

# 2012 Drinking Water Quality Test Results SUMMARY TABLE

## **Lemieux Island Water Purification Plant**

Physical, Microbiological, Chemical, & Radiological test results

Combined Average 2012 Water Production = 290.7 ML/d (Britannia = 150.8 ML/d + Lemieux Island = 139.9 ML/d)

### Notes:

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### **Physical Tests**

Parameter	Unit of measure	Lemieux Treated Water (average)	Central Distribution (average)	Health-based Drinking Water Guideline*	Aesthetic or Operational Guideline*
Colour	TCU	nd	3.5		5.0
Turbidity	NTU	0.05	0.24		5.0
Temperature	degree C	10.9	13.1		15.0
Conductivity	m-mhos/cm	133	134		
Total Dissolved Solids	ma/L				500

### **Microbiological Tests**

Parameter	Unit of measure	Lemieux Treated Water (average)	Central Distribution (average)	Health-based Drinking Water Guideline*	Aesthetic or Operational Guideline*
Total Coliforms	cfu/100mL	0	0	0	
E.coli	cfu/100mL	0	0	0	
Heterotrophic Plate Count (HPC)	cfu/mL	nd	13		500
Cryptosporidium	#/ 100 L	0			
Giardia	#/ 100 L	0	-		

### Chemical - General

Parameter	Unit of measure	Lemieux Treated Water (average)	Central Distribution (average)	Health-based Drinking Water Guideline*	Aesthetic or Operational Guideline*
рН	log <sub>10</sub>	9.32	9.27		6.5 - 8.5
Alkalinity	mg/L CaCO₃	29	30		30 - 500
Total chlorine (chloramine)	mg/L	2.06	1.75	0.25 - 3.00	
Bromide	mg/L	0.0168	0.0046		
Bromate	mg/L	nd	0.0004	0.01	
Chlorite	mg/L	nd	0.00343		
Chlorate	mg/L	0.10	0.1017		
Chloride	mg/L	5.0	5.1		250
Perchlorate	mg/L		0.00008		
Fluoride	mg/L	0.67	0.68	1.5	
Calcium	mg/L	8.0	8.2		
Magnesium	mg/L	2.1	2.0		
Potassium	mg/L	0.67	0.70		
Sodium	mg/L	15.2	15.2	20	200
Silicate	mg/L SiO₂	2.43			
Sulphate	mg/L	25.3	24.9		500
Phosphates	mg/L	nd	0.002		
Total Phosphorous	mg/L	0.003	nd		
Cyanide	mg/L	nd	nd	0.2	
Total Hardness**	mg/L CaCO₃	28.8	28.8		80 - 100
Calcium Hardness**	mg/L CaCO₃	20.1	20.5		
Magnesium Hardness**	mg/L CaCO₃	8.5	8.3		
Ammonia	mg/L N	nd	0.02		
Total Kjeldahl Nitrogen	mg/L N	0.33	0.38		
Organic Nitrogen**	mg/L N	0.03	0.36		0.15
UV254 Absorbace	Absorbance/cm	0.051	0.060		
Nitrate	mg/L N	0.13	0.11	10.0	
Nitrite	mg/L N	nd	nd	1.0	
Total Organic Carbon	mg/L				
Dissolved Organic Carbon	mg/L	2.9	3.0		5.0
Dissolved Inorganic Carbon	mg/L	6.0			
Langelier's Index**	log <sub>10</sub>	0.2	0.2		
C-T Disinfection**	mg/L-min	87.4			
Log Giardia Disinfection**	log <sub>10</sub>	4.2		Minimum 0.5-Log	
Log Virus Disinfection**	log <sub>10</sub>	14.9	-	Minimum 3.0-Log	



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### **Physical Tests**

Parameter	Unit of measure	Lemieux Treated Water (average)	Central Distribution (average) Central	Health-based Drinking Water Guideline* Health-based	Aesthetic or Operational Guideline* Aesthetic or
Parameter	Unit of measure	Lemieux Treated Water (average)	Distribution (average)	Drinking Water Guideline*	Operational Guideline*
Aluminum	mg/L	0.0582	0.0496		0.100
Antimony	mg/L	0.0003	0.0002	0.006	
Arsenic	mg/L	0.0003	0.0004	$0.010^2 / 0.025^3$	
Barium	mg/L	0.0162	0.0133	1.0	
Beryllium	mg/L	nd	nd		
Bismuth	mg/L	nd	0.0002		
Boron	mg/L	0.0075	0.0075	5.000	
Cadmium	mg/L	nd	nd	0.01	
Chromium	mg/L	0.0002	0.0006	0.05	
Chromium VI	mg/L	0.00006			
Cobalt	mg/L	nd	nd		
Copper	mg/L	0.0011	0.0028		1.00
Iron	mg/L	0.0163	0.0192		0.30
Lead	mg/L	nd	nd	0.010	
Manganese	mg/L	0.0029	0.0028		0.05
Mercury	mg/L	nd	nd	0.001	
Molybdenum	mg/L	nd	0.0014		
Nickel	mg/L	0.0011	0.0024		
Selenium	mg/L	nd	nd	0.010	
Silver	mg/L	nd	nd		
Strontium	mg/L	0.040	0.0405		
Thallium	mg/L	nd	nd		
Tin	mg/L	0.0001	nd		
Titanium	mg/L	nd	nd		
Tungsten	mg/L	nd	0.0003		
Uranium	mg/L	nd	nd	0.02	
Vanadium	mg/L	0.0004	0.0005		
Zinc	mg/L	0.0011	0.0010		5.0
Zirconium	mg/L	0.0001	nd		

