

Drinking Water Quality Report

2016



CITY OF
Pitt Meadows
The *Natural* Place



DRINKING WATER QUALITY REPORT 2016

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1.0 EXECUTIVE SUMMARY

The City of Pitt Meadows holds a permit to operate its water utility from the Fraser Health Authority (FHA). In 2016, the city was mainly supplied by the Coquitlam watershed and treated by Metro Vancouver.

In accordance with the requirements of the *Drinking Water Protection Act* and the *Drinking Water Protection Regulation*, the city's operations department takes weekly water samples from eight stations which are sent to the Metro Vancouver laboratory for testing. Results are returned to the city on a weekly basis as documented in this annual public report.

The *Drinking Water Protection Regulation* establishes requirements for drinking water quality to ensure water quality standards are in compliance for public safety.

In 2016, the City of Pitt Meadows water system met all regulatory requirements for drinking water quality as set out by the BC Drinking Water Protection Act. All water quality objectives suggested by Health Canada were also met:

- Two chlorine residual tests fell below the minimum level of 0.2 ppm.
- No samples tested positive for E. coli.
- 100% of the samples had 0 Total Coliform per 100 mL.
- The annual average Total Trihalomethane results ranged between 41 and 46 parts per billion (ppb), less than the Health Canada guidelines of 100 ppb.
- The annual average Total Haloacetic acid results ranged from 47 to 55 ppb, less than Health Canada's guidelines of 80 ppb.

In conclusion, the water quality in the City of Pitt Meadows was quite good in 2016.

2.0 INTRODUCTIONS

This is the City of Pitt Meadows (PM) annual Drinking Water Quality Report for 2016. It is prepared for the Fraser Health Authority (FHA) as well as public information.

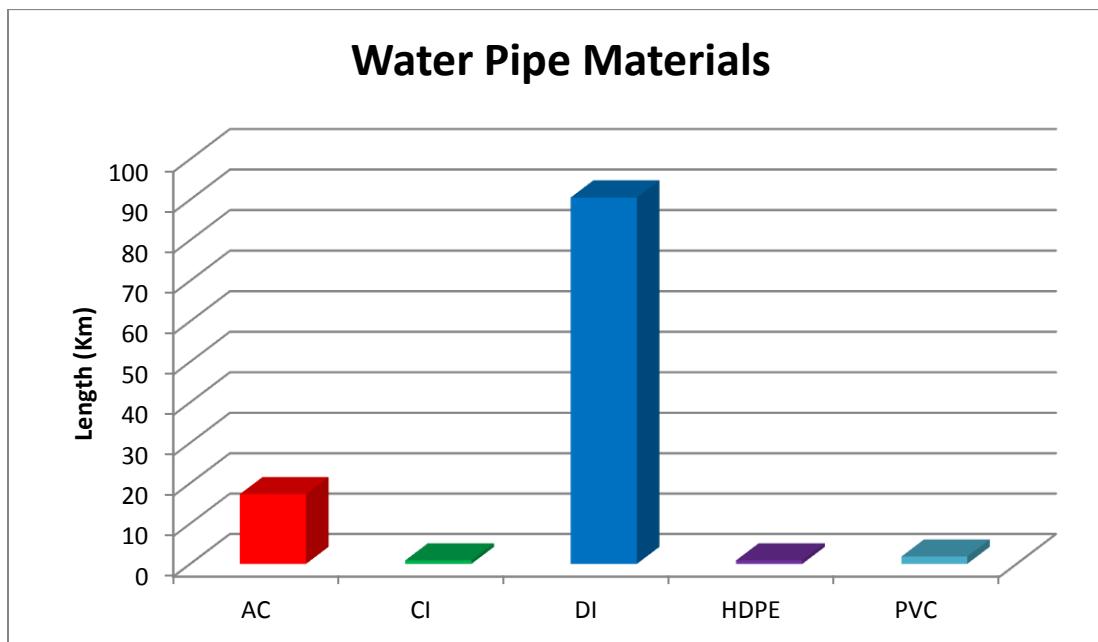
3.0 BACKGROUND

3.1 Regulating Authorities

PM holds a permit to operate its water distribution network from the FHA (Appendix 8) and adheres to the provisions of the Local Government Act. Water quality requirements are legislated by the *Drinking Water Protection Act (DWPA)* and *Drinking Water Protection Regulation (DWPR)*. The drinking water officer may also issue orders for non-compliance and or health concerns. The water distribution system has been classified by the EOCP as a Class II System.

3.2 Distribution System

PM's water distribution network is over 111 kilometers long and serves a population of approximately 18,500 residents.



Water Supply

The primary water supply source is the Coquitlam watershed. The Coquitlam source uses Ozone as a primary disinfectant. Water supply can also come from the Metro Vancouver's other watershed sources (Capilano & Seymour). The water arrives via Haney Mains 2 and 3. Water supplied by both Haney Main 2 and 3 is re-chlorinated as a

secondary disinfectant at the Pitt River Disinfection Station prior to arriving in the municipal water distribution system.

Maintenance

In a unidirectional fashion, using valve isolation, all water mains were effectively flushed. Dead end lines that are not looped received special attention. Sodium thiosulphate was used to ensure the absence of chlorine residual as the water being flushed was introduced into the environment. An automatic flush valve at the end of the long run on Rannie Road engages for 2 hours twice every day to ensure the presence of chlorine residual.

Unidirectional flushing has been revised further with the aid of computerized modeling and feedback from last year's program to improve effectiveness.

All City owned backflow devices and assemblies were tested and repaired as required by a certified tester. Our cross connection control program ensures backflow protection devices are installed and tested annually at all high and moderate hazard locations.

All components of the six pressure regulating stations and the single booster station were maintained on a regular basis to ensure proper operation. This maintenance included the cleaning of inline and body strainers, function of Clayton valves and pressure relief valves, air valves. Kennedy PRV was replaced with a new facility in 2015.

All 489 fire hydrants owned by the City were fully maintained in 2016. The hydrants received a scheduled "A" or "B" service and approximately 133 were power washed and painted.

The City has 1002 mainline and service valves in the distribution system that were exercised and maintained as necessary.

We currently have 6 level II and 2 level I Water Distribution Operators employed to maintain our system.

Repairs and Upgrades

Currently asbestos cement (AC) mains are being replaced by ductile iron mains (DI) on a yearly basis with all AC mains scheduled to be replaced by 2025. Projects in 2016 included:

- 1) Replaced 715 meters of AC main on 116B, 117B, 193B and 193A St.
- 2) Replaced 198 meters of AC main on Blakely Rd.
- 3) Replaced 415 meters of AC main on Wildwood Cres

4.0 WATER QUALITY SAMPLE SITES

The city has 8 sampling sites that are sampled weekly. Their locations and attributes are listed in table 1 and shown on a map in Appendix 1. All 9 sample sites are tested for physical parameters and 4 are tested for chemical in one distribution zone.

Table 1: Sample Location and Attributes

Sample Site	Location	Main Size (mm)	Normal Flow
DmPMS-421	12188 McMyn Ave	150 DI	Low
DmPMS-422	19817 Wildwood Place	150 DI	Low
DmPMS-423	12476 Wooldridge Road	250 DI	Medium
DmPMS-424	20217 McNeil Road	250 DI	Medium
DmPMS-425	16651 Rannie Road	150 DI	Low
DmPMS-426	13657 McKechnie Road	150 DI	Medium
DmPMS-427	120B Ave Opposite 18993	150 AC	Low
DmPMS-428	100 meters west of Old Dewdney Trunk Rd PRV	300 DI	Source
DmPMS-429	North West corner of Sutton and Bonson	300 DI	Low

Samples are taken every Tuesday morning by the city's Operations Department and are then picked up by the Metro Vancouver for testing. The detailed 2016 results are in Appendix 2.

4.1 Bacteriological Monitoring

Samples are analyzed for fecal coliform, total coliform and heterotrophic plate count (HPC). BCSDWR Microbiological Standards are listed in Table 2.

Table 2: BCSDWR Microbiological Standards

Parameter	Occurrence	Standard
Fecal Coliform	0	Less than 1 fecal coliform per 100 mL
Total Coliform	0	0 total coliform per 100 mL At least 90% of samples have 0 total coliform per 100 mL and no sample has more than 10 fecal coliform per 100 mL

Bacteriological Results

Appendix 4 illustrates the bacteriological requirements were met in 2016.

4.2 Chemical and Physical Monitoring

Monitoring of the City's distribution system is conducted by Metro Vancouver. Samples are screened for temperature, pH and turbidity. Monitoring of the source water and Metro Vancouver transmission system is conducted by the Metro Vancouver Water District (MVWD) and Metro Vancouver. Table 3 illustrates which BCSDWR guidelines were not met.

Table 3: Chemical or Physical Parameters that Did Not Meet the Guidelines

Parameter	Target	Number of Tests that did not meet the Guideline	Percent of Tests that did not meet the Guideline
Source Water			
See Appendix 3, 6 and 7			
Metro Vancouver Transmission System			
See Appendix 5			
City Distribution System			
Temperature	<15 °C	82	18.0%

Temperature of water was generally acceptable, the only times that the water temperature was above the guideline was during the summer months. The excess temperatures range from 16 to 18 degrees Celsius. Temperature of water will affect the efficiency of water treatment processes. Low temperature decreases efficiency of treatment processes and high temperatures enhance the growth of nuisance organisms that could be detected by odor and taste.

Total Haloacetic Acid results account for the by-products of the disinfection process from chlorine break down when it reacts with natural occurring organisms and are within the allowable limits. Source water and Metro Vancouver improvement plans are determined by the MVWD and published in the *MVWD Quality Control Annual Report, 2015*. They are also in Appendix 6 and 7.

