

Township of
Langley



Est. 1873

Parks Water Quality Report 2015

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1.0 Executive Summary

Two municipal parks in the Township have wells which supply drinking water to fountains or a concession for public consumption. Each park is an isolated system and neither is connected to the Township's distribution system. The BC Drinking Water Protection Regulation (Section 11) requires monitoring of water quality from all public drinking sources as well as an annual report on water quality that must be made available to the public.

Source water quality from Brown and Williams Park met regulatory requirements in 2015. Water from wells in Brown and Williams Park was tested weekly for color, *E. coli*, Heterotrophic Plate Count, total coliforms, turbidity, and pH; and on a quarterly basis for arsenic.

All sources met the requirements of the British Columbia Drinking Water Protection Regulation and the Guidelines for Canadian Drinking Water Quality. Specifically, there were no confirmed positive *E. coli* test results from either Township Park source.

2.0 Introduction

The BC Drinking Water Protection Regulation (Section 11) requires all water suppliers to produce an annual report on water quality for all sources and must ensure that the information is made public. This report provides an overview of the water system in the two Township Parks, and documents the results of the Township's monitoring program of source well water quality.

3.0 System Description

Williams Park and Brown Park are located in the center of the Township of Langley in an area called the Salmon River Uplands. Williams Park is 36.5 acres bounded to the east by 238 Street and to the south by 64 Avenue. Brown Park is located off of 240 Street, south of 51 Avenue and is 12.9 acres in size. Location is show in Figure 3.0.1. No connection to the municipal water system exists for either park.

Williams Park receives potable water from 1 well which supplies water to restrooms, drinking fountains, and a caretaker residence within the park. The treatment system for William's park includes a green sand filter, a filter to remove arsenic, a five-micron filter and NSF UV Sterilization.

Brown Park has two wells; a shallow one in the northwest corner of the property (Well 1), and a deeper one, in the south west corner (Well 2). Well 1 is exclusively for irrigation purposes and has no treatment, whereas Well 2 supplies drinking water to the park for restrooms, a concession, drinking fountains, and a caretaker residence. The treatment system for Brown Park includes a water softener, a sediment filter and NSF UV Sterilization.

Well depths and rated capacity are shown in Table 3.0.1.

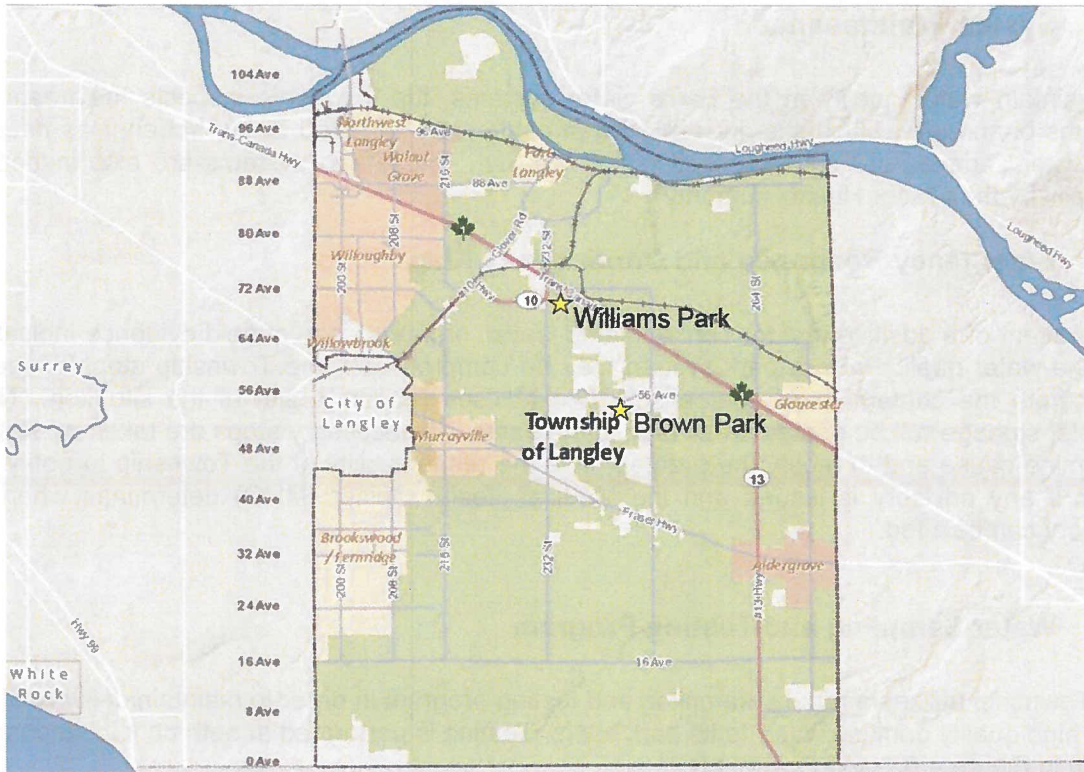


Figure 3.0.1 Location of Williams and Brown Park in the Township

Table 3.0.1 Municipal Well Data

Well Name	EMS #	Year Drilled	Rated Capacity (l/s)	Depth (m)
Williams Park Well	unknown			55
Brown Park Well 1	E49289	1981	1.58	19
Brown Park Well 2	E104834	2007	1.89	68

3.1 Staff Training and Operation Level

The Environmental Operators Certification Program (EOCP) has not yet rated the water systems in Williams and Brown Parks.