### Radiological Parameters

Parameter	Unit of measure	Lemieux Treated Water (average)	Central Distribution (average)	Health-based Drinking Water Guideline*	Aesthetic or Operational Guideline*
Gross-Alpha Radioactivity	Bq/L	nd		0.10	
Gross-Beta Radioactivity	Bq/L	0.03		1.00	
Tritium	Bq/L	4.4		7000	

### **Chemical - Disinfection By-Products**

Official and Distriction By-1 roducts					
Parameter	Unit of measure	Lemieux Treated Water (average)	Central Distribution (average)	Health-based Drinking Water Guideline*	Aesthetic or Operational Guideline*
Chloroform	μg/L	22.8	24.7		
Bromodichloromethane	μg/L	4.2	4.7		
Dibromochloromethane	μg/L	0.6	0.6		
Bromoform	μg/L	nd	nd		
Total Trihalomethanes (TTHMs) <sup>1</sup>	μg/L	31.8	36.1	100.0	-
Monochloroacetic Acid	μg/L	nd	1.3		
Monobromoacetic Acid	μg/L	nd	nd		
Dichloroacetic Acid	μg/L	10.1	14.4		
Dibromoacetic Acid	μg/L	nd	nd		-
Trichloroacetic Acid	μg/L	8.5	9.2		
Bromochloroacetic Acid	μg/L	2.2	2.3		-
Bromodichloroacetic Acid	μg/L	2.1	2.0		
Chlorodibromoacetic Acid	μg/L	nd	nd		-
Tribromoacetic Acid	μg/L	nd	nd		



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Parameter	Unit of measure	Lemieux Treated Water (average)	Central Distribution (average)	Health-based Drinking Water Guideline*	Aesthetic or Operational Guideline*
Total Haloacetic Acids (HAA5)	μg/L	19.1	24.7	80.0 <sup>2</sup>	
Total Haloacetic Acids (HAA9)	ua/l	23.3	20 1		

### **Chemical - Trace Organic Parameters**

Parameter	Unit of measure	Lemieux Treated Water (average)	Central Distribution (average)	Health-based Drinking Water Guideline*	Aesthetic or Operational Guideline*
,1,1-Trichloroethane	μg/L	nd	nd		
,1,2,2-Tetrachloroethane	μg/L	nd	nd		
,1,2-Trichloeoethane	μg/L	nd	nd		
,1-Dichloroethane	μg/L	nd	nd		
,1-Dichloroethylene	μg/L	nd	nd	14	
,2-Dibromoethane	μg/L	nd	nd		
,2-Dichlorobenzene	μg/L	nd	nd	200	
,2-Dichloroethane	μg/L	nd	nd		
,2-Dichloroethylene - cis	μg/L	nd	nd		
,2-Dichloroethylene - trans	μg/L	nd	nd		
,2-Dichlrorpropane	μg/L	nd	nd		
,3-Dichlorobenzene	μg/L	nd	nd		
,4-Dichlorobenzene	μg/L	nd	nd	5	
,2 -Dichloropropanoic Acid	μg/L	0.35	0.23		
,3,4,6-Tetrachlorophenol	μg/L	nd	-	100	
,3,6-Trichloroanisole	μg/L	nd	nd		
,4,5-Trichlorophenoxyacetic Acid (2,4,5-T)	μg/L	nd	_	280	
,4,6-Trichloroanisole	μg/L	nd	nd		
,4,6-Trichlorophenol	μg/L	nd		5	
,4-Dichlorophenol	μg/L	nd		900	
,4-Dichlorophenoxyacetic Acid (2,4-D)	μg/L	nd		100	
-Isobutyl-3-methoxypyrazine	μg/L	nd	nd		
-Isopropyl -3-methoxypyrazine	μg/L	nd	nd		
-Methylisoborneol	μg/L	nd	nd		
lachlor	μg/L	nd		5	
ldicarb	μg/L	nd		9	
Idrin	μg/L	nd			
ldrin + Dieldrin	μg/L	nd		1	
trazine	μg/L	nd			
trazine +N -dealkylated metabolites	μg/L	nd		5	
zinphos-methyl	μg/L	nd		20	
endiocarb	μg/L	nd		40	
enzene	μg/L	nd	nd	5	
Benzo(a)pyrene	μg/L	nd		0	
Bromoxynil	μg/L	nd		5	
Carbaryl	μg/L	nd		90	
Carbofuran	μg/L	nd		90	
Carbon Tetrachloride	μg/L	nd	nd	5	
Chlordane - alpha	μg/L	nd			
Chlordane - gamma	μg/L	nd			
Chlordane - total	μg/L	nd	<del></del>	7	
Chlorobenzene	μg/L	nd	nd	80	
Chloroethylene (monochloroethylene)	μg/L	nd	nd		
chlorpyrifos	μg/L	nd		90	
yanazine	μg/L μg/L	nd		10	
DD - para, para	μg/L	nd			
• • • • • • • • • • • • • • • • • • • •		nd		 	
DE- para, para DT - ortho, para	μg/L		<del></del>	<del></del>	
	μg/L	nd nd	<del></del>		
DT - para, para DT + metabolites	μg/L			30	
	μg/L	nd	<del></del>	30	 
e-ethylated Atrazine	μg/L	nd	-		-



