0	82.3	81.3	82.4	81.2	3105	3105	3105	2959	2959	2959	3112	3112	3112	100.00	0.00	0.00	78.03	78.03
25/10/2012	18.5	27.5	24.3	32.6	73.7	64.9	84.1	83.9	84.2	98.6	87.5	84.1	71.1	71.1	71.1	3129	3129	3129	2983	2983	2983	3124	3124	3124	100.00	0.00	0.00	64.94	64.94
26/10/2012	0.0	89.9	24.4	0.0	72.5	58.5	95.6	95.1	95.7	110.7	96.2	94.7	66.2	69.8	24.9	3139	3139	3138	2993	2993	2993	3125	3125	3125	100.00	0.00	0.00	23.59	23.59
27/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3139	3139	3138	2993	2993	2993	3125	3125	3125	OL	0.00	0.00	0.00	0.00
28/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3139	3139	3138	2993	2993	2993	3125	3125	3125	OL	0.00	0.00	0.00	0.00
29/10/2012	17.8	69.3	24.4	3.2	78.8	46.9	67.5	59.6	70.0	118.5	86.3	74.3	73.4	73.6	65.3	3140	3140	3140	3009	3009	3009	3141	3141	3141	100.00	0.00	0.00	31.25	31.25
30/10/2012	22.4	27.6	24.5	42.2	49.7	45.7	OL	OL	OL	125.2	89.6	84.4	73.9	75.5	74.2	3140	3140	3140	3033	3033	3033	3165	3165	3165	100.00	0.00	0.00	45.67	45.67
31/10/2012	21.5	25.5	24.3	42.4	59.4	52.7	OL	OL	OL	120.5	89.5	90.6	84.9	85.4	85.2	3140	3140	3140	3057	3057	3057	3189	3189	3189	100.00	0.00	0.00	52.65	52.65
Total [ML]:																									1.20	2.41	1235.89	1239.50	

Water Volume [%]:

Untreated: 0.10 %
Below Dose 0.19 %
To Dose 99.71 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: **October 2012**
Reactor: **UVR-400A**

Report Created: **Thursday, November 01, 2012**

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume to Validate	Daily Totals Water Volume [ML]				
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Conditions					
																									Untreated	Below Dose	To Dose	Total		
1/10/2012	22.8	24.9	23.9	80.1	89.7	85.0	86.4	86.3	84.1	86.3	86.3	86.3	86.3	86.3	86.3	4959	4959	2974	162	162	162	162	4161	162	100.00	0.00	0.00	84.95	84.95	
2/10/2012	14.7	55.3	24.2	0.0	88.5	75.5	77.1	77.1	75.1	80.3	77.0	77.0	79.3	77.7	79.3	4983	4983	2998	186	186	186	186	4185	186	100.00	0.00	0.00	75.50	75.50	
3/10/2012	22.7	25.1	24.0	71.4	82.7	77.4	78.9	78.9	77.4	78.8	78.9	78.9	78.8	78.8	79.0	5007	5007	3022	210	210	210	210	4209	210	100.00	0.00	0.00	77.44	77.44	
4/10/2012	0.0	54.2	23.7	0.0	89.4	78.8	80.4	80.1	77.9	82.1	80.3	80.2	80.5	80.3	80.8	5030	5030	3046	233	233	234	233	4233	233	99.98	0.00	0.02	76.66	76.68	
5/10/2012	0.0	39.7	20.8	0.0	88.4	84.6	86.1	86.0	70.4	86.1	86.0	86.0	86.1	86.1	86.0	5033	5033	3048	236	236	236	236	4235	236	100.00	0.00	0.00	9.86	9.86	
6/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5033	5033	3048	236	236	236	236	4235	236	OL	0.00	0.00	0.00	0.00	0.00
7/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5033	5033	3048	236	236	236	236	4235	236	OL	0.00	0.00	0.00	0.00	0.00
8/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	5033	5033	3048	236	236	236	236	4235	236	OL	0.00	0.00	0.00	0.00	0.00
9/10/2012	0.0	62.7	29.2	0.0	58.8	39.0	70.0	53.3	44.7	81.5	75.1	44.9	81.3	92.8	103.0	5033	5033	3048	236	236	237	236	4236	236	100.00	0.00	0.00	0.11	0.11	
10/10/2012	0.0	63.9	24.4	0.0	80.9	77.9	79.4	78.8	79.0	123.3	90.5	79.1	100.4	102.2	121.4	5038	5038	3053	241	241	241	241	4240	241	100.00	0.00	0.00	15.66	15.66	
11/10/2012	0.0	63.9	24.3	0.0	81.0	78.0	79.7	79.3	79.1	99.0	80.1	79.4	92.3	80.3	89.5	5051	5051	3066	254	254	254	254	4254	254	100.00	0.00	0.00	42.12	42.12	
12/10/2012	0.0	63.9	24.3	0.0	97.0	82.8	105.7	85.8	83.6	109.8	85.4	87.7	98.5	94.1	102.7	5063	5063	3079	267	266	267	266	4266	267	99.92	0.00	0.03	42.47	42.51	
13/10/2012	0.0	55.7	23.6	0.0	88.5	81.2	86.0	82.6	79.7	88.7	83.2	82.5	84.7	84.0	83.1	5075	5075	3090	278	278	278	278	4277	278	100.00	0.00	0.00	38.59	38.59	
14/10/2012	19.7	63.9	24.4	5.0	71.7	65.5	102.9	66.9	68.5	115.7	67.0	76.8	101.8	66.9	111.8	13	12	3103	291	290	291	290	4290	291	100.00	0.00	0.00	34.47	34.47	
15/10/2012	0.0	63.9	23.1	0.0	75.7	63.6	85.8	65.7	66.6	101.1	74.7	74.5	94.1	75.1	95.2	27	27	3118	308	308	309	308	4308	308	99.64	0.00	0.16	46.10	46.26	
16/10/2012	0.0	44.2	23.8	0.0	88.2	73.1	78.7	74.2	73.2	95.9	74.8	74.5	88.7	74.7	80.4	46	46	3136	327	327	327	326	4326	327	99.89	0.00	0.06	56.00	56.07	
17/10/2012	14.2	36.2	23.9	11.9	87.6	41.0	55.4	48.8	41.8	83.1	61.2	58.7	84.9	72.7	69.8	53	53	3144	351	351	351	350	4350	351	97.26	0.00	1.12	39.88	41.01	
18/10/2012	0.0	46.8	24.3	0.0	82.8	46.6	38.7	18.5	12.4	94.2	76.4	73.2	97.3	92.9	99.0	53	53	3144	374	374	375	374	4374	374	99.93	0.00	0.03	45.20	45.23	
19/10/2012	0.0	34.6	24.0	0.0	74.6	70.0	OL	OL	OL	112.3	112.2	111.7	112.2	112.3	115.5	53	53	3144	388	388	388	388	4387	388	100.00	0.00	0.00	40.03	40.03	
20/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	53	53	3144	388	388	388	388	4387	388	OL	0.00	0.00	0.00	0.00	0.00
21/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	53	53	3144	388	388	388	388	4387	388	OL	0.00	0.00	0.00	0.00	0.00
22/10/2012	0.0	32.8	23.6	0.0	84.9	81.3	35.6	18.5	13.8	129.5	129.5	125.2	129.6	129.8	130.6	53	53	3144	393	393	394	393	4393	393	99.51	0.00	0.09	17.91	18.00	
23/10/2012	0.0	56.6	24.1	0.0	100.7	67.7	19.8	8.7	8.2	118.3	108.9	107.7	119.5	120.7	130.9	53	53	3144	403	402	403	402	4402	403	100.00	0.00	0.00	25.43	25.43	
24/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	53	53	3144	403	402	403	402	4402	403	OL	0.00	0.00	0.00	0.00	0.00
25/10/2012	0.0	25.3	18.4	0.0	43.9	38.3	16.4	9.0	6.8	76.5	64.7	57.5	84.0	84.6	109.6	54	53	3144	403	403	403	402	4402	403	67.56	0.00	0.13	0.26	0.39	
26/10/2012	17.5	63.9	26.0	0.0	130.1	58.5	107.7	74.9	65.8	114.6	70.1	78.5	101.2	91.1	105.3	69	68	3159	418	418	418	416	4416	417	99.75	0.00	0.09	36.45	36.54	
27/10/2012	20.1	27.0	24.5	38.6	56.5	49.0	72.5	50.8	50.7	96.9	51.0	50.8	94.7	82.0	87.8	93	92	3183	442	442	442	440	4440	441	100.00	0.00	0.00	48.98	48.98	
28/10/2012	21.0	28.9	24.7	41.4	48.2	44.5	72.5	46.6	46.1	103.4	50.9	53.6	104.1	92.8	111.8	117	116	3207	466	466	466	464	4464	465	100.00	0.00	0.00	44.46	44.46	
29/10/2012	0.0	36.3	24.8	0.0	48.4	43.8	76.5	45.9	45.4	119.1	53.7	63.0	114.6	106.9	129.4	125	125	3215	474	474	474	473	4472	473	100.00	0.00	0.00	14.67	14.67	
30/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4472	473	OL	0.00	0.00	0.00	0.00	0.00
31/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4472	473	OL	0.00	0.00	0.00	0.00	0.00
Total [ML]:																									0.00	1.74	913.23	914.96		

Water Volume [%]:

Untreated: 0.00 %
Below Dose 0.19 %
To Dose 99.81 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: **October 2012**
Reactor: **UVR-500A**

Report Created: **Thursday, November 01, 2012**

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1474	1130	3235	1946	3526	2379	1656	1657	4262	OL	0.00	0.00	0.00	0.00
2/10/2012	0.0	82.1	35.5	0.0	45.9	22.8	116.9	68.2	259.7	131.2	94.1	104.8	123.9	74.0	99.5	1476	1131	3237	1946	3526	2379	1658	1659	4264	100.00	0.00	0.00	1.68	1.68
3/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1476	1131	3237	1946	3526	2379	1658	1659	4264	OL	0.00	0.00	0.00	0.00
4/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1476	1131	3237	1946	3526	2379	1658	1659	4264	OL	0.00	0.00	0.00	0.00
5/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1476	1131	3237	1946	3526	2379	1658	1659	4264	OL	0.00	0.00	0.00	0.00
6/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1476	1131	3237	1946	3526	2379	1658	1659	4264	OL	0.00	0.00	0.00	0.00
7/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1476	1131	3237	1946	3526	2379	1658	1659	4264	OL	0.00	0.00	0.00	0.00
8/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1476	1131	3237	1946	3526	2379	1658	1659	4264	OL	0.00	0.00	0.00	0.00
9/10/2012	17.8	78.2	24.2	3.4	82.2	73.3	115.7	115.5	141.6	81.4	80.7	74.4	116.5	115.6	115.5	1494	1150	3255	1947	3527	2380	1676	1677	4283	100.00	0.00	0.00	56.20	56.20
10/10/2012	19.8	25.9	24.3	58.4	84.0	73.8	75.4	75.4	78.0	90.6	88.8	75.3	78.0	75.4	75.3	1518	1174	3279	1971	3551	2404	1700	1701	4307	100.00	0.00	0.00	73.77	73.77
11/10/2012	20.7	25.5	24.0	60.6	80.9	74.2	75.8	75.8	75.7	75.8	75.8	74.5	75.7	75.8	75.7	1542	1198	3303	1995	3575	2428	1724	1725	4331	100.00	0.00	0.00	74.26	74.26
12/10/2012	0.0	35.2	23.6	0.0	79.0	74.7	76.4	76.3	76.2	76.1	75.8	73.0	75.9	76.1	76.1	1558	1214	3319	2011	3591	2444	1740	1741	4346	100.00	0.00	0.00	49.22	49.22
13/10/2012	0.0	52.1	23.7	0.0	100.6	69.6	71.6	71.6	71.0	70.6	68.3	69.7	70.6	71.8	70.8	1573	1228	3334	2026	3605	2459	1755	1755	4361	99.84	0.00	0.07	41.85	41.92
14/10/2012	17.6	30.7	24.4	26.2	70.8	57.5	65.6	65.7	59.1	58.7	59.0	58.4	58.9	64.9	64.9	1597	1252	3358	2050	3629	2483	1779	1779	4385	99.94	0.00	0.03	57.55	57.58
15/10/2012	20.6	26.0	24.2	46.0	75.8	58.9	63.1	63.9	60.6	60.6	60.6	59.7	59.8	62.0	62.9	1621	1276	3382	2074	3653	2507	1803	1803	4409	100.00	0.00	0.00	58.95	58.95
16/10/2012	0.0	33.9	24.2	0.0	72.0	51.4	70.2	67.1	56.4	56.3	56.7	55.7	51.7	56.4	71.0	1641	1297	3402	2094	3674	2527	1821	1822	4428	100.00	0.00	0.00	43.38	43.38
17/10/2012	0.0	94.1	24.4	0.0	87.0	80.4	130.1	126.6	317.8	141.2	117.3	121.3	128.6	129.3	128.4	1649	1305	3410	2095	3675	2528	7	7	7	100.00	0.00	0.00	25.63	25.63
18/10/2012	20.6	27.7	24.2	27.9	88.8	68.7	113.2	115.9	142.3	OL	OL	OL	118.8	110.1	109.7	1673	1329	3434	2095	3675	2528	31	31	31	100.00	0.00	0.00	68.81	68.81
19/10/2012	20.5	28.8	24.4	25.4	65.4	44.6	73.9	77.9	83.5	OL	OL	OL	81.6	73.0	72.1	1697	1353	3458	2095	3675	2528	55	55	55	100.00	0.00	0.00	44.58	44.58
20/10/2012	20.7	25.6	24.2	45.6	64.6	57.0	91.9	91.8	91.9	OL	OL	OL	91.8	91.8	91.8	1721	1377	3482	2095	3675	2528	79	79	79	100.00	0.00	0.00	57.00	57.00
21/10/2012	20.9	25.7	24.3	39.9	59.0	50.2	89.9	84.9	83.5	OL	OL	OL	84.7	81.3	81.2	1745	1401	3506	2095	3675	2528	103	103	103	100.00	0.00	0.00	50.23	50.23
22/10/2012	21.2	31.3	24.3	31.3	84.8	53.1	116.1	95.3	93.6	OL	OL	OL	92.0	86.7	90.8	1769	1425	3530	2095	3675	2528	127	127	127	100.00	0.00	0.00	53.08	53.08
23/10/2012	20.7	38.2	24.2	29.9	92.5	62.0	129.3	105.7	113.6	OL	OL	OL	102.1	99.9	102.4	1793	1449	3554	2095	3675	2528	151	151	151	100.00	0.00	0.00	61.96	61.96
24/10/2012	0.0	34.5	24.3	0.0	71.2	61.9	130.6	105.6	131.9	OL	OL	OL	104.8	100.6	104.8	1805	1461	3566	2095	3675	2528	164	163	163	100.00	0.00	0.00	31.85	31.85
25/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1805	1461	3566	2095	3675	2528	164	163	163	OL	0.00	0.00	0.00	0.00
26/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1805	1461	3566	2095	3675	2528	164	163	163	OL	0.00	0.00	0.00	0.00
27/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1805	1461	3566	2095	3675	2528	164	163	163	OL	0.00	0.00	0.00	0.00
28/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1805	1461	3566	2095	3675	2528	164	163	163	OL	0.00	0.00	0.00	0.00
29/10/2012	20.1	114.1	24.3	0.0	71.3	68.9	136.9	111.0	335.8	159.8	87.2	82.0	110.3	110.2	110.3	1815	1470	3576	2096	3675	2529	173	173	172	98.14	0.25	0.25	26.24	26.73
30/10/2012	21.1	24.8	24.1	66.7	71.7	69.4	112.7	111.5	179.7	OL	OL	OL	111.4	111.4	111.4	1839	1494	3600	2096	3675	2529	197	197	196	100.00	0.00	0.00	69.41	69.41
31/10/2012	21.2	25.4	24.2	52.1	71.7	59.8	96.7	96.6	96.6	OL	OL	OL	96.5	96.5	96.4	1863	1518	3624	2096	3675	2529	221	221	220	100.00	0.00	0.00	59.82	59.82
Total [ML]:																									0.25	0.35	1005.47	1006.07	

Water Volume [%]:

Untreated: 0.02 %
Below Dose: 0.03 %
To Dose: 99.94 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code: 252.00
Licence Number: PWS-09-412 RR