Water quality sampling in Township Parks is undertaken by utilities staff, and the operation and maintenance is overseen by a staff member who is certified as an EOCP Small Water Systems Operator.

3.2 System Maintenance

To maintain water quality in the parks water systems, the Township inspects the treatment systems bi-annually, UV bulbs are replaced annually, salt is added to our softener as needed and water samples are collected and tested weekly. These two systems are also inspected annually by the Fraser Health Authority.

3.3 Emergency Response and Contingency Plan

In the event of a positive test for contaminated water, or in the case of field evidence indicating that the water quality from a park system may be compromised, the Township stops usage of water from the contaminated source and then advises Fraser Health of the situation. “Non-potable” signage will be posted on all taps in the parks. All necessary steps are taken by staff to determine cause and to rectify the problem. It is the responsibility of the Township to notify the public if any advisory is issued and the Medical Health Officer (MHO) determines when an advisory can be lifted.

4.0 Water Sampling and Testing Program

The Township utilizes a regular sampling and testing program in order to maintain delivery of safe, high quality drinking water to its park users. Testing is performed at both park locations as shown in Figure 4.0.1 and Figure 4.0.2.

Water sampling and testing, as described in Table 4.0.1, meets regulatory requirements as set by the Guidelines for Canadian Drinking Water Quality.

Table 4.0.1 Water Sampling and Testing Schedule

Parameter	Frequency
E.coli, Total Coliforms, HPC	Weekly
Free Chlorine	
Turbidity	
pH, Temperature	
Arsenic	Quarterly