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Diazinon	μg/L	nd		20	
Dicamba	μg/L	nd		120	
Dichloroacetonitrile	μg/L	nd	nd		
Dichloromethane	μg/L	nd	nd	50	-
Diclofop - methyl	μg/L	nd		9	
Dieldrin	μg/L	nd			
Diisopropylether	μg/L	nd	nd		
Dimethoate	μg/L	nd		20	
Dinoseb	μg/L	nd		10	
Diquat	μg/L	nd		70	
Diuron	μg/L	nd		150	
Ethylbenzene	μg/L	nd	nd		2
Geosmin	μg/L	nd	nd		
Glyphosate	μg/L	nd		280	
Heptachlor	μg/L	nd			
Heptachlor + Heptachlor Epoxide	μg/L	nd		3	
Heptachlor Epoxide	μg/L	nd			
Hexachlorocyclohexane - gamma (g-BHC, Lindane)	μg/L	nd		4	
odoacetic Acid	μg/L	nd	nd		
Malathion	μg/L	nd		190	
MCPA	μg/L	nd	nd		<del></del>
Methoxychlor	μg/L	nd		900	
Methyl-tert -Butyl ether	μg/L	nd	nd		<del></del>
Metolachlor	μg/L	nd		50	
Metrabuzin	μg/L	nd		80	
N - Nitrosodi - n - propylamine		nd	nd		
N - Nitrosodi - m - propyramine N - Nitrosodibutylamine	μg/L		nd		
· · · · · · · · · · · · · · · · · · ·	μg/L	nd			
N - Nitrosodiethylamine	μg/L	nd 0.000	nd 0.004		
N - Nitrosodimethylamine	µg/L	0.002	0.001	$0.040^2 / 0.009^3$	
N - Nitrosomethylehtylamine	μg/L	nd	nd		
N - Nitrosomorpholine	μg/L	nd	nd		
N - Nitrosopiperidine	μg/L	nd	nd	<del></del>	
N - Nitrosopyrolidine	μg/L	nd	nd		
Nitrilotriacetic Acid	μg/L	nd	nd	400	
Dxychlordane	μg/L	nd			
Paraquat	μg/L	nd	<del></del>	10	
Parathion	μg/L	nd		50	
Pentachlorophenol	μg/L	nd		60	
Phorate	μg/L	nd		2	
Picloram	μg/L	nd		190	
Polychlorinated Byphenyls (PCB's)	μg/L	nd		3	
Prometryne	μg/L	nd		1	
Simazine	μg/L	nd		10	
Styrene	μg/L	0.20	0.11		
Гетерhos	μg/L	nd		280	
Terbufos	μg/L	nd		1	
Tetrachloroethylene	μg/L	nd	nd	30	
Foluene Foluene	μg/L	nd	nd		24
riallate	μg/L	nd		230	
richloroethylene	μg/L	nd	nd	5	
rifluralin	μg/L	nd		45	
/inyl Chloride	μg/L	nd		2	
Kylene - meta & para	μg/L	0.07	nd		
Xylene - ortho	μg/L	nd	nd		
Xylene - total	μg/L	0.07	nd		300
2,3,7,8,-Tetra-Dizenzo-p-Dioxin	μg/L	nd	-		-
1,2,3,7,8,-Penta-Dibenzo-p-Dioxin	μg/L	nd			