WATER TREATMENT PLANT UV REPORT

Report Period: **October 2012**
Reactor: **UVR-600A**

Report Created: **Thursday, November 01, 2012**

Date	UV Dose mJ/cm²			Reactor Flow MLD			Average UV Lamp Intensity W/m²									UV Lamp Status Hours									% Volume to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/10/2012	17.8	25.6	24.2	74.7	84.3	79.0	116.3	88.3	80.4	80.9	80.4	80.4	124.9	80.4	80.4	2365	225	225	480	479	480	1877	480	479	100.00	0.00	0.00	79.04	79.04
2/10/2012	0.0	61.8	24.2	0.0	94.7	81.7	92.4	90.1	82.9	84.9	84.3	84.4	124.3	83.5	83.1	2388	249	249	503	503	504	1901	503	503	99.59	0.17	0.17	81.01	81.35
3/10/2012	18.7	25.0	24.1	81.7	88.1	85.0	105.4	87.7	86.3	86.3	86.3	86.3	122.5	86.3	86.3	2412	273	273	527	527	528	1925	527	527	100.00	0.00	0.00	85.02	85.02
4/10/2012	0.0	75.3	24.2	0.0	89.6	81.7	106.9	88.4	83.0	86.2	84.3	84.8	121.9	83.7	83.8	2436	297	297	551	551	552	1948	551	551	99.99	0.01	0.01	80.59	80.60
5/10/2012	18.8	25.1	24.2	77.4	91.0	82.4	102.7	86.6	83.8	85.7	83.8	83.8	121.6	83.8	83.8	2460	321	321	575	575	576	1972	575	575	100.00	0.00	0.00	82.43	82.43
6/10/2012	18.7	25.2	24.2	73.5	88.0	80.9	94.4	88.7	82.2	84.1	82.2	82.2	118.4	82.2	82.2	2484	345	345	599	599	600	1996	599	599	100.00	0.00	0.00	80.87	80.87
7/10/2012	18.8	25.4	24.2	72.1	81.5	77.9	87.5	88.0	79.3	83.2	79.3	79.3	118.7	79.3	79.3	2508	369	369	623	623	624	2020	623	623	100.00	0.00	0.00	77.95	77.95
8/10/2012	17.4	25.5	24.2	71.1	81.4	76.8	98.4	91.6	78.1	83.5	78.2	78.5	118.7	78.2	78.2	2532	393	393	647	647	648	2044	647	647	100.00	0.00	0.00	76.79	76.79
9/10/2012	0.0	32.5	24.2	0.0	80.0	73.7	105.8	90.3	76.4	80.8	75.4	76.0	114.8	76.4	76.4	2538	399	398	653	652	653	2050	653	652	100.00	0.00	0.00	17.33	17.33
10/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2538	399	398	653	652	653	2050	653	652	OL	0.00	0.00	0.00	0.00
11/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2538	399	398	653	652	653	2050	653	652	OL	0.00	0.00	0.00	0.00
12/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2538	399	398	653	652	653	2050	653	652	OL	0.00	0.00	0.00	0.00
13/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2538	399	398	653	652	653	2050	653	652	OL	0.00	0.00	0.00	0.00
14/10/2012	0.0	46.6	22.6	0.0	70.0	66.9	107.5	107.3	95.8	OL	OL	OL	109.8	107.1	107.2	2544	405	404	653	652	653	2056	659	658	100.00	0.00	0.00	16.30	16.30
15/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2544	405	404	653	652	653	2056	659	658	OL	0.00	0.00	0.00	0.00
16/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2544	405	404	653	652	653	2056	659	658	OL	0.00	0.00	0.00	0.00
17/10/2012	0.0	46.1	21.4	0.0	73.1	65.0	96.4	96.1	71.9	46.8	1.2	43.7	133.0	93.4	97.1	2544	405	405	653	652	653	2056	659	659	78.20	0.00	0.10	0.36	0.46
18/10/2012	17.9	91.2	24.2	0.0	80.0	68.2	140.4	111.7	110.1	122.9	113.8	108.9	185.6	56.8	67.9	2552	413	413	661	660	661	2056	659	659	99.92	0.01	0.01	22.16	22.18
19/10/2012	18.0	26.0	24.1	42.7	95.1	70.6	96.6	96.7	96.9	100.0	100.4	103.0	94.9	85.9	86.1	2576	437	437	685	684	685	2065	667	667	99.92	0.00	0.06	70.57	70.63
20/10/2012	17.7	25.5	24.1	73.4	93.9	85.0	86.2	86.2	86.1	88.0	89.0	100.4	93.4	86.2	86.2	2600	461	461	709	708	709	2089	691	691	100.00	0.00	0.00	84.92	84.92
21/10/2012	17.0	33.7	24.1	61.4	87.5	76.6	90.1	89.7	89.9	94.1	94.0	101.1	91.6	82.0	82.1	2624	485	485	733	732	733	2106	708	708	100.00	0.00	0.00	76.54	76.54
22/10/2012	18.2	26.3	24.0	45.0	96.2	71.8	118.0	115.2	115.1	121.4	120.3	118.5	OL	OL	OL	2648	509	509	757	756	757	2106	708	708	100.00	0.00	0.00	71.82	71.82
23/10/2012	14.4	38.1	24.1	29.9	100.8	76.5	133.8	124.9	118.2	127.1	126.3	123.8	88.2	55.2	58.4	2672	533	533	781	780	781	2109	712	712	99.86	0.00	0.11	76.41	76.52
24/10/2012	16.7	25.5	24.1	50.9	95.4	77.2	156.0	100.1	99.4	115.0	112.5	106.7	100.4	77.9	77.9	2696	557	557	805	804	805	2123	726	726	100.00	0.00	0.00	77.14	77.14
25/10/2012	18.8	25.4	24.2	62.1	81.5	77.2	157.7	78.6	78.5	84.1	80.3	78.7	121.6	78.6	78.5	2720	581	581	829	828	829	2147	750	750	100.00	0.00	0.00	77.12	77.12
26/10/2012	17.6	57.0	24.2	5.4	122.4	78.0	155.7	79.5	79.5	91.7	87.2	80.1	129.4	79.5	79.4	2744	605	605	853	852	853	2171	774	774	99.93	0.00	0.05	77.93	77.99
27/10/2012	18.8	25.3	24.3	66.6	80.8	73.7	150.8	75.1	75.1	76.7	75.2	75.1	130.2	75.4	75.1	2768	629	629	877	876	877	2195	798	798	100.00	0.00	0.00	73.70	73.70
28/10/2012	17.9	34.6	24.3	63.1	71.7	66.2	145.8	74.6	73.0	73.1	73.3	73.0	130.5	70.4	67.8	2792	653	653	901	900	901	2216	819	819	100.00	0.00	0.00	66.22	66.22
29/10/2012	0.0	91.8	24.2	0.0	71.7	65.8	147.6	100.0	96.9	105.6	104.3	101.5	126.3	75.1	76.7	2806	667	667	915	915	916	2220	823	823	100.00	0.00	0.00	40.47	40.47
30/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2806	667	667	915	915	916	2220	823	823	OL	0.00	0.00	0.00	0.00
31/10/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2806	667	667	915	915	916	2220	823	823	OL	0.00	0.00	0.00	0.00
Total [ML]:																									0.18	0.50	1492.68	1493.36	

Water Volume [m³]:

Untreated: 0.01 %
Below Dose 0.03 %
To Dose 99.95 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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UV Monitoring Report – Monthly



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

Report Period: November 2012

Date	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]				
	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	
11/1/2012	0.00	0.00	73.79	73.79	0.00	0.00	0 00	0.00	0.00	0 00	56.22	56.22	0.00	0.00	0 00	0.00	0.00	0 00	54.95	54.95	0.00	0.00	0.00	0 00	0.00	0.00	184.97	184.97	100.0
11/2/2012	0.11	0.00	56.71	56.82	0.00	0.00	46.96	46.96	0.00	0.13	16.76	16.90	0.00	0.08	0.72	0.79	0.16	0.00	15.71	15.88	0.00	0.00	52.36	52.36	0.28	0.21	189.22	189.71	99.7
11/3/2012	0.00	0.00	51.87	51.87	0.00	0.00	69.33	69.33	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	77.79	77.79	0.00	0.00	198.98	198.98	100.0
11/4/2012	0.00	0.00	50.14	50.14	0.00	0.00	68.60	68.60	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	76.07	76.07	0.00	0.00	194.81	194.81	100.0
11/5/2012	0.00	0.00	53.13	53.13	0.00	0.00	71.44	71.44	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	79.16	79.16	0.00	0.00	203.73	203.73	100.0
11/6/2012	0.00	0.00	52.42	52.42	0.00	0.00	70.56	70.56	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	78.62	78.62	0.00	0.00	201.59	201.59	100.0
11/7/2012	0.00	0.00	50.49	50.49	0.00	0.00	67.94	67.94	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	81.54	81.54	0.00	0.00	199.96	199.96	100.0
11/8/2012	0.00	0.00	50.53	50.53	0.00	0.00	67.91	67.91	0.00	0.04	0.02	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.45	81.45	0.00	0.04	199.91	199.95	100.0
11/9/2012	0.00	0.00	50.35	50.35	0.00	0.00	67.78	67.78	0.00	0.00	0.22	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.57	81.57	0.00	0.00	199.92	199.92	100.0
11/10/2012	0.00	0.00	49.41	49.41	0.00	0.00	66.66	66.66	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	80.38	80.38	0.00	0.00	196.45	196.45	100.0
11/11/2012	0.00	0.00	48.16	48.16	0.00	0.00	65.11	65.11	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	78.51	78.51	0.00	0.00	191.78	191.78	100.0
11/12/2012	0.00	0.00	47.39	47.39	0.00	0.00	64.17	64.17	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	77.50	77.50	0.00	0.00	189.06	189.06	100.0
11/13/2012	0.00	0.00	47.39	47.39	0.00	0.00	64.16	64.16	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	77.50	77.50	0.00	0.00	189.05	189.05	100.0
11/14/2012	0.00	0.00	48.62	48.62	0.00	0.00	62.01	62.01	0.00	0.00	3.21	3.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.19	78.19	0.00	0.00	192.05	192.05	100.0
11/15/2012	0.00	0.00	61.65	61.65	0.00	0.00	0 00	0.00	0.00	0.00	69.81	69.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.31	66.31	0.00	0.00	197.77	197.77	100.0
11/16/2012	0.00	0.00	61.59	61.59	0.00	0.00	0 00	0.00	0.00	0.00	68.37	68.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.04	68.04	0.00	0.00	198.00	198.00	100.0
11/17/2012	0.00	0.00	61.48	61.48	0.00	0.00	0 00	0.00	0.00	0.00	68.36	68.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.12	68.12	0.00	0.00	197.97	197.97	100.0
11/18/2012	0.00	0.00	60.43	60.43	0.00	0.00	0 00	0.00	0.00	0.00	67.27	67.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	66.74	66.79	0.00	0.05	194.43	194.48	100.0
11/19/2012	0.00	0.00	60.39	60.39	0.00	0.00	0 00	0.00	0.00	0.00	66.98	66.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.48	66.48	0.00	0.00	193.85	193.85	100.0
11/20/2012	0.00	0.00	61.64	61.64	0.00	0.00	0 00	0.00	0.00	0.00	69.55	69.55	0.00	0.00	0 00	0.00	0.00	0.03	16.15	16.19	0.04	0.00	47.57	47.60	0.04	0.03	194.90	194.98	100.0
11/21/2012	0.00	0.00	64.29	64.29	0.00	0.00	0 00	0.00	0.00	0.05	73.57	73.62	0.00	0.24	0.01	0.26	0.00	0.00	45.97	45.97	0.00	0.02	12.31	12.33	0.00	0.31	196.16	196.47	99.8
11/22/2012	0.00	0.00	34.53	34.53	0.00	0.05	41.44	41.49	0.01	0.00	26.94	26.94	0.00	0.26	25.13	25.39	0.00	0.00	4.64	4.64	0.00	0.05	64.90	64.95	0.01	0.35	197.58	197.94	99.8
11/23/2012	0.00	0.00	0.00	0.00	0.00	0.00	68.54	68.54	0.00	0.00	28.63	28.63	0.00	0.00	34.80	34.80	0.00	0.00	0.00	0.00	0.00	0.00	66.05	66.05	0.00	0.00	198.02	198.02	100.0
11/24/2012	0.00	0.00	0.00	0.00	0.00	0.00	66.00	66.00	0.00	0.00	64.71	64.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.25	67.25	0.00	0.00	197.96	197.96	100.0
11/25/2012	0.00	0.00	0.00	0.00	0.00	0.00	65.90	65.90	0.00	0.00	64.72	64.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.38	67.38	0.00	0.00	197.99	197.99	100.0
11/26/2012	0.00	0.00	0.00	0.00	0.00	0.00	65.80	65.80	0.00	0.00	64.70	64.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.46	67.46	0.00	0.00	197.96	197.96	100.0
11/27/2012	0.00	0.00	0.00	0.00	0.00	0.00	65.75	65.75	0.00	0.00	64.70	64.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	67.45	67.49	0.00	0.05	197.90	197.95	100.0
11/28/2012	0.00	0.00	0.00	0.00	0.00	0.00	65.73	65.73	0.00	0.00	64.72	64.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.50	67.50	0.00	0.00	197.95	197.95	100.0
11/29/2012	0.00	0.00	0.00	0.00	0.00	0.00	65.68	65.68	0.00	0.00	64.71	64.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	67.50	67.55	0.00	0.05	197.89	197.94	100.0
11/30/2012	0.00	0.06	45.36	45.42	0.00	0.36	30.08	30.44	0.01	0.00	17.46	17.46	0.00	0.00	11.12	11.13	0.00	0.00	28.93	28.93	0.00	0.01	64.40	64.41	0.01	0.43	197.35	197.79	99.8

Total [ML] 0.12 0.06 1241.76 1241.93 0.00 0.41 1387.54 1387.95 0.01 0.22 1021.64 1021.87 0.00 0.58 71.79 72.37 0.17 0.04 166.36 166.56 0.04 0.21 1996.10 1996.35 0.34 1.51 5885.18 5887.03

Report Created: Monday, December 03, 2012

Water Volume [%]:

Untreated 0.01%
Below Dose 0.03%
To Dose 99.97%

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\11-2012

Notes 1. UV Comparative Dose: 18.1 mJ/cm2

Submitted By (Print): A.Weremy

Signature: Original signed by A.Weremy

UV Monitoring Report – Monthly



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

Reactor: UVR-100A
Report Period: November 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours										Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
11/1/2012	96.46	20.0	24.7	24.1	71.9	75.6	73.8	183.9	75.5	79.8	161.6	116.3	115.8	178.1	116.5	117.9	4560	1277	2678	4056	1785	1784	133	3798	1623	100.0	0.00	0.00	73.79	73.79
11/2/2012	96.60	0.0	57.7	24.3	2.3	77.6	56.9	136.5	56.9	93.3	171.1	105.2	105.2	188.9	94.2	124.8	4560	1277	2679	4079	1809	1807	157	3822	1647	99.8	0.11	0.00	56.71	56.82
11/3/2012	96.58	19.3	27.9	24.3	49.9	53.5	51.9	OL	OL	OL	176.6	100.9	102.1	208.4	83.5	130.5	4560	1277	2679	4103	1833	1831	181	3846	1671	100.0	0.00	0.00	51.87	51.87
11/4/2012	96.38	20.0	38.5	24.4	13.2	53.6	51.5	108.5	47.7	89.8	174.6	99.4	99.4	219.7	83.6	128.1	4560	1277	2679	4126	1856	1854	204	3868	1694	100.0	0.00	0.00	50.14	50.14
11/5/2012	95.86	19.8	26.7	24.4	50.6	55.4	53.1	124.9	53.9	78.9	173.8	100.1	96.5	220.3	84.2	127.2	4567	1283	2685	4174	1904	1902	252	3916	1742	100.0	0.00	0.00	53.13	53.13
11/6/2012	95.64	20.5	35.8	24.3	26.9	63.6	52.4	OL	OL	OL	174.6	100.1	97.0	219.8	85.0	125.7	4567	1283	2685	4198	1928	1926	276	3940	1766	100.0	0.00	0.00	52.42	52.42
11/7/2012	96.09	19.9	27.7	24.6	48.8	52.1	50.5	OL	OL	OL	180.9	102.6	98.5	226.2	81.9	127.9	4567	1283	2685	4222	1952	1950	300	3964	1790	100.0	0.00	0.00	50.49	50.49
11/8/2012	96.35	20.1	32.8	24.4	32.1	52.0	50.5	OL	OL	OL	178.0	100.5	94.4	223.2	82.0	121.6	4567	1283	2685	4246	1976	1974	324	3988	1814	100.0	0.00	0.00	50.53	50.53
11/9/2012	96.01	20.2	31.1	24.3	29.7	52.0	50.4	OL	OL	OL	163.5	94.8	84.5	207.5	81.9	109.9	4567	1283	2685	4270	2000	1998	348	4012	1838	100.0	0.00	0.00	50.35	50.35
11/10/2012	96.05	20.2	25.2	24.3	47.0	52.0	49.4	OL	OL	OL	164.4	94.7	82.0	206.5	80.4	109.6	4567	1283	2685	4294	2024	2022	372	4036	1862	100.0	0.00	0.00	49.41	49.41
11/11/2012	96.64	20.1	24.8	24.3	45.4	50.3	48.2	OL	OL	OL	164.1	94.0	79.2	205.4	78.3	116.2	4567	1283	2685	4318	2048	2046	396	4060	1886	100.0	0.00	0.00	48.16	48.16
11/12/2012	96.70	20.2	26.4	24.3	45.7	48.9	47.4	OL	OL	OL	158.7	91.0	77.3	199.3	77.1	102.8	4567	1283	2685	4342	2072	2070	420	4084	1910	100.0	0.00	0.00	47.39	47.39
11/13/2012	96.65	20.3	24.8	24.2	45.0	48.9	47.4	OL	OL	OL	156.2	88.0	77.4	196.4	77.1	96.1	4567	1283	2685	4366	2096	2094	444	4108	1934	100.0	0.00	0.00	47.39	47.39
11/14/2012	96.62	20.2	24.8	24.2	45.2	62.0	48.6	OL	OL	OL	155.3	87.7	79.2	194.9	79.2	96.2	4567	1283	2685	4390	2120	2118	468	4132	1958	100.0	0.00	0.00	48.62	48.62
11/15/2012	96.55	19.9	24.7	24.1	45.1	68.3	61.6	OL	OL	OL	155.2	99.0	99.0	191.3	99.0	101.9	4567	1283	2685	4414	2144	2142	492	4156	1982	100.0	0.00	0.00	61.65	61.65
11/16/2012	96.49	19.9	24.7	24.1	59.1	63.5	61.6	OL	OL	OL	150.8	98.9	99.0	186.0	98.8	100.3	4567	1283	2685	4438	2168	2166	516	4180	2006	100.0	0.00	0.00	61.59	61.59
11/17/2012	96.37	19.8	24.6	24.1	58.8	63.4	61.5	OL	OL	OL	148.5	98.8	98.6	184.0	98.8	100.0	4567	1283	2685	4462	2192	2190	540	4204	2030	100.0	0.00	0.00	61.48	61.48
11/18/2012	96.34	20.0	24.7	24.1	58.1	63.9	60.4	OL	OL	OL	145.9	97.1	97.1	181.2	97.2	97.8	4567	1283	2685	4486	2216	2214	564	4228	2054	100.0	0.00	0.00	60.43	60.43
11/19/2012	96.35	20.0	24.7	24.1	57.5	63.0	60.4	OL	OL	OL	143.3	97.0	97.0	178.4	97.1	97.6	4567	1283	2685	4510	2240	2238	588	4252	2078	100.0	0.00	0.00	60.39	60.39
11/20/2012	96.48	19.8	26.7	24.1	56.3	66.3	61.6	OL	OL	OL	142.9	99.2	98.7	178.1	99.1	99.6	4567	1283	2685	4534	2264	2262	612	4276	2102	100.0	0.00	0.00	61.64	61.64
11/21/2012	96.58	19.9	25.1	24.1	56.9	98.2	64.3	OL	OL	OL	143.7	103.3	103.0	179.3	103.3	104.1	4567	1283	2685	4549	2279	2277	627	4292	2117	100.0	0.00	0.00	64.29	64.29
11/22/2012	96.95	20.0	26.9	24.2	33.1	64.8	57.7	OL	OL	OL	145.8	93.3	92.8	183.5	93.6	97.6	4567	1283	2685	4549	2279	2277	627	4292	2117	100.0	0.00	0.00	34.53	34.53
11/23/2012	96.82	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4567	1283	2685	4549	2279	2277	627	4292	2117	OL	0.00	0.00	0.00	0.00
11/24/2012	96.32	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4567	1283	2685	4549	2279	2277	627	4292	2117	OL	0.00	0.00	0.00	0.00
11/25/2012	96.28	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4567	1283	2685	4549	2279	2277	627	4292	2117	OL	0.00	0.00	0.00	0.00
11/26/2012	96.03	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4567	1283	2685	4549	2279	2277	627	4292	2117	OL	0.00	0.00	0.00	0.00
11/27/2012	96.02	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4567	1283	2685	4549	2279	2277	627	4292	2117	OL	0.00	0.00	0.00	0.00
11/28/2012	95.73	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4567	1283	2685	4549	2279	2277	627	4292	2117	OL	0.00	0.00	0.00	0.00
11/29/2012	95.68	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4567	1283	2685	4549	2279	2277	627	4292	2117	OL	0.00	0.00	0.00	0.00
11/30/2012	95.58	0.5	55.1	24.0	4.1	91.2	84.6	242.5	135.2	134.9	166.0	98.1	115.0	195.8	134.0	143.8	4579	1295	2697	4550	2279	2278	639	4304	2129	99.9	0.00	0.06	45.36	45.42

