



2012 Public Water System Annual Report

Dauphin Public Water System

It is the City of Dauphin's belief that the public has a right to access information related to the drinking water they consume. To that end the following report has been prepared for the City of Dauphin water system.

3/22/2013

Water System Information

Name of Public Water System: Dauphin Public Water System

Name of the Legal Owner: City of Dauphin

Contact Person: Bill Brenner C.E.T., Director of Public Works & Operations

Phone: 204.622.3212

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Emergency Phone Number: 204.648.3295

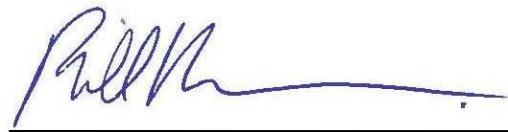
Names of Water Treatment Plant Operators:

Randy Hlady

Bryan Adcock

Water Treatment Plant Phone Number: 204.622.3287

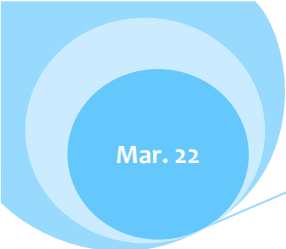
Date Completed: March 22, 2013



Bill Brenner, C.E.T.

Water Treatment and Technology Manager

City of Dauphin



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Introduction

The 2012 Annual Report for the City of Dauphin summarized the Water Utility's ability to produce safe potable water and meet the requirements of all provincial regulations

Description of Water System

The City of Dauphin Public Water System (PWS) provides potable drinking water to a population of 8251 residents (2011 Census). Dauphin's PWS also supplies potable water to 3 private water systems in the RM of Dauphin those being the Lockville Water Coop, Eclipse Water Coop and the Dauphin Airport. Treated water produced from the water treatment plant meets all health and aesthetic objectives as stated in the *Guidelines for Canadian Drinking Water Quality*.

Water Supply Source

The City of Dauphin (City) obtains surface water from the Vermillion River Reservoir. The intake structure is located approximately 6.5 km from the water treatment plant (WTP) site. Raw water is pumped from the reservoir via the Vermillion Raw Water Pumping Station to the Lower Reservoir located at the WTP site via 300 mm diameter pipe. It is then pumped into the WTP via the Low-lift Pumping Station via 300 mm diameter pipe.

Edwards Creek is used as a back-up water source when required. The intake structure is located just south of the southern tip of the Lower Reservoir. Due to raw water quality concerns (variable composition, high manganese levels), Edwards Creek is only used in emergency situations.

Intake Structures

The Vermillion Raw Water Reservoir is operated by Manitoba Water Stewardship. The intake structure consists of approximately 45 m of 400 mm diameter cast iron pipe. The pipe opening is screened by a stainless steel mesh. The Vermillion Pumping Station consists of two alternating 50 hp pumps. Raw water is pumped from the Vermillion Reservoir 4 to 5 days per week to the Lower Reservoir at the WTP site via approximately 6 km of 300 mm diameter pipe.

On an as needed basis raw water is also sourced from Edwards Creek. Edwards Creek is controlled by Parks Canada. The intake structure is located at the southeast shore of the Lower Reservoir at the WTP site.

Water Treatment Process

The source water for the WTP is the Vermillion River and, if necessary, Edwards Creek. Raw water is drawn from Vermillion River by pumps and stored in the Lower Reservoir at the WTP site. Raw water is pumped from the Lower Reservoir via the Low Lift Pumping Station and enters the facility on the north side of the building and is split to feed the two process trains.

Treated water is stored in two reservoirs: the WTP Reservoir and the Brown Avenue Reservoir and distributed to the consumers via water mains. The PRV/Booster Station located along Hwy #5 aids in the transfer of the treated water to the City of Dauphin (City) distribution system.

The existing treatment process consists of the following:

- Flash Mixing/Flocculation/Sedimentation, using aluminium sulphate (alum), caustic soda and polymer.
- Ozonation, for primary disinfection.
- Filtration, polishing step using sand and anthracite rapid gravity filters.
- Chloramination, using chlorine and ammonia for secondary disinfection.
- Fluoridation, using hydrofluosilic acid (HFSA) for consumers' dental health.

These processes are designed to clarify the water and remove microbial contaminants, such as bacteria, and organic materials that are naturally found in surface waters.

