

2015 Annual Water System Report



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City of Dauphin
April 6th, 2016
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Water System Information

Name of Public Water System: Dauphin Public Water System

Name of the Legal Owner: City of Dauphin

Contact Person: Jeff Hume, Utility Foreman

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Emergency Phone Number: 204.648.4133

Names of Water Treatment Plant Operators:

Randy Hlady

Oblin N. Sofan

Chad McCrady

Jason Lobert

Water Treatment Plant Phone Number: 204.622.3287

Date Completed: April 7th, 2016

Jeff Hume

Utility Foreman

City of Dauphin

April 7th, 2016

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Introduction

The 2016 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; 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.

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 south bank 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 as required. 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.

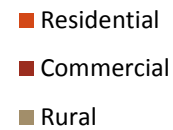
Capacity of Reservoirs

	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 3368 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



Classification and Certification

The water system facility classifications for the 2014 year:

Class 4 Water Treatment Facility Classification

Class 2 Water Distribution Facility Classification

The water system staff and certification levels for the 2014 year:

Staff Member	Water Treatment	Water Distribution
William P. Brenner, C.E.T.	Class IV	Class II
Jeffrey J. Hume	Class IV	Class II
Randy Hlady	Class III	Class II
Jeff J. Weselowski		Class II
Gary Burla		Class I
Oblin N. Sofan	OIT	OIT
Chad McCready	OIT	Class I
Jason Lobert	OIT	OIT
Curtis Flett	OIT	Class II

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.

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 2015, 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%	

Water Quality Standards		Percent Compliance	Corrective Action Forms
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, when free chlorine disinfection is being practiced	100%	
	A monochloramine residual of at least 0.3 mg/L at all times at any point in the water distribution system, when monochloramine disinfection is being practiced	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%	
	Not exceed 0.3 NTU for more than 12 consecutive hours of filter operation	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	0.03
Arsenic	Less than or equal to 0.01 mg/L	0.00069
Fluoride	Less than or equal to 0.9 mg/L	0.68
Nitrate	Less than or equal to 10 mg/L measured as nitrogen	0.025
Uranium	Less than or equal to 0.02 mg/L	0.00042
Total Haloacetic Acids	Less than or equal to 0.08 mg/L as an annual average	0.019

Monitoring Requirements		Percent Compliance
<i>Bacterial</i>		
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%
<i>Disinfection</i>		
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 thirty minutes of contact time	100%
Total chlorine (treated water)	One sample per day of water entering the distribution system following at least thirty minutes of contact time	100%
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%
<i>Physical</i>		
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 daily at a location established by the Drinking Water Officer	100%
<i>Chemistry</i>		
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 exceedance's as described in the most recent version of the Office of Drinking Water "Operational Guidelines for Public and Semi-public Water Systems", along with the monthly disinfection, or turbidity report form	100%
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 2015, 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 2015, fluoride levels never exceeded the 0.90 mg/L recommended limit.

Drinking Water Safety Orders and Actions Taken in Response

In 2015, no Drinking Water Safety Orders were issued for the Dauphin Public Water System.

Boil Water Advisories and Actions Taken in Response

In 2015, 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 2015, no Warnings were issued for the Dauphin Public Water System.

Major Expenses Incurred

- WTP lagoon Sludge removal
- Aqueduct Valve Installation
- Aqueduct replacement

- Memorial Boulevard water main replacement
- 2nd Street NE water main replacement
- 4th Avenue to 6th Avenue water main loop installation
- Brown Avenue Reservoir pump replacement
- Leak detection equipment

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.

Appendix A



Bacteriological Results

Date	Location	Sample Identification	TC	EC
13-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	12	0
13-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
13-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
13-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
13-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
13-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
27-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	21	0
27-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
27-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
27-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BRAUN RES	0	0
27-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
27-Jan-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
10-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	2	0
10-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
10-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
10-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
10-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
10-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
24-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	3	0
24-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
24-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @BOOSTER STN	0	0
24-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @BROWN RES	0	0
24-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @CITY HALL	0	0
24-Feb-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @CITY SHOP	0	0
10-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	14	1
10-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
10-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
10-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BRAUN RES	0	0
10-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
10-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
24-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	1
24-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
24-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @BOOSTER STN	0	0
24-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @BROWN RES	0	0
24-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @CITY HALL	0	0
24-Mar-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @CITY SHOP	0	0
08-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	0

08-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
08-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN.	0	0
08-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES.	0	0
08-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
08-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
21-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	101	0
21-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
21-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
21-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
21-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
21-Apr-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
05-May-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	29	0
05-May-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
05-May-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
05-May-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
05-May-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
05-May-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
19-May-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	29	0
19-May-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
19-May-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
19-May-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
19-May-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
19-May-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
02-June-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	Sample	Error
02-June-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
02-June-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
02-June-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BRAIN RES	0	0
02-June-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
02-June-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
16-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	1
16-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
16-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
16-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
16-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
16-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
29-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	0
29-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
29-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @City Shop	0	0
29-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @BROWN RES	0	0
29-Jun-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @CITY HALL	0	0
29-Jul-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @COOP BULK	0	0



14-Jul-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	1
14-Jul-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
14-Jul-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
14-Jul-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
14-Jul-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
14-Jul-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
21-Jul-14	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	3
21-Jul-14	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
21-Jul-14	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ Tuxedo	0	0
21-Jul-14	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
21-Jul-14	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
21-Jul-14	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CO-OP	0	0
11-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	18
11-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
11-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ City Shop	0	0
11-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
11-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
11-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ Booster STN	0	0
18-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	16
18-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
18-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @BOOSTER STN	0	0
18-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @BROWN RES	0	0
18-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @CITY HALL	0	0
18-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @CITY SHOP	0	0
25-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	>200
25-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
25-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
25-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
25-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
25-Aug-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
08-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	45
08-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
08-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ 23 TUXEDO	0	0
08-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES. EAST	0	0
08-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
08-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CO-OP	0	0
22-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	25
22-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
22-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
22-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
22-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0

22-Sep-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
06-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	10
06-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
06-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
06-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
06-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
06-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
20-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	2
20-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
20-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
20-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
20-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
20-Oct-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
03-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	130	8
03-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
03-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
03-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
03-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
03-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
17-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	>200	16
17-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
17-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
17-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES.	0	0
17-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
17-Nov-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
01-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	95	1
01-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
01-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
01-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
01-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
01-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
15-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 1 - RAW	165	0
15-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 2 - TREATED @ WTP	0	0
15-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BOOSTER STN	0	0
15-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ BROWN RES	0	0
15-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
15-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0
15-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY HALL	0	0
15-Dec-15	DAUPHIN WATER PLANT	DAUPHIN 3 - DISTRIBUTION @ CITY SHOP	0	0





Appendix B