Report Created: Monday, December 03, 2012

Total [ML]:0.120.061241.761241.93

Water Volume [%]:

Untreated0.01 %
Below Dose0.00 %
To Dose99.99 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm2
2. OL - Off Line

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UV Monitoring Report – Monthly



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

Reactor: UVR-200A
Report Period: November 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours										Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
		OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1613	1613	1613	1612	1096	3711	1614	1615	1614	OL	0.00	0.00	0.00	0.00
11/1/2012	96.46	21.4	25.0	24.3	47.4	70.6	66.8	193.1	88.8	127.4	206.8	117.2	68.4	271.4	89.5	105.9	1630	1630	1630	1621	1105	3719	1631	1631	1631	100.0	0.00	0.00	46.96	46.96
11/2/2012	96.60	21.6	27.1	24.2	67.8	71.1	69.3	245.4	120.1	153.5	OL	OL	OL	282.0	112.5	115.6	1654	1654	1654	1621	1105	3719	1655	1655	1655	100.0	0.00	0.00	69.33	69.33
11/3/2012	96.58	21.3	35.7	24.3	14.8	71.1	68.3	240.1	129.5	148.2	108.6	67.7	51.0	268.4	111.0	113.9	1677	1677	1678	1622	1105	3720	1678	1679	1678	100.0	0.00	0.00	68.60	68.60
11/4/2012	96.38	21.6	26.8	24.2	68.5	73.8	71.4	234.8	130.0	139.3	OL	OL	OL	259.8	116.2	117.3	1725	1725	1726	1622	1105	3720	1726	1727	1726	100.0	0.00	0.00	71.44	71.44
11/5/2012	95.86	21.5	27.4	24.2	36.6	83.5	70.6	229.1	130.4	138.7	OL	OL	OL	257.1	114.4	115.9	1749	1749	1750	1622	1105	3720	1750	1751	1750	100.0	0.00	0.00	70.56	70.56
11/6/2012	95.64	21.7	27.8	24.2	65.6	69.8	68.0	229.2	131.0	140.0	OL	OL	OL	263.1	110.3	111.4	1773	1773	1774	1622	1105	3720	1774	1775	1774	100.0	0.00	0.00	67.94	67.94
11/7/2012	96.09	21.8	27.1	24.2	49.2	69.6	67.9	220.8	126.7	131.6	OL	OL	OL	258.6	110.1	110.8	1797	1797	1798	1622	1105	3720	1798	1799	1798	100.0	0.00	0.00	67.91	67.91
11/8/2012	96.35	21.7	26.0	24.2	47.7	69.4	67.8	202.2	117.0	115.1	OL	OL	OL	241.2	110.0	110.0	1821	1821	1822	1622	1105	3720	1822	1823	1822	100.0	0.00	0.00	67.78	67.78
11/9/2012	96.01	21.5	25.3	24.2	63.6	69.8	66.7	199.2	116.9	112.4	OL	OL	OL	238.5	108.1	108.2	1845	1845	1846	1622	1105	3720	1846	1847	1846	100.0	0.00	0.00	66.66	66.66
11/10/2012	96.05	21.5	24.9	24.1	62.1	68.4	65.1	196.5	114.9	106.6	OL	OL	OL	237.1	105.6	105.6	1869	1869	1870	1622	1105	3720	1870	1871	1870	100.0	0.00	0.00	65.11	65.11
11/11/2012	96.64	21.7	24.6	24.1	61.9	65.7	64.2	189.0	110.5	103.7	OL	OL	OL	229.8	103.9	103.8	1893	1893	1894	1622	1105	3720	1894	1895	1894	100.0	0.00	0.00	64.17	64.17
11/12/2012	96.70	21.8	24.5	24.1	61.6	65.6	64.1	183.1	106.7	103.6	OL	OL	OL	225.4	103.8	103.6	1917	1917	1917	1622	1105	3720	1918	1919	1918	100.0	0.00	0.00	64.16	64.16
11/13/2012	96.65	21.7	33.6	24.1	10.6	68.5	64.9	180.2	106.3	104.7	OL	OL	OL	222.4	105.0	104.7	1917	1917	1917	1622	1105	3720	1918	1919	1918	100.0	0.00	0.00	62.01	62.01
11/14/2012	96.62	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1917	1917	1917	1622	1105	3720	1918	1919	1918	OL	0.00	0.00	0.00	0.00
11/15/2012	96.55	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1917	1917	1917	1622	1105	3720	1918	1919	1918	OL	0.00	0.00	0.00	0.00
11/16/2012	96.49	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1917	1917	1917	1622	1105	3720	1918	1919	1918	OL	0.00	0.00	0.00	0.00
11/17/2012	96.37	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1917	1917	1917	1622	1105	3720	1918	1919	1918	OL	0.00	0.00	0.00	0.00
11/18/2012	96.34	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1917	1917	1917	1622	1105	3720	1918	1919	1918	OL	0.00	0.00	0.00	0.00
11/19/2012	96.35	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1917	1917	1917	1622	1105	3720	1918	1919	1918	OL	0.00	0.00	0.00	0.00
11/20/2012	96.48	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1917	1917	1918	1622	1105	3720	1918	1919	1918	OL	0.00	0.00	0.00	0.00
11/21/2012	96.58	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1917	1917	1918	1622	1105	3720	1918	1919	1918	OL	0.00	0.00	0.00	0.00
11/22/2012	96.95	17.9	25.5	24.1	21.6	72.2	69.7	172.0	105.7	104.9	132.9	55.4	69.5	212.7	105.8	105.1	1931	1930	1931	1625	1109	3723	1931	1932	1931	99.9	0.00	0.05	41.44	41.49
11/23/2012	96.82	21.7	24.6	24.1	58.3	72.3	68.5	176.1	110.5	110.3	OL	OL	OL	220.7	111.2	110.8	1955	1954	1955	1625	1109	3723	1955	1956	1955	100.0	0.00	0.00	68.54	68.54
11/24/2012	96.32	21.6	24.6	24.1	64.3	69.0	66.0	160.4	106.5	106.1	OL	OL	OL	208.2	106.5	106.3	1979	1978	1979	1625	1109	3723	1979	1980	1979	100.0	0.00	0.00	66.00	66.00
11/25/2012	96.28	21.6	24.5	24.1	64.4	67.8	65.9	156.8	106.4	105.9	OL	OL	OL	205.7	106.7	106.1	2003	2002	2003	1625	1109	3723	2003	2004	2003	100.0	0.00	0.00	65.90	65.90
11/26/2012	96.03	21.6	24.6	24.1	64.1	67.7	65.8	153.3	106.2	105.8	OL	OL	OL	201.9	106.3	106.0	2027	2026	2027	1625	1109	3723	2027	2028	2027	100.0	0.00	0.00	65.80	65.80
11/27/2012	96.02	21.6	24.7	24.1	63.8	67.8	65.8	155.3	106.2	105.8	OL	OL	OL	202.3	106.2	105.9	2051	2050	2051	1625	1109	3723	2051	2052	2051	100.0	0.00	0.00	65.75	65.75
11/28/2012	95.73	21.6	24.7	24.1	64.1	67.8	65.7	152.9	106.1	105.7	OL	OL	OL	196.4	106.2	105.9	2075	2074	2075	1625	1109	3723	2075	2076	2075	100.0	0.00	0.00	65.73	65.73
11/29/2012	95.68	21.6	24.6	24.1	64.1	67.8	65.7	152.5	106.0	105.7	OL	OL	OL	195.3	106.1	105.8	2099	2098	2099	1625	1109	3723	2099	2100	2099	100.0	0.00	0.00	65.68	65.68
11/30/2012	95.58	10.2	27.5	24.0	2.1	102.4	65.2	152.8	94.0	91.0	130.6	91.9	63.1	196.6	90.8	90.3	2111	2111	2111	1630	1113	3728	2112	2112	2112	98.8	0.00	0.36	30.08	30.44

Report Created: Monday, December 03, 2012

Total [ML]:0.000.411387.541387.95

Water Volume [%]:

Untreated0.00 %
Below Dose0.03 %
To Dose99.97 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm2
2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\11-2012

UV Monitoring Report – Monthly



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

Reactor: UVR-300A
Report Period: November 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours										Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
11/1/2012	96.46	21.9	25.0	24.3	52.8	59.0	56.2	OL	OL	OL	121.1	90.7	93.4	90.8	90.8	90.9	3140	3140	3140	3081	3081	3081	3213	3213	3213	100.0	0.00	0.00	56.22	56.22
11/2/2012	96.60	14.5	33.3	24.2	4.5	82.5	56.5	39.9	30.8	77.7	123.7	92.2	95.4	90.6	91.2	34.9	3140	3140	3140	3088	3088	3088	3220	3220	3220	99.2	0.00	0.13	16.76	16.90
11/3/2012	96.58	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3140	3140	3140	3088	3088	3088	3220	3220	3220	OL	0.00	0.00	0.00	0.00
11/4/2012	96.38	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3140	3140	3140	3088	3088	3088	3220	3220	3220	OL	0.00	0.00	0.00	0.00
11/5/2012	95.86	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3140	3140	3140	3088	3088	3088	3220	3220	3220	OL	0.00	0.00	0.00	0.00
11/6/2012	95.64	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3140	3140	3140	3088	3088	3088	3220	3220	3220	OL	0.00	0.00	0.00	0.00
11/7/2012	96.09	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3141	3140	3140	3088	3088	3088	3220	3220	3220	OL	0.00	0.00	0.00	0.00
11/8/2012	96.35	14.6	18.2	16.4	41.7	52.2	47.0	32.5	23.4	120.6	104.3	99.0	113.1	85.1	102.2	1.2	3141	3141	3140	3089	3088	3088	3220	3220	3220	34.7	0.00	0.04	0.02	0.06
11/9/2012	96.01	31.4	53.5	40.1	30.0	61.2	48.1	122.6	87.2	183.5	108.5	107.6	128.9	103.5	120.7	2.7	3141	3141	3140	3089	3088	3088	3220	3220	3220	100.0	0.00	0.00	0.22	0.22
11/10/2012	96.05	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3141	3141	3140	3089	3088	3088	3220	3220	3220	OL	0.00	0.00	0.00	0.00
11/11/2012	96.64	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3141	3141	3140	3089	3088	3088	3220	3220	3220	OL	0.00	0.00	0.00	0.00
11/12/2012	96.70	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3141	3141	3140	3089	3088	3088	3220	3220	3220	OL	0.00	0.00	0.00	0.00
11/13/2012	96.65	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3141	3141	3141	3089	3089	3088	3221	3220	3220	OL	0.00	0.00	0.00	0.00
11/14/2012	96.62	23.9	63.4	25.3	10.7	70.9	68.2	113.9	104.5	163.0	119.3	108.7	137.2	84.8	109.5	2.4	3165	3165	3165	3113	3113	3112	3221	3220	3220	100.0	0.00	0.00	3.21	3.21
11/15/2012	96.55	21.6	25.3	24.2	45.8	72.7	69.9	113.0	112.2	125.8	114.6	112.3	114.6	OL	OL	OL	3189	3189	3189	3137	3137	3136	3221	3220	3220	100.0	0.00	0.00	69.81	69.81
11/16/2012	96.49	21.5	25.0	24.1	65.2	70.9	68.5	110.1	109.9	110.5	110.0	110.0	110.1	OL	OL	OL	3213	3213	3213	3161	3161	3160	3221	3220	3220	100.0	0.00	0.00	68.37	68.37
11/17/2012	96.37	21.5	25.0	24.2	64.1	70.8	68.5	110.1	110.0	113.8	110.0	110.0	110.0	OL	OL	OL	3237	3237	3237	3185	3185	3184	3221	3220	3220	100.0	0.00	0.00	68.36	68.36
11/18/2012	96.34	21.5	24.9	24.2	63.6	70.9	67.4	108.4	108.2	144.2	108.3	108.3	108.4	OL	OL	OL	3261	3261	3261	3209	3209	3208	3221	3220	3220	100.0	0.00	0.00	67.27	67.27
11/19/2012	96.35	21.7	25.0	24.2	63.4	69.8	67.0	107.9	107.8	152.3	107.8	107.8	109.3	OL	OL	OL	3285	3285	3285	3233	3233	3232	3221	3220	3220	100.0	0.00	0.00	66.98	66.98
11/20/2012	96.48	21.7	24.9	24.2	58.8	77.4	69.6	112.0	111.9	147.6	111.9	111.8	115.5	OL	OL	OL	3309	3309	3309	3257	3257	3256	3224	3224	3224	100.0	0.00	0.00	69.55	69.55
11/21/2012	96.58	17.0	32.5	24.1	3.1	78.2	73.7	117.9	112.7	142.3	110.9	111.0	119.9	66.2	64.7	1.3	3320	3319	3319	3267	3267	3267	3235	3235	3235	99.9	0.00	0.05	73.57	73.62
11/22/2012	96.95	21.4	34.8	24.5	10.2	69.7	67.1	104.7	77.6	140.7	68.4	68.4	111.2	69.5	69.7	7.9	3320	3320	3319	3277	3277	3277	3245	3244	3244	100.0	0.01	0.00	26.94	26.94
11/23/2012	96.82	23.8	68.0	24.5	21.8	66.2	64.6	121.4	93.3	176.4	108.4	110.4	114.5	106.0	110.5	90.9	3333	3332	3332	3301	3301	3301	3269	3268	3268	100.0	0.00	0.00	28.63	28.63
11/24/2012	96.32	21.3	25.2	24.4	62.2	67.2	64.7	88.6	68.1	141.6	93.1	83.8	82.7	82.7	82.6	82.4	3357	3356	3356	3325	3325	3325	3293	3292	3292	100.0	0.00	0.00	64.71	64.71
11/25/2012	96.28	21.0	25.3	24.4	61.8	66.9	64.8	68.3	66.5	76.1	90.0	66.6	66.2	66.6	66.5	66.2	3381	3380	3380	3349	3349	3349	3317	3316	3316	100.0	0.00	0.00	64.72	64.72
11/26/2012	96.03	20.8	25.5	24.4	60.4	66.6	64.7	66.5	66.3	66.2	91.6	66.4	66.2	66.6	66.7	66.3	3405	3404	3404	3373	3373	3373	3341	3340	3340	100.0	0.00	0.00	64.70	64.70
11/27/2012	96.02	21.1	25.3	24.4	62.2	66.8	64.7	66.6	66.4	66.2	94.6	66.4	66.1	66.5	67.6	66.4	3429	3428	3428	3397	3397	3397	3365	3364	3364	100.0	0.00	0.00	64.70	64.70
11/28/2012	95.73	20.7	24.9	23.7	62.3	66.9	64.8	66.6	66.3	63.6	93.1	66.6	66.2	66.6	68.7	66.4	3453	3452	3452	3421	3421	3421	3389	3388	3388	100.0	0.00	0.00	64.72	64.72
11/29/2012	95.68	19.6	24.2	23.0	61.7	67.2	64.8	66.6	66.2	61.2	92.2	66.4	66.2	66.6	69.0	66.5	3460	3460	3460	3429	3428	3428	3396	3396	3396	100.0	0.00	0.00	64.71	64.71
11/30/2012	95.58	21.5	29.2	22.8	43.3	66.6	64.7	67.8	66.6	60.3	92.2	66.1	65.9	66.3	68.9	27.6	3460	3460	3460	3429	3428	3428	3396	3396	3396	100.0	0.01	0.00	17.46	17.46