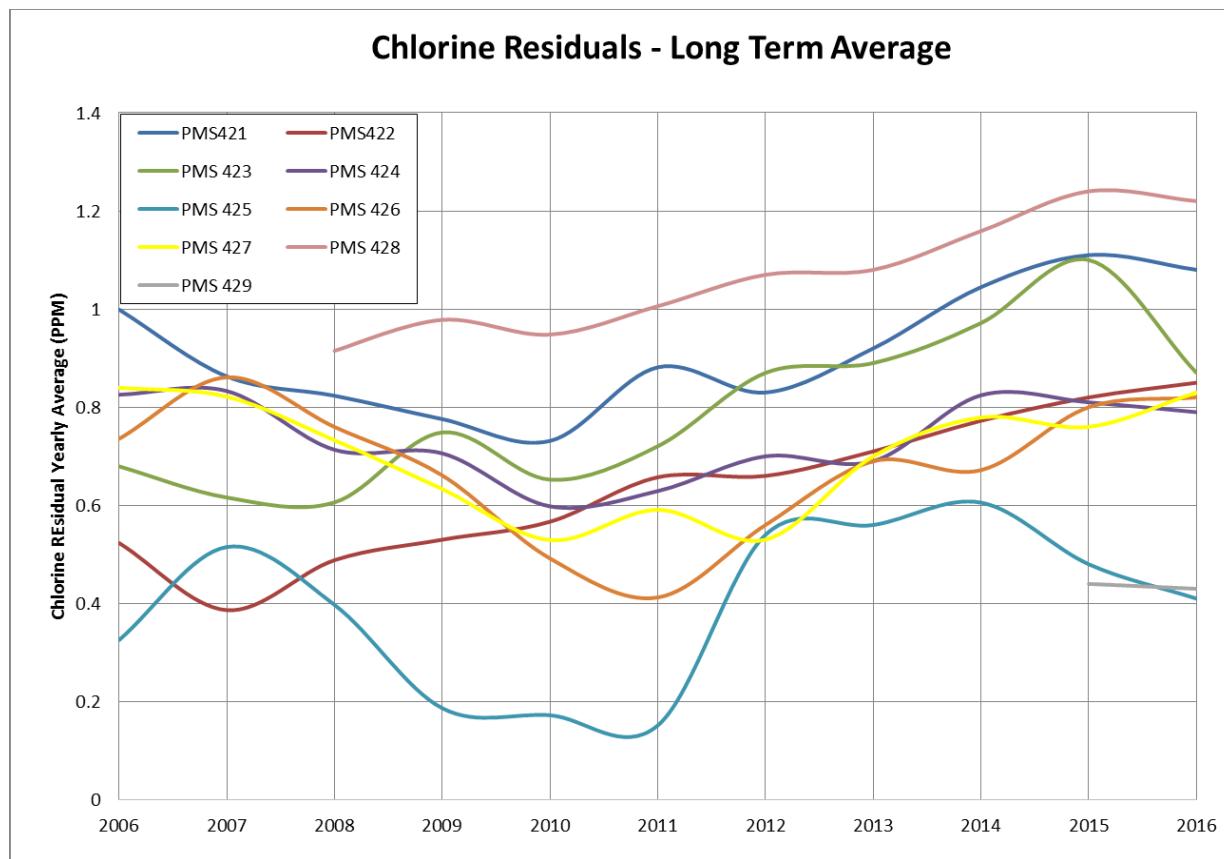
4.3 Chlorine Residual Levels

Table 4: Chlorine Levels at Each Sample Site in 2016

Sample Site	Number of Samples Taken	Number of Samples with <0.2ppm Chlorine Residual	Percent of Samples with <0.2ppm Chlorine Residual
DmPMS-421	50	0	0%
DmPMS-422	51	0	0%
DmPMS-423	50	1	2%
DmPMS-424	51	0	0%
DmPMS-425	51	1	2%
DmPMS-426	50	0	0%
DmPMS-427	51	0	0%
DmPMS-428	50	0	0%
DmPMS-429	51	0	0%

Chlorine Residual Improvement Plan

Chlorine Residuals have improved over the past several years due to significant improvements to our unidirectional flushing program. We have 2 stations that are trending downwards that may indicate a build up on the pipe walls. We have used pigging in recent years to help. If the trend continues we will incorporate this procedure to improve residuals. We will continue to monitor the distant lines for issues. The following graph illustrates the long term yearly average chlorine Residuals in Pitt Meadows.



5.0 EMERGENCY RESPONSE PLAN

The City of Pitt Meadows *Water Response Plan* is a document that contains detailed information for all stakeholders in the event of an emergency related to the City's water distribution system.

The plan has been developed to ensure the safe and effective delivery of water is maintained and lessen the impacts of emergency situations.



6.0 WATER FLUSHING MESSAGE FROM FRASER HEALTH

A public health message from the Fraser Health Authority



Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until you notice a change in temperature. (This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer.) The more time water has been sitting in your home's pipes, the more lead it may contain.

Use only water from the cold-tap for drinking, cooking, and especially making baby formula. Hot water is likely to contain higher levels of lead.

The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

Conserving water is still important. Rather than just running the water down the drain you could use the water for things such as watering your plants.

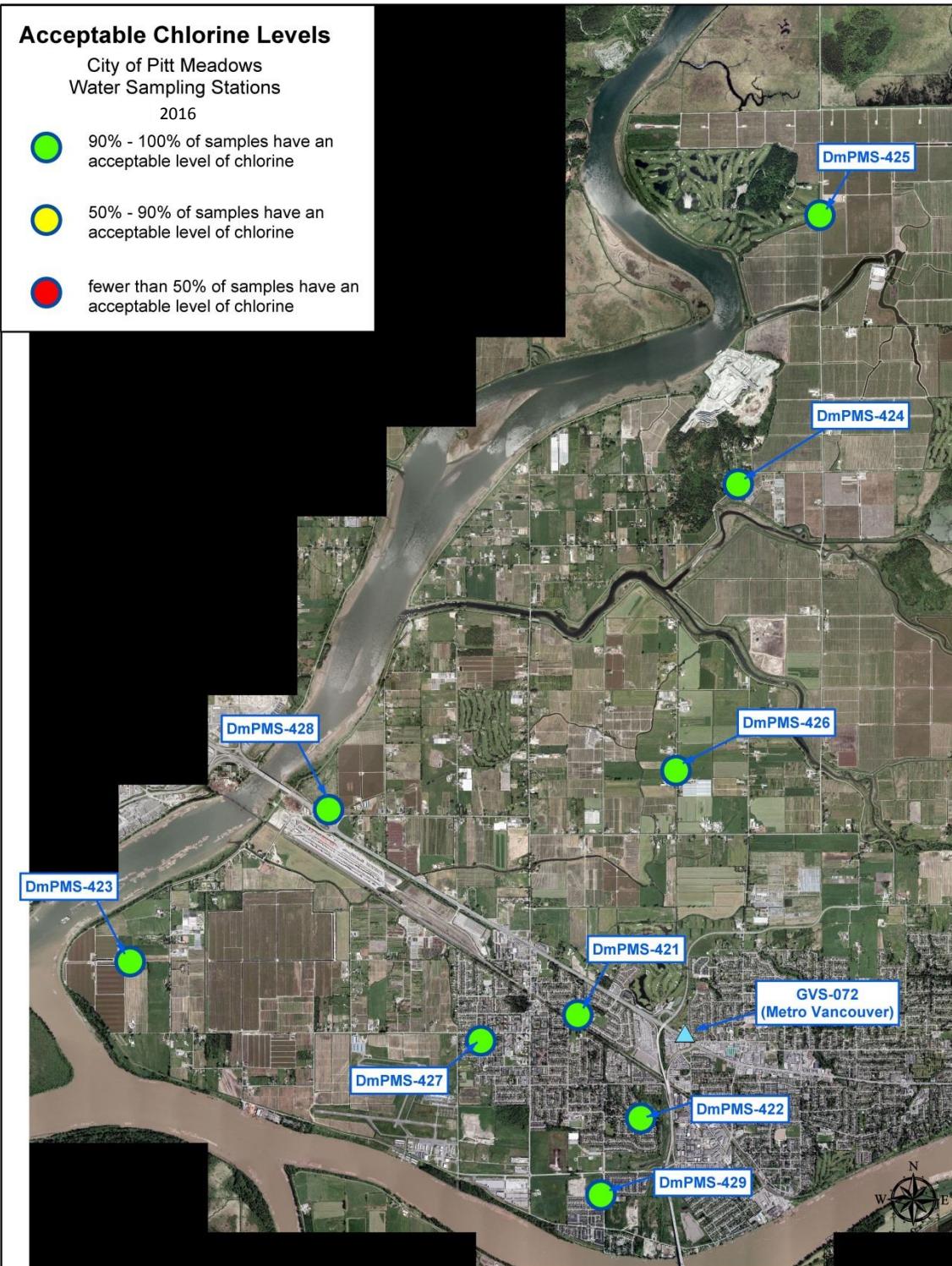
APPENDIX – I

ACCEPTABLE CHLORINE LEVELS AND SAMPLE SITE LOCATIONS

Acceptable Chlorine Levels

City of Pitt Meadows
Water Sampling Stations
2016

- 90% - 100% of samples have an acceptable level of chlorine
- 50% - 90% of samples have an acceptable level of chlorine
- fewer than 50% of samples have an acceptable level of chlorine



APPENDIX – 2

WEEKLY SAMPLE METRO VANCOUVER LAB RESULTS DMPMS 421 – 429

PMS-421

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Jan 05, 2016 9:00:00 AM	0.96	<1	8	6.0	<1	0.32
Jan 12, 2016 9:00:00 AM	0.94	<1	<2	6.0	<1	0.32
Jan 19, 2016 9:05:00 AM	1.2	<1	<2	6.0	<1	0.38
Jan 26, 2016 9:10:00 AM	0.99	<1	<2	7.0	<1	0.42
Feb 02, 2016 10:10:00 AM	1.3	<1	<2	6.0	<1	0.45
Feb 09, 2016 9:05:00 AM	1.3	<1	<2	7.0	<1	0.63
Feb 16, 2016 9:08:00 AM	1.0	<1	<2	7.0	<1	0.55
Feb 23, 2016 9:23:00 AM	0.72	<1	<2	7.0	<1	0.49
Mar 01, 2016 9:12:00 AM	1.2	<1	<2	7.0	<1	0.38
Mar 08, 2016 9:00:00 AM	1.3	<1	<2	7.0	<1	0.38
Mar 15, 2016 11:10:00 AM	1.1	<1	<2	5.5	<1	0.34
Mar 22, 2016 9:02:00 AM	1.1	<1	<2	7.0	<1	0.31
Mar 29, 2016 8:56:00 AM	1.0	<1	<2	7.0	<1	0.34
Apr 05, 2016 9:05:00 AM	1.0	<1	<2	8.0	<1	0.27
Apr 12, 2016 9:18:00 AM	1.01	<1	<2	7.0	<1	0.31
Apr 19, 2016 8:58:00 AM	1.09	<1	<2	9.0	<1	0.42
Apr 26, 2016 8:58:00 AM	0.72	<1	<2	9.0	<1	0.29
May 03, 2016 9:28:00 AM	0.84	<1	2	10	<1	0.27
May 10, 2016 11:05:00 AM	1.09	<1	<2	9.0	<1	0.36
May 17, 2016 10:05:00 AM	1.03	<1	<2	10	<1	0.26
May 24, 2016 10:10:00 AM	1.07	<1	6	11	<1	0.24
May 31, 2016 9:06:00 AM	0.90	<1	52	10	<1	0.37
Jun 07, 2016 8:52:00 AM	1.20	<1	18	11	<1	0.34
Jun 14, 2016 9:25:00 AM	1.09	<1	<2	12	<1	0.31
Jun 21, 2016 9:15:00 AM	NA	<1	4	12	<1	0.34
Jun 28, 2016 9:03:00 AM	1.15	<1	4	12.0	<1	0.36
Jul 05, 2016 10:30:00 AM	1.00	<1	48	13	<1	0.53
Jul 12, 2016 11:25:00 AM	1.27	<1	8	13	<1	0.25
Jul 19, 2016 10:30:00 AM	1.18	<1	8	14	<1	0.26
Jul 26, 2016 9:10:00 AM	1.26	<1	42	15	<1	0.33
Aug 02, 2016 9:15:00 AM	1.24	<1	24	16	<1	0.27
Aug 09, 2016 10:10:00 AM	1.16	<1	10	17	<1	0.34
Aug 16, 2016 10:50:00 AM	1.11	<1	8	17	<1	0.41
Aug 23, 2016 9:20:00 AM	1.23	<1	28	17	<1	0.48