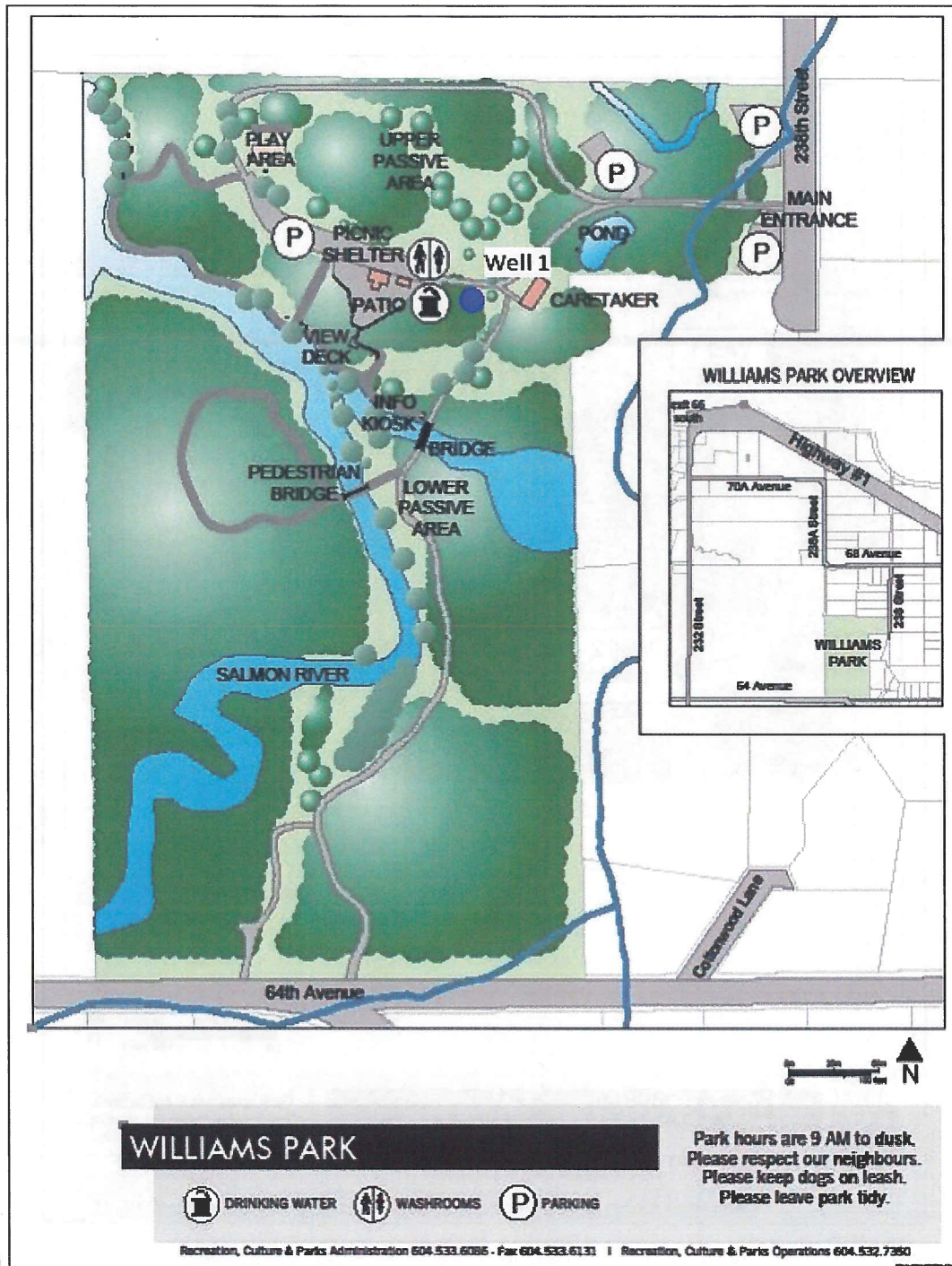


Figure 4.0.1 Weekly Water Sampling Site Location Map – Williams Park

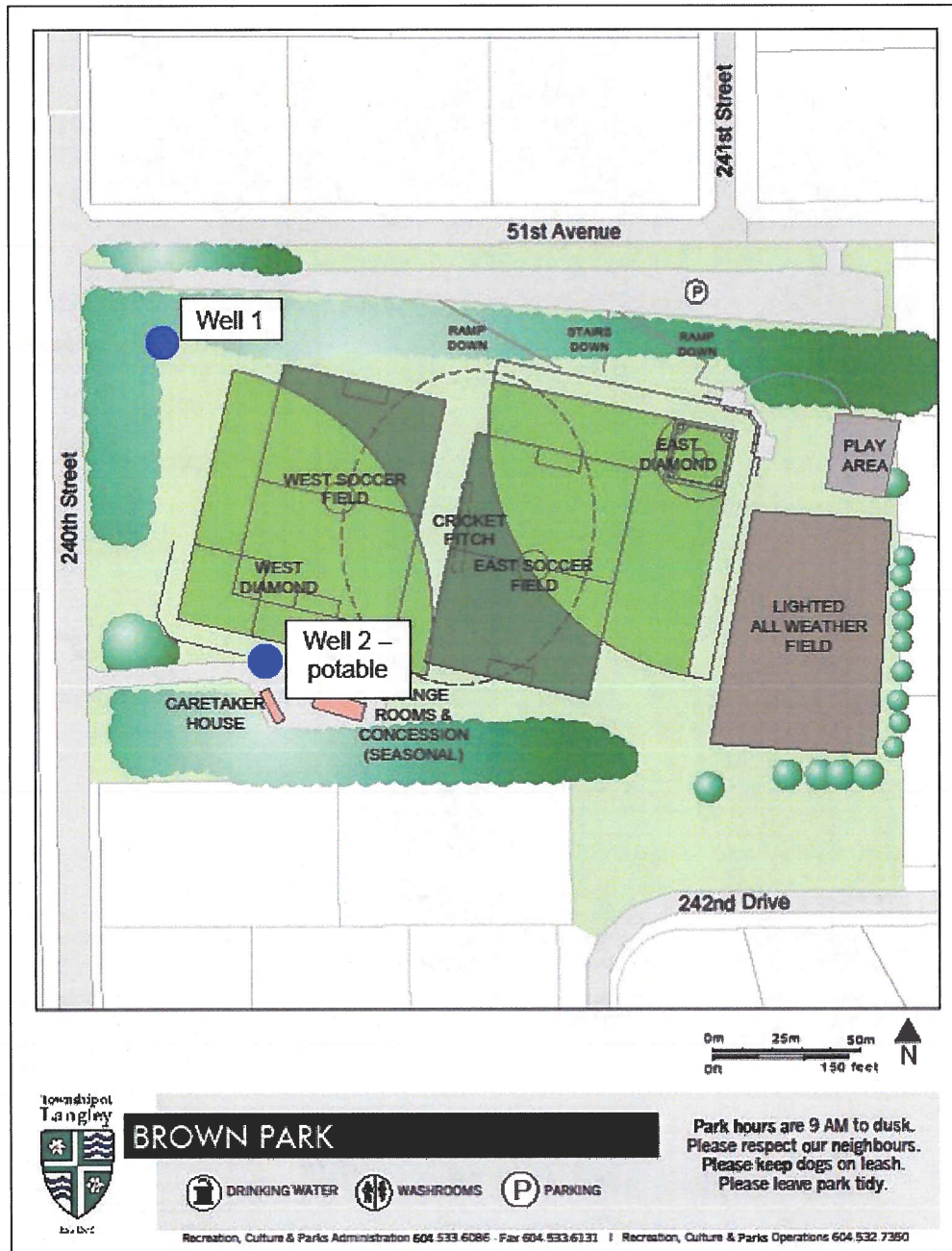


Figure 4.0.2 Weekly Water Distribution Test Site Location Map – Brown Park

Table 4.0.2 shows results for the 2015 quarterly microbiological analysis of the source water for total coliforms and *E.coli*. Township Park's water did not test positive for total coliform at any site.

Table 4.0.2 Quarterly Microbial Analysis

Source	March 2015 Total/E.coli Coliform (MPN/100 mL)	June 2015 Total/E.coli Coliform (MPN/100 mL)	August 2015 Total/E.coli Coliform (MPN/100 mL)	December 2015 Total/E.coli Coliform (MPN/100 mL)
Brown Park	< 1/< 1	< 1/< 1	< 1/< 1	< 1/< 1
Williams Park	< 1/< 1	< 1/< 1	< 1/< 1	< 1/< 1

The wells in Brown Park and Williams Park supply water for a single caretaker, drinking fountains in the picnic area, and for irrigation purposes only. Therefore fewer than 5,000 people are served by the water supply in these parks yearly. The required number of samples should be on the order of 4 samples per month. Currently the Township takes an average of 8 samples per month. Water sampling and testing for *E.coli* and total coliform, as described in Table 4.0.3, meets regulatory requirements as set by the Guidelines for Canadian Drinking Water Quality.