Distribution System

The existing water distribution network is made up of pipes of various, age, size and material. The distribution network is made up of pipe ranging from 100 mm to 300 mm diameter, with the majority of the pipe being 150 mm in diameter.

The City has a very detailed procedure for swabbing and flushing their water main network. Between 2002 and 2007 the entire distribution network was flushed annually and one quarter of the network was swabbed annually.

Storage Reservoirs

The water storage system incorporates one (1) raw water and two (2) treated water reservoirs. The table below summarizes their capacities.

Capacity of Reservoirs

	Imperial Units (Imp. Gallons)	Metric Units (ML)	Year Constructed
Edwards Reservoir (Raw)	11,300,000	51.4	
WTP (Treated)	792,000	3.6	1999 & 2001
Brown Avenue (Treated)	1,000,000	4.54	1981

Number of Connections, Population Served and Types of Water Users

The Dauphin distribution system is comprised of 3301 active service connections servicing a population of 8251 residents (2011 Census). All service connections are metered with 88.8% being residential services, 10.8% being commercial services and 0.4% being rural services.

Active Service Connections



- Residential
- Commercial
- Rural

Classification and Certification

The water system facility classifications for the 2012 year:

Class 4 Water Treatment Facility Classification

Class 2 Water Distribution Facility Classification

The water system staff and certification levels for the 2012 year:

Staff Member	Water Treatment	Water Distribution
William P. Brenner, C.E.T.	Class IV	Class II
Randy A. Hlady	Class IV	Class II
Bryan C. Adcock	Class IV (conditional)	Class II
Jeff J. Weselowski		Class II
Brian L. Harvey		Class II
Ronald E. Paziuk		Class II
John Sochan	Class II	Class II
Gary Burla		Class I
Curtis Flett		Class I

Disinfection System in Use

The final step in the treatment of safe water is disinfection. Disinfection is the selective destruction or inactivation of potential disease causing organisms in water. As per the Drinking Water Safety Act the Dauphin PWS is required to ensure a disinfectant residual of at least:

- 0.5 mg of free chlorine per litre of water entering the distribution system following a minimum contact time of 20 minutes
- 0.3 mg of monochloramine per litre of water at all times at any point in the water distribution system

Type of Disinfection system used

Secondary disinfection of the filtered water is accomplished using chlorine gas and aqua-ammonia. Chlorine and ammonia are added to the treated water to produce chloramines.

Chlorine gas is added to the water using a Wallace and Tiernan V-Notch gas feeder system. Ammonia is added to the water using a Wallace and Tiernan positive displacement pump.

For one month in the fall of 2011, the Dauphin PWS switched to free chlorination in the distribution system. The Dauphin PWS used chloramination exclusively during 2012 but will continue to use free chlorination in the distribution system for one month biannually.

Equipment Redundancy and Monitoring Requirements

Chlorine gas is stored in a separate room in 68 kg cylinders. Two banks of two cylinders each are connected to the chlorine feed system at all times and an automatic transfer system is in place.

Each of the two banks of cylinders is capable of supplying the full amount of chlorine required for disinfection at peak demand. Parts and maintenance kits for all chlorination equipment are kept at the WTP at all times.

Spare ammonia pumps as well as pump parts are stored at the WTP at all times.

Disinfectant Residual Overall Performance/Results

For 2012, the Dauphin PWS has met all regulatory requirements in regard to monitoring and reporting disinfection residuals in the water leaving the water treatment plant as well as in the distribution system.

List of Water Quality Standards

The Province of Manitoba has adopted a number of water quality standards from the *Guidelines for Canadian Drinking Water Quality*, developed by Health Canada. The parameters are health-based and they express the maximum acceptable concentration for a surface water supply source.

Concentration values in excess constitute a health-related issue and require corrective actions.