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Aug 30, 2016 9:05:00 AM	1.14	<1	8	17	<1	0.33
Sep 06, 2016 10:30:00 AM	1.03	<1	8	17	<1	0.28
Sep 13, 2016 9:05:00 AM	1.14	<1	32	16	<1	0.29
Sep 20, 2016 8:57:00 AM	1.28	<1	<2	16	<1	0.39
Sep 27, 2016 9:05:00 AM	1.20	<1	12	15	<1	0.29
Oct 04, 2016 9:00:00 AM	1.14	<1	6	14	<1	0.27
Oct 11, 2016 9:00:00 AM	1.15	<1	4	13	<1	0.20
Oct 18, 2016 9:20:00 AM	0.31	<1	<2	12	<1	0.42
Oct 25, 2016 9:03:00 AM	1.32	<1	2	11	<1	0.43
Nov 01, 2016 9:07:00 AM	1.24	<1	2	10	<1	0.39
Nov 08, 2016 9:09:00 AM	1.02	<1	<2	10	<1	0.36
Nov 15, 2016 10:30:00 AM	0.98	<1	<2	10	<1	0.42
Nov 22, 2016 9:28:00 AM	1.11	<1	24	8	<1	0.37
Nov 29, 2016 9:25:00 AM	0.89	<1	10	8	<1	0.38
Dec 20, 2016 10:17:00 AM	1.23	<1	<2	6	<1	0.28
Dec 28, 2016 10:30:00 AM	1.16	<1	NA	5	<1	0.26

PMS-422

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Jan 05, 2016 8:40:00 AM	0.89	<1	2	7.0	<1	0.29
Jan 12, 2016 8:45:00 AM	0.66	<1	8	7.0	<1	0.33
Jan 19, 2016 8:45:00 AM	0.96	<1	2	7.0	<1	0.33
Jan 26, 2016 8:50:00 AM	0.78	<1	28	8.0	<1	0.36
Feb 02, 2016 11:00:00 AM	0.99	<1	10	7.0	<1	0.32
Feb 09, 2016 8:45:00 AM	1.0	<1	8	8.0	<1	0.49
Feb 16, 2016 8:45:00 AM	0.70	<1	2	8.0	<1	0.45
Feb 23, 2016 9:10:00 AM	0.78	<1	<2	8.0	<1	0.37
Mar 01, 2016 8:48:00 AM	0.82	<1	<2	8.0	<1	0.34
Mar 08, 2016 8:45:00 AM	0.99	<1	<2	9.0	<1	0.39
Mar 15, 2016 8:35:00 AM	0.80	<1	2	8.0	<1	0.26
Mar 22, 2016 8:33:00 AM	0.78	<1	<2	8.0	<1	0.26
Mar 29, 2016 8:40:00 AM	0.80	<1	8	9.0	<1	0.27
Apr 05, 2016 8:52:00 AM	0.75	<1	20	9.0	<1	0.31
Apr 12, 2016 8:30:00 AM	0.85	<1	<2	10	<1	0.33
Apr 19, 2016 8:43:00 AM	0.82	<1	12	11	<1	0.80

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Apr 26, 2016 8:37:00 AM	0.83	<1	<2	11	<1	0.32
May 03, 2016 8:51:00 AM	0.71	<1	2	11	<1	0.30
May 10, 2016 8:35:00 AM	0.94	<1	6	12	<1	0.35
May 17, 2016 10:45:00 AM	0.85	<1	24	13	<1	0.26
May 24, 2016 10:35:00 AM	0.88	<1	12	13	<1	0.22
May 31, 2016 8:45:00 AM	0.80	<1	2	13	<1	0.31
Jun 07, 2016 8:27:00 AM	0.98	<1	2	12	<1	0.38
Jun 14, 2016 11:35:00 AM	0.77	<1	2	14	<1	0.34
Jun 21, 2016 8:55:00 AM	NA	<1	4	14	<1	0.34
Jun 28, 2016 8:45:00 AM	0.94	<1	<2	14.0	1	0.34
Jul 05, 2016 8:45:00 AM	0.76	<1	2	15	<1	0.32
Jul 12, 2016 10:50:00 AM	0.98	<1	6	15	<1	0.23
Jul 19, 2016 11:30:00 AM	0.84	<1	<2	16	<1	0.22
Jul 26, 2016 8:50:00 AM	1.09	<1	2	15	<1	0.29
Aug 02, 2016 8:55:00 AM	1.05	<1	2	17	<1	0.24
Aug 09, 2016 10:50:00 AM	1.00	<1	4	17	<1	0.37
Aug 16, 2016 8:35:00 AM	1.04	<1	<2	17	<1	0.36
Aug 23, 2016 8:45:00 AM	1.07	<1	<2	17	<1	0.40
Aug 30, 2016 8:42:00 AM	1.01	<1	<2	18	<1	0.22
Sep 06, 2016 11:10:00 AM	0.83	<1	2	17	<1	0.21
Sep 13, 2016 8:47:00 AM	0.98	<1	<2	16	<1	0.26
Sep 20, 2016 11:26:00 AM	0.79	<1	2	17	<1	0.28
Sep 27, 2016 8:49:00 AM	0.89	<1	<2	16	<1	0.18
Oct 04, 2016 8:44:00 AM	0.80	<1	8	16	<1	0.19
Oct 11, 2016 8:43:00 AM	0.86	<1	<2	14	<1	0.25
Oct 18, 2016 8:50:00 AM	0.82	<1	2	13	<1	0.32
Oct 25, 2016 8:45:00 AM	0.91	<1	<2	12	<1	0.33
Nov 01, 2016 8:52:00 AM	0.74	<1	<2	12	<1	0.35
Nov 08, 2016 8:53:00 AM	0.68	<1	4	12	<1	0.29
Nov 15, 2016 11:00:00 AM	0.74	<1	8	12	<1	0.41
Nov 22, 2016 9:01:00 AM	0.72	<1	<2	10	<1	0.37
Nov 29, 2016 9:01:00 AM	0.51	<1	<2	9	<1	0.30
Dec 13, 2016 9:55:00 AM	0.88	<1	8	7	<1	0.34
Dec 20, 2016 10:00:00 AM	0.90	<1	2	7	<1	0.25
Dec 28, 2016 11:00:00 AM	1.00	<1	NA	5	<1	0.30

PMS-423

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Jan 05, 2016 10:55:00 AM	0.99	<1	<2	7.0	<1	0.29
Jan 12, 2016 10:55:00 AM	1.2	<1	<2	6.0	<1	0.34
Jan 19, 2016 11:00:00 AM	1.0	<1	<2	7.0	<1	0.32
Jan 26, 2016 9:40:00 AM	0.75	<1	<2	7.0	<1	0.34
Feb 02, 2016 8:40:00 AM	0.97	<1	2	6.0	<1	0.35
Feb 09, 2016 9:38:00 AM	1.2	<1	4	6.0	<1	0.52
Feb 16, 2016 9:45:00 AM	1.2	<1	<2	7.0	<1	0.56
Feb 23, 2016 9:50:00 AM	0.84	<1	<2	7.0	<1	0.48
Mar 01, 2016 9:40:00 AM	0.91	<1	<2	7.0	<1	0.34
Mar 08, 2016 9:40:00 AM	1.2	<1	<2	7.0	<1	0.36
Mar 15, 2016 9:10:00 AM	0.84	<1	<2	6.5	<1	0.36
Mar 22, 2016 11:05:00 AM	0.81	<1	<2	7.0	<1	0.29
Mar 29, 2016 9:26:00 AM	0.96	<1	<2	7.0	<1	0.28
Apr 05, 2016 9:46:00 AM	0.97	<1	<2	7.0	<1	0.31
Apr 12, 2016 11:10:00 AM	1.10	<1	<2	8.0	<1	0.32
Apr 19, 2016 9:30:00 AM	0.81	<1	<2	9.0	<1	0.37
Apr 26, 2016 9:33:00 AM	0.86	<1	<2	9.0	<1	0.26
May 03, 2016 11:21:00 AM	0.56	<1	<2	9.0	<1	0.24
May 10, 2016 9:10:00 AM	0.97	<1	<2	9.5	<1	0.37
May 17, 2016 8:25:00 AM	0.98	<1	<2	10	<1	0.26
May 24, 2016 8:30:00 AM	0.96	<1	<2	10	<1	0.30
May 31, 2016 9:37:00 AM	0.87	<1	<2	10	<1	0.29
Jun 07, 2016 11:07:00 AM	0.82	<1	<2	11	<1	0.33
Jun 14, 2016 11:05:00 AM	1.02	<1	<2	11	<1	0.37
Jun 21, 2016 10:45:00 AM	NA	<1	14	11	<1	0.35
Jun 28, 2016 9:40:00 AM	1.08	<1	<2	12.0	<1	0.31
Jul 05, 2016 9:20:00 AM	0.95	<1	2	13	<1	0.30
Jul 12, 2016 8:30:00 AM	1.05	<1	<2	13	<1	0.22
Jul 19, 2016 8:55:00 AM	0.98	<1	2	14	<1	0.24
Jul 26, 2016 10:35:00 AM	1.14	<1	LA	14	<1	0.28
Aug 02, 2016 10:35:00 AM	1.06	<1	<2	15	<1	0.27
Aug 09, 2016 8:35:00 AM	1.02	<1	6	16	<1	0.32
Aug 16, 2016 9:05:00 AM	1.13	<1	20	16	<1	0.41
Aug 23, 2016 10:40:00 AM	1.03	<1	16	17	<1	0.27

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Aug 30, 2016 9:38:00 AM	1.09	<1	8	17	<1	0.27
Sep 06, 2016 9:00:00 AM	0.70	<1	4	17	<1	0.26
Sep 13, 2016 9:42:00 AM	0.82	<1	<2	16	<1	0.23
Sep 20, 2016 9:29:00 AM	0.86	<1	<2	16	<1	0.21
Sep 27, 2016 9:50:00 AM	0.73	<1	<2	16	<1	0.16
Oct 04, 2016 9:34:00 AM	0.41	<1	<2	16	<1	0.22
Oct 11, 2016 9:38:00 AM	0.43	<1	<2	14	<1	0.18
Oct 18, 2016 10:55:00 AM	0.72	<1	<2	13	<1	0.33
Oct 25, 2016 9:45:00 AM	0.65	<1	LA	12	<1	0.30
Nov 01, 2016 9:43:00 AM	0.45	<1	2	12	<1	0.36
Nov 08, 2016 9:45:00 AM	0.38	<1	2	11	<1	0.52
Nov 15, 2016 8:45:00 AM	0.03	<1	8	11	<1	0.34
Nov 22, 2016 11:10:00 AM	0.89	<1	16	10	<1	0.37
Nov 29, 2016 11:11:00 AM	0.32	<1	<2	8	<1	0.40
Dec 20, 2016 10:45:00 AM	0.88	<1	12	6	<1	0.31
Dec 28, 2016 10:00:00 AM	1.02	<1	NA	5	<1	0.24