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Parameter	Unit of measure	Lemieux Treated Water (average)	Central Distribution (average)	Health-based Drinking Water Guideline*	Aesthetic or Operational Guideline*
1,2,3,4,7,8,-Hexa-Dibenzo-p-Dioxin	μg/L	nd			
1,2,3,6,7,8,-Hexa-Dibenzo-p-Dioxin	μg/L	nd			
1,2,3,7,8,9-Hexa-Dibenzo-p-Dioxin	μg/L	nd			
1,2,3,4,6,7,8,-Hepta-Dibenzo-p-Dioxin	μg/L	nd			
2,3,7,8-Tetra-Dibenzofuran	μg/L	nd			
1,2,3,7,8,-Penta-Dibenzofuran	μg/L	nd			
2,3,4,7,8,-Penta-Dibenzofuran	μg/L	nd			
1,2,3,4,7,8,-Hexa-Dibenzofuran	μg/L	nd			
1,2,3,6,7,8,-Hexa-Dibenzofuran	μg/L	nd		0.000015	
2,3,4,6,7,8,-Hexa-Dibenzofuran	μg/L	nd			
1,2,3,7,8,9,-Hexa-Dibenzofuran	μg/L	nd			
1,2,3,4,6,7,8-Hepta-Dibenzofuran	μg/L	nd			
1,2,3,4,7,8,9,-Hepta-Dibenzofuran	μg/L	nd			
Total Tetrachlorodibenzo-p-Dioxins	μg/L	nd			
Total Pentachlorodibenzo-p-Dioxins	μg/L	nd			
Total Hexachlorodibenzo-p-Dioxins	μg/L	nd			
Total Heptachlorodibenzo-p-Dioxins	μg/L	nd			
Total Octachlorodibenzo-p-Dioxins	μg/L	nd			
Total Tetrachlorodibenzofurans	μg/L	nd			
Total Pentachlorodibenzofurans	μg/L	nd			
Total Hexachlorodibenzofurans	μg/L	nd			
Total Heptachlorodibenzofurans	μg/L	nd			
Total Octachlorodibenzofuran	μg/L	nd		0.000015	
2,3,7,8-TCDD Toxicity Equivalents	TEQ/L	nd		0.000015	

#### Pharmaceuticals & Personal Care Products (PPCPs)

Pharmaceuticals & Personal Care Products (PPCPs)								
Parameter	Unit of measure	Lemieux Treated Water (average)	Central Distribution (average)	Health-based Drinking Water Guideline*	Aesthetic or Operational Guideline*			
1,7-Dimethylxanthine	μg/L	nd						
10-Hydroxy-Amitriptyline	μg/L	nd						
17a-Dihydroequilin	μg/L	nd						
17a-Estradiol	μg/L	nd						
17a-Ethinylestradiol	μg/L	nd						
17b-Estradiol	μg/L	nd						
2-Hydroxy-Ibuprofen	μg/L	nd						
4-Epianhydrochlortetracycline	μg/L	nd						
4-Epianhydrotetracycline	μg/L	nd						
4-Epichlortetracycline	μg/L	nd						
4-Epioxytetracycline	μg/L	nd						
Acetaminophen	μg/L	nd						
Albuterol	μg/L	0.003						
Amitriptyline	μg/L	nd						
Amlodipine	μg/L	nd						
Amphetamine	μg/L	nd						
Androstenedion	μg/L	nd						
Androsterone	μg/L	nd						
Anhydrotetracycline	μg/L	<						
Atenolol	μg/L	0.005						
Atorvastatin	μg/L	nd						
Azithromycin	μg/L	nd						
Benzafibrate	μg/L	nd						
Benzoylecgonine	μg/L	nd						
Betamethasone	μg/L	nd						
Caffeine	μg/L	0.004						
Carbamezepine	μg/L	0.001						
Ciprofloxacin	μg/L	nd						
Clotrimazole	μg/L	nd			-			



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Cotinine	μg/L	0.002			
Deet	μg/L	nd			
Diphenhydramine	μg/L	0.002			
Enrofloxacin	μg/L	nd			
Epitetracycline	μg/L	nd			
Erythromycin	μg/L	0.002			
Fluoxetine	μg/L	nd			
Indomethacin	μg/L	nd			
Ketoprofen	μg/L	nd			
Metformin	μg/L	0.02			
Miconazole	μg/L	nd			
Norfloxacin	μg/L	nd			
Ofloxacin	μg/L	nd			
Oxolinic Acid	μg/L	nd			
Pentoxifylline	μg/L	nd			
Roxithromycin	μg/L	nd			
Sulfachloropyridazine	μg/L	nd			
Sulfadiazine	μg/L	nd			
Sulfadimethoxine	μg/L	nd			
Sulfamerazine	μg/L	nd			
Sulfamethazine	μg/L	nd			
Sulfamethizole	μg/L	nd			
Sulfamethoxazole	μg/L	nd			
Sulfathiazole	μg/L	nd			-
Trimethoprim	μg/L	nd			