Table 4.0.3 Schedule A of the B.C. Drinking Water Protection Regulation

Parameter	Standard
Escherichia coli	No detectable Escherichia coli per 100 ml
Total coliform bacteria:	
(a) 1 sample in a 30 day period	No detectable total coliform bacteria per 100 ml
(b) more than 1 sample in a 30 day period	At least 90% of samples have no detectable total coliform bacteria per 100 ml and no sample has more than 10 total coliform bacteria per 100 ml

4.1 Microbial Results for 2015

The MAC for total coliform is 10% of samples taken; in 2015 0% of samples tested were positive for total coliform. These results can be seen in Figure 4.1.1.

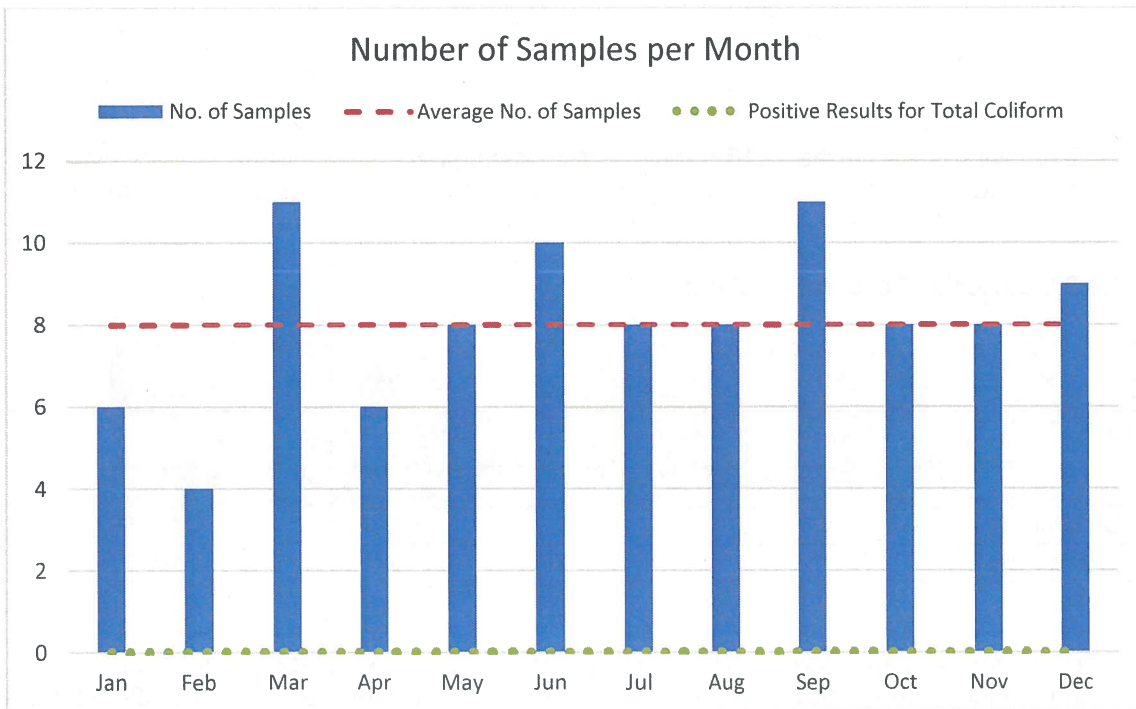


Figure 4.1.1 Number of Samples per Month Positive for Total Coliform Bacteria

5.0 Conclusion

It can be concluded from the 2015 water testing programs that the Brown Park and William's Park wells meet the Canadian Drinking Water Guidelines.

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Appendix A Water Test Results