PMS-424

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Jan 05, 2016 10:55:00 AM	0.99	<1	<2	7.0	<1	0.29
Jan 12, 2016 10:55:00 AM	1.2	<1	<2	6.0	<1	0.34
Jan 19, 2016 11:00:00 AM	1.0	<1	<2	7.0	<1	0.32
Jan 26, 2016 9:40:00 AM	0.75	<1	<2	7.0	<1	0.34
Feb 02, 2016 8:40:00 AM	0.97	<1	2	6.0	<1	0.35
Feb 09, 2016 9:38:00 AM	1.2	<1	4	6.0	<1	0.52
Feb 16, 2016 9:45:00 AM	1.2	<1	<2	7.0	<1	0.56
Feb 23, 2016 9:50:00 AM	0.84	<1	<2	7.0	<1	0.48
Mar 01, 2016 9:40:00 AM	0.91	<1	<2	7.0	<1	0.34
Mar 08, 2016 9:40:00 AM	1.2	<1	<2	7.0	<1	0.36
Mar 15, 2016 9:10:00 AM	0.84	<1	<2	6.5	<1	0.36
Mar 22, 2016 11:05:00 AM	0.81	<1	<2	7.0	<1	0.29
Mar 29, 2016 9:26:00 AM	0.96	<1	<2	7.0	<1	0.28
Apr 05, 2016 9:46:00 AM	0.97	<1	<2	7.0	<1	0.31
Apr 12, 2016 11:10:00 AM	1.10	<1	<2	8.0	<1	0.32
Apr 19, 2016 9:30:00 AM	0.81	<1	<2	9.0	<1	0.37

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Apr 26, 2016 9:33:00 AM	0.86	<1	<2	9.0	<1	0.26
May 03, 2016 11:21:00 AM	0.56	<1	<2	9.0	<1	0.24
May 10, 2016 9:10:00 AM	0.97	<1	<2	9.5	<1	0.37
May 17, 2016 8:25:00 AM	0.98	<1	<2	10	<1	0.26
May 24, 2016 8:30:00 AM	0.96	<1	<2	10	<1	0.30
May 31, 2016 9:37:00 AM	0.87	<1	<2	10	<1	0.29
Jun 07, 2016 11:07:00 AM	0.82	<1	<2	11	<1	0.33
Jun 14, 2016 11:05:00 AM	1.02	<1	<2	11	<1	0.37
Jun 21, 2016 10:45:00 AM	NA	<1	14	11	<1	0.35
Jun 28, 2016 9:40:00 AM	1.08	<1	<2	12.0	<1	0.31
Jul 05, 2016 9:20:00 AM	0.95	<1	2	13	<1	0.30
Jul 12, 2016 8:30:00 AM	1.05	<1	<2	13	<1	0.22
Jul 19, 2016 8:55:00 AM	0.98	<1	2	14	<1	0.24
Jul 26, 2016 10:35:00 AM	1.14	<1	LA	14	<1	0.28
Aug 02, 2016 10:35:00 AM	1.06	<1	<2	15	<1	0.27
Aug 09, 2016 8:35:00 AM	1.02	<1	6	16	<1	0.32
Aug 16, 2016 9:05:00 AM	1.13	<1	20	16	<1	0.41
Aug 23, 2016 10:40:00 AM	1.03	<1	16	17	<1	0.27
Aug 30, 2016 9:38:00 AM	1.09	<1	8	17	<1	0.27
Sep 06, 2016 9:00:00 AM	0.70	<1	4	17	<1	0.26
Sep 13, 2016 9:42:00 AM	0.82	<1	<2	16	<1	0.23
Sep 20, 2016 9:29:00 AM	0.86	<1	<2	16	<1	0.21
Sep 27, 2016 9:50:00 AM	0.73	<1	<2	16	<1	0.16
Oct 04, 2016 9:34:00 AM	0.41	<1	<2	16	<1	0.22
Oct 11, 2016 9:38:00 AM	0.43	<1	<2	14	<1	0.18
Oct 18, 2016 10:55:00 AM	0.72	<1	<2	13	<1	0.33
Oct 25, 2016 9:45:00 AM	0.65	<1	LA	12	<1	0.30
Nov 01, 2016 9:43:00 AM	0.45	<1	2	12	<1	0.36
Nov 08, 2016 9:45:00 AM	0.38	<1	2	11	<1	0.52
Nov 15, 2016 8:45:00 AM	0.03	<1	8	11	<1	0.34
Nov 22, 2016 11:10:00 AM	0.89	<1	16	10	<1	0.37
Nov 29, 2016 11:11:00 AM	0.32	<1	<2	8	<1	0.40
Dec 20, 2016 10:45:00 AM	0.88	<1	12	6	<1	0.31
Dec 28, 2016 10:00:00 AM	1.02	<1	NA	5	<1	0.24

PMS-425

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Jan 05, 2016 9:40:00 AM	0.56	<1	<2	8.0	<1	0.38
Jan 12, 2016 9:40:00 AM	0.35	<1	<2	7.0	<1	0.29
Jan 19, 2016 9:45:00 AM	0.48	<1	<2	7.0	<1	0.30
Jan 26, 2016 10:55:00 AM	0.26	<1	<2	8.0	<1	0.41
Feb 02, 2016 9:30:00 AM	0.48	<1	2	7.0	<1	0.32
Feb 09, 2016 11:10:00 AM	0.70	<1	<2	8.0	<1	0.45
Feb 16, 2016 11:00:00 AM	0.38	<1	<2	8.0	<1	0.44
Feb 23, 2016 11:00:00 AM	0.20	<1	<2	8.0	<1	0.52
Mar 01, 2016 10:57:00 AM	0.41	<1	<2	8.0	<1	0.28
Mar 08, 2016 11:00:00 AM	0.61	<1	<2	8.0	<1	0.71
Mar 15, 2016 10:00:00 AM	0.22	<1	<2	8.0	<1	0.23
Mar 22, 2016 9:49:00 AM	0.50	<1	<2	7.0	<1	0.26
Mar 29, 2016 10:50:00 AM	0.49	<1	<2	9.0	<1	0.30
Apr 05, 2016 11:03:00 AM	0.41	<1	<2	9.0	<1	0.22
Apr 12, 2016 10:00:00 AM	0.39	<1	<2	10	<1	0.30
Apr 19, 2016 11:00:00 AM	0.39	<1	<2	11	<1	0.43
Apr 26, 2016 11:00:00 AM	0.40	<1	<2	11	<1	0.30
May 03, 2016 10:21:00 AM	0.38	<1	<2	11	<1	0.28
May 10, 2016 10:15:00 AM	0.40	<1	2	12	<1	0.28
May 17, 2016 9:20:00 AM	0.46	<1	<2	12	<1	0.26
May 24, 2016 9:30:00 AM	0.44	<1	<2	12	<1	0.26
May 31, 2016 10:55:00 AM	0.41	<1	<2	13	<1	0.28
Jun 07, 2016 9:58:00 AM	0.50	<1	<2	12	<1	0.45
Jun 14, 2016 10:10:00 AM	0.28	<1	<2	13	<1	0.33
Jun 21, 2016 9:50:00 AM	NA	<1	<2	13	<1	0.34
Jun 28, 2016 11:15:00 AM	0.36	<1	<2	14.0	<1	0.37
Jul 05, 2016 10:05:00 AM	0.26	<1	<2	14	<1	0.43
Jul 12, 2016 9:30:00 AM	0.35	<1	<2	14	<1	0.24
Jul 19, 2016 9:50:00 AM	0.43	<1	<2	15	<1	0.25
Jul 26, 2016 9:50:00 AM	0.40	<1	<2	15	<1	0.29
Aug 02, 2016 9:50:00 AM	0.38	<1	<2	16	<1	0.25
Aug 09, 2016 9:35:00 AM	0.36	<1	<2	17	<1	0.54
Aug 16, 2016 10:00:00 AM	0.55	<1	<2	17	<1	0.41
Aug 23, 2016 10:00:00 AM	0.44	<1	LA	17	<1	0.24

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Aug 30, 2016 10:56:00 AM	0.41	<1	<2	18	<1	0.18
Sep 06, 2016 9:45:00 AM	0.46	<1	<2	17	<1	0.21
Sep 13, 2016 11:04:00 AM	0.5	<1	<2	17	<1	0.22
Sep 20, 2016 10:48:00 AM	0.38	<1	<2	17	<1	0.19
Sep 27, 2016 11:04:00 AM	0.52	<1	<2	17	<1	0.20
Oct 04, 2016 10:57:00 AM	0.17	<1	<2	16	<1	0.17
Oct 11, 2016 11:02:00 AM	0.43	<1	<2	15	<1	0.19
Oct 18, 2016 10:00:00 AM	0.33	<1	<2	14	<1	0.29
Oct 25, 2016 11:05:00 AM	0.39	<1	<2	13	<1	0.27
Nov 01, 2016 11:06:00 AM	0.25	<1	<2	13	<1	0.32
Nov 08, 2016 11:08:00 AM	0.24	<1	<2	13	<1	0.32
Nov 15, 2016 9:25:00 AM	0.54	<1	<2	12	<1	0.45
Nov 22, 2016 10:15:00 AM	0.20	<1	<2	11	<1	0.39
Nov 29, 2016 10:15:00 AM	0.23	<1	<2	8	<1	0.32
Dec 13, 2016 10:55:00 AM	0.68	<1	<2	9	<1	0.35
Dec 20, 2016 11:25:00 AM	0.62	<1	<2	8	<1	0.26
Dec 28, 2016 9:10:00 AM	0.35	<1	NA	7	<1	0.22

PMS-426

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Jan 05, 2016 9:20:00 AM	0.93	<1	<2	7.0	<1	0.31
Jan 12, 2016 9:25:00 AM	0.67	<1	<2	6.0	<1	0.45
Jan 19, 2016 9:25:00 AM	1.0	<1	<2	7.0	<1	0.34
Jan 26, 2016 10:35:00 AM	0.64	<1	52	7.0	<1	0.38
Feb 02, 2016 9:10:00 AM	1.0	<1	2	6.0	<1	0.36
Feb 09, 2016 10:50:00 AM	1.3	<1	<2	7.0	<1	0.45
Feb 16, 2016 10:37:00 AM	0.87	<1	16	7.0	<1	0.50
Feb 23, 2016 10:42:00 AM	0.61	<1	2	8.0	<1	0.41
Mar 01, 2016 10:40:00 AM	0.69	<1	<2	8.0	<1	0.27
Mar 08, 2016 10:38:00 AM	1.1	<1	16	8.0	<1	0.35
Mar 15, 2016 10:45:00 AM	0.80	<1	<2	7.5	<1	0.32
Mar 22, 2016 9:23:00 AM	0.80	<1	2	7.0	<1	0.28
Mar 29, 2016 10:30:00 AM	0.67	<1	34	8.0	<1	0.29
Apr 05, 2016 10:45:00 AM	0.56	<1	12	10	<1	0.24