Report Created: Monday, December 03, 2012

Total [ML]:0.010.221021.641021.87

Water Volume [%]:

Untreated0.00 %
Below Dose0.02 %
To Dose99.98 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm2
2. OL - Off Line

UV Monitoring Report – Monthly



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

Reactor: UVR-400A
Report Period: November 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours										Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
11/1/2012	96.46	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4472	473	OL	0.00	0.00	0.00	0.00
11/2/2012	96.60	14.2	26.3	21.8	46.3	117.8	67.6	83.6	63.7	50.0	98.6	79.6	77.5	97.0	98.6	114.6	125	125	3215	474	474	474	473	4473	473	90.4	0.00	0.08	0.72	0.79
11/3/2012	96.58	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/4/2012	96.38	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/5/2012	95.86	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/6/2012	95.64	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/7/2012	96.09	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/8/2012	96.35	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/9/2012	96.01	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/10/2012	96.05	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/11/2012	96.64	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/12/2012	96.70	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/13/2012	96.65	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/14/2012	96.62	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/15/2012	96.55	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/16/2012	96.49	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/17/2012	96.37	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/18/2012	96.34	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/19/2012	96.35	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3215	474	474	474	473	4473	473	OL	0.00	0.00	0.00	0.00
11/20/2012	96.48	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	125	125	3216	474	474	475	473	4473	473	OL	0.00	0.00	0.00	0.00
11/21/2012	96.58	14.4	33.4	18.3	8.7	72.8	52.7	58.6	41.2	30.0	88.9	85.8	80.9	90.9	92.8	117.3	134	134	3225	483	483	484	482	4482	482	4.7	0.00	0.24	0.01	0.26
11/22/2012	96.95	13.9	52.4	26.6	29.6	66.7	62.1	122.3	70.1	74.9	120.1	78.2	94.5	106.3	99.1	128.8	149	148	3239	498	498	498	496	4496	497	99.0	0.00	0.26	25.13	25.39
11/23/2012	96.82	20.6	26.0	24.4	51.7	64.9	62.3	111.2	64.4	63.9	109.0	65.4	67.3	102.7	88.8	109.1	149	148	3239	498	498	498	496	4496	497	100.0	0.00	0.00	34.80	34.80
11/24/2012	96.32	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	149	148	3239	498	498	498	496	4496	497	OL	0.00	0.00	0.00	0.00
11/25/2012	96.28	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	149	148	3239	498	498	498	496	4496	497	OL	0.00	0.00	0.00	0.00
11/26/2012	96.03	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	149	148	3239	498	498	498	496	4496	497	OL	0.00	0.00	0.00	0.00
11/27/2012	96.02	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	149	148	3239	498	498	498	496	4496	497	OL	0.00	0.00	0.00	0.00
11/28/2012	95.73	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	149	148	3239	498	498	498	496	4496	497	OL	0.00	0.00	0.00	0.00
11/29/2012	95.68	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	149	148	3239	498	498	498	496	4496	497	OL	0.00	0.00	0.00	0.00
11/30/2012	95.58	0.0	35.0	24.1	2.5	64.6	56.9	70.9	57.3	58.4	88.9	62.1	61.4	75.8	71.5	85.2	153	153	3244	503	502	503	501	4501	502	100.0	0.00	0.00	11.12	11.13

Report Created: Monday, December 03, 2012

Total [ML]:0.000.5871.7972.37

Water Volume [%]:

Untreated0.00 %
Below Dose0.80 %
To Dose99.20 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm2
2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\11-2012

UV Monitoring Report – Monthly



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

Reactor: UVR-500A
Report Period: November 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status									% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours										Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
11/1/2012	96.46	21.4	24.8	24.2	52.8	57.6	55.0	89.4	89.2	88.9	OL	OL	OL	88.8	88.8	88.8	1887	1542	3648	2096	3675	2529	245	245	244	100.0	0.00	0.00	54.95	54.95
11/2/2012	96.60	0.0	28.9	23.9	14.7	70.7	54.8	93.4	89.6	88.4	33.2	60.5	3.3	88.1	88.4	88.4	1893	1549	3655	2096	3675	2529	252	252	251	98.9	0.16	0.00	15.71	15.88
11/3/2012	96.58	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/4/2012	96.38	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/5/2012	95.86	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/6/2012	95.64	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/7/2012	96.09	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/8/2012	96.35	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/9/2012	96.01	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/10/2012	96.05	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/11/2012	96.64	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/12/2012	96.70	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/13/2012	96.65	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/14/2012	96.62	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/15/2012	96.55	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/16/2012	96.49	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/17/2012	96.37	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/18/2012	96.34	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1893	1549	3655	2096	3675	2529	252	252	251	OL	0.00	0.00	0.00	0.00
11/19/2012	96.35	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1900	1555	3661	2096	3676	2529	258	258	257	OL	0.00	0.00	0.00	0.00
11/20/2012	96.48	17.9	88.8	26.6	4.1	67.9	54.5	141.8	103.6	388.4	163.3	133.8	212.5	189.9	105.9	138.6	1900	1555	3661	2096	3676	2529	258	258	257	99.8	0.00	0.03	16.15	16.19
11/21/2012	96.58	21.3	35.7	24.4	4.2	58.0	55.3	116.9	90.0	246.4	OL	OL	OL	180.5	95.7	113.3	1921	1576	3682	2096	3676	2529	279	279	278	100.0	0.00	0.00	45.97	45.97
11/22/2012	96.95	21.4	42.9	24.4	15.9	71.3	68.1	111.4	104.2	206.4	110.7	87.5	75.9	140.1	114.6	110.2	1922	1578	3684	2096	3676	2530	281	280	280	100.0	0.00	0.00	4.64	4.64
11/23/2012	96.82	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1922	1578	3684	2096	3676	2530	281	280	280	OL	0.00	0.00	0.00	0.00
11/24/2012	96.32	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1922	1578	3684	2096	3676	2530	281	280	280	OL	0.00	0.00	0.00	0.00
11/25/2012	96.28	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1922	1578	3684	2096	3676	2530	281	280	280	OL	0.00	0.00	0.00	0.00
11/26/2012	96.03	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1922	1578	3684	2096	3676	2530	281	280	280	OL	0.00	0.00	0.00	0.00
11/27/2012	96.02	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1922	1578	3684	2096	3676	2530	281	280	280	OL	0.00	0.00	0.00	0.00
11/28/2012	95.73	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1922	1578	3684	2096	3676	2530	281	280	280	OL	0.00	0.00	0.00	0.00
11/29/2012	95.68	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	1922	1578	3684	2096	3676	2530	281	280	280	OL	0.00	0.00	0.00	0.00
11/30/2012	95.58	20.1	27.5	24.7	27.5	47.1	40.3	41.9	42.2	43.1	46.6	44.8	42.0	117.4	86.4	86.7	1939	1594	3700	2113	3692	2546	297	297	296	100.0	0.00	0.00	28.93	28.93

Report Created: Monday, December 03, 2012

Total [ML]: 0.17 0.04 166.36 166.56

Water Volume [%]:

Untreated 0.10 %
Below Dose 0.02 %
To Dose 99.88 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm2
2. OL - Off Line

UV Monitoring Report – Monthly



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

Reactor: UVR-600A
Report Period: November 2012

Date	Transmittance	UV Dose			Reactor Flow			Average UV Lamp Intensity									UV Lamp Status										% Volume Treated to Validated Conditions	Daily Totals			
	%	mJ/cm2			MLD			W/m2									Hours											Water Volume [ML]			
		Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated		Below Dose	To Dose	Total	
11/1/2012	96.46	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2806	667	667	915	915	916	2220	823	823	OL	0.00	0.00	0.00	0.00	
11/2/2012	96.60	19.4	55.8	24.2	6.0	79.5	74.2	116.1	78.9	81.0	117.5	115.9	113.7	131.1	115.5	113.5	2808	669	669	932	932	933	2237	840	839	100.0	0.00	0.00	52.36	52.36	
11/3/2012	96.58	19.2	24.7	24.0	75.4	80.6	77.7	OL	OL	OL	124.8	124.8	123.9	133.2	124.2	122.9	2808	669	669	956	956	957	2261	864	863	100.0	0.00	0.00	77.79	77.79	
11/4/2012	96.38	19.7	56.5	24.2	5.6	80.6	76.5	106.5	83.0	76.8	122.8	122.3	122.2	129.5	122.8	120.2	2808	669	669	979	979	980	2284	887	886	100.0	0.00	0.00	76.07	76.07	
11/5/2012	95.86	19.1	31.2	24.2	75.4	82.6	79.2	132.0	80.8	81.2	91.8	84.6	84.6	121.0	86.1	84.6	2853	714	714	1027	1027	1028	2332	935	934	100.0	0.00	0.00	79.16	79.16	
11/6/2012	95.64	19.2	25.3	24.2	66.4	98.0	78.6	142.5	80.0	80.2	88.2	82.2	80.0	121.3	80.0	79.6	2877	738	738	1051	1051	1052	2356	959	958	100.0	0.00	0.00	78.62	78.62	
11/7/2012	96.09	19.0	24.8	24.2	79.0	83.4	81.6	148.7	82.8	83.0	90.5	85.5	82.9	123.4	82.7	82.3	2901	762	762	1075	1075	1076	2380	983	982	100.0	0.00	0.00	81.54	81.54	
11/8/2012	96.35	19.1	25.6	24.2	65.1	83.1	81.5	141.8	82.8	83.0	85.4	82.9	82.8	119.2	82.8	82.1	2925	786	786	1099	1099	1100	2404	1007	1006	100.0	0.00	0.00	81.45	81.45	
11/9/2012	96.01	19.0	25.6	24.2	60.5	83.4	81.6	128.0	82.9	83.1	83.0	82.9	82.9	109.1	82.7	82.0	2949	810	810	1123	1123	1124	2428	1031	1030	100.0	0.00	0.00	81.57	81.57	
11/10/2012	96.05	19.1	25.0	24.2	77.5	83.0	80.4	128.3	81.7	81.9	81.7	81.7	81.7	109.0	81.6	81.0	2973	834	834	1147	1147	1148	2452	1055	1054	100.0	0.00	0.00	80.38	80.38	
11/11/2012	96.64	19.0	25.1	24.2	74.6	81.6	78.5	124.6	79.9	80.1	79.9	79.9	79.9	107.3	79.8	79.3	2997	858	858	1171	1171	1172	2476	1079	1078	100.0	0.00	0.00	78.51	78.51	
11/12/2012	96.70	18.9	25.0	24.2	74.8	79.3	77.5	118.1	78.8	79.0	78.8	78.8	78.8	103.1	78.9	78.2	3021	882	882	1195	1195	1196	2500	1103	1102	100.0	0.00	0.00	77.50	77.50	
11/13/2012	96.65	18.9	25.2	24.3	74.7	79.3	77.5	114.5	78.9	79.0	78.8	78.8	78.8	100.8	78.8	78.1	3045	906	906	1219	1219	1220	2524	1127	1126	100.0	0.00	0.00	77.50	77.50	
11/14/2012	96.62	18.1	25.0	24.2	62.5	82.2	78.2	112.4	79.5	79.7	81.8	79.8	79.1	100.1	79.6	79.0	3069	930	930	1243	1243	1244	2548	1151	1150	100.0	0.00	0.00	78.19	78.19	
11/15/2012	96.55	18.1	25.6	24.3	59.3	70.4	66.3	106.1	67.7	67.8	81.4	73.3	67.6	98.0	67.9	67.8	3093	954	954	1267	1267	1268	2572	1175	1174	100.0	0.00	0.00	66.31	66.31	
11/16/2012	96.49	18.4	25.3	24.3	65.5	70.7	67.9	101.4	69.4	69.4	77.5	72.2	69.4	96.8	69.5	69.4	3117	978	978	1291	1291	1292	2596	1199	1198	100.0	0.00	0.00	68.04	68.04	
11/17/2012	96.37	18.3	25.3	24.3	65.5	70.8	68.1	104.7	69.5	69.5	77.0	72.2	69.4	96.4	69.6	69.5	3141	1002	1002	1315	1315	1316	2620	1223	1222	100.0	0.00	0.00	68.12	68.12	
11/18/2012	96.34	18.0	25.1	24.3	63.2	70.7	66.7	102.5	68.2	68.2	75.9	71.1	68.2	95.6	68.3	68.3	3165	1026	1026	1339	1339	1340	2644	1247	1246	99.9	0.00	0.05	66.74	66.79	
11/19/2012	96.35	18.4	25.2	24.3	63.6	69.6	66.4	102.5	67.8	68.0	75.7	70.8	67.9	94.3	68.0	68.0	3183	1044	1044	1357	1357	1358	2662	1265	1264	100.0	0.00	0.00	66.48	66.48	
11/20/2012	96.48	0.0	25.7	24.2	40.1	70.8	67.1	102.0	68.5	68.5	75.6	70.8	68.5	94.0	68.7	68.6	3186	1047	1047	1361	1360	1361	2665	1268	1268	99.9	0.04	0.00	47.57	47.60	
11/21/2012	96.58	17.1	25.0	24.2	38.2	91.7	69.3	94.1	71.4	70.2	80.8	73.5	71.5	98.4	73.1	70.1	3209	1070	1069	1383	1383	1383	2688	1291	1290	99.9	0.00	0.02	12.31	12.33	
11/22/2012	96.95	17.8	34.2	24.3	21.5	81.4	69.6	105.0	71.1	71.1	81.1	75.7	71.1	98.7	71.4	70.9	3233	1094	1093	1407	1407	1407	2712	1315	1314	99.9	0.00	0.05	64.90	64.95	
11/23/2012	96.82	18.2	25.1	24.3	58.8	69.3	66.0	107.0	67.5	67.5	78.4	73.2	67.5	96.7	67.6	67.5	3257	1118	1117	1431	1431	1431	2736	1339	1338	100.0	0.00	0.00	66.05	66.05	
11/24/2012	96.32	18.3	25.2	24.3	63.9	69.4	67.3	89.3	68.7	68.7	72.5	68.8	68.7	89.8	68.8	68.8	3281	1142	1141	1455	1455	1455	2760	1363	1362	100.0	0.00	0.00	67.25	67.25	
11/25/2012	96.28	18.5	25.2	24.2	63.6	69.7	67.4	86.0	68.8	68.8	71.8	68.9	68.7	88.8	68.9	68.9	3305	1166	1165	1479	1479	1479	2784	1387	1386	100.0	0.00	0.00	67.38	67.38	
11/26/2012	96.03	18.1	25.1	24.2	63.6	69.9	67.5	80.8	68.9	69.0	71.0	68.9	68.9	86.9	69.0	69.0	3329	1190	1189	1503	1503	1503	2808	1411	1410	100.0	0.00	0.00	67.46	67.46	
11/27/2012	96.02	18.0	25.1	24.2	63.8	69.8	67.5	82.4	68.9	69.0	71.4	69.0	68.9	87.1	69.1	69.0	3353	1214	1213	1527	1527	1527	2832	1435	1434	99.9	0.00	0.05	67.45	67.49	
11/28/2012	95.73	18.1	25.1	24.2	64.5	69.9	67.5	78.8	69.0	69.0	70.2	69.0	69.0	84.6	69.1	69.0	3377	1238	1237	1551	1551	1551	2856	1459	1458	100.0	0.00	0.00	67.50	67.50	
11/29/2012	95.68	17.8	25.4	24.2	64.3	69.7	67.6	79.5	69.0	69.1	69.6	69.0	68.9	84.2	69.1	69.0	3401	1262	1261	1575	1575	1575	2880	1483	1482	99.9	0.00	0.05	67.50	67.55	
11/30/2012	95.58	18.0	25.8	24.3	38.8	89.4	64.5	81.3	65.9	65.9	70.1	69.4	65.9	84.8	66.6	65.9	3402	1263	1262	1576	1576	1576	2881	1484	1483	100.0	0.00	0.01	64.40	64.41	

Report Created: Monday, December 03, 2012

Total [ML]:0.040.211996.101996.35

Water Volume [%]:

Untreated0.00 %
Below Dose0.01 %
To Dose99.99 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm2
2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\11-2012