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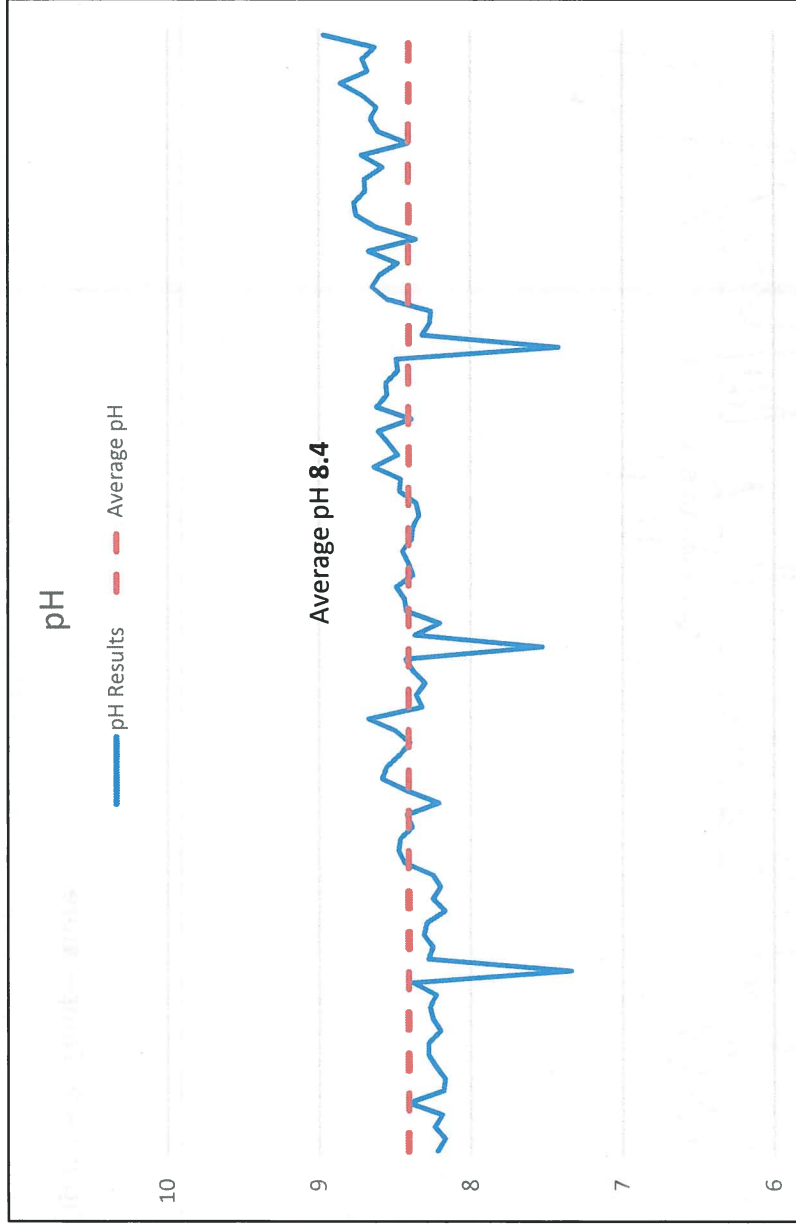