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Apr 12, 2016 9:41:00 AM	0.79	<1	32	9.0	<1	0.28
Apr 19, 2016 10:36:00 AM	0.78	<1	6	10	<1	0.80
Apr 26, 2016 10:43:00 AM	0.61	<1	20	12	<1	0.29
May 03, 2016 9:48:00 AM	0.84	<1	2	11	<1	0.35
May 10, 2016 10:45:00 AM	0.61	<1	10	13	<1	0.52
May 17, 2016 9:05:00 AM	0.82	<1	2	12	<1	0.29
May 24, 2016 9:10:00 AM	0.98	<1	6	12	<1	0.25
May 31, 2016 10:38:00 AM	0.64	CG	12	13	CG	0.29
Jun 07, 2016 9:30:00 AM	1.20	<1	2	12	<1	0.41
Jun 14, 2016 9:40:00 AM	0.53	<1	4	14	<1	0.28
Jun 21, 2016 9:35:00 AM	NA	<1	6	13	<1	0.36
Jun 28, 2016 10:52:00 AM	1.17	<1	12	14.0	<1	0.31
Jul 05, 2016 9:55:00 AM	0.79	<1	10	15	<1	0.41
Jul 12, 2016 9:15:00 AM	0.46	<1	32	15	<1	0.23
Jul 19, 2016 9:35:00 AM	1.05	<1	6	14	<1	0.28
Jul 26, 2016 9:30:00 AM	0.90	<1	4	15	<1	0.26
Aug 02, 2016 9:35:00 AM	0.97	<1	2	16	<1	0.24
Aug 09, 2016 9:15:00 AM	0.92	<1	12	17	<1	0.37
Aug 16, 2016 9:40:00 AM	0.97	<1	12	18	<1	0.25
Aug 23, 2016 9:40:00 AM	1.03	<1	4	18	<1	0.29
Aug 30, 2016 10:37:00 AM	1.01	<1	10	18	<1	0.25
Sep 06, 2016 9:30:00 AM	1.08	<1	38	17	<1	0.24
Sep 13, 2016 10:45:00 AM	0.72	<1	16	18	<1	0.35
Sep 20, 2016 10:27:00 AM	0.79	<1	6	17	<1	0.24
Sep 27, 2016 10:47:00 AM	0.80	<1	10	17	<1	0.26
Oct 04, 2016 10:40:00 AM	0.56	<1	12	16	<1	0.32
Oct 11, 2016 10:45:00 AM	0.81	<1	14	14	<1	0.29
Oct 18, 2016 10:20:00 AM	0.78	<1	2	13	<1	0.38
Oct 25, 2016 10:46:00 AM	0.81	<1	4	12	<1	0.34
Nov 01, 2016 10:49:00 AM	0.74	<1	2	12	<1	0.37
Nov 08, 2016 10:48:00 AM	0.63	<1	6	12	<1	0.33
Nov 15, 2016 9:10:00 AM	0.85	<1	<2	11	<1	0.36
Nov 22, 2016 9:45:00 AM	0.72	<1	2	10	<1	0.36
Nov 29, 2016 9:58:00 AM	0.23	<1	6	8	<1	0.33
Dec 13, 2016 10:35:00 AM	1.06	<1	<2	7	<1	0.31
Dec 28, 2016 8:40:00 AM	0.86	<1	NA	5	<1	0.23

PMS-427

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Jan 05, 2016 11:20:00 AM	0.85	<1	6	7.0	<1	0.30
Jan 12, 2016 11:20:00 AM	0.64	<1	2	7.0	<1	0.34
Jan 19, 2016 11:20:00 AM	0.86	<1	<2	7.0	<1	0.31
Jan 26, 2016 9:20:00 AM	0.53	<1	<2	7.0	<1	0.46
Feb 02, 2016 10:25:00 AM	0.88	<1	<2	6.0	<1	0.38
Feb 09, 2016 9:20:00 AM	0.94	<1	<2	7.0	<1	0.45
Feb 16, 2016 9:30:00 AM	0.65	<1	<2	7.0	<1	0.46
Feb 23, 2016 9:33:00 AM	0.43	<1	<2	8.0	<1	0.43
Mar 01, 2016 9:25:00 AM	0.68	<1	<2	8.0	<1	0.29
Mar 08, 2016 9:23:00 AM	0.91	<1	4	8.0	<1	0.30
Mar 15, 2016 8:55:00 AM	0.36	<1	<2	8.0	<1	0.30
Mar 22, 2016 11:21:00 AM	0.66	<1	<2	7.0	<1	0.27
Mar 29, 2016 9:12:00 AM	0.84	<1	<2	8.0	<1	0.31
Apr 05, 2016 9:25:00 AM	0.96	<1	<2	7.0	<1	0.33
Apr 12, 2016 11:34:00 AM	0.90	<1	<2	8.0	<1	0.27
Apr 19, 2016 9:12:00 AM	1.04	<1	2	9.0	<1	0.52
Apr 26, 2016 9:13:00 AM	0.86	<1	<2	9.0	<1	0.38
May 03, 2016 11:47:00 AM	0.75	<1	2	10	<1	0.25
May 10, 2016 8:55:00 AM	0.93	<1	<2	9.5	<1	0.34
May 17, 2016 10:20:00 AM	0.84	<1	<2	10	<1	0.26
May 24, 2016 10:20:00 AM	0.91	<1	2	11	<1	0.23
May 31, 2016 9:18:00 AM	0.84	<1	<2	10	<1	0.30
Jun 07, 2016 11:21:00 AM	0.89	<1	2	11	<1	0.35
Jun 14, 2016 9:10:00 AM	0.85	<1	<2	12	<1	0.38
Jun 21, 2016 11:05:00 AM	NA	<1	4	12	<1	0.34
Jun 28, 2016 9:18:00 AM	1.02	<1	6	13.0	<1	0.55
Jul 05, 2016 9:05:00 AM	0.92	<1	12	13	<1	0.52
Jul 12, 2016 11:00:00 AM	0.98	<1	22	14	<1	0.25
Jul 19, 2016 10:50:00 AM	0.74	<1	<2	14	<1	0.26
Jul 26, 2016 10:50:00 AM	0.89	<1	10	15	<1	0.28
Aug 02, 2016 10:50:00 AM	0.87	<1	4	15	<1	0.26
Aug 09, 2016 10:20:00 AM	0.79	<1	22	16	<1	0.26
Aug 16, 2016 8:50:00 AM	0.95	<1	20	16	<1	0.27
Aug 23, 2016 9:05:00 AM	1.04	<1	<2	17	<1	0.29

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Aug 30, 2016 9:20:00 AM	1.05	<1	24	17	<1	0.32
Sep 06, 2016 10:45:00 AM	0.70	<1	36	17	<1	0.27
Sep 13, 2016 9:22:00 AM	1.03	<1	44	16	<1	0.26
Sep 20, 2016 9:10:00 AM	0.90	<1	2	16	<1	0.27
Sep 27, 2016 9:23:00 AM	0.90	<1	2	16	<1	0.20
Oct 04, 2016 9:15:00 AM	0.82	<1	20	15	<1	0.26
Oct 11, 2016 9:15:00 AM	0.96	<1	8	13	<1	0.20
Oct 18, 2016 9:05:00 AM	0.83	<1	<2	12	<1	0.32
Oct 25, 2016 9:20:00 AM	0.86	<1	<2	12	<1	0.30
Nov 01, 2016 9:22:00 AM	0.82	<1	6	12	<1	0.35
Nov 08, 2016 9:28:00 AM	0.42	<1	22	12	<1	0.38
Nov 15, 2016 11:10:00 AM	0.79	<1	<2	10	<1	0.40
Nov 22, 2016 11:28:00 AM	0.72	<1	4	11	<1	0.36
Nov 29, 2016 11:34:00 AM	0.74	<1	6	8	<1	0.34
Dec 13, 2016 10:15:00 AM	1.07	<1	<2	7	<1	0.30
Dec 20, 2016 10:29:00 AM	0.92	<1	2	7	<1	0.31
Dec 28, 2016 10:15:00 AM	0.83	<1	NA	5	<1	0.24

PMS-428

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Jan 05, 2016 10:30:00 AM	1.2	<1	<2	7.0	<1	0.32
Jan 12, 2016 10:30:00 AM	0.96	<1	<2	6.0	<1	0.34
Jan 19, 2016 10:40:00 AM	1.2	<1	2	6.0	<1	0.34
Jan 26, 2016 9:55:00 AM	1.2	<1	<2	6.0	<1	0.38
Feb 02, 2016 8:55:00 AM	1.3	<1	<2	5.0	<1	0.38
Feb 09, 2016 10:30:00 AM	1.1	<1	<2	6.0	<1	0.45
Feb 16, 2016 10:00:00 AM	1.2	<1	<2	6.0	<1	0.50
Feb 23, 2016 10:25:00 AM	0.83	<1	<2	6.0	<1	0.61
Mar 01, 2016 10:25:00 AM	1.2	<1	<2	7.0	<1	0.37
Mar 08, 2016 10:22:00 AM	1.4	<1	<2	7.0	<1	0.40
Mar 15, 2016 9:35:00 AM	1.2	<1	<2	6.0	<1	0.35
Mar 22, 2016 10:48:00 AM	1.2	<1	<2	6.0	<1	0.33
Mar 29, 2016 9:50:00 AM	0.84	<1	2	6.0	<1	0.35
Apr 05, 2016 10:27:00 AM	1.1	<1	<2	6.0	<1	0.33
Apr 12, 2016 10:50:00 AM	1.01	<1	<2	7.0	<1	0.27