Water Quality Standards		Percent Compliance	Corrective Action Forms
Bacterial			
E. coli	Less than one E. coli bacteria detectable per 100mL in all treated water	100%	
Total coliform	Less than one total coliform bacteria detectable per 100mL in all treated water	100%	
E. coli	Less than one E. coli bacteria detectable per 100mL in all distributed water	100%	
Total coliform	Less than one total coliform bacteria detectable per 100mL in all distributed water	100%	
Disinfection			
Chlorine residual	A free chlorine residual of at least 0.5 mg/L in water entering the distribution system following a minimum contact time of 20 minutes	100%	
	A free chlorine residual of at least 0.1 mg/L at all times at any point in the water distribution system	100%	
	A monochloramine residual of at least 0.3 mg/L at all times at any point in the water distribution system	100%	
Physical			
Turbidity	Less than or equal to 0.3 NTU in 95% of the measurements in a month of the effluent from each operating particulate filter.	100%	100%
	Not exceed 0.3 NTU for more than 12 consecutive hours of filter operation	100%	100%
	Not exceed 1.0 NTU for any continuous measurement	100%	

Chemical		
Total trihalomethanes (to include: bromodichloromethane, bromoform, chloroform, dibromochloromethane)	Less than or equal to 0.10 mg/L as annual average of quarterly samples	0.0346
Arsenic	Less than or equal to 0.01 mg/L	0.00066
Fluoride	Less than or equal to 1.5 mg/L	0.577
Nitrate	Less than or equal to 10 mg/L measured as nitrogen	0.0459
Uranium	Less than or equal to 0.02 mg/L	0.00105

Monitoring Requirements		Percent Compliance
Bacterial		
Total coliform and E. coli	Bi-weekly sampling program with each set of samples consisting of one raw, one treated, and a minimum of 4 distribution samples.	100%
	Consecutive sample sets must be separated by at least 12 days	100%
Disinfection		
Free chlorine (treated water)	One sample per day at the treated water sampling location established by the Drinking Water Officer	100%
	Continuous sampling of water entering the distribution system following at least twenty minutes of contact time	100%
Free chlorine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling	100%
Total chlorine	One sample per day of water entering the distribution system	100%

(treated water)	following at least twenty minutes of contact time	
Total chlorine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling	100%
Monochloramine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling	100%
Physical		
Turbidity	One raw water sample per day.	100%
	Continuous sampling of the effluent from each operating particulate filter	100%
	A confirmatory sample to be taken weekly at location(s) established by the Drinking Water Officer	100%
Chemistry		
General chemistry (to include arsenic, fluoride, nitrate, and uranium)	One raw and one treated water sample once each year	100%
Trihalomethanes (THMs)	"2" preserved distribution system samples taken on a quarterly basis during February May, August, and November, every year	100%
Lead	As per the instructions of the Drinking Water Officer	

Reporting Requirements		
Disinfection	Submit original monthly disinfection report forms within seven days after the end of each calendar month	100%
Physical	Submit original monthly turbidity report forms within seven days after the end of each calendar month	100%
Corrective Actions	Submit original corrective action report for minor exceedences as described in the most recent version of the Office of Drinking Water "Operational Guidelines for Public and Semi-public Water	100%

	Systems”, along with the monthly disinfection, or turbidity report form	
Emergency	Immediately notify the Office of Drinking Water of any condition that may affect the ability of the water system to produce or deliver safe drinking water including treatment upsets or bypass conditions, contamination of the source water or treated water, a filtration or disinfection system failure, or a distribution system failure	NA

Water System Failures and Corrective Actions

In 2012, there were no water system failures or associated corrective actions required.

Additional Records Required

As part of Manitoba Health’s fluoridation program, water samples are collected on a daily basis at the WTP and City Hall and tested on site. Daily fluoride results are recorded and a 14 day composite sample is submitted by-weekly for analysis. The Dauphin PWS strives to maintain a 0.70 mg/L fluoride level. The operating range for fluoride, as identified by Manitoba Health, is 0.50-0.90 mg/L. In 2012, fluoride levels never exceeded the 0.90 mg/L recommended limit. (See Appendix “B” – Certificate of Commendation)

Drinking Water Safety Orders and Actions Taken in Response

In 2012, no Drinking Water Safety Orders were issued for the Dauphin Public Water System.

Boil Water Advisories and Actions Taken in Response

In 2012, no Boil Water Advisories were issued for the Dauphin Public Water System.

Warnings Issued or Charges Laid on the System in Accordance with the Drinking Water Safety Act

In 2012, no Warnings were issued for the Dauphin Public Water System.