Figure A.1: pH

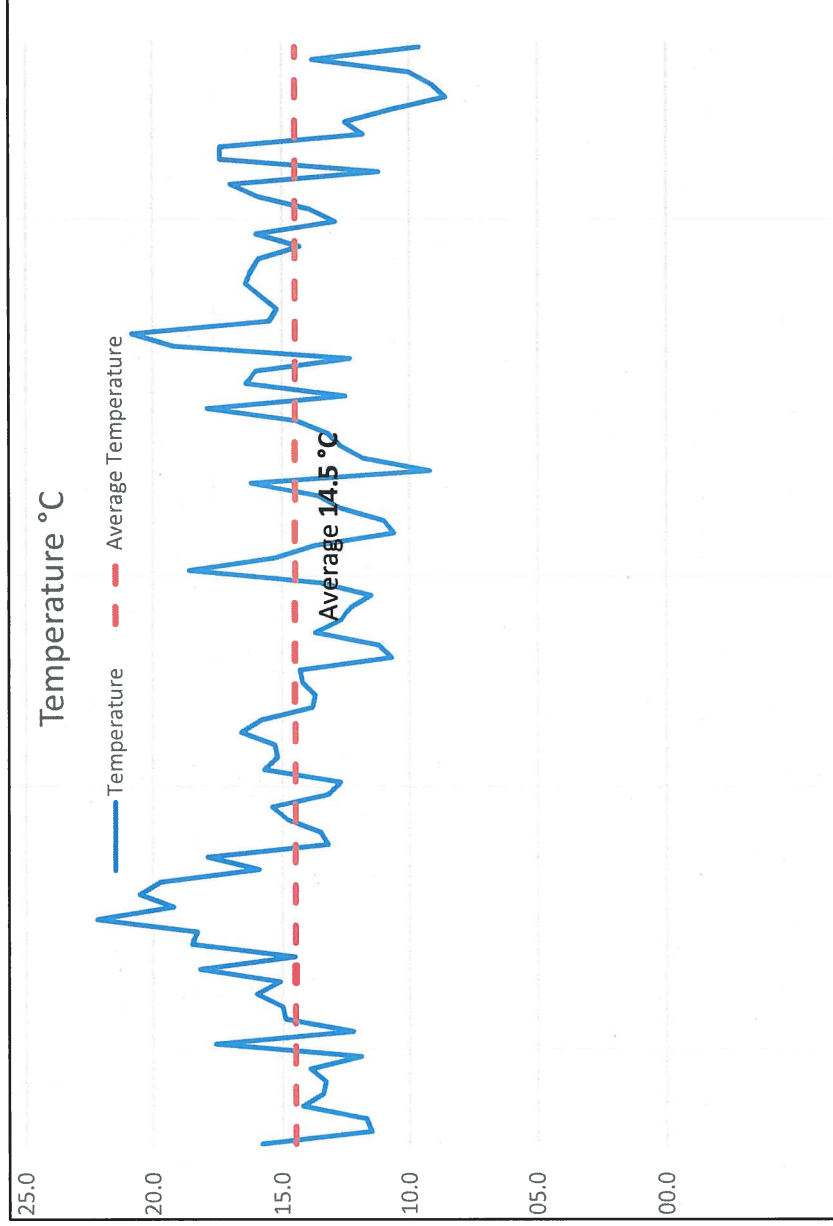


Figure A.2: Temperature

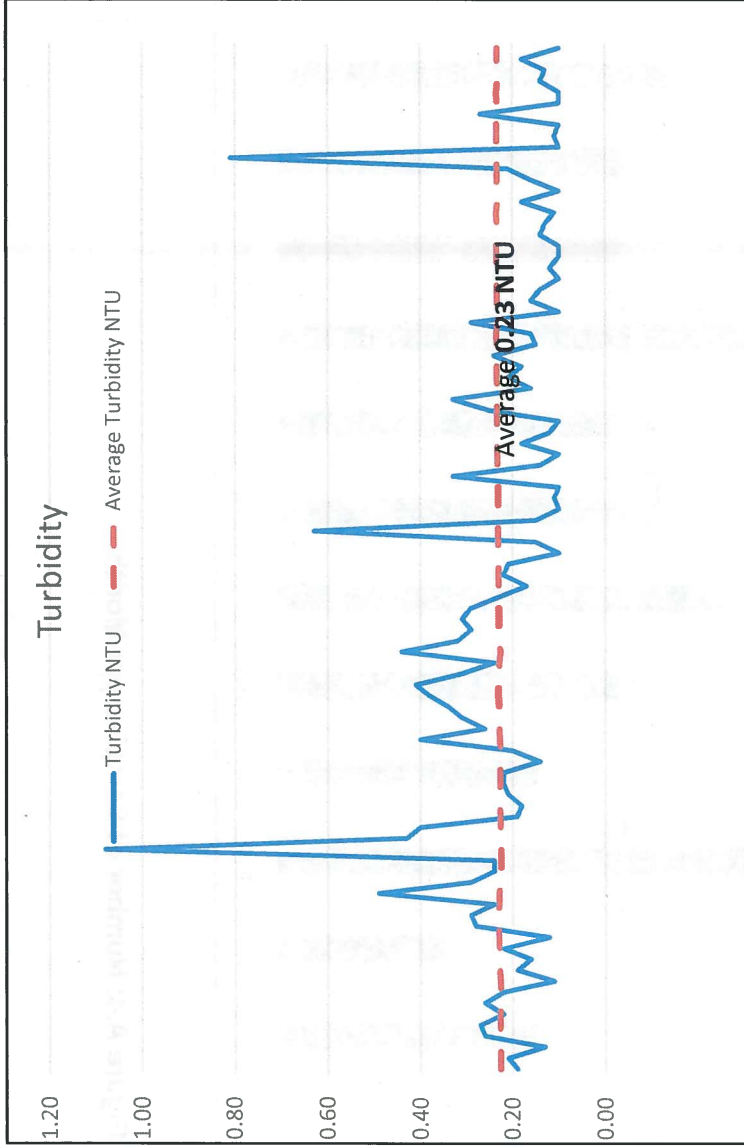


Figure A.3: Turbidity

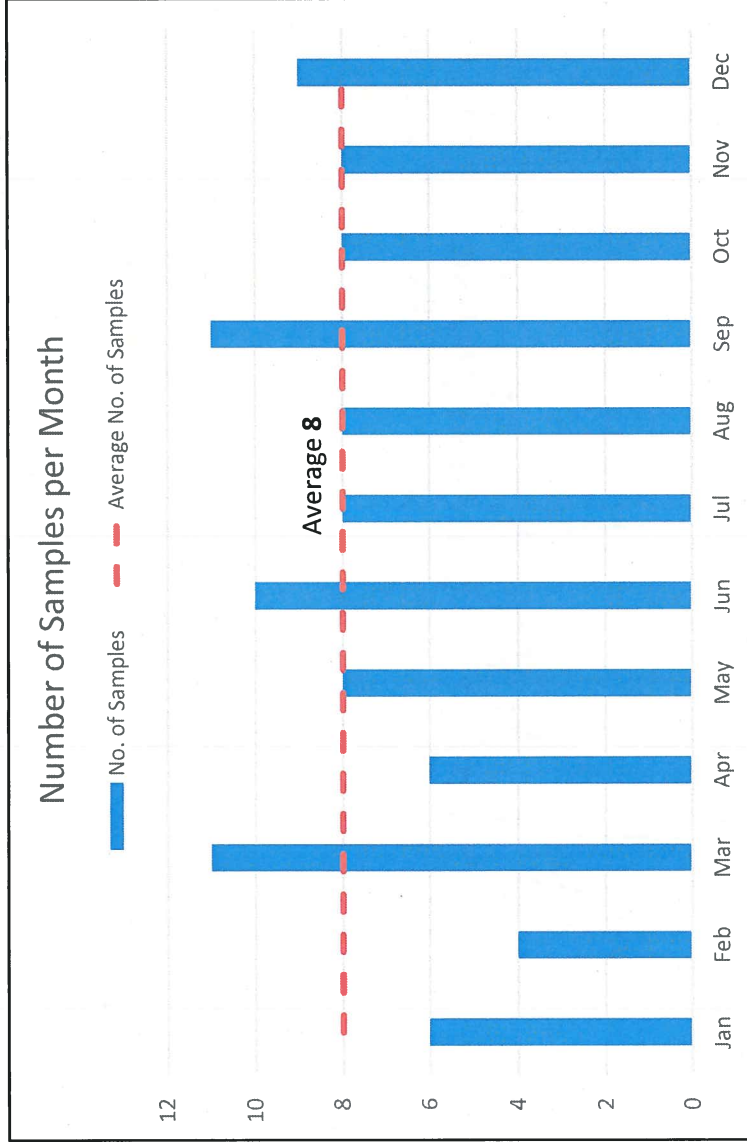


Figure A.4: Number of Samples per Month

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Appendix B Raw Data

Report Name: Water Quality Report										
Facility	Collection Date	Arsenic (total) mg/L	Chlorine (free) mg/L	Colour TCU	Escherichia coli / E. coli (MPN / PA) MPN/100mL	Heterotrophic Plate Count / HPC CFU/mL	pH	Temperature degrees C	Total Coliforms (MPN / PA) MPN/100mL	Turbidity NTU
Brown Park	01/06/2015		0	<5.0	<1	<1	8.22	15.8	<1	0.19
Brown Park	01/13/2015		0	<5.0	<1	<1	8.17	11.5	<1	0.21
Brown Park	01/20/2015		0	<5.0	<1	<1	8.24	11.7	<1	0.13
Brown Park	02/03/2015		0	<5.0	<1	<1	8.19	14.2	<1	0.26
Brown Park	02/24/2015			<5.0	<1	<1	8.41		<1	0.27
Brown Park	03/03/2015			<5.0	<1	<1	8.18	13.4	<1	0.22
Brown Park	03/10/2015		0	<5.0	<1	<1	8.17	13.3	<1	0.26
Brown Park	03/17/2015			<5.0	<1	<1	8.23	13.9	<1	0.22
Brown Park	03/24/2015		0	<5.0	<1	<1	8.28	11.9	<1	0.11
Brown Park	03/31/2015		0	<5.0	<1	<1	8.28	17.6	<1	0.19
Brown Park	04/07/2015			<5.0	<1	<1	8.20	12.2	<1	0.16
Brown Park	04/21/2015			<5.0	<1	<1	8.25	14.9	<1	0.22
Brown Park	04/28/2015		0	<5.0	<1	<1	8.27	15	<1	0.12
Brown Park	05/05/2015			<5.0	<1	<1	8.23	16	<1	0.28
Brown Park	05/12/2015		0	<5.0	<1	<1	8.38	15.1	<1	0.29
Brown Park	05/19/2015			<5.0	<1	<1	7.34	18.2	<1	0.24
Brown Park	05/26/2015			<5.0	<1	<1	8.28		<1	0.49
Brown Park	06/03/2015		0	<5.0	<1	<1	8.25	14.5	<1	0.29
Brown Park	06/09/2015			<5.0	<1	<1	8.31	18.5	<1	0.24
Brown Park	06/16/2015			<5.0	<1	<1	8.29	18.3	<1	0.24