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code
Licence Number

252.00
PWS 09 412 A

WATER TREATMENT PLANT UV REPORT

Report Period: December 2012

Report Created: Tuesday, January 01, 2013

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	
1/12/2012	95.40	0.00	0.17	76.24	76.41	0.00	0.00	8.15	8.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	42.55	0.00	0.00	70.10	70.10	0.00	0.17	197.03	197.20	99.91
2/12/2012	95.29	0.00	0.00	0.14	0.14	0.00	0.00	84.91	84.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.58	39.58	0.00	0.05	67.23	67.28	0.00	0.05	191.87	191.91	99.98
3/12/2012	95.30	0.01	0.01	35.84	35.86	0.00	0.00	37.70	37.70	0.00	0.00	37.58	37.58	0.00	0.00	0.00	0.00	0.00	0.00	55.88	55.88	0.00	0.00	24.89	24.89	0.01	0.01	191.89	191.91	99.99
4/12/2012	95.50	0.00	0.05	78.23	78.29	0.00	0.00	0.00	0.00	0.00	0.00	55.31	55.31	0.00	0.00	0.00	0.00	0.00	0.00	69.44	69.44	0.00	0.00	0.00	0.00	0.00	0.05	202.99	203.04	99.97
5/12/2012	94.86	0.00	0.17	6.94	7.11	0.00	0.23	16.36	16.60	0.00	0.04	29.81	29.84	0.00	0.00	37.83	37.83	0.00	0.00	45.70	45.70	0.00	0.00	69.21	69.21	0.00	0.44	205.85	206.29	99.79
6/12/2012	94.14	0.00	0.04	0.19	0.23	0.00	0.22	18.27	18.50	0.00	0.05	32.90	32.96	0.00	0.00	0.09	0.09	0.00	0.04	27.65	27.69	0.00	0.00	43.55	43.55	0.00	0.35	122.66	123.01	99.72
7/12/2012	94.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.99	49.99	0.00	0.00	0.00	0.00	0.00	0.00	67.91	67.91	0.00	0.00	85.03	85.03	0.00	0.00	202.93	202.93	100.00
8/12/2012	93.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	70.02	70.02	0.00	0.00	85.06	85.06	0.00	0.00	205.09	205.09	100.00
9/12/2012	93.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.01	50.01	0.00	0.00	0.00	0.00	0.00	0.00	69.98	69.98	0.00	0.00	85.01	85.01	0.00	0.00	204.99	204.99	100.00
10/12/2012	93.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.80	49.80	0.00	0.00	0.00	0.00	0.00	0.00	73.43	73.43	0.00	0.00	84.69	84.69	0.00	0.00	207.91	207.91	100.00
11/12/2012	93.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.09	51.09	0.00	0.00	0.00	0.00	0.00	0.00	74.13	74.13	0.00	0.00	84.79	84.79	0.00	0.00	210.01	210.01	100.00
12/12/2012	93.75	0.00	0.09	29.88	29.97	0.00	0.00	0.00	0.00	0.00	0.00	62.82	62.82	0.00	0.00	0.00	0.00	0.00	0.00	29.05	29.05	0.00	0.00	77.64	77.64	0.00	0.09	199.38	199.48	99.95
13/12/2012	93.96	0.00	0.00	70.94	70.94	0.00	0.00	0.00	0.00	0.00	0.00	47.64	47.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	72.87	72.87	0.00	0.00	191.45	191.45	100.00
14/12/2012	94.03	0.07	0.91	50.61	51.59	0.00	0.00	0.00	0.00	0.00	0.00	54.77	54.77	0.00	0.00	8.78	8.78	0.00	0.00	0.00	0.00	0.00	0.00	73.79	73.79	0.07	0.91	187.95	188.93	99.48
15/12/2012	94.05	0.00	0.00	60.02	60.02	0.00	0.00	0.00	0.00	0.00	0.00	59.32	59.32	0.00	0.00	0.01	0.01	0.00	0.13	18.24	18.36	0.00	0.00	48.54	48.54	0.00	0.13	186.12	186.25	99.93
16/12/2012	94.04	0.00	0.00	59.95	59.95	0.00	0.07	0.02	0.09	0.00	0.00	49.76	49.76	0.00	0.04	72.58	72.62	0.00	0.00	0.55	0.55	0.00	0.00	0.00	0.00	0.00	0.11	182.86	182.97	99.94
17/12/2012	93.33	0.00	0.29	46.03	46.33	0.00	0.00	20.35	20.35	0.00	0.00	49.77	49.77	0.00	0.00	60.97	60.97	0.00	0.02	5.55	5.58	0.00	0.00	0.00	0.00	0.00	0.31	182.69	183.00	99.83
18/12/2012	93.92	0.00	0.00	57.61	57.61	0.00	0.00	24.69	24.69	0.00	0.00	56.83	56.83	0.00	0.00	0.05	0.05	0.00	0.00	43.80	43.80	0.00	0.00	0.06	0.06	0.00	0.00	183.03	183.03	100.00
19/12/2012	93.98	0.00	0.00	50.59	50.59	0.00	0.00	0.00	0.00	0.00	0.00	57.83	57.83	0.00	0.00	0.00	0.00	0.00	0.00	76.46	76.46	0.00	0.00	0.00	0.00	0.00	0.00	184.89	184.89	100.00
20/12/2012	94.01	0.00	0.07	43.52	43.59	0.00	0.00	10.88	10.88	0.00	0.00	28.23	28.23	0.00	0.00	35.92	35.92	0.00	0.00	67.94	67.94	0.00	0.00	0.00	0.00	0.00	0.07	186.48	186.56	99.96
21/12/2012	93.78	0.00	0.04	3.46	3.50	0.00	0.00	71.29	71.29	0.00	0.02	7.34	7.35	0.00	0.00	28.41	28.42	0.00	0.00	45.50	45.50	0.00	0.00	31.48	31.48	0.00	0.06	187.48	187.55	99.96
22/12/2012	93.36	0.00	0.00	5.30	5.30	0.00	0.00	68.35	68.35	0.00	0.04	48.43	48.47	0.00	0.00	0.11	0.11	0.00	0.00	6.87	6.87	0.06	0.06	57.18	57.30	0.06	0.10	186.25	186.41	99.92
23/12/2012	93.38	0.00	0.00	71.11	71.11	0.00	0.00	0.00	0.00	0.00	0.00	48.56	48.56	0.00	0.00	0.00	0.00	0.00	0.00	70.48	70.48	0.00	0.00	0.00	0.00	0.00	0.00	190.16	190.16	100.00
24/12/2012	93.58	0.18	0.74	52.28	53.20	0.00	0.31	0.12	0.43	0.00	0.03	27.81	27.84	0.00	0.10	31.91	32.00	0.00	0.00	72.33	72.33	0.00	0.00	0.00	0.00	0.18	1.17	184.45	185.80	99.27
25/12/2012	93.55	0.00	0.00	69.85	69.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.11	47.11	0.00	0.00	66.06	66.06	0.00	0.00	0.00	0.00	0.00	0.00	183.02	183.02	100.00
26/12/2012	93.48	0.00	0.00	71.65	71.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	48.45	48.48	0.00	0.00	67.97	67.97	0.00	0.00	0.00	0.00	0.00	0.03	188.07	188.10	99.98
27/12/2012	93.48	0.00	0.00	51.73	51.73	0.00	0.00	22.16	22.16	0.00	0.00	19.25	19.25	0.00	0.00	19.68	19.68	0.00	0.00	68.25	68.25	0.00	0.00	12.58	12.58	0.00	0.00	193.65	193.65	100.00
28/12/2012	93.50	0.00	0.00	61.30	61.30	0.00	0.00	40.40	40.40	0.00	0.00	0.00	0.00	0.00	0.00	20.32	20.32	0.00	0.00	72.97	72.97	0.00	0.00	0.00	0.00	0.00	0.00	194.98	194.99	100.00
29/12/2012	93.55	0.00	0.05	65.87	65.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.68	53.68	0.00	0.00	75.39	75.39	0.00	0.00	0.00	0.00	0.00	0.05	194.94	194.99	99.97
30/12/2012	93.57	0.00	0.00	59.50	59.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.84	56.84	0.00	0.00	76.65	76.65	0.00	0.00	0.00	0.00	0.00	0.00	192.99	192.99	100.00
31/12/2012	93.35	0.00	0.00	34.45	34.45	0.00	0.00	33.15	33.15	0.00	0.00	19.65	19.65	0.00	0.00	32.62	32.62	0.00	0.00	73.13	73.13	0.00	0.00	0.00	0.00	0.00	0.00	193.00	193.00	100.00
		0.26	2.64	1213.26	1216.15	0.00	0.83	456.81	457.65	0.00	0.18	1044.52	1044.71	0.00	0.17	555.36	555.53	0.00	0.18	1573.45	1573.63	0.06	0.11	1073.69	1073.86	0.33	4.11	5917.09	5921.53	
Water Volume [%]:																														
Untreated		0.01 %																												
Below Dose		0.07 %																												
To Dose		99.92 %																												

Submitted By (Print): D.Minor

Signature: Original signed by D.Minor



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code
Licence Number

252.00
PWS 09 412 A

WATER TREATMENT PLANT UV REPORT

Report Period: **December 2012**
Reactor: **UVR-100A**

Report Created: **Tuesday, January 01, 2013**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/12/2012	0.0	43.7	23.3	0.0	87.4	84.5	156.8	103.3	99.4	117.4	85.5	85.6	149.0	103.2	103.7	4601	1318	2720	4564	2294	2293	662	4326	2152	99.78	0.00	0.17	76.24	76.41		
2/12/2012	0.0	51.7	24.2	0.0	88.1	50.1	93.1	62.4	44.9	100.0	64.7	51.9	111.6	54.6	52.6	4601	1318	2720	4565	2294	2293	662	4326	2152	100.00	0.00	0.00	0.14	0.14		
3/12/2012	0.0	106.0	24.5	0.0	101.2	69.2	249.7	124.8	121.7	176.7	89.0	119.4	204.7	111.2	142.2	4614	1331	2732	4565	2295	2293	674	4339	2164	99.96	0.01	0.01	35.84	35.86		
4/12/2012	17.1	34.9	24.0	72.6	80.6	78.3	142.8	104.6	103.1	115.9	79.5	79.5	147.3	104.4	104.7	4638	1355	2756	4577	2306	2305	698	4363	2188	99.93	0.00	0.05	78.23	78.29		
5/12/2012	0.0	50.8	21.2	0.0	86.1	77.6	97.0	79.0	65.3	103.6	79.5	79.1	135.0	78.6	78.2	4640	1357	2759	4579	2309	2307	700	4365	2191	97.61	0.00	0.17	6.94	7.11		
6/12/2012	0.0	44.0	23.6	0.0	73.7	48.6	196.6	126.6	39.9	186.4	99.8	50.9	152.3	70.4	80.1	4640	1357	2759	4579	2309	2307	701	4365	2191	83.33	0.00	0.04	0.19	0.23		
7/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4640	1357	2759	4579	2309	2307	701	4365	2191	OL	0.00	0.00	0.00	0.00		
8/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4640	1357	2759	4579	2309	2307	701	4365	2191	OL	0.00	0.00	0.00	0.00		
9/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4640	1357	2759	4579	2309	2307	701	4365	2191	OL	0.00	0.00	0.00	0.00		
10/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4640	1357	2759	4579	2309	2307	701	4365	2191	OL	0.00	0.00	0.00	0.00		
11/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	4640	1357	2759	4579	2309	2307	701	4365	2191	OL	0.00	0.00	0.00	0.00		
12/12/2012	0.0	106.8	24.1	0.0	74.9	71.7	261.8	118.1	115.6	178.9	96.2	101.1	209.5	113.8	138.5	4651	1367	2769	4580	2309	2308	711	4376	2201	99.69	0.00	0.09	29.88	29.97		
13/12/2012	18.7	34.2	24.1	68.6	73.5	70.9	165.3	100.9	99.4	122.4	72.9	72.0	154.1	100.3	101.2	4675	1391	2793	4588	2318	2316	735	4400	2225	100.00	0.00	0.00	70.94	70.94		
14/12/2012	0.0	73.8	23.4	0.0	73.5	60.2	115.2	64.7	81.6	111.9	67.0	61.9	143.3	62.3	61.9	4695	1412	2814	4609	2338	2337	755	4420	2246	98.09	0.07	0.91	50.61	51.59		
15/12/2012	18.9	25.1	24.3	56.0	62.5	60.0	108.8	61.8	66.5	107.0	62.7	61.6	142.5	61.6	61.6	4719	1436	2838	4633	2362	2361	779	4444	2270	100.00	0.00	0.00	60.02	60.02		
16/12/2012	16.4	29.4	24.0	32.0	64.1	60.0	108.5	61.8	60.6	106.6	62.4	61.5	148.0	61.5	61.5	4743	1460	2862	4657	2386	2385	803	4468	2294	100.00	0.00	0.00	59.95	59.95		
17/12/2012	0.0	106.9	22.9	0.0	73.8	56.5	186.2	86.8	77.7	110.9	64.0	64.5	188.4	80.8	78.7	4763	1480	2881	4666	2396	2394	823	4488	2313	99.37	0.00	0.29	46.03	46.33		
18/12/2012	19.4	27.6	24.1	26.1	71.4	57.6	190.8	100.5	95.7	OL	OL	OL	188.6	93.0	93.0	4787	1504	2905	4666	2396	2394	847	4512	2337	100.00	0.00	0.00	57.61	57.61		
19/12/2012	18.1	34.2	24.4	46.2	57.8	50.6	149.9	75.2	61.5	133.3	74.7	55.4	161.3	68.0	68.6	4811	1528	2929	4682	2412	2410	871	4536	2361	100.00	0.00	0.00	50.59	50.59		
20/12/2012	0.0	31.6	23.4	0.0	57.2	51.6	143.7	69.9	49.8	131.4	72.7	55.3	181.9	59.1	79.2	4831	1548	2949	4703	2432	2431	892	4556	2382	99.83	0.00	0.07	43.52	43.59		
21/12/2012	0.0	41.4	23.3	0.0	50.6	44.1	120.0	69.3	41.0	120.1	70.8	57.2	156.8	55.7	93.2	4833	1550	2951	4705	2434	2433	894	4558	2384	98.81	0.00	0.04	3.46	3.50		
22/12/2012	14.8	33.1	23.9	4.9	73.5	69.9	94.8	66.3	24.0	113.1	110.7	110.8	148.3	110.8	111.8	4833	1550	2951	4706	2436	2435	896	4560	2386	100.00	0.00	0.00	5.30	5.30		
23/12/2012	19.7	25.9	24.0	67.4	74.6	71.1	OL	OL	OL	114.3	114.1	114.1	168.9	114.1	121.2	4833	1550	2951	4730	2460	2459	920	4584	2410	100.00	0.00	0.00	71.11	71.11		
24/12/2012	0.0	60.8	23.9	0.0	74.0	70.0	99.7	58.2	22.9	114.1	111.5	111.6	172.4	111.6	134.1	4834	1550	2952	4749	2479	2477	938	4603	2428	98.28	0.18	0.74	52.28	53.20		
25/12/2012	19.7	24.9	24.1	66.6	73.4	69.8	OL	OL	OL	112.6	112.0	112.1	191.1	112.0	129.0	4834	1550	2952	4773	2503	2501	962	4627	2452	100.00	0.00	0.00	69.85	69.85		
26/12/2012	19.6	24.8	24.0	66.7	75.5	71.7	OL	OL	OL	114.9	114.9	114.9	221.5	114.9	125.0	4834	1550	2952	4797	2527	2525	986	4651	2476	100.00	0.00	0.00	71.65	71.65		
27/12/2012	0.0	104.2	24.2	0.0	76.2	64.4	242.3	114.4	109.8	117.6	115.4	115.8	212.7	103.7	123.1	4845	1561	11	4806	2535	2534	1005	4670	2495	100.00	0.00	0.00	51.73	51.73		
28/12/2012	19.0	27.0	24.1	38.9	77.0	61.4	145.8	103.6	99.6	OL	OL	OL	165.0	99.3	100.2	4869	1585	35	4806	2535	2534	1029	4694	2519	100.00	0.00	0.00	61.30	61.30		
29/12/2012	17.1	34.8	23.9	57.1	77.3	65.9	73.5	76.8	73.7	133.8	85.4	84.0	169.2	84.9	84.7	4882	1598	48	4829	2559	2557	1053	4718	2543	99.92	0.00	0.05	65.87	65.93		
30/12/2012	19.8	27.5	24.1	56.9	61.4	59.5	OL	OL	OL	125.4	95.7	95.8	165.9	95.7	95.8	4882	1598	48	4853	2583	2581	1077	4742	2567	100.00	0.00	0.00	59.50	59.50		
31/12/2012	0.0	28.3	24.1	0.0	61.5	59.3	OL	OL	OL	122.8	95.4	95.4	163.6	95.4	95.5	4882	1598	48	4867	2597	2595	1091	4756	2581	100.00	0.00	0.00	34.45	34.45		
Total [ML]:																											0.26	2.64	1213.26	1216.15	

Water Volume [%]:

Untreated 0.02 %
Below Dose 0.22 %
To Dose 99.76 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\12-December