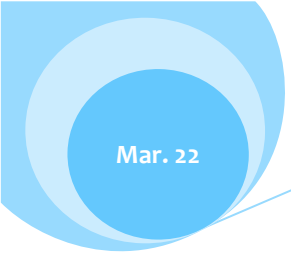
Major Expenses Incurred

- Replaced 14 services to prevent freezing \$35,259.01
- UV Engineering Study \$27,738.92
- Watermain Replacement – Macleod Ave \$42,911.11

Future System Expansion and/or Increased Production

The City of Dauphin currently has the ability to provide 200% of our average daily flows; therefore, there is currently no need to look at ways to increase water production.

As part of the City's ongoing effort to control operation costs at the water treatment plant, we are currently exploring the possibility of converting our primary disinfection system from ozone to ultraviolet (UV) disinfection. An engineering study was completed by KGS in 2012. Initial information indicates that a significant reduction in operational costs could be realized by the conversion. The city will continue to explore this option in 2013.



Appendix

Appendix A – Bacteriological Sample Results

Collection Date	Sample Identification	TC	EC	CL2 Free	CL2 Total
03-Jan-12	DAUPHIN 1-RAW	21	1		
03-Jan-12	DAUPHIN 2-TTD	0	0		
03-Jan-12	DAUPHIN 4-DIST@CITY SHOP	0	0	1.89	2.2
03-Jan-12	DAUPHIN 5-DIST@BOOSTER STN CHLORINATING BLDG	0	0	2.86	2.95
03-Jan-12	DAUPHIN 6-DIST@CIVIC OFFICE	0	0	1.81	2.3
03-Jan-12	DAUPHIN 3-DIST@261 BROWN AVE EAST	0	0	1.02	1.1
10-Jan-12	DAUPHIN 4 @ CIVIC OFFICE	0	0	1.86	2
10-Jan-12	DAUPHIN 7 CO-OP BULK GAS	0	0	1.69	2.5
10-Jan-12	DAUPHIN 5 BROWN AVE RES EAST CELL	0	0	1.26	1.3
10-Jan-12	DAUPHIN 2 TTD	0	0		
10-Jan-12	DAUPHIN 1 RAW	25	0		
10-Jan-12	DAUPHIN 6 20 TUXEDO DRIVE	0	0	0.61	0.7
24-Jan-12	DAUPHIN 3-DIST@CIVIC OFFICE	0	0	2.12	2.6
24-Jan-12	DAUPHIN 3-DIST@BOOSTER STN CHLORINATING BLDG	0	0	2.41	2.6
24-Jan-12	DAUPHIN 3-DIST@CITY SHOP	0	0	1.91	2
24-Jan-12	DAUPHIN 3-DIST@261 BROWN AVE. EAST	0	0	1.89	1.8
24-Jan-12	DAUPHIN 2-TTD	0	0		
24-Jan-12	DAUPHIN 1-RAW	9	1		
07-Feb-12	DAUPHIN 3-DIST@BROWN AVENUE RESERVOIR	0	0	1.98	2.3
07-Feb-12	DAUPHIN 6-DIST@CIVIC OFFICE	0	0	1.4	1.4
07-Feb-12	DAUPHIN 4-DIST@CITY SHOP	0	0	2.5	2.5
07-Feb-12	DAUPHIN 2-TTD	0	0		
07-Feb-12	DAUPHIN 1-RAW	15	0		
07-Feb-12	DAUPHIN 5-DIST@BOOSTER STN CHLORINATING BLDG	0	0	2.6	2.8
14-Feb-12	DAUPHIN 1 RAW	8	0		
14-Feb-12	DAUPHIN 6 20 TUXEDO DRIVE	0	0	0.66	1.1
14-Feb-12	DAUPHIN 4 DIST @ CIVIC OFFICE	0	0	2.57	2.4
14-Feb-12	DAUPHIN 5 BROWN AVE RES WEST CELL	0	0	0.99	1.1
14-Feb-12	DAUPHIN 2 TTD	0	0		
14-Feb-12	DAUPHIN 7 COOP BULK GAS	0	0	2.2	2.5
28-Feb-12	DAUPHIN 4 - DIST @ CITY SHOP	0	0	1.53	1.8