Brown Park	06/23/2015			9.8	<1	<1	8.17	22.2	<1	1.08
Brown Park	06/30/2015			<5.0	<1	4	8.25	19.2	<1	0.43
Brown Park	07/07/2015		0	<5.0	<1	<1	8.20	20.5	<1	0.40
Brown Park	07/14/2015		0	<5.0	<1	<1	8.25	19.7	<1	0.19
Brown Park	07/21/2015		0	<5.0	<1	<1	8.435**		<1	0.18
Brown Park	07/28/2015			<5.0	<1	2	8.475**	15.9	<1	0.21
Brown Park	08/04/2015			<5.0	<1	<1	8.465**	17.9	<1	0.22
Brown Park	08/11/2015		0	<5.0	<1	1	8.385**	13.2	<1	0.22
Brown Park	08/18/2015			5.4	<1	1	8.42**	13.5	<1	0.14
Brown Park	08/25/2015			<5.0	<1	1	8.21	14.8	<1	0.20
Brown Park	09/01/2015			<5.0	<1	<1	8.415**	15.4	<1	0.40
Brown Park	09/08/2015			<5.0	<1	<1	8.585**	13.2	<1	0.26
Brown Park	09/15/2015			<5.0	<1	2	8.555**	12.7	<1	0.31
Brown Park	09/22/2015		0	<5.0	<1	<1	8.47**	15.7	<1	0.34
Brown Park	09/29/2015			<5.0	<1	<1	8.40**	15.2	<1	0.38
Brown Park	10/06/2015			<5.0	<1	1	8.495**	15.3	<1	0.41
Brown Park	10/13/2015			<5.0	<1	2	8.675**	16.6	<1	0.31
Brown Park	10/20/2015			<5.0	<1	1	8.32**	15.8	<1	0.24
Brown Park	10/27/2015			<5.0	<1	<1	8.36**	13.8	<1	0.44
Brown Park	11/03/2015			<5.0	<1	<1	8.30**	13.7	<1	0.32
Brown Park	11/10/2015			<5.0	<1	<1	8.38**	14.2	<1	0.29
Brown Park	11/17/2015			<5.0	<1	<1	8.43**	14.3	<1	0.31
Brown Park	11/24/2015			<5.0	<1	<1	7.53**	10.7	<1	0.29
Brown Park	12/01/2015			<5.0	<1	<1	8.37**	11.2	<1	0.23
Brown Park	12/08/2015			<5.0	<1	2	8.205**	13.7	<1	0.17
Brown Park	12/15/2015			<5.0	<1	<1	8.425**	12.7	<1	0.22
Brown Park	12/22/2015			<5.0	<1	<1	8.435**	12.3	<1	0.21
Williams Park	01/06/2015		0	<5.0	<1	<1	8.49	11.5	<1	<0.10
Williams Park	01/13/2015		0	<5.0	<1	<1	8.38	13.5	<1	0.15
Williams Park	01/20/2015			<5.0	<1	2	8.41	18.6	<1	0.63
Williams Park	02/03/2015		0	<5.0	<1	1	8.45	15.3	<1	0.15