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

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PWS 09 412 A

WATER TREATMENT PLANT UV REPORT

Report Period: **December 2012**
Reactor: **UVR-200A**

Report Created: **Tuesday, January 01, 2013**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose		To Dose	Total		
1/12/2012	17.8	115.6	24.7	4.4	95.7	84.7	205.5	139.4	170.6	191.7	203.1	168.5	225.9	121.8	131.1	2113	2113	2114	1630	1114	3728	2114	2115	2114	100.00	0.00	0.00	8.15	8.15		
2/12/2012	21.1	34.6	24.1	0.0	93.8	84.9	172.3	119.3	123.1	146.7	138.1	86.3	204.8	118.0	119.0	2137	2137	2138	1639	1123	3737	2138	2139	2138	100.00	0.00	0.00	84.91	84.91		
3/12/2012	0.0	37.1	24.2	0.0	87.3	80.5	112.3	82.3	81.8	129.1	132.6	81.9	182.6	81.8	75.5	2149	2148	2149	1650	1134	3748	2149	2150	2149	100.00	0.00	0.00	37.70	37.70		
4/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2149	2148	2149	1650	1134	3748	2149	2150	2149	OL	0.00	0.00	0.00	0.00		
5/12/2012	0.0	53.9	22.5	0.0	109.8	71.4	80.4	73.1	62.5	106.0	104.4	72.6	145.6	73.5	61.4	2154	2154	2155	1656	1140	3754	2155	2156	2155	98.59	0.00	0.23	16.36	16.60		
6/12/2012	0.0	36.7	20.4	0.0	69.6	62.5	83.9	63.4	48.4	108.9	108.7	65.3	172.5	67.2	63.6	2161	2161	2161	1663	1147	3761	2162	2163	2162	98.80	0.00	0.22	18.27	18.50		
7/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2161	2161	2161	1663	1147	3761	2162	2163	2162	OL	0.00	0.00	0.00	0.00		
8/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2161	2161	2161	1663	1147	3761	2162	2163	2162	OL	0.00	0.00	0.00	0.00		
9/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2161	2161	2161	1663	1147	3761	2162	2163	2162	OL	0.00	0.00	0.00	0.00		
10/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2161	2161	2161	1663	1147	3761	2162	2163	2162	OL	0.00	0.00	0.00	0.00		
11/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2161	2161	2161	1663	1147	3761	2162	2163	2162	OL	0.00	0.00	0.00	0.00		
12/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2161	2161	2161	1663	1147	3761	2162	2163	2162	OL	0.00	0.00	0.00	0.00		
13/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2161	2161	2161	1663	1147	3761	2162	2163	2162	OL	0.00	0.00	0.00	0.00		
14/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2161	2161	2161	1663	1147	3761	2162	2163	2162	OL	0.00	0.00	0.00	0.00		
15/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2161	2161	2162	1664	1147	3762	2162	2163	2162	OL	0.00	0.00	0.00	0.00		
16/12/2012	0.0	31.6	20.2	0.0	57.9	37.8	53.4	43.0	30.0	79.4	85.6	42.0	137.7	49.9	39.1	2161	2161	2162	1664	1147	3762	2162	2163	2162	21.43	0.00	0.07	0.02	0.09		
17/12/2012	0.0	65.5	24.4	0.0	78.3	71.2	213.6	72.3	143.2	189.6	92.8	156.3	243.3	73.0	107.5	2168	2168	2169	1671	1154	3769	2169	2170	2169	100.00	0.00	0.00	20.35	20.35		
18/12/2012	0.0	64.0	24.4	0.0	67.3	64.9	193.4	66.1	101.9	162.8	99.2	109.0	247.8	66.5	79.2	2178	2177	2178	1680	1163	3778	2179	2179	2179	100.00	0.00	0.00	24.69	24.69		
19/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2178	2177	2178	1680	1163	3778	2179	2179	2179	OL	0.00	0.00	0.00	0.00		
20/12/2012	17.3	60.5	24.3	4.4	78.0	69.9	132.3	70.5	71.9	133.1	79.6	71.7	195.9	71.5	71.7	2181	2181	2182	1684	1167	3782	2182	2183	2182	100.00	0.00	0.00	10.88	10.88		
21/12/2012	18.8	25.8	24.2	39.6	85.5	71.3	130.0	71.4	71.0	128.6	101.9	79.2	218.5	78.8	80.3	2203	2202	2203	1708	1191	3806	2206	2207	2206	100.00	0.00	0.00	71.29	71.29		
22/12/2012	0.0	27.9	24.0	0.0	89.8	73.8	OL	OL	OL	120.9	119.5	117.2	203.3	118.5	118.4	2203	2202	2203	1730	1213	3828	2229	2229	2229	100.00	0.00	0.00	68.35	68.35		
23/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2203	2202	2203	1730	1213	3828	2229	2229	2229	OL	0.00	0.00	0.00	0.00		
24/12/2012	0.0	44.4	21.4	0.0	79.5	62.4	75.1	47.3	37.8	95.8	92.9	56.8	146.7	72.4	66.7	2203	2203	2203	1730	1214	3828	2229	2230	2229	28.73	0.00	0.31	0.12	0.43		
25/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2203	2203	2203	1730	1214	3828	2229	2230	2229	OL	0.00	0.00	0.00	0.00		
26/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2203	2203	2203	1730	1214	3828	2229	2230	2229	OL	0.00	0.00	0.00	0.00		
27/12/2012	18.2	115.8	24.3	3.9	71.1	69.2	220.1	119.3	157.0	148.7	194.3	136.5	245.2	110.4	115.3	2211	2210	2211	1730	1214	3828	2237	2237	2237	100.00	0.00	0.00	22.16	22.16		
28/12/2012	0.0	31.3	24.1	0.0	71.5	69.3	176.7	111.2	115.1	OL	OL	OL	218.1	111.1	111.1	2225	2224	2225	1730	1214	3828	2251	2251	2251	100.00	0.00	0.00	40.40	40.40		
29/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2225	2224	2225	1730	1214	3828	2251	2251	2251	OL	0.00	0.00	0.00	0.00		
30/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2225	2224	2225	1730	1214	3828	2251	2251	2251	OL	0.00	0.00	0.00	0.00		
31/12/2012	20.5	86.9	24.3	4.8	80.9	78.5	104.5	79.8	79.8	80.4	80.3	79.7	167.2	80.2	79.9	2235	2234	2235	1741	1224	3839	2261	2261	2261	100.00	0.00	0.00	33.15	33.15		
Total [ML]:																											0.00	0.83	456.81	457.65	

Water Volume [%]:

Untreated 0.00 %
Below Dose 0.18 %
To Dose 99.82 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code
Licence Number

252.00
PWS 09 412 A

WATER TREATMENT PLANT UV REPORT

Report Period: **December 2012**
Reactor: **UVR-300A**

Report Created: **Tuesday, January 01, 2013**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3460	3460	3460	3429	3428	3428	3396	3396	3396	OL	0.00	0.00	0.00	0.00
2/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3460	3460	3460	3429	3428	3428	3396	3396	3396	OL	0.00	0.00	0.00	0.00
3/12/2012	0.0	93.8	24.5	0.0	96.3	61.7	99.1	73.8	148.5	110.2	99.5	99.6	98.9	99.5	99.7	3461	3461	3460	3443	3443	3443	3411	3411	3411	99.99	0.00	0.00	37.58	37.58
4/12/2012	21.2	35.0	24.4	53.1	57.9	55.3	86.3	64.0	142.0	87.7	80.3	80.7	80.4	80.5	79.3	3468	3468	3468	3467	3467	3467	3435	3435	3435	100.00	0.00	0.00	55.31	55.31
5/12/2012	0.0	46.1	23.4	0.0	79.3	65.7	72.0	68.3	100.6	75.2	67.8	63.5	67.4	67.6	67.2	3479	3479	3479	3478	3478	3478	3446	3446	3445	99.88	0.00	0.04	29.81	29.84
6/12/2012	0.0	38.4	23.8	0.0	80.7	51.1	54.9	53.8	64.7	73.0	55.6	49.4	53.9	57.0	52.6	3495	3494	3494	3493	3493	3493	3461	3461	3461	99.84	0.00	0.05	32.90	32.96
7/12/2012	21.0	25.9	24.6	47.2	53.0	50.0	52.0	51.7	56.1	80.0	60.7	51.6	51.6	61.6	51.7	3519	3518	3518	3517	3517	3517	3485	3485	3485	100.00	0.00	0.00	49.99	49.99
8/12/2012	21.0	25.7	24.6	47.0	53.0	50.0	51.8	51.7	56.8	88.4	69.5	51.6	54.2	69.7	51.7	3543	3542	3542	3541	3541	3541	3509	3509	3509	100.00	0.00	0.00	50.00	50.00
9/12/2012	18.1	33.5	24.4	47.1	52.8	50.0	51.7	51.6	59.3	101.4	81.8	73.0	75.9	79.6	72.0	3550	3550	3550	3565	3565	3565	3533	3533	3533	100.00	0.00	0.00	50.01	50.01
10/12/2012	21.7	25.1	24.3	47.4	52.5	50.0	OL	OL	OL	112.7	91.5	80.8	80.7	80.8	80.9	3550	3550	3550	3589	3589	3589	3557	3557	3557	100.00	0.00	0.00	49.80	49.80
11/12/2012	21.7	25.2	24.3	47.3	79.5	51.1	OL	OL	OL	117.6	95.4	82.6	82.5	82.6	82.7	3550	3550	3550	3613	3613	3613	3581	3581	3581	100.00	0.00	0.00	51.09	51.09
12/12/2012	21.4	26.1	24.2	41.0	79.2	62.8	OL	OL	OL	117.6	107.5	101.2	101.2	101.3	101.3	3550	3550	3550	3637	3637	3637	3605	3605	3605	100.00	0.00	0.00	62.82	62.82
13/12/2012	21.6	25.5	24.3	43.8	51.2	47.6	OL	OL	OL	113.2	91.5	77.0	77.0	77.1	77.2	3550	3550	3550	3661	3661	3661	3629	3629	3629	100.00	0.00	0.00	47.64	47.64
14/12/2012	21.6	31.8	24.4	26.4	66.5	54.8	OL	OL	OL	113.2	93.7	88.8	88.7	88.8	88.8	3550	3550	3550	3685	3685	3685	3653	3653	3653	100.00	0.00	0.00	54.77	54.77
15/12/2012	21.5	25.7	24.2	47.2	66.0	59.3	OL	OL	OL	111.6	98.3	95.5	95.4	95.4	95.6	3550	3550	3550	3709	3709	3709	3677	3677	3677	100.00	0.00	0.00	59.32	59.32
16/12/2012	21.5	31.6	24.3	27.0	53.7	49.7	OL	OL	OL	111.9	89.4	80.4	80.3	80.4	80.6	3550	3550	3550	3733	3733	3733	3701	3701	3701	100.00	0.00	0.00	49.76	49.76
17/12/2012	21.4	30.9	24.3	27.7	74.4	49.8	OL	OL	OL	112.6	94.0	80.5	80.4	84.1	80.7	3550	3550	3550	3757	3757	3757	3725	3725	3725	100.00	0.00	0.00	49.77	49.77
18/12/2012	21.5	34.9	24.3	7.1	74.6	56.8	OL	OL	OL	113.6	101.7	91.8	91.7	97.0	91.9	3550	3550	3550	3781	3781	3781	3749	3749	3749	100.00	0.00	0.00	56.83	56.83
19/12/2012	21.4	25.2	24.2	52.8	62.8	57.8	OL	OL	OL	113.4	93.2	93.1	93.1	93.1	93.3	3550	3550	3550	3805	3805	3805	3773	3773	3773	100.00	0.00	0.00	57.83	57.83
20/12/2012	0.0	34.8	24.3	0.0	70.4	63.6	OL	OL	OL	112.9	103.8	103.3	103.0	103.3	102.6	3550	3550	3550	3816	3816	3816	3784	3784	3784	100.00	0.00	0.00	28.23	28.23
21/12/2012	1.1	25.5	24.0	3.0	75.8	58.8	OL	OL	OL	96.0	94.4	94.1	94.1	94.5	90.7	3550	3550	3550	3819	3819	3819	3787	3787	3787	99.78	0.00	0.02	7.34	7.35
22/12/2012	1.1	34.2	24.4	6.1	76.1	48.5	OL	OL	OL	106.0	85.6	78.8	78.8	79.1	78.8	3550	3550	3550	3843	3843	3843	3811	3811	3811	99.92	0.00	0.04	48.43	48.47
23/12/2012	21.6	25.8	24.3	44.5	51.9	48.6	OL	OL	OL	107.7	86.5	78.5	78.5	78.5	78.7	3550	3550	3550	3867	3867	3867	3835	3835	3835	100.00	0.00	0.00	48.56	48.56
24/12/2012	0.0	32.4	24.5	0.0	52.6	47.5	OL	OL	OL	108.5	87.5	77.3	77.5	77.7	77.3	3550	3550	3550	3881	3881	3881	3849	3849	3849	99.88	0.00	0.03	27.81	27.84
25/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3550	3550	3550	3881	3881	3881	3849	3849	3849	OL	0.00	0.00	0.00	0.00
26/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3550	3550	3550	3881	3881	3881	3849	3849	3849	OL	0.00	0.00	0.00	0.00
27/12/2012	0.0	58.6	24.3	0.0	72.4	58.4	OL	OL	OL	104.7	94.2	93.9	94.1	94.2	94.4	3550	3550	3550	3889	3889	3889	3857	3857	3857	100.00	0.00	0.00	19.25	19.25
28/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3550	3550	3550	3889	3889	3889	3857	3857	3857	OL	0.00	0.00	0.00	0.00
29/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3550	3550	3550	3889	3889	3889	3857	3857	3857	OL	0.00	0.00	0.00	0.00
30/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3550	3550	3550	3889	3889	3889	3857	3857	3857	OL	0.00	0.00	0.00	0.00
31/12/2012	18.9	90.3	24.6	4.2	59.7	45.7	127.0	74.0	132.6	93.3	91.9	75.9	74.4	75.7	74.7	3561	3561	3560	3889	3889	3889	3868	3867	3867	100.00	0.00	0.00	19.65	19.65

Total [ML]: 0.00 0.18 1044.52 1044.71

Water Volume [%]:

Untreated 0.00 %
Below Dose 0.02 %
To Dose 99.98 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code 252.00
Licence Number PWS 09 412 A

WATER TREATMENT PLANT UV REPORT

Report Period: **December 2012**
Reactor: **UVR-400A**

Report Created: **Tuesday, January 01, 2013**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²										UV Lamp Status Hours										% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	Untreated	Below Dose					
																										To Dose		Total			
1/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	153	153	3244	503	502	503	501	4501	502	OL	0.00	0.00	0.00	0.00	
2/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	153	153	3244	503	502	503	501	4501	502	OL	0.00	0.00	0.00	0.00	
3/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	153	153	3244	503	502	503	501	4501	502	OL	0.00	0.00	0.00	0.00	
4/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	153	153	3244	503	502	503	501	4501	502	OL	0.00	0.00	0.00	0.00	
5/12/2012	0.0	63.9	24.2	0.0	87.9	83.5	88.6	84.4	84.2	101.9	85.1	89.3	90.1	85.6	113.3	164	164	3255	514	513	514	512	4512	513	100.00	0.00	0.00	37.83	37.83		
6/12/2012	0.0	63.9	46.7	0.0	51.0	31.5	101.9	62.8	59.1	98.6	83.2	84.8	87.1	85.9	114.3	165	164	3255	514	513	514	512	4512	513	100.00	0.00	0.00	0.09	0.09		
7/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	165	164	3255	514	513	514	512	4512	513	OL	0.00	0.00	0.00	0.00	
8/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	165	164	3255	514	513	514	512	4512	513	OL	0.00	0.00	0.00	0.00	
9/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	165	164	3255	514	513	514	512	4512	513	OL	0.00	0.00	0.00	0.00	
10/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	165	164	3255	514	513	514	512	4512	513	OL	0.00	0.00	0.00	0.00	
11/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	165	164	3255	514	513	514	512	4512	513	OL	0.00	0.00	0.00	0.00	
12/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	165	164	3255	514	513	514	512	4512	513	OL	0.00	0.00	0.00	0.00	
13/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	165	164	3255	514	513	514	512	4512	513	OL	0.00	0.00	0.00	0.00	
14/12/2012	0.0	55.4	24.7	0.0	59.2	54.4	65.6	55.4	72.4	103.5	77.7	85.9	79.6	71.3	111.0	168	168	3259	518	517	518	516	4516	517	100.00	0.00	0.00	8.78	8.78		
15/12/2012	0.0	59.8	27.8	0.0	15.4	8.5	54.2	29.8	42.2	65.7	83.6	57.0	62.5	59.3	75.2	169	168	3259	518	517	518	516	4516	517	100.00	0.00	0.00	0.01	0.01		
16/12/2012	17.1	59.3	24.1	4.4	76.7	73.1	74.6	74.5	74.5	79.1	74.7	74.6	74.7	74.7	77.4	192	192	3283	542	541	542	540	4540	541	99.95	0.00	0.04	72.58	72.62		
17/12/2012	0.0	40.3	23.2	0.0	76.8	68.2	69.9	69.8	67.4	70.1	69.9	69.8	69.9	69.9	70.0	214	214	3304	563	563	563	562	4561	562	100.00	0.00	0.00	60.97	60.97		
18/12/2012	0.0	39.6	24.1	0.0	53.2	30.1	47.3	34.1	31.1	51.5	64.7	40.9	60.0	55.1	61.4	214	214	3304	563	563	563	562	4562	562	100.00	0.00	0.00	0.05	0.05		
19/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	214	214	3304	563	563	563	562	4562	562	OL	0.00	0.00	0.00	0.00	
20/12/2012	20.7	63.9	25.0	0.0	67.8	62.1	81.0	72.7	66.3	102.7	68.2	76.3	73.9	76.8	96.8	228	228	3318	577	577	577	575	4575	576	100.00	0.00	0.00	35.92	35.92		
21/12/2012	0.0	35.2	24.0	0.0	61.6	55.0	57.0	57.1	56.2	80.6	57.1	57.0	57.3	57.7	57.7	240	240	3331	590	589	590	588	4587	588	99.97	0.00	0.00	28.41	28.42		
22/12/2012	0.0	28.7	22.3	0.0	45.5	29.6	27.6	24.4	21.8	47.8	54.3	37.8	44.1	45.7	42.2	240	240	3331	590	589	590	588	4588	588	100.00	0.00	0.00	0.11	0.11		
23/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	240	240	3331	590	589	590	588	4588	588	OL	0.00	0.00	0.00	0.00	
24/12/2012	16.8	27.3	23.3	4.3	52.5	47.8	32.9	28.5	22.2	77.3	77.2	72.9	77.0	77.1	77.0	241	240	3331	606	606	606	604	4604	604	99.70	0.00	0.10	31.91	32.00		
25/12/2012	17.7	22.9	21.0	43.5	50.3	47.1	OL	OL	OL	76.3	76.3	60.6	76.3	76.2	76.3	241	240	3331	630	630	630	628	4628	628	100.00	0.00	0.00	47.11	47.11		
26/12/2012	17.7	22.6	20.8	44.0	52.1	48.5	OL	OL	OL	78.4	78.4	61.4	78.3	78.3	78.5	241	240	3331	654	654	654	652	4652	652	99.93	0.00	0.03	48.45	48.48		
27/12/2012	0.0	31.0	22.4	0.0	53.6	49.4	OL	OL	OL	80.0	80.0	69.8	79.8	80.2	80.4	241	240	3331	663	663	664	662	4661	662	100.00	0.00	0.00	19.68	19.68		
28/12/2012	18.2	56.7	24.3	0.0	50.9	48.3	110.4	98.5	77.3	96.8	78.3	83.2	82.0	107.1	112.9	251	251	10	674	673	674	662	4662	662	100.00	0.00	0.00	20.32	20.32		
29/12/2012	23.4	35.2	24.5	46.1	60.5	53.7	67.9	69.5	67.6	67.2	67.0	67.4	76.9	88.5	85.3	275	275	34	698	697	698	677	4676	677	100.00	0.00	0.00	53.68	53.68		
30/12/2012	18.7	25.2	24.0	54.0	59.9	56.9	58.8	58.5	55.3	82.0	81.7	82.1	88.4	90.5	90.0	283	282	42	722	721	722	701	4700	701	100.00	0.00	0.00	56.84	56.84		
31/12/2012	0.0	29.9	24.3	0.0	59.9	56.8	OL	OL	OL	91.5	91.5	91.5	91.5	91.6	91.6	283	282	42	735	735	736	714	4714	715	100.00	0.00	0.00	32.62	32.62		
Total [ML]:																									0.00	0.17	555.36	555.53			