Collection Date	Sample Identification	TC	EC	CL2 Free	CL2 Total
28-Feb-12	DAUPHIN 3 - DIST 34 MACNEILL PLACE	0	0	0.66	0.9
28-Feb-12	DAUPHIN 5 - DIST @ BOOSTER STATION CHLORINATING BLDG	0	0	2.95	2.5
28-Feb-12	DAUPHIN 2 - TTD	0	0		
28-Feb-12	DAUPHIN 1 - RAW	8	0		
28-Feb-12	DAUPHIN 6 - DIST @ CIVIC OFFICE	0	0	2.33	2.3
06-Mar-12	DAUPHIN 7-DIST 261 BROWN EAST	0	0	1.47	1.2
06-Mar-12	DAUPHIN 1-RAW	5	0		
06-Mar-12	DAUPHIN 2-TTD	0	0		
06-Mar-12	DAUPHIN 4-DIST CITY SHOP	0	0	2.39	2.5
06-Mar-12	DAUPHIN 5-DIST BOOSTER STN	0	0	2.66	2.8
06-Mar-12	DAUPHIN 6-DIST CIVIC OFFICE	0	0	2.88	2.8
13-Mar-12	DAUPHIN 7-DIST@COOP BULK GAS	0	0	1.94	2.4
13-Mar-12	DAUPHIN 6-DIST@20 TUXEDO DRIVE	0	0	0.66	1.3
13-Mar-12	DAUPHIN 5-DIST@BRAUN AVE. RES CELL	0	0	1.24	1.3
13-Mar-12	DAUPHIN 4-DIST@CIVIC OFFICE	0	0	2.05	2.4
13-Mar-12	DAUPHIN 2-TTD	0	0		
13-Mar-12	DAUPHIN 1-RAW	48	0		
27-Mar-12	DAUPHIN 4-DIST CITY SHOP	0	0	2.57	3
27-Mar-12	DAUPHIN 7-DIST 34 MACNEILL PLACE	0	0	1.26	1.6
27-Mar-12	DAUPHIN 6-DIST CIVIC OFFICE	0	0	2.25	2.7
27-Mar-12	DAUPHIN 2-TTD	0	0		
27-Mar-12	DAUPHIN 5-DIST BOOSTER STN CHLORINATING BLDG	0	0	2.34	2.7
27-Mar-12	DAUPHIN 1-RAW	8	0		
03-Apr-12	DAUPHIN 2-TTD	0	0		
03-Apr-12	DAUPHIN 6-DIST@CIVIC OFFICE	0	0	1.75	2.3
03-Apr-12	DAUPHIN 1-RAW	3	0		
03-Apr-12	DAUPHIN 5-DIST@BOOSTER STN CHLORINATING BLDG	0	0	2.87	2.7
03-Apr-12	DAUPHIN 4-DIST@CITY SHOP	0	0	1.95	1.9
03-Apr-12	DAUPHIN 3-DIST@BROWN AVE EAST	0	0	1.71	1.6
17-Apr-12	DAUPHIN 6 20 TUXEDO DRAIN	0	0	0.710	1.00
17-Apr-12	DAUPHIN 7 CO-OP BULK	0	0	2.58	2.10
17-Apr-12	DAUPHIN 4 - DIST @ CIVIC OFFICE	0	0	NR	NR
17-Apr-12	DAUPHIN 5 BOWN AVE RED WEST CELL	0	0	1.66	1.60
17-Apr-12	DAUPHIN 1 - RAW	3 **	0	NR	NR
17-Apr-12	DAUPHIN 2 - TREATED @ WTP	0	0	NR	NR