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Apr 19, 2016 9:50:00 AM	1.22	<1	<2	8.0	<1	0.38
Apr 26, 2016 9:55:00 AM	1.16	<1	<2	9.0	<1	0.24
May 03, 2016 10:25:00 AM	1.12	<1	<2	9.0	<1	0.32
May 10, 2016 9:25:00 AM	1.14	<1	2	9.0	<1	0.35
May 17, 2016 8:45:00 AM	1.15	<1	<2	9.0	<1	0.29
May 24, 2016 8:45:00 AM	1.24	<1	<2	10	<1	0.25
May 31, 2016 9:52:00 AM	1.21	<1	<2	10	<1	0.36
Jun 07, 2016 10:45:00 AM	1.10	<1	<2	10	<1	0.34
Jun 14, 2016 10:50:00 AM	1.12	<1	<2	10	<1	0.36
Jun 21, 2016 10:30:00 AM	NA	<1	<2	10	<1	0.39
Jun 28, 2016 9:55:00 AM	1.31	<1	<2	12.0	<1	0.38
Jul 05, 2016 9:40:00 AM	1.26	<1	<2	12	<1	0.37
Jul 12, 2016 9:00:00 AM	1.33	<1	<2	12	<1	0.28
Jul 19, 2016 9:20:00 AM	1.44	<1	<2	14	<1	0.28
Jul 26, 2016 10:20:00 AM	1.30	<1	<2	14	<1	0.29
Aug 02, 2016 10:15:00 AM	1.30	<1	<2	15	<1	0.27
Aug 09, 2016 8:45:00 AM	1.21	<1	<2	15	<1	0.36
Aug 16, 2016 9:25:00 AM	1.34	<1	<2	17	<1	0.58
Aug 23, 2016 10:25:00 AM	1.33	<1	<2	17	<1	0.37
Aug 30, 2016 9:55:00 AM	1.29	<1	<2	17	<1	0.35
Sep 06, 2016 9:15:00 AM	1.36	<1	<2	16	<1	0.24
Sep 13, 2016 9:56:00 AM	1.34	<1	<2	16	<1	0.23
Sep 20, 2016 9:47:00 AM	1.21	<1	<2	16	<1	0.32
Sep 27, 2016 10:29:00 AM	1.46	<1	<2	15	<1	0.24
Oct 04, 2016 9:58:00 AM	1.22	<1	<2	14	<1	0.34
Oct 11, 2016 10:00:00 AM	1.32	<1	2	13	<1	0.20
Oct 18, 2016 10:35:00 AM	1.76	<1	<2	10	<1	0.53
Oct 25, 2016 9:57:00 AM	1.41	<1	<2	11	<1	0.38
Nov 01, 2016 10:30:00 AM	1.28	<1	2	10	<1	0.59
Nov 08, 2016 10:28:00 AM	1.30	<1	2	10	<1	0.42
Nov 15, 2016 8:55:00 AM	1.26	<1	<2	9	<1	0.43
Nov 22, 2016 11:05:00 AM	1.29	<1	<2	8	<1	0.46
Nov 29, 2016 10:49:00 AM	0.63	<1	<2	7	<1	0.51
Dec 20, 2016 10:55:00 AM	1.39	<1	<2	5	<1	0.26
Dec 28, 2016 9:40:00 AM	1.18	<1	NA	4	<1	0.29

PMS-429

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Jan 05, 2016 8:20:00 AM	0.31	<1	<2	8.0	<1	0.30
Jan 12, 2016 8:30:00 AM	0.33	<1	<2	7.0	<1	0.30
Jan 19, 2016 8:30:00 AM	0.47	<1	6	7.0	<1	0.33
Jan 26, 2016 8:35:00 AM	0.36	<1	<2	8.0	<1	0.36
Feb 02, 2016 10:40:00 AM	0.44	<1	<2	8.0	<1	0.33
Feb 09, 2016 8:30:00 AM	0.59	<1	<2	8.0	<1	0.38
Feb 16, 2016 8:30:00 AM	0.41	<1	<2	8.0	<1	0.43
Feb 23, 2016 8:40:00 AM	0.25	<1	<2	8.0	<1	0.37
Mar 01, 2016 8:30:00 AM	0.54	<1	14	8.0	<1	0.28
Mar 08, 2016 8:30:00 AM	0.58	<1	<2	9.0	<1	0.32
Mar 15, 2016 11:15:00 AM	0.28	<1	<2	8.5	<1	0.25
Mar 22, 2016 11:43:00 AM	0.37	<1	<2	8.0	<1	0.25
Mar 29, 2016 8:27:00 AM	0.35	<1	<2	9.0	<1	0.30
Apr 05, 2016 8:37:00 AM	0.49	<1	<2	9.0	<1	0.50
Apr 12, 2016 9:00:00 AM	0.22	<1	<2	10	<1	0.27
Apr 19, 2016 8:30:00 AM	0.53	<1	<2	11	<1	0.29
Apr 26, 2016 8:20:00 AM	0.37	<1	<2	11	<1	0.26
May 03, 2016 8:26:00 AM	0.66	<1	<2	11	<1	0.38
May 10, 2016 8:25:00 AM	0.67	<1	<2	12	<1	0.34
May 17, 2016 11:05:00 AM	0.35	<1	<2	13	<1	0.30
May 24, 2016 10:45:00 AM	0.46	<1	<2	13	<1	0.21
May 31, 2016 8:30:00 AM	0.36	<1	<2	13	<1	0.23
Jun 07, 2016 11:48:00 AM	0.61	<1	<2	13	<1	0.32
Jun 14, 2016 11:25:00 AM	0.32	<1	4	15	<1	0.33
Jun 21, 2016 8:25:00 AM	NA	<1	<2	14	<1	0.31
Jun 28, 2016 8:30:00 AM	0.57	<1	<2	14.0	<1	0.33
Jul 05, 2016 8:30:00 AM	0.35	<1	<2	16	<1	0.37
Jul 12, 2016 10:35:00 AM	0.21	<1	<2	16	<1	0.22
Jul 19, 2016 11:20:00 AM	0.54	<1	<2	15	<1	0.25
Jul 26, 2016 8:35:00 AM	0.68	<1	<2	15	<1	0.26
Aug 02, 2016 8:40:00 AM	0.63	<1	2	16	<1	0.26
Aug 09, 2016 10:40:00 AM	0.63	<1	<2	17	<1	0.28
Aug 16, 2016 8:25:00 AM	0.83	<1	<2	17	<1	0.35
Aug 23, 2016 8:30:00 AM	0.63	<1	<2	17	<1	0.21

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
Aug 30, 2016 8:25:00 AM	0.54	<1	<2	18	<1	0.27
Sep 06, 2016 8:25:00 AM	0.49	<1	<2	17	<1	0.25
Sep 13, 2016 8:28:00 AM	0.61	<1	<2	17	<1	0.23
Sep 20, 2016 8:23:00 AM	0.38	<1	<2	17	<1	0.19
Sep 27, 2016 8:33:00 AM	0.40	<1	16	17	<1	0.20
Oct 04, 2016 8:27:00 AM	0.34	<1	4	16	<1	0.26
Oct 11, 2016 8:27:00 AM	0.25	<1	<2	15	<1	0.18
Oct 18, 2016 8:30:00 AM	0.33	<1	<2	13	<1	0.24
Oct 25, 2016 8:30:00 AM	0.32	<1	<2	13	<1	0.28
Nov 01, 2016 8:30:00 AM	0.31	<1	<2	13	<1	0.36
Nov 08, 2016 8:30:00 AM	0.24	<1	<2	13	<1	0.33
Nov 15, 2016 10:47:00 AM	0.57	<1	2	12	<1	0.38
Nov 22, 2016 8:33:00 AM	0.26	<1	<2	12	<1	0.30
Nov 29, 2016 8:22:00 AM	0.26	<1	2	11	<1	0.28
Dec 13, 2016 9:40:00 AM	0.30	<1	4	9	<1	0.28
Dec 20, 2016 9:45:00 AM	0.41	<1	<2	7	<1	0.24
Dec 28, 2016 10:45:00 AM	0.34	<1	NA	7	<1	0.22

APPENDIX – 3

QUARTERLY METALS ANALYSIS RESULTS FROM METRO VANCOUVER LAB

Chemical Analysis

Sample	Date Sampled	THM (ppb)						Total THM Quarterly Average	HAA (ppb)						Total HAA Quarterly Average
		Bromodichloromethane	Bromoform	Chlor dibromomethane	Chloroform	Total Trihalomethanes			Dibromoacetic Acid	Dichloroacetic Acid	Monobromoacetic Acid	Monochloroacetic Acid	Trichloroacetic Acid	Total Haloacetic Acid	
PMS-422	2015-02-17 00:00	<1	<1	<1	37	37.2		<0.5	21	1	8	26	57.1		
PMS-422	2015-05-19 00:00	<1	<1	<1	47	47.6		<0.5	20	<1	9	23	52.5		
PMS-422	2015-08-18 00:00	1	<1	<1	40	41.2		<0.5	18	<1	12	19.6	50.3		
PMS-422	2015-11-24 00:00	<1	<1	<1	37	38.9	41	<0.5	17	<1	10	16.7	43.4	51	
PMS-422	2016-03-01 00:00	<1	<1	<1	36	36.7	41	<0.5	14	<1	9	17.5	41.3	47	
PMS-422	2016-05-31 00:00	<1	<1	<1	30	30.8	37	<0.5	14	<1	9	16.1	40.6	44	
PMS-422	2016-08-30 00:00	1	<1	<1	25	28	34	<0.5	14	<1	9	18.4	41.8	42	
PMS-424	2015-02-17 00:00	<1	<1	<1	40	40.2		<0.5	17	2	8	17	43.5		
PMS-424	2015-05-19 00:00	<1	<1	<1	45	45.4		<0.5	23	<1	10	27.1	60.8		
PMS-424	2015-08-18 00:00	<1	<1	<1	38	39.1		<0.5	18	<1	12	17.6	47.5		
PMS-424	2015-11-24 00:00	<1	<1	<1	37	39.3	41	<0.5	21	<1	9	23.5	54.9	52	
PMS-424	2016-03-01 00:00	<1	<1	<1	37	38.5	41	<0.5	14	<1	10	13.6	37.3	50	
PMS-424	2016-05-31 00:00	<1	<1	<1	31	32.4	37	<0.5	15	<1	10	15.8	42.3	46	
PMS-424	2016-08-30 00:00	1	<1	<1	29	31	35	<0.5	15	<1	9	18.3	43	44	
PMS-425	2015-02-17 00:00	<1	<1	<1	42	42.6		<0.5	19	2	7	32.4	60		
PMS-425	2015-05-19 00:00	<1	<1	<1	48	48.9		<0.5	15	<1	8	30.8	54.1		
PMS-425	2015-08-18 00:00	1	<1	<1	45	45.9		<0.5	12	<1	9	32.5	53.6		
PMS-425	2015-11-24 00:00	<1	<1	<1	40	41.6	45	<0.5	14	<1	8	28.9	50.7	55	
PMS-425	2016-03-01 00:00	<1	<1	<1	44	45.8	46	<0.5	9	<1	6	25.1	40.2	50	
PMS-425	2016-05-31 00:00	<1	<1	<1	39	39.1	43	<0.5	8	<1	6	22.7	38.2	46	
PMS-425	2016-08-30 00:00	1	<1	<1	35	38	41	<0.5	8	<1	7	23.2	38.5	42	