Water Volume [%]:

Untreated 0.00 %
Below Dose 0.03 %
To Dose 99.97 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code 252.00
Licence Number PWS 09 412 A

WATER TREATMENT PLANT UV REPORT

Report Period: **December 2012**
Reactor: **UVR-500A**

Report Created: **Tuesday, January 01, 2013**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/12/2012	19.2	27.7	24.7	36.6	48.6	42.5	44.2	44.2	44.2	59.0	48.6	44.2	188.3	96.4	125.4	1964	1619	3725	2138	3717	2571	322	322	321	100.00	0.00	0.00	42.55	42.55
2/12/2012	17.8	31.8	24.6	33.2	47.6	39.6	52.0	51.9	51.8	69.6	52.4	42.5	212.4	105.1	141.9	1988	1643	3749	2151	3730	2584	346	346	345	100.00	0.00	0.00	39.58	39.58
3/12/2012	0.0	70.1	24.4	0.0	83.2	57.0	67.3	67.4	67.1	76.3	70.2	69.6	211.3	103.7	141.2	2011	1667	3772	2165	3745	2599	370	369	369	100.00	0.00	0.00	55.88	55.88
4/12/2012	20.6	26.1	24.3	67.1	71.9	69.4	71.0	71.0	70.9	86.7	71.1	70.9	208.2	100.8	134.0	2035	1691	3796	2189	3769	2623	394	393	393	100.00	0.00	0.00	69.44	69.44
5/12/2012	18.0	29.1	24.4	31.5	71.5	45.7	67.4	64.7	64.6	91.9	63.5	52.9	203.0	97.5	127.0	2059	1715	3820	2197	3777	2630	418	417	417	100.00	0.00	0.00	45.70	45.70
6/12/2012	0.0	65.3	24.5	0.0	74.9	46.6	67.7	62.7	61.9	94.1	70.7	65.2	198.6	96.5	125.6	2074	1729	3835	2203	3782	2636	432	432	431	99.87	0.00	0.04	27.65	27.69
7/12/2012	20.7	25.6	24.1	46.8	74.9	68.0	109.3	109.2	109.1	OL	OL	OL	199.0	109.5	126.0	2098	1753	3859	2203	3782	2636	456	456	455	100.00	0.00	0.00	67.91	67.91
8/12/2012	20.7	25.2	24.1	64.3	75.5	70.0	113.1	112.3	112.3	OL	OL	OL	190.2	112.4	117.7	2122	1777	3883	2203	3782	2636	480	480	479	100.00	0.00	0.00	70.02	70.02
9/12/2012	20.8	25.7	24.1	64.7	75.2	70.0	118.8	112.3	112.4	OL	OL	OL	183.1	112.3	113.3	2146	1801	3907	2203	3782	2636	504	504	503	100.00	0.00	0.00	69.98	69.98
10/12/2012	20.5	25.9	24.1	65.7	80.6	73.7	123.2	118.2	118.4	OL	OL	OL	178.8	118.3	118.3	2170	1825	3931	2203	3782	2636	528	528	527	100.00	0.00	0.00	73.43	73.43
11/12/2012	20.6	26.2	24.1	48.8	80.6	74.1	125.9	118.8	123.7	OL	OL	OL	174.5	119.5	119.7	2194	1849	3955	2203	3782	2636	552	552	551	100.00	0.00	0.00	74.13	74.13
12/12/2012	0.0	38.4	24.4	0.0	56.0	49.6	124.3	80.3	168.1	OL	OL	OL	171.3	90.0	103.3	2208	1863	3969	2203	3782	2636	566	566	565	100.00	0.00	0.00	29.05	29.05
13/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2208	1863	3969	2203	3782	2636	566	566	565	OL	0.00	0.00	0.00	0.00
14/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	2208	1863	3969	2203	3782	2636	566	566	565	OL	0.00	0.00	0.00	0.00
15/12/2012	0.9	25.9	24.0	4.5	75.0	72.4	115.8	115.5	160.0	17.2	12.2	2.4	146.1	117.1	115.8	2214	1869	3975	2203	3782	2636	572	572	571	99.32	0.00	0.13	18.24	18.36
16/12/2012	0.0	37.6	25.4	0.0	73.8	65.3	111.7	104.1	171.5	OL	OL	OL	163.0	105.1	111.0	2214	1870	3975	2203	3782	2636	572	572	572	100.00	0.00	0.00	0.55	0.55
17/12/2012	0.0	35.4	24.1	0.0	54.3	48.3	99.8	78.1	176.6	43.5	36.6	7.2	156.4	79.1	96.0	2217	1873	3978	2203	3782	2636	575	575	575	99.63	0.00	0.02	5.55	5.58
18/12/2012	20.6	116.4	24.3	4.4	96.9	70.1	130.6	112.4	293.1	145.7	102.5	145.7	182.3	112.4	126.4	2232	1888	3993	2203	3783	2636	590	590	590	100.00	0.00	0.00	43.80	43.80
19/12/2012	20.4	34.8	24.1	72.3	82.5	76.5	109.7	109.3	121.9	138.1	82.7	78.8	132.1	109.4	109.6	2256	1912	4017	2210	3790	2644	614	614	614	100.00	0.00	0.00	76.46	76.46
20/12/2012	20.3	25.9	24.3	53.2	77.1	67.9	69.6	69.5	69.7	128.0	77.1	69.6	113.9	69.7	69.4	2280	1936	4041	2234	3814	2668	638	638	638	100.00	0.00	0.00	67.94	67.94
21/12/2012	0.0	36.8	24.4	0.0	63.1	51.8	64.5	64.2	64.2	125.3	75.7	60.1	110.0	66.5	64.2	2301	1957	4062	2247	3827	2680	659	659	659	100.00	0.00	0.00	45.50	45.50
22/12/2012	18.5	84.4	24.3	8.3	90.3	70.4	72.0	71.7	72.0	100.6	73.5	71.5	111.1	73.3	71.8	2303	1959	4065	2250	3829	2683	662	661	661	100.00	0.00	0.00	6.87	6.87
23/12/2012	20.2	25.3	24.3	66.9	73.7	70.5	72.0	72.0	72.0	114.6	72.2	72.1	126.5	72.1	72.0	2327	1983	4089	2274	3853	2707	686	685	685	100.00	0.00	0.00	70.48	70.48
24/12/2012	19.6	26.6	24.3	58.7	90.3	72.3	74.0	74.0	73.9	115.5	74.5	74.1	126.5	79.3	73.9	2351	2007	4113	2298	3877	2731	710	709	709	100.00	0.00	0.00	72.33	72.33
25/12/2012	20.6	25.5	24.4	62.9	68.5	66.0	67.6	67.6	67.6	121.3	67.9	67.7	160.0	87.6	69.1	2375	2031	4137	2322	3901	2755	734	733	733	100.00	0.00	0.00	66.06	66.06
26/12/2012	20.7	25.4	24.4	62.9	71.4	68.0	69.6	69.6	69.5	145.9	70.3	69.6	184.9	92.8	112.2	2399	2055	4161	2346	3925	2779	758	757	757	100.00	0.00	0.00	67.97	67.97
27/12/2012	18.9	31.2	24.2	28.7	92.7	68.2	93.8	93.7	93.1	184.4	75.8	73.1	189.5	106.8	145.1	2423	2079	4185	2355	3935	2788	782	781	781	100.00	0.00	0.00	68.25	68.25
28/12/2012	20.9	27.2	24.1	57.8	75.6	73.0	118.0	116.9	117.0	OL	OL	OL	178.9	117.2	145.0	2447	2103	4209	2355	3935	2788	806	805	805	100.00	0.00	0.00	72.97	72.97
29/12/2012	20.7	24.8	24.1	69.8	80.1	75.4	133.2	120.7	120.9	OL	OL	OL	167.5	121.0	136.1	2471	2127	4233	2355	3935	2788	830	829	829	100.00	0.00	0.00	75.39	75.39
30/12/2012	20.8	24.8	24.1	73.8	79.0	76.6	140.5	122.7	123.0	OL	OL	OL	164.1	123.0	133.5	2495	2151	4257	2355	3935	2788	854	853	853	100.00	0.00	0.00	76.65	76.65
31/12/2012	20.8	25.8	24.1	60.5	79.0	73.1	136.1	117.3	120.4	OL	OL	OL	161.2	117.5	128.4	2519	2175	4281	2355	3935	2788	878	877	877	100.00	0.00	0.00	73.13	73.13

Total [ML]: 0.00 0.18 1573.45 1573.63

Water Volume [%]:

Untreated 0.00 %
Below Dose 0.01 %
To Dose 99.99 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
 2. OL - Off Line

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES DIVISION

Water System Code
Licence Number

252.00
PWS 09 412 A

WATER TREATMENT PLANT UV REPORT

Report Period: **December 2012**
Reactor: **UVR-600A**

Report Created: **Tuesday, January 01, 2013**

Date	UV Dose mJ/cm ²			Reactor Flow MLD			Average UV Lamp Intensity W/m ²									UV Lamp Status Hours									% Volume Treated to Validate Conditions	Daily Totals Water Volume [ML]			
	Min.	Max.	Avg.	Min.	Max.	Avg.	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3	1-1	1-2	1-3	2-1	2-2	2-3	3-1	3-2	3-3		Untreated	Below Dose	To Dose	Total
1/12/2012	17.6	26.3	24.2	61.0	77.0	70.1	82.7	71.5	71.5	71.8	71.5	71.5	85.5	71.5	71.4	3426	1287	1286	1600	1600	1600	2905	1508	1507	100.00	0.00	0.00	70.10	70.10
2/12/2012	17.8	26.1	24.2	50.4	73.4	67.2	83.4	68.7	68.7	70.5	68.8	68.7	85.2	68.7	68.7	3450	1311	1310	1624	1624	1624	2929	1532	1531	99.93	0.00	0.05	67.23	67.28
3/12/2012	0.0	66.2	24.3	0.0	72.0	67.0	85.7	68.3	68.0	71.2	68.6	68.2	88.0	68.4	67.9	3459	1320	1319	1633	1633	1634	2938	1541	1540	100.00	0.00	0.00	24.89	24.89
4/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3459	1320	1319	1633	1633	1634	2938	1541	1540	OL	0.00	0.00	0.00	0.00
5/12/2012	17.4	65.2	24.1	4.3	105.0	76.0	85.6	77.5	77.5	79.1	78.9	77.5	85.3	77.5	72.0	3481	1342	1341	1655	1655	1655	2960	1562	1562	100.00	0.00	0.00	69.21	69.21
6/12/2012	0.0	69.7	24.2	0.0	95.1	70.0	84.7	72.0	71.8	79.5	77.6	71.9	86.5	72.4	66.2	3496	1357	1356	1670	1670	1670	2975	1577	1577	100.00	0.00	0.00	43.55	43.55
7/12/2012	18.0	25.2	24.1	80.4	90.4	85.0	89.1	86.3	86.3	86.3	86.3	86.3	86.5	86.3	75.6	3520	1381	1380	1694	1694	1694	2999	1601	1601	100.00	0.00	0.00	85.03	85.03
8/12/2012	18.0	25.0	24.0	80.8	89.3	85.0	87.1	86.3	86.3	86.3	86.3	86.3	86.3	86.3	72.9	3544	1405	1404	1718	1718	1718	3023	1625	1625	100.00	0.00	0.00	85.06	85.06
9/12/2012	18.0	25.2	24.1	80.9	89.4	85.0	87.8	86.3	86.3	86.3	86.3	86.3	86.3	86.3	72.0	3568	1429	1428	1742	1742	1742	3047	1649	1649	100.00	0.00	0.00	85.01	85.01
10/12/2012	17.8	25.5	24.1	80.2	89.7	85.0	88.4	86.3	86.3	86.3	86.3	86.3	86.3	86.3	72.2	3592	1453	1452	1766	1766	1766	3071	1673	1673	100.00	0.00	0.00	84.69	84.69
11/12/2012	18.1	25.5	24.1	76.3	90.2	84.8	88.9	86.1	86.1	86.1	86.1	86.1	86.3	86.1	71.0	3616	1477	1476	1790	1790	1790	3095	1697	1697	100.00	0.00	0.00	84.79	84.79
12/12/2012	18.0	26.4	24.1	53.1	83.4	77.7	86.4	79.0	79.0	79.0	79.1	79.0	82.9	79.0	69.9	3640	1501	1500	1814	1814	1814	3119	1721	1721	100.00	0.00	0.00	77.64	77.64
13/12/2012	17.9	25.5	24.1	68.0	77.3	72.8	83.8	74.2	74.2	74.2	74.2	74.2	82.2	74.2	70.3	3664	1525	1524	1838	1838	1838	3143	1745	1745	100.00	0.00	0.00	72.87	72.87
14/12/2012	18.4	26.3	24.2	55.8	93.4	73.8	83.9	75.3	75.2	75.4	75.4	75.4	81.6	75.3	66.8	3688	1549	1548	1862	1862	1862	3167	1769	1769	100.00	0.00	0.00	73.79	73.79
15/12/2012	0.0	38.3	23.0	0.0	68.5	65.0	82.4	66.4	66.4	66.4	63.2	66.3	80.7	66.4	66.3	3706	1567	1566	1880	1880	1880	3185	1787	1787	100.00	0.00	0.00	48.54	48.54
16/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3706	1567	1566	1880	1880	1880	3185	1787	1787	OL	0.00	0.00	0.00	0.00
17/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3706	1567	1566	1880	1880	1880	3185	1787	1787	OL	0.00	0.00	0.00	0.00
18/12/2012	0.0	37.2	24.0	0.0	56.4	34.1	65.1	47.4	44.3	33.8	27.2	33.0	113.2	61.9	33.4	3706	1567	1566	1880	1880	1880	3185	1788	1787	100.00	0.00	0.00	0.06	0.06
19/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3706	1567	1566	1880	1880	1880	3185	1788	1787	OL	0.00	0.00	0.00	0.00
20/12/2012	OL	OL	0.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3706	1567	1566	1880	1880	1880	3185	1788	1787	OL	0.00	0.00	0.00	0.00
21/12/2012	0.0	94.8	24.4	0.0	78.2	64.5	142.6	94.5	129.8	106.8	104.0	122.3	124.0	103.6	103.0	3706	1567	1567	1892	1892	1892	3197	1799	1799	100.00	0.00	0.00	31.48	31.48
22/12/2012	0.0	33.7	24.3	0.0	111.0	63.8	144.4	79.7	114.3	78.7	76.7	77.8	97.2	76.5	76.7	3721	1582	1581	1913	1913	1914	3218	1821	1821	99.79	0.06	0.06	57.18	57.30
23/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3721	1582	1581	1913	1913	1914	3218	1821	1821	OL	0.00	0.00	0.00	0.00
24/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3721	1582	1581	1913	1913	1914	3218	1821	1821	OL	0.00	0.00	0.00	0.00
25/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3721	1582	1581	1913	1913	1914	3218	1821	1821	OL	0.00	0.00	0.00	0.00
26/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3721	1582	1581	1913	1913	1914	3218	1821	1821	OL	0.00	0.00	0.00	0.00
27/12/2012	0.0	78.1	24.2	0.0	84.2	80.2	98.1	81.6	82.4	82.0	81.3	81.6	83.1	81.3	80.8	3724	1585	1585	1917	1917	1918	3222	1825	1824	100.00	0.00	0.00	12.58	12.58
28/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3724	1585	1585	1917	1917	1918	3222	1825	1824	OL	0.00	0.00	0.00	0.00
29/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3724	1585	1585	1917	1917	1918	3222	1825	1824	OL	0.00	0.00	0.00	0.00
30/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3724	1585	1585	1917	1917	1918	3222	1825	1824	OL	0.00	0.00	0.00	0.00
31/12/2012	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	3724	1585	1585	1917	1917	1918	3222	1825	1824	OL	0.00	0.00	0.00	0.00
Total [ML]:																									0.06	0.11	1073.69	1073.86	

Water Volume [%]:

Untreated 0.01 %
Below Dose 0.01 %
To Dose 99.98 %

Notes: 1. UV Comparative Dose 18.1 mJ/cm²
2. OL - Off Line

N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\UV\2012\12-December

2012 Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Tuesday, March 27, 2012

Our Incident/Report: 01-2012

LIMS Reference No: **32239**

Mr. Gilbert Bushati
Senior 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 SW14
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
INCIDENT DATE	March 19, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	AS SOON AS POSSIBLE: Re-sampled original location, also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
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 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 Applicable

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

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2230 Main Street. • 2230, rue Main • Winnipeg • Manitoba R2V 4T8
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SampleName		SampleNumber	DateSampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
SW14		320402	19-Mar-12	<1	2	0.47	0.68	10.6	0.18
SW14		320927	22-Mar-12	<1	<1	0.99	1.20	6.1	0.22



Water and Waste Department • Service des eaux et des déchets

Wednesday, May 2, 2012

Our Incident/Report: 02-2012

LIMS Reference No: **32515**

Mr. Gilbert Bushati
Senior 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 WC09
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
INCIDENT DATE	April 24, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	AS SOON AS POSSIBLE: Re-sampled original location, also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
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 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 Applicable

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

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SampleName	SampleNumber	DateSampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
WC09_ [REDACTED]	323353	24-Apr-12	<1	4	NA	NA	NA	NA
WC09_ [REDACTED]	323832	26-Apr-12	<1	<1	0.68	0.80	6.8	0.18



Water and Waste Department • Service des eaux et des déchets

Thursday, August 9, 2012

Our Incident/Report No: 03-2012

LIMS Reference No: 33497

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 WC-06
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	Low disinfection residual in the distribution system, 22(1) MR 40/2007
INCIDENT DATE	August 07, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	AS SOON AS POSSIBLE: Recommended an increase in chlorine setpoint level(s) and contacted the ODW. Follow up testing performed at the initial location as well as other locations within the vicinity. Water Services increased the chlorine setpoint/dosage at pumping stations, flushed water main and checked for water main valve closures in the immediate area.
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 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.