Collection Date	Sample Identification	TC	EC	CL2 Free	CL2 Total
24-Apr-12	DAUPHIN 3 - DIST @ 34 MACNEILL PLACE	0	0	1.01	1.50
24-Apr-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	1.88	2.10
24-Apr-12	DAUPHIN 1 - RAW	18 **	0	NR	NR
24-Apr-12	DAUPHIN 2 - TREATED @ WTP	0	0	NR	NR
24-Apr-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.80	2.00
24-Apr-12	DAUPHIN 3 - DIST @ BOOSTER STATION CHLORINATING BLDG	0	0	2.14	2.20
01-May-12	DAUPHIN 2 - TREATED @ WTP	0	0		
01-May-12	DAUPHIN 3 - DIST @ BOOSTER STATION CHLORINATING BLDG	0	0	1.90	2.60
01-May-12	DAUPHIN 1 - RAW	27	0		
01-May-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	2.23	2.10
01-May-12	DAUPHIN 3 - DIST @ 34 MACNEILL PLACE	0	0	0.820	1.40
01-May-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.10	2.60
15-May-16	DAUPHIN 3 - DIST @ 20 TUXEDO DR	0	0	1.08	1.30
15-May-16	DAUPHIN 3 - DIST @ BROWN AVE RES EAST CELL	0	0	1.21	1.60
15-May-16	DAUPHIN 1 - RAW	59 **	1 **	NR	NR
15-May-16	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.15	1.90
15-May-16	DAUPHIN 2 - TREATED @ WTP	0	0	NR	NR
15-May-12	DAUPHIN 3 - DIST @ COOK BULK GAS	0	0	2.12	1.80
29-May-12	DAUPHIN 3 - DIST @ BOOSTER STATION CHLORINATING BLDG	0	0	2.22	2.70
29-May-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	2.26	1.20
29-May-12	DAUPHIN 2 - TREATED @ WTP	0	0	NR	NR
29-May-12	DAUPHIN 3 - DIST @ 34 MACNEILL PLACE	0	0	1.08	1.20
29-May-12	DAUPHIN 1 - RAW	32 **	3 **	NR	NR

Collection Date	Sample Identification	TC	EC	CL2 Free	CL2 Total
29-May-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.14	2.20
05-Jun-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	1.85	2.10
05-Jun-12	DAUPHIN 1 - RAW	25 **	2 **	NR	NR
05-Jun-12	DAUPHIN 2 - TREATED @ WTP	0	0	NR	NR
05-Jun-12	DAUPHIN 3 - DIST @ 261 BROWN AVE	0	0	1.10	1.30
05-Jun-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.65	1.80
05-Jun-12	DAUPHIN 3 - DIST @ BOOSTER STATION CHLORINATING BLDG	0	0	2.92	2.90
12-Jun-12	DAUPHIN 1 - RAW	>200 **	27 **	NR	NR
12-Jun-12	DAUPHIN 2 - TREATED @ WTP	0	0	NR	NR
12-Jun-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.49	2.70
12-Jun-12	DAUPHIN 3 - DIST @ BROWN AVE RES WEST CELL	0	0	1.00	1.10
12-Jun-12	DAUPHIN 3 - DIST @ 20 TUXEDO DRIVE	0	0	0.700	0.800
12-Jun-12	DAUPHIN 3 - DIST @ CO-OP BULK GAS STATION	0	0	2.51	2.70
26-Jun-12	DAUPHIN 2 - TREATED @ WTP	0	0	NR	NR
26-Jun-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	2.49	2.50
26-Jun-12	DAUPHIN 3 - DIST @ BOOSTER STATION CHLORINATING BLDG	0	0	2.54	2.50
26-Jun-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.25	2.26
26-Jun-12	DAUPHIN 3 - DIST @ 34 MACNEIL PLACE	0	0	0.570	0.700
26-Jun-12	DAUPHIN 1 - RAW	200 **	8 **	NR	NR
03-Jul-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.57	2.70
03-Jul-12	DAUPHIN 1 - RAW	>200 **	14 **	NR	NR
03-Jul-12	34 MACNEILL PLACE	0	0	0.570	0.700
03-Jul-12	DAUPHIN 2 - TREATED @ WTP	0	0	NR	NR
03-Jul-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	2.18	1.80
03-Jul-12	DAUPHIN 3 - DIST @ BOOSTER STATION CHLORINATING BLDG	0	0	2.20	2.30
17-Jul-12	DAUPHIN 3 - DIST @ BROWN AVE RES EAST CELL	0	0	1.02	1.00
17-Jul-12	DAUPHIN 3 - DIST @ 23 TUXEDO DRIVE	0	0	0.810	0.800
17-Jul-12	DAUPHIN 3 - DIST @ CO-OP BULK GAS	0	0	1.63	1.50
17-Jul-12	DAUPHIN 2 - TREATED @ WTP	0	0	NR	NR
17-Jul-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	1.77	1.80
17-Jul-12	DAUPHIN 1 - RAW	>200 **	10 **	NR	NR
31-Jul-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.64	1.70