Metal Analysis

	Sample Description	PMS-421	PMS-426		
		12192 McMynn Ave.	McKechnie Road	Canadian Guideline Limit	Reason Guideline Established
	Sample Date	25/10/2016 9:05	25/10/2016 10:48		
Aluminum Total	µg/L	87	87	200	aesthetic
Antimony Total	µg/L	<0.5	<0.5	6	health
Arsenic Total	µg/L	<0.5	<0.5	10	health
Barium Total	µg/L	2.4	2.5	1000	health
Boron Total	µg/L	<10	<10	5000	health
Cadmium Total	µg/L	<0.2	<0.2	5	health
Calcium Total	µg/L	960	1330	none	
Chromium Total	µg/L	0.25	0.18	50	health
Cobalt Total	µg/L	<0.5	<0.5	none	
Copper Total	µg/L	7.7	0.8	≤1000	aesthetic
Iron Total	µg/L	51	45	≤ 300	aesthetic
Lead Total	µg/L	<0.5	<0.5	10	health
Magnesium Total	µg/L	96	96	none	
Manganese Total	µg/L	3.4	1.6	≤ 50	aesthetic
Mercury Total	µg/L	<0.05	<0.05	1.0	health
Molybdenum Total	µg/L	<0.5	<0.5	none	
Nickel Total	µg/L	<0.5	<0.5	none	
Potassium Total	µg/L	124	132	none	
Selenium Total	µg/L	<0.5	<0.5	50	health
Silver Total	µg/L	<0.5	<0.5	none	
Sodium Total	µg/L	6380	6390	≤ 200,000	aesthetic
Zinc Total	µg/L	<3.0	<3.0	≤ 5000	aesthetic

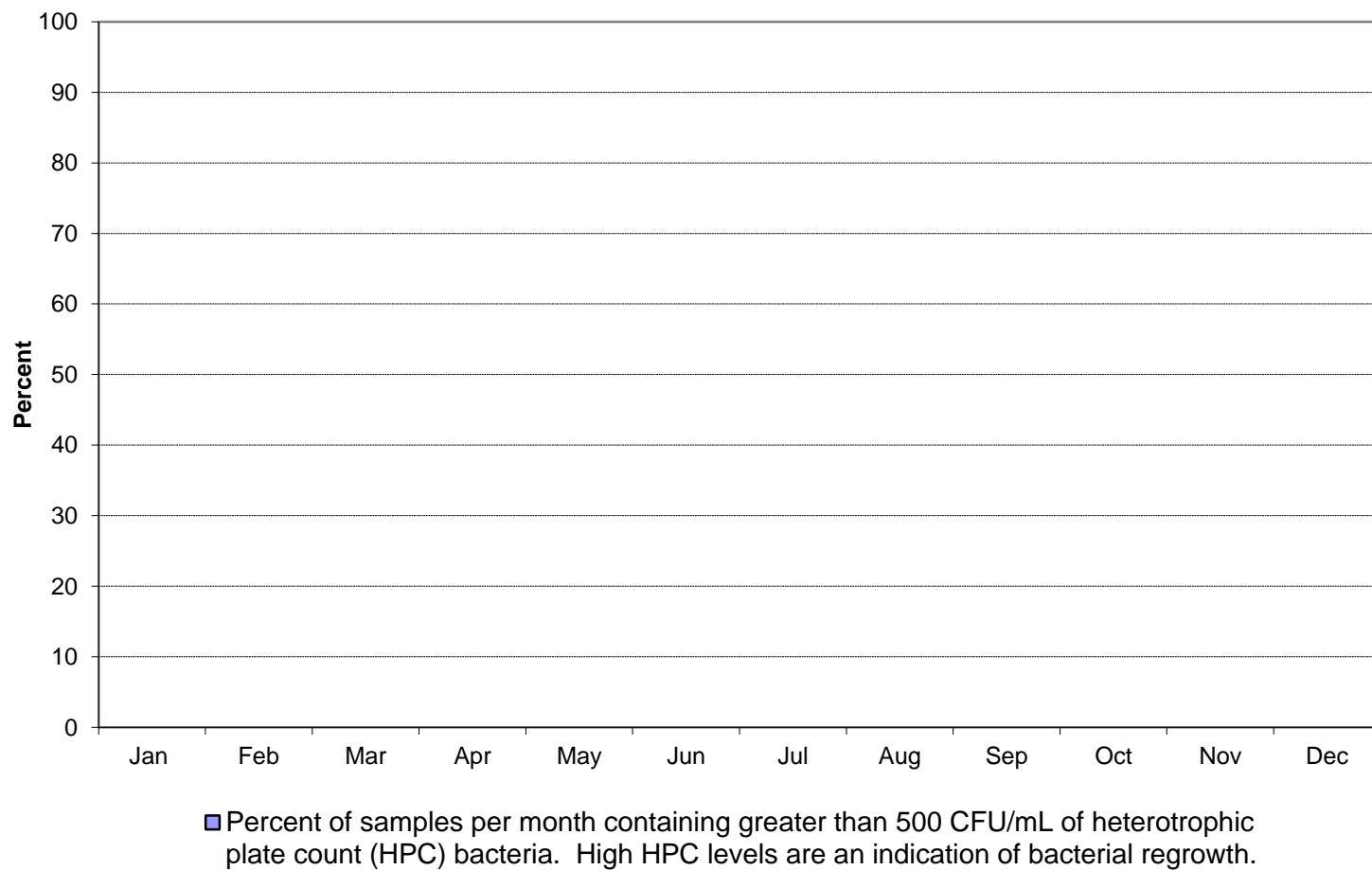
Vinyl Chloride Analysis

Sample Site Number	Sample Reported Name	Sampled date	Vinyl Chloride ppb
PMS-1	Pitt Meadows Sampling Point (PMS-1)	June 14, 2016	<0.0010
PMS-1	Pitt Meadows Sampling Point (PMS-1)	December 6, 2016	<0.0010