Report Name: Water Quality Report										
Facility	Collection Date	Arsenic (total) mg/L	Chlorine (free) mg/L	Colour TCU	Escherichia coli / E. coli (MPN / FA) MPN/100mL	Heterotrophic Plate Count / HPC CFU/mL	pH	Temperature degrees C	Total Coliforms (MPN / FA) MPN/100mL	Turbidity NTU
Williams Park	02/24/2015			< 5.0	< 1	< 1	8.39		< 1	0.10
Williams Park	03/03/2015			< 5.0	< 1	< 1	8.38	13.7	< 1	0.11
Williams Park	03/10/2015		0	< 5.0	< 1	< 1	8.34	10.6	< 1	< 0.10
Williams Park	03/17/2015			< 5.0	< 1	< 1	8.36	11	< 1	0.33
Williams Park	03/18/2015	0.00966						12.7		
Williams Park	03/24/2015		0	< 5.0	< 1	< 1	8.47	13.6	< 1	0.14
Williams Park	03/31/2015		0	< 5.0	< 1	1	8.46	16.2	< 1	< 0.10
Williams Park	04/07/2015			< 5.0	< 1	11	8.64	9.2	< 1	0.18
Williams Park	04/21/2015			< 5.0	< 1	< 1	8.48	11.8	< 1	0.12
Williams Park	04/28/2015		0	< 5.0	< 1	< 1	8.54	12.7	< 1	< 0.10
Williams Park	05/05/2015			< 5.0	< 1	< 1	8.61	13.2	< 1	0.25
Williams Park	05/12/2015		0	< 5.0	< 1	< 1	8.39	14.4	< 1	0.33
Williams Park	05/19/2015			< 5.0	< 1	< 1	8.62	17.9	< 1	0.16
Williams Park	05/26/2015			< 5.0	< 1	< 1	8.55		< 1	0.21
Williams Park	06/03/2015		0	< 5.0	< 1	< 1	8.56	12.5	< 1	0.18
Williams Park	06/09/2015			< 5.0	< 1	42	8.48	16.4	< 1	0.24
Williams Park	06/16/2015			< 5.0	< 1	< 1	8.49	16	< 1	0.15
Williams Park	06/23/2015			< 5.0	< 1	2	7.42	12.3	< 1	0.16
Williams Park	06/30/2015			< 5.0	< 1	45	8.32	19.2	< 1	0.29
Williams Park	07/07/2015		0	< 5.0	< 1	11	8.27	20.8	< 1	< 0.10
Williams Park	07/14/2015		0	< 5.0	< 1	< 1	8.26	15.5	< 1	0.16
Williams Park	07/21/2015		0	< 5.0	< 1	1	8.55**		< 1	0.14
Williams Park	07/28/2015			< 5.0	< 1	10	8.65**	15.2	< 1	< 0.10
Williams Park	08/04/2015			< 5.0	< 1	45	8.60**	15.8	< 1	0.12
Williams Park	08/11/2015		0	< 5.0	< 1	3	8.48**	16.4	< 1	< 0.10
Williams Park	08/18/2015			< 5.0	< 1	3	8.675**	16.2	< 1	< 0.10
Williams Park	08/25/2015			< 5.0	< 1	2	8.36	15.9	< 1	0.14
Williams Park	09/01/2015			< 5.0	< 1	57	8.625**	14.3	< 1	0.13
Williams Park	09/08/2015			< 5.0	< 1	9	8.755**	16	< 1	0.11
Williams Park	09/15/2015			< 5.0	< 1	3	8.77**	12.9	< 1	0.18
Williams Park	09/22/2015		0	< 5.0	< 1	24	8.695**	13.9	< 1	0.10
Williams Park	09/23/2015	0.00074								
Williams Park	09/29/2015			< 5.0	< 1	< 1	8.70**	15.9	< 1	0.16
Williams Park	10/06/2015			< 5.0	< 1	2	8.58**	17	< 1	0.21
Williams Park	10/13/2015			< 5.0	< 1	< 1	8.72**	11.2	< 1	0.81
Williams Park	10/20/2015			< 5.0	< 1	< 1	8.41**	17.4	< 1	< 0.10
Williams Park	10/27/2015			< 5.0	< 1	3	8.61**	17.4	< 1	0.11
Williams Park	11/03/2015			< 5.0	< 1	12	8.66**	11.8	< 1	< 0.10
Williams Park	11/10/2015			< 5.0	< 1	2	8.62**	12.5	< 1	0.27
Williams Park	11/17/2015			< 5.0	< 1	1	8.715**	10.7	< 1	< 0.10
Williams Park	11/24/2015			< 5.0	< 1	< 1	8.86**	8.6	< 1	< 0.10
Williams Park	12/01/2015			< 5.0	< 1	< 1	8.68**	9.1	< 1	0.14
Williams Park	12/08/2015			< 5.0	< 1	< 1	8.715**	10	< 1	0.13
Williams Park	12/09/2015	0.00149								
Williams Park	12/15/2015			< 5.0	< 1	< 1	8.63**	13.8	< 1	0.18