Collection Date	Sample Identification	TC	EC	CL2 Free	CL2 Total
31-Jul-12	DAUPHIN 1 - RAW	>200	6		
31-Jul-12	DAUPHIN 2 - TREATED @ WTP	0	0		
31-Jul-12	DAUPHIN 3 - DIST @ 261 BROWN AVE E	0	0	1.00	1.20
31-Jul-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.40	2.30
31-Jul-12	DAUPHIN 3 - DIST @ BOOSTER STATION CHLORINATION BLDG	0	0	2.78	2.70
07-Aug-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.97	1.70
07-Aug-12	DAUPHIN 1 - RAW	118	2		
07-Aug-12	DAUPHIN 3 - DIST @ BROWN RES MAINLINE	0	0	1.87	1.70
07-Aug-12	DAUPHIN 3 - DIST @ BOOSTER STATION	0	0	3.13	3.10
07-Aug-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.48	2.40
07-Aug-12	DAUPHIN 2 - TREATED @ WTP	0	0		
14-Aug-12	DAUPHIN 3 - DIST @ 20 TUXEDO DRIVE	0	0	0.550	0.600
14-Aug-12	DAUPHIN 3 - DIST @ BROWN AVE RES WEST CELL	0	0	0.930	0.900
14-Aug-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	1.92	1.90
14-Aug-12	DAUPHIN 2 - TREATED @ WTP	0	0		
14-Aug-12	DAUPHIN 3 - DIST @ CO-OP BULK GAS	0	0	1.80	1.90
14-Aug-12	DAUPHIN 1 - RAW	>200	1		
28-Aug-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.54	1.60
28-Aug-12	DAUPHIN 3 - DIST @ 261 BROWN AVE E.	0	0	1.00	1.10
28-Aug-12	DAUPHIN 3 - DIST @ BOOSTER STATION CHLORINATING BLDG	0	0	2.73	2.70
28-Aug-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	1.75	1.90
28-Aug-12	DAUPHIN 3 - DIST @ CIVIC OFFICE (DUPLICATE SAMPLE)	0	0		
28-Aug-12	DAUPHIN 2 - TREATED @ WTP	0	0		
28-Aug-12	DAUPHIN 1 - RAW	>200	3		
04-Sep-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.81	1.80
04-Sep-12	DAUPHIN 3 - DIST @ BOOSTER STATION	0	0	2.64	2.80
04-Sep-12	DAUPHIN 3 - DIST @ 34 MACNEILL PLACE	0	0	0.630	0.700
04-Sep-12	DAUPHIN 2 - TREATED @ WTP	0	0		
04-Sep-12	DAUPHIN 1 - RAW	118	3		
04-Sep-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.18	2.60
11-Sep-12	DAUPHIN 1 - RAW	200	4		
11-Sep-12	DAUPHIN 2 - TREATED @ WTP	0	0		
11-Sep-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	1.74	2.50
11-Sep-12	DAUPHIN 3 - DIST @ BROWN AVE RES EAST CELL	0	0	0.710	0.700
11-Sep-12	DAUPHIN 3 - DIST @ 20 TUXEDO DRIVE	0	0	0.610	0.500