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

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SampleName			SampleNumber	DateSampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
WC06			333975	07-Aug-12	<1	<1	<0.02	0.02	19.0	0.21
WC06			334504	08-Aug-12	NA	NA	<0.02	0.04	NA	NA
WC06			334528	09-Aug-12	NA	NA	0.65	0.87	20.3	0.35
WC06 I			334530	09-Aug-12	NA	NA	0.32	0.49	18.7	0.19
WC06			334531	09-Aug-12	NA	NA	0.71	0.88	20.5	0.19
WC06			334532	09-Aug-12	NA	NA	0.46	0.61	17.4	0.20



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Monday, August 20, 2012

Our Incident/Report No: 04-2012

LIMS Reference No: 33497

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 SE-12
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	Other: Treated (or distribution system) water sample contains total coliform >10 per100mL, 3 MR 41/2007
INCIDENT DATE	August 13, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	IMMEDIATELY: Resampled original location, tested additional samples upstream/downstream of original location for; turbidity, free/total chlorine, temperature and contacted the ODW.
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 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.

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

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SampleName		SampleNumber	DateSampled	HPC (cfu/mL)	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
SE12		333952	08-Aug-12	620	<1	<1	NA	NA	NA	NA
SE12		334814	13-Aug-12	<10	<1	101	0.78	1.04	20.5	0.37
SE12		335184	15-Aug-12	<10	<1	<1	0.67	0.84	21.1	0.23
SE12		335200	15-Aug-12	<10	<1	<1	0.86	1.02	22.1	0.24
SE12		335201	15-Aug-12	<10	<1	<1	0.45	0.68	20.6	0.29



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Tuesday, September 11, 2012

Our Incident/Report: 05-2012

LIMS Reference No: **33740**

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 NE09
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
INCIDENT DATE	September 4, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	AS SOON AS POSSIBLE: Re-sampled original location, also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
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 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 Applicable

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

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SampleName		SampleNumber	DateSampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
NE09		336598	04-Sep-12	<1	1	0.10	0.23	18.2	0.29
NE09		337152	06-Sep-12	<1	<1	0.26	0.46	15.9	0.18



Water and Waste Department • Service des eaux et des déchets

Thursday, October 4, 2012

Our Incident/Report No: 06-2012

LIMS Reference No: 33797

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 SE-12
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	1. Treated (or distribution system) water sample contains total coliform >10 per100mL, 3 MR 41/2007 2. Consecutive sample(s) from the treated water sample tap or the same distributed water sampling location test positive for total coliform, 3 MR 41/2007
INCIDENT DATE	September 11 & 13, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	IMMEDIATELY: Re-sampled original location, tested additional samples upstream/downstream of original location for; TC/EC, turbidity, free/total chlorine, temperature and contacted the ODW. Also, the source of the problem was later identified as a tamper proof aerator on the sample tap, which was subsequently removed.
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 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.

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

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SampleName		SampleNumber	DateSampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
SE12		337237	11-Sep-12	<1	109	NA	NA	NA	NA
SE12		337803	13-Sep-12	<1	11	0.60	0.88	20.4	0.25
SE12		337804	13-Sep-12	<1	<1	0.82	0.92	18.8	0.22
SE12		337805	13-Sep-12	<1	<1	0.97	1.14	18.9	0.22
SE12		338000	14-Sep-12	<1	<1	0.66	0.87	20.1	0.23
SE12		338001	14-Sep-12	<1	<1	0.71	0.87	19.0	0.27
SE12		338002	14-Sep-12	<1	<1	0.92	1.14	19.0	0.20



Water and Waste Department • Service des eaux et des déchets

Tuesday, October 9, 2012

Our Incident/Report: 07-2012

LIMS Reference No: **33992**

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 SE11
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
INCIDENT DATE	October 1, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	AS SOON AS POSSIBLE: Re-sampled original location, also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
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 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 Applicable

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

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SampleName		SampleNumber	DateSampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
SE11		339209	01-Oct-12	<1	1	0.60	0.74	18.0	0.26
SE11		339788	03-Oct-12	<1	<1	0.61	0.78	17.8	0.23



Water and Waste Department • Service des eaux et des déchets

Monday, October 22, 2012

Our Incident/Report No: 08-2012

LIMS Reference No: 34058

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 SW-16
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	Low disinfection residual in the distribution system, 22(1) MR 40/2007
INCIDENT DATE	October 09, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	AS SOON AS POSSIBLE: Follow up testing performed at the initial location as well as other locations within the vicinity. Water Services later performed checked for water main valve closures in the immediate area. Tim Shanks reported that "...the large [REDACTED] main [REDACTED] was effectively flow restricted by valve positions [REDACTED]. We opened these valves but did not do any area flushing. I'm relatively confident this was a water age issue and it occurred after the repair [REDACTED] was complete and the valve [REDACTED] was turned on (releasing older water that had been sitting in the [REDACTED] main) which would dilute/use up the free chlorine." Also contacted the ODW.
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 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.

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

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SampleName		SampleNumber	DateSampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
SW16		339952	09-Oct-12	<1	<1	0.07	0.24	15.7	0.29
SW16		340403	10-Oct-12	NA	NA	0.06	0.24	15.3	NA
SW16		340355	10-Oct-12	NA	NA	0.05	0.20	NA	NA
SW16		340352	10-Oct-12	NA	NA	0.04	0.17	16.4	NA
SW16		340347	10-Oct-12	NA	NA	0.14	0.21	15.5	NA
SW16		340485	12-Oct-12	NA	NA	0.09	0.29	15.3	NA
SW16		340487	12-Oct-12	NA	NA	0.22	0.41	15.1	NA
SW16		340486	12-Oct-12	NA	NA	0.14	0.37	16.9	NA
SW16		340488	12-Oct-12	NA	NA	0.04	0.19	14.3	NA
SW16		340575	15-Oct-12	<1	<1	0.12	0.22	15.7	0.63



Water and Waste Department • Service des eaux et des déchets

Wednesday, October 24, 2012

Our Incident/Report: 09-2012
LIMS Reference No: **34114**

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 NW07
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
INCIDENT DATE	October 16, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	AS SOON AS POSSIBLE: Re-sampled original location, also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
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 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 Applicable

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

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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

SampleName		SampleNumber	DateSampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
NW07		340545	16-Oct-12	<1	3	NA	NA	NA	NA
NW07		341162	18-Oct-12	<1	<1	0.42	0.62	15.9	0.23



Water and Waste Department • Service des eaux et des déchets

Tuesday, November 27, 2012

Our Incident/Report No: 10-2012

LIMS Reference No: 34358

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 SW-17
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	Low disinfection residual in the distribution system, 22(1) MR 40/2007
INCIDENT DATE	November 13, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	AS SOON AS POSSIBLE: Follow up testing performed at the initial location as well as other location(s) within the vicinity. Water Services was contacted and requested to check for water main valve closures in the immediate area.
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 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.

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

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fax/téléc. (204) 339-2147 • www.winnipeg.ca

SampleName	SampleNumber	DateSampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
SW17	343256	13-Nov-12	<1	<1	0.09	0.29	12.3	0.55
SW17	343734	13-Nov-12	NA	NA	0.14	0.37	12.0	NA
SW17	343873	19-Nov-12	<1	<1	0.17	0.33	11.7	0.43



Water and Waste Department • Service des eaux et des déchets

Tuesday, December 4, 2012

Our Incident/Report No: 11-2012

LIMS Reference No: 34477

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 SW-03
OPERATOR IN CHARGE	NA
INCIDENT REPORTED BY	Steve Fletcher, Supervisor of Analytical Services Branch
TYPE OF NON-COMPLIANT INCIDENT	Low disinfection residual in the distribution system, 22(1) MR 40/2007
INCIDENT DATE	November 26, 2012
DESCRIPTION OF CORRECTIVE ACTIONS	AS SOON AS POSSIBLE: Follow up testing performed at the initial location as well as other location(s) within the vicinity. Water Services was contacted and requested to check for water main valve closures in the immediate area.
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 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.

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

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SampleName		SampleNumber	DateSampled	ColiEsch-QT (MPNU/100mL)	ColiTotal-QT (MPNU/100mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity (ntu)
SW03		344557	26-Nov-12	<1	<1	0.05	0.13	10.1	0.58
SW03		344647	26-Nov-12	NA	NA	0.88	1.12	9.5	NA
SW03		345142	03-Dec-12	<1	<1	0.34	0.51	9.7	0.26

2012 Monthly Fluoride Monitoring Reports



Water and Waste Department • Service des eaux et des déchets

February 13, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	313875	January 3, 2012	0.70
	314374	January 9, 2012	0.67
	314940	January 16, 2012	0.72
	315508	January 23, 2012	0.69
	316120	January 30, 2012	0.71

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by:

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/pr

cc: Tim Shanks, P.Eng. Acting Manager of Water Services

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Water and Waste Department • Service des eaux et des déchets

March 7, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	316814	February 6, 2012	0.69
	317382	February 13, 2012	0.70
	317930	February 21, 2012	0.69
	318486	February 27, 2012	0.66

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by:
R. Grosselle for:

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/pr

cc: Terry Josephson, P.Eng. Manager of Water Services

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Water and Waste Department • Service des eaux et des déchets

April 3, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	319090	March 5, 2012	0.67
	319760	March 12, 2012	0.65
	320354	March 19, 2012	0.67
	320957	March 26, 2012	0.65

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by:
Renée Grosselle for:

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/pr

cc: Terry Josephson, P.Eng. Manager of Water Services

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May 9, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	321540	April 2, 2012	0.69
	322115	April 10, 2012	0.67
	322648	April 16, 2012	0.70
	323293	April 23, 2012	0.71
	323920	April 30, 2012	0.71

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by:

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/pr

cc: Terry Josephson, P.Eng. Manager of Water Services

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Water and Waste Department • Service des eaux et des déchets

June 6, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	324540	May 7, 2012	0.71
	325205	May 14, 2012	0.71
	325943	May 23, 2012	0.71
	326655	May 28, 2012	0.70

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by:

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/kw

cc: Terry Josephson, P.Eng. Manager of Water Services

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Water and Waste Department • Service des eaux et des déchets

July 10, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	327399	June 4, 2012	0.70
	328173	June 11, 2012	0.68
	328880	June 18, 2012	0.71
	329607	June 25, 2012	0.70

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by:

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/kw

cc: Terry Josephson, P.Eng. Manager of Water Services

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Water and Waste Department • Service des eaux et des déchets

August 7, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	330323	July 3, 2012	0.70
	331022	July 9, 2012	0.71
	331752	July 16, 2012	0.71
	332521	July 23, 2012	0.71
	333243	July 30, 2012	0.71

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by:

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/kw

cc: Terry Josephson, P.Eng. Manager of Water Services

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Water and Waste Department • Service des eaux et des déchets

September 11, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	333918	August 7, 2012	0.71
	334681	August 13, 2012	0.74
	335293	August 20, 2012	0.74
	335962	August 27, 2012	0.70

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by :

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/kw

cc: Terry Josephson, P.Eng. Manager of Water Services

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Water and Waste Department • Service des eaux et des déchets

October 4, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	336586	September 4, 2012	0.71
	337203	September 10, 2012	0.70
	337868	September 17, 2012	0.70
	338531	September 24, 2012	0.71

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by :

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/kw

cc: Terry Josephson, P.Eng. Manager of Water Services

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Water and Waste Department • Service des eaux et des déchets

November 14, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	339176	October 1, 2012	0.70
	339902	October 9, 2012	0.69
	340525	October 15, 2012	0.67
	341217	October 22, 2012	0.67
	341873	October 29, 2012	0.66

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by :

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/kw

cc: Terry Josephson, P.Eng. Manager of Water Services

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Water and Waste Department • Service des eaux et des déchets

December 12, 2012

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	342614	November 5, 2012	0.69
	343205	November 13, 2012	0.70
	343822	November 19, 2012	0.71
	344519	November 26, 2012	0.71

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by :

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/kw

cc: Terry Josephson, P.Eng. Manager of Water Services

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Water and Waste Department • Service des eaux et des déchets

January 7, 2013

Our File: 040-18-18-14-00

Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	345104	December 3, 2012	0.71
	345733	December 10, 2012	0.70
	346317	December 17, 2012	0.70
	346785	December 24, 2012	0.70
	347301	December 31, 2012	0.70

If you have any questions on the foregoing, please call Ms. Renée Grosselle, Supervisor of Compliance Reporting, at 986-8359.

Yours truly,

Original signed by :

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards Division

RG/kw

cc: Terry Josephson, P.Eng. Manager of Water Services

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**2012 Quarterly Total Trihalomethane
Summary Reports**

**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Total Trihalomethane Summary Report

Reporting Period: Quarter 1-2012

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
Monday, May 16, 2011	26	27	26	26	27	29
Monday, August 15, 2011	55	56	59	61	56	60
Monday, November 14, 2011	18	17	17	24	22	22
Monday, February 6, 2012	20	20	20	23	23	24
RUNNING AVERAGE THM	30	30	30	34	32	34

COMMENTS:

NS - NO SAMPLE
NR - NO RESULT

Methodology

Trihalomethanes analyzed by GC-ECD, Standard Methods for the Examination of Water and Waste Water, 21'st Edition, Method 6232

Report Compiled by: K. Wazny

Approved in LIMS by: S.Fletcher

File: WQR4

Date Approved: February 22, 2012

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**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Total Trihalomethane Summary Report

Reporting Period: Quarter 2-2012

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
Monday, August 15, 2011	55	56	59	61	56	60
Monday, November 14, 2011	18	17	17	24	22	22
Monday, February 06, 2012	20	20	20	23	23	24
Monday, May 28, 2012	23	27	26	27	27	28
RUNNING AVERAGE THM	29	30	30	34	32	33

COMMENTS:

NS - NO SAMPLE
NR - NO RESULT

Methodology

Trihalomethanes analyzed by GC-ECD, Standard Methods for the Examination of Water and Waste Water, 21'st Edition, Method 6232

Report Compiled by: K. Wazny

Approved in LIMS by: S.Fletcher

File: WQR4

Date Approved: June 6, 2012

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**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Total Trihalomethane Summary Report

Reporting Period: Quarter 3-2012

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
Monday, November 14, 2011	18	17	17	24	22	22
Monday, February 06, 2012	20	20	20	23	23	24
Monday, May 28, 2012	23	27	26	27	27	28
Monday, August 13, 2012	42	46	49	50	50	48
RUNNING AVERAGE THM	26	28	28	31	30	30

COMMENTS:

NS - NO SAMPLE
NR - NO RESULT

Methodology

Trihalomethanes analyzed by GC-ECD, Standard Methods for the Examination of Water and Waste Water, 21st Edition, Method 6232

Report Compiled by: K. Wazny

Approved in LIMS by: S.Fletcher

File: WQR4

Date Approved: August 31, 2012

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**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Total Trihalomethane Summary Report

Reporting Period: Quarter 4-2012

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
February 06, 2012	20	20	20	23	23	24
May 28, 2012	23	27	26	27	27	28
August 13, 2012	42	46	49	50	50	48
November 05, 2012	19	20	20	22	22	19
RUNNING AVERAGE THM	26	28	29	31	30	30

COMMENTS: Effective October 22, 2012, the Kildare Avenue and McMeans Avenue location has been relocated to Kildare Avenue and Redonda Street due to the installation of a water filtering system at the existing location.

NS - NO SAMPLE
NR - NO RESULT

Methodology

Trihalomethanes analyzed by GC-ECD, Standard Methods for the Examination of Water and Waste Water, 21st Edition, Method 6232

Report Compiled by: K. Wazny

Approved in LIMS by: S. Fletcher

File: WQR4

Date Approved: November 15, 2012

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2012 Lead Loop Monitoring Report



**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Water System Code: 252.00

Licence Number: PWS-09-412 A

2012 Lead Loop System Summary Report

SAMPLE DATE	Five minute flushed Lead Concentration (mg/L)				
	Lead Loop Cu	Lead Loop Pb	Lead Loop Pb1	Lead Loop Pb2	Lead Loop Pb3
January 24, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
February 23, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
March 13, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
April 17, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
May 11, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
June 13, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
July 18, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
August 15, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
September 12, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
October 17, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
November 15, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
December 12, 2012	<0.001	<0.001	<0.001	<0.001	<0.001
2012 AVERAGE LEAD CONCENTRATION	<0.001	<0.001	<0.001	<0.001	<0.001

COMMENTS:

NS - NO SAMPLE
NR - NO RESULT

Report Compiled By: J. Jones

Approved in LIMS By: S.Fletcher

Date Approved: 17-Dec-12

Methodology

Reference Method for Lead: Standard Methods for the Examination of Water and Wastewater, 21st Edition, Method 3125

File Location: N:\Compliance Reporting\WQ Annual Report\2012 Annual Report\Annual Report Contents\Lead Loop 2012.xls

File: WQR4