Collection Date	Sample Identification	TC	EC	CL2 Free	CL2 Total
11-Sep-12	DAUPHIN 3 - DIST @ CO-OP BULK GAS	0	0	1.85	2.70
25-Sep-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	2.22	2.40
25-Sep-12	DAUPHIN 2 - TREATED @ WTP	0	0		
25-Sep-12	DAUPHIN 1 - RAW	>200	24		
25-Sep-12	DAUPHIN 3 - DIST @ 34 MACNEILL PLACE	0	0	0.550	0.600
25-Sep-12	DAUPHIN 3 - DIST @ BOOSTER STATION	0	0	2.33	2.80
25-Sep-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.30	2.40
02-Oct-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	2.38	2.80
02-Oct-12	DAUPHIN 3 - DIST @ BOOSTER STATION DUPLICATED SAMPLE	0	0		
02-Oct-12	DAUPHIN 3 - DIST @ BOOSTER STATION CHLORINATING BLDG.	0	0	2.66	3.00
02-Oct-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.89	2.10
02-Oct-12	DAUPHIN 2 - TREATED @ WTP	0	0		
02-Oct-12	DAUPHIN 3 - DIST @ 34 MACNEILL PLACE	0	0	0.450	0.400
02-Oct-12	DAUPHIN 1 - RAW	>200	21		
16-Oct-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.43	2.00
16-Oct-12	DAUPHIN 3 - DIST @ 34 MACNEILL PLACE	0	0	1.11	1.30
16-Oct-12	DAUPHIN 3 - DIST @ BOOSTER STATION CHLORINATING BLDG	0	0	0.090	0.900
16-Oct-12	DAUPHIN 2 - TREATED @ WTP	0	0		
16-Oct-12	DAUPHIN 1 - RAW	83	0		
16-Oct-12	DAUPHIN 3 - DIST @ CIVIC OFFICE	0	0	0.870	2.10
23-Oct-12	DAUPHIN 1 - RAW	95	4		
23-Oct-12	DAUPHIN 2 - TREATED @ WTP	0	0		
23-Oct-12	DAUPHIN 3 - DIST @ BROWN RES MAINLINE	0	0	0.190	0.600
23-Oct-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.42	1.80
23-Oct-12	DAUPHIN 3 - DIST @ BOOSTER STATION BLDG	0	0	2.42	3.10
23-Oct-12	DAUPHIN 3 - DIST @ CITY HALL	0	0	1.78	2.70
06-Nov-12	DAUPHIN 2 - TREATED @ WTP	0	0		
06-Nov-12	DAUPHIN 3 - DIST @ CITY HALL	0	0	1.72	2.80
06-Nov-12	DAUPHIN 1 - RAW	38	0		
06-Nov-12	DAUPHIN 3 - DIST @ BOOSTER STATION BLDG	0	0	2.38	3.40
06-Nov-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.58	2.30
06-Nov-12	DAUPHIN 3 - DIST @ BROWN RES MAINLINE	0	0	0.380	1.30
20-Nov-12	DAUPHIN 1 - RAW	83	2		
20-Nov-12	DAUPHIN 2 - TREATED @ WTP	0	0		
20-Nov-12	DAUPHIN 3 - DIST @ BROWN RES MAINLINE	0	0	1.81	1.70

Collection Date	Sample Identification	TC	EC	CL2 Free	CL2 Total
20-Nov-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.93	1.90
20-Nov-12	DAUPHIN 3 - DIST @ BOOSTER STN	0	0	2.81	2.90
20-Nov-12	DAUPHIN 3 - DIST @ CITY HALL	0	0	2.26	2.30
04-Dec-12	DAUPHIN 3 - DIST @ CITY SHOP	0	0	1.89	2.10
04-Dec-12	DAUPHIN 3 - DIST @ BOOSTER STATION	0	0	2.09	2.60
04-Dec-12	DAUPHIN 3 - DIST @ BROWN RES MAINLINE	0	0	0.670	0.700
04-Dec-12	DAUPHIN 2 - TREATED @ WTP	0	0		
04-Dec-12	DAUPHIN 3 - DIST @ CITY MALL	0	0	2.50	2.70
04-Dec-12	DAUPHIN 1 - RAW	14	0		
18-Dec-12	DAUPHIN 3 - DIST @ __CITY HALL__	0	0	2.24	2.30
18-Dec-12	DAUPHIN 3 - DIST @ __BOOSTER STATION__	0	0	2.71	2.80
18-Dec-12	DAUPHIN 3 - DIST @ __CITY SHOP__	0	0	1.70	1.10
18-Dec-12	DAUPHIN 2 - TREATED @ WTP	0	0		
18-Dec-12	DAUPHIN 1 - RAW	18	0		
18-Dec-12	DAUPHIN 3 - DIST @ __BROWN AVE RES MAINLINE__	0	0	0.270	0.300

Appendix B – Fluoridation Certificate of Commendation

Certificate of Commendation

Water Treatment Plant Staff

Personeel des installations de traitement des eaux

In recognition of achieving a high standard of operational efficiency with respect to the Community Water Fluoridation Program as administered by Manitoba Health.

En reconnaissance de ce la grande efficacité de son installation de traitement des eaux, dans le cadre du Programme de fluoruration de l'eau dans les collectivités qui relèvent de Santé Manitoba.

We award this certificate of commendation to:

Nous décernons ce certificat de mérite à :

Staff of the DAUPHIN Water Treatment Plant

21

day of month of

December 2012



Associate Deputy Minister
Ministre adjoint
Santé Manitoba
Santé publique et Santé des soins primaires



Minister of Health
Ministre de la Santé