APPENDIX – 4

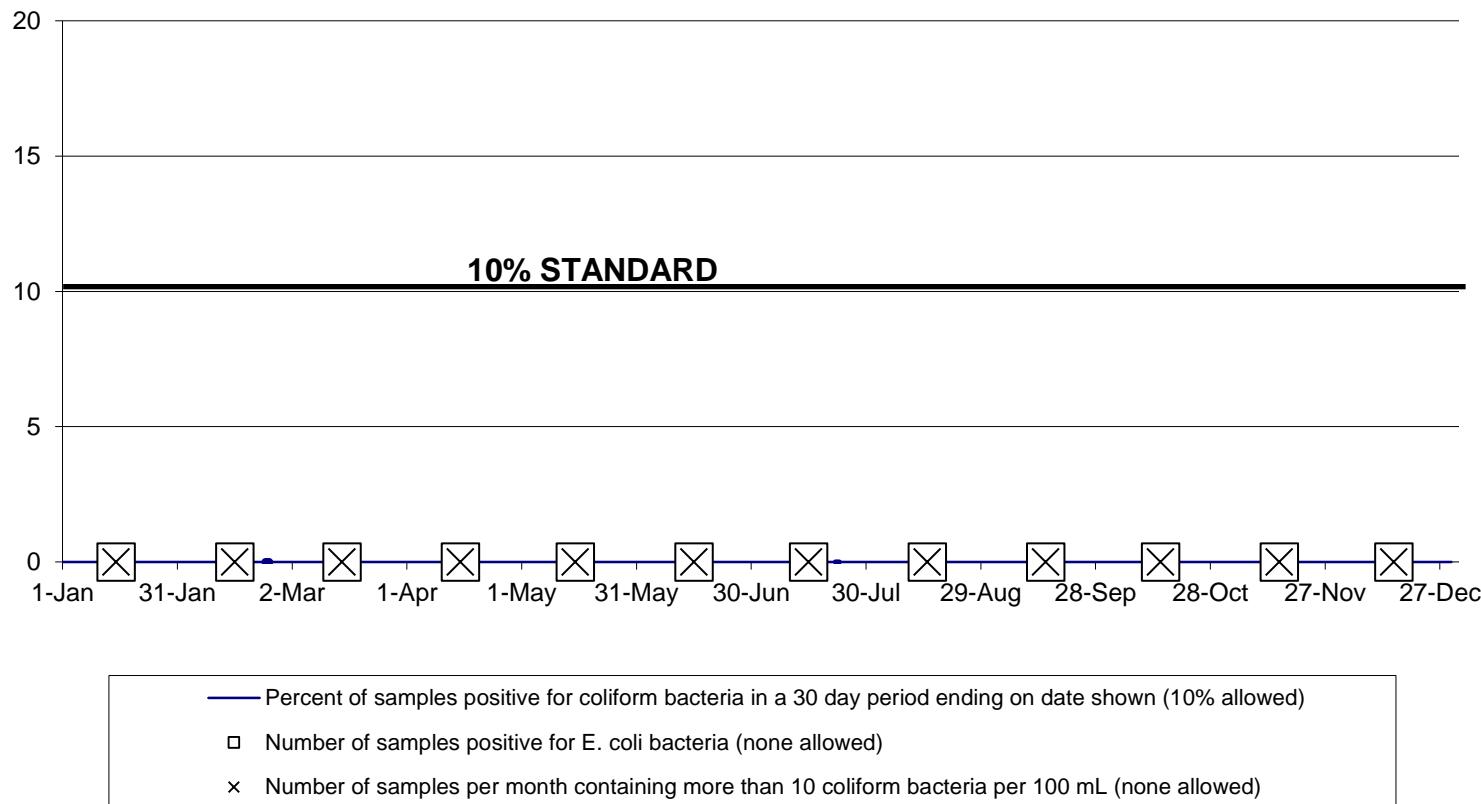
BACTERIOLOGICAL ANALYSIS OF POTABLE WATER SAMPLES

CITY OF PITT MEADOWS - MONTHLY HPC COUNTS FOR 2016

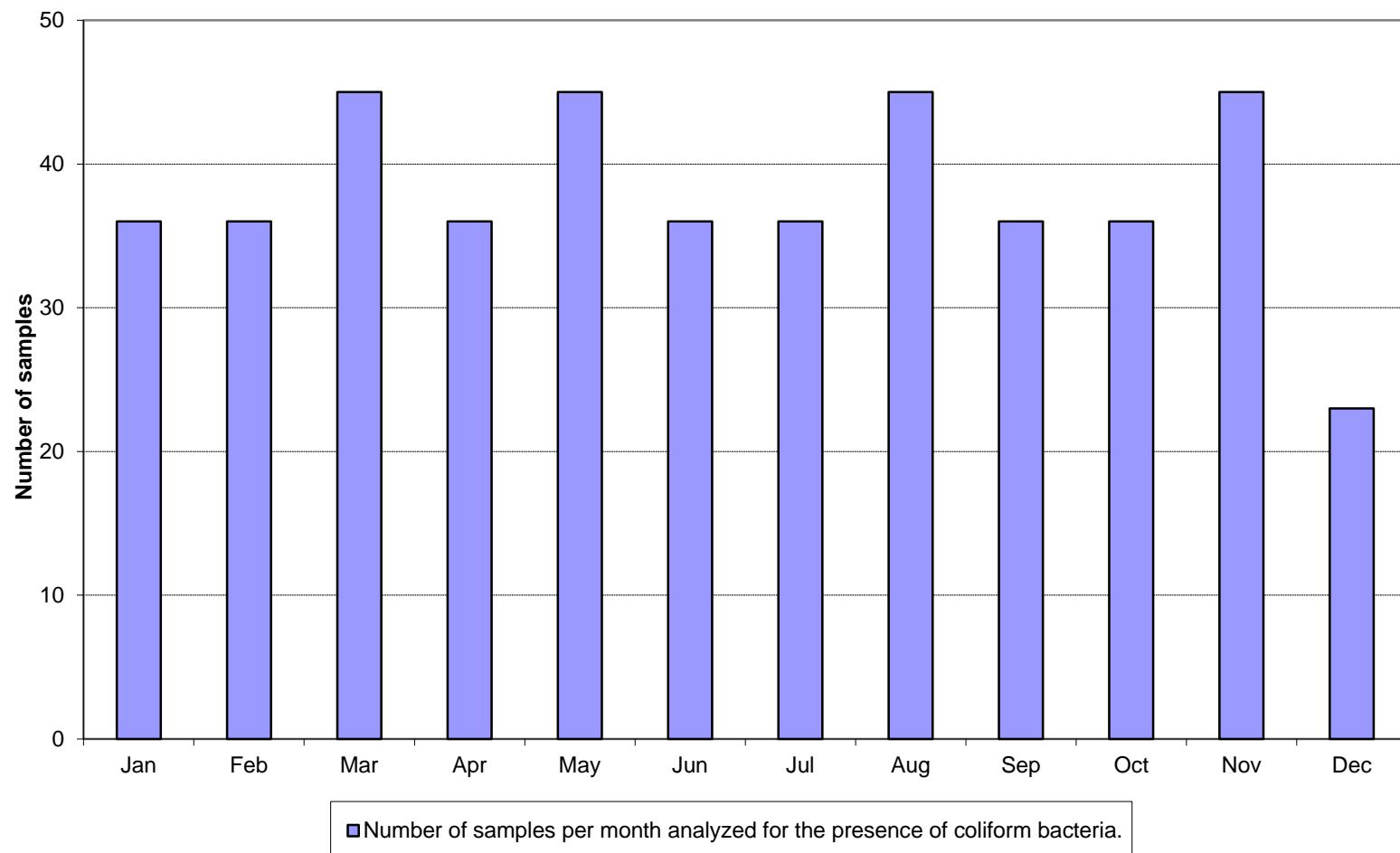


CITY OF PIT MEADOWS - 2016

Results of Bacteriological Analyses of Potable Water Samples Compliance With BC Drinking Water Protection Regulation



CITY OF PIT MEADOWS - 2016



APPENDIX – 5

**WEEKLY SAMPLE RESULTS – METRO VANCOUVER SAMPLE
STATION GVS-072 IN MAPLE RIDGE AND STATION GVS-012
IN PORT MOODY**

GVS-012 Port Moody Results:

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
06/01/2016	0.84	<1	<2	6.3	<1	0.36
07/01/2016	0.91	<1	<2	6.1	<1	0.35
12/01/2016	0.89	<1	<2	6.6	<1	0.36
14/01/2016	0.75	<1	<2	7	<1	0.51
21/01/2016	0.75	<1	<2	7.3	<1	0.32
26/01/2016	0.68	<1	<2	7.3	<1	0.39
28/01/2016	0.74	<1	<2	6.9	<1	0.4
03/02/2016	0.79	<1	LA	6.7	<1	0.41
05/02/2016	0.7	<1	<2	6.9	<1	0.47
10/02/2016	0.82	<1	<2	6.2	<1	0.42
16/02/2016	0.84	<1	<2	8.3	<1	0.54
22/02/2016	0.67	<1	<2	8.6	<1	0.41
26/02/2016	0.78	<1	<2	6.5	<1	0.39
01/03/2016	0.89	<1	6	7	<1	0.49
03/03/2016	0.53	<1	10	7.8	<1	0.37
07/03/2016	0.94	<1	<2	6.7	<1	0.43
11/03/2016	0.64	<1	<2	6.7	<1	0.43
14/03/2016	0.86	<1	<2	7.3	<1	0.4
18/03/2016	0.75	<1	<2	6.9	<1	0.32
21/03/2016	0.7	<1	<2	8.5	<1	0.3
31/03/2016	0.52	<1	20	7.7	<1	0.38
05/04/2016	0.63	<1	<2	7.3	<1	0.3
07/04/2016	0.78	<1	8	8.5	<1	0.3
12/04/2016	0.82	<1	<2	9	<1	0.25
18/04/2016	0.96	<1	<2	9.2	<1	0.28
28/04/2016	0.86	<1	54	9.4	<1	0.29
03/05/2016	0.83	<1	2	10	<1	0.29
06/05/2016	0.79	<1	<2	9.3	<1	0.31
11/05/2016	0.92	<1	<2	11	<1	0.26
18/05/2016	0.82	<1	4	11	<1	0.41
26/05/2016	0.64	<1	120	11	<1	0.35
31/05/2016	1.1	<1	<2	10	<1	0.35
07/06/2016	0.93	<1	8	12	6	0.37
10/06/2016	0.95	<1	14	11	<1	0.36

16/06/2016	1.13	<1	2	11	<1	0.39
22/06/2016	1.07	<1	<2	12	<1	0.38
28/06/2016	1.04	<1	6	12	<1	0.61
08/07/2016	0.92	<1	<2	13	<1	0.38
13/07/2016	0.71	<1	<2	13	<1	0.31
18/07/2016	0.96	<1	<2	15	<1	0.3
26/07/2016	1.1	<1	120	15	<1	0.42
03/08/2016	0.66	<1	<2	15	<1	0.28
11/08/2016	0.71	<1	<2	17	<1	0.42
12/08/2016	0.76	<1	<2	16	<1	0.3
18/08/2016	1	<1	<2	18	<1	0.38
22/08/2016	1.1	<1	<2	18	<1	0.29
26/08/2016	0.95	<1	<2	21	<1	0.4
30/08/2016	0.96	<1	<2	18	<1	0.32
01/09/2016	1.6	<1	<2	18	<1	0.3
09/09/2016	0.85	<1	<2	18	<1	0.28
14/09/2016	0.92	<1	<2	18	<1	0.24
22/09/2016	0.97	<1	2	17	<1	0.23
27/09/2016	0.9	<1	<2	15	<1	0.27
04/10/2016	0.68	<1	<2	16	<1	0.27
07/10/2016	0.77	<1	<2	14	<1	0.35
11/10/2016	0.8	<1	<2	13	<1	0.2
19/10/2016	0.49	<1	<2	11	<1	0.47
27/10/2016	0.75	<1	<2	13	<1	0.49
31/10/2016	0.75	<1	2	11	<1	0.45
10/11/2016	0.69	<1	36	10	<1	0.43
17/11/2016	0.73	<1	<2	10	<1	0.43
21/11/2016	1	<1	6	10	<1	0.52
01/12/2016	0.64	<1	<2	9	<1	0.37
02/12/2016	1.1	<1	<2	7	<1	0.32
05/12/2016	0.17	<1	<2	8	<1	0.34
15/12/2016	0.63	<1	<2	6	<1	0.29
20/12/2016	0.84	<1	<2	5	<1	0.27
22/12/2016	0.72	<1	8	6	<1	0.33
29/12/2016	0.47	<1	NA	6	<1	0.41

GVS-072 Maple Ridge Results *:

Sampled date	Chlorine Free mg/L	Ecoli MF/100 mLs	HPC CFU/mls	Temp °C	Total Coliform MF/100mLs	Turbidity NTU
07/01/2016	0.77	<1	<2	6.6	<1	0.3
13/01/2016	0.75	<1	<2	6.4	<1	0.32
14/01/2016	1	<1	2	7.1	<1	0.59
21/01/2016	0.93	<1	<2	7.1	<1	0.33
27/01/2016	0.9	<1	<2	7.3	<1	0.35
03/02/2016	1	<1	LA	6.8	<1	0.39
05/02/2016	1.1	<1	<2	6.8	<1	0.46
13/02/2016	1.2	<1	2	6.5	<1	0.47
17/02/2016	1	<1	<2	6.9	<1	0.56
26/02/2016	0.7	<1	<2	7.4	<1	0.47
02/03/2016	1	<1	<2	7.5	<1	0.39
04/03/2016	0.88	<1	<2	7.6	<1	0.43
09/03/2016	0.83	<1	<2	7.6	<1	0.35
11/03/2016	0.89	<1	<2	6.8	<1	0.55
15/03/2016	1.1	<1	<2	6.7	<1	0.35
17/03/2016	0.82	<1	<2	6.9	<1	0.36

* This sampling station was decommissioned when the new Barnston Maple Ridge Pump Station activated. It has not been replaced with a new site.

APPENDIX – 6

SOURCE WATER QUALITY – COQUITLAM, SEYMOUR AND CAPILANO WATERSHEDS

Physical and Chemical Analysis of Water Supply
 Greater Vancouver Water District

2016 - Capilano Water System

<u>Parameter</u>	<u>Untreated</u>	<u>SCFP Treated</u>			<u>Canadian Guideline Limit</u>	<u>Reason Guideline Established</u>
	<u>Average</u>	<u>Average</u>	<u>Range</u>	<u>Days Guideline Exceeded</u>		
Alkalinity as CaCO ₃ (mg/L)	3.2	7.3	4.6-8.9		none	
Aluminium Dissolved (µg/L)	61	21	13-31		none	
Aluminium Total (µg/L)	188	29	15-85		none	
Antimony Total (µg/L)	<0.5	<0.5	<0.5	0	6	Health
Arsenic Total (µg/L)	<0.5	<0.5	<0.5	0	10	Health
Barium Total (µg/L)	2.9	2.9	2.5-3.0	0	1000	Health
Boron Total (mg/L)	<0.01	<10	<10		5	
Bromate (mg/L)	<0.01	<0.01	<0.01	0	0.01	Health
Bromide (mg/L)	<0.01	<0.01	<0.01	0	none	Health
Cadmium Total (µg/L)	<0.2	<0.2	<0.2	0	5	Health
Calcium Total (mg/L)	1.30	3.07	2.26-3.57		none	
Carbon Organic Dissolved (mg/L)	1.88	0.6	0.5-1.0		none	
Carbon Organic Total (mg/L)	1.88	0.65	0.5-1.0		none	
Chlorate (mg/L)	<0.01	0.03	0.01- 0.05	0	1.0	Health
Chloride Total (mg/L)	0.58	2.4	2.1-3.0	0	≤ 250	Aesthetic
Chromium Total (µg/L)	<0.05	<0.05	<0.05- 0.05	0	50	Health
Color Apparent (ACU)	23	<1	<1		none	
Color True (TCU)	12	<1	<1	0	≤ 15	Aesthetic
Conductivity (umhos/cm)	12	26	21-34		none	
Copper Total (µg/L)	4.9	<0.5	<0.5	0	≤ 1000	Aesthetic
Cyanide Total (mg/L)	<0.02	<0.02	<0.02	0	0.2	Health
Fluoride (mg/L)	<0.05	<0.05	<0.05	0	1.5	Health
Hardness as CaCO ₃ (mg/L)	4.10	8.6	6.2-9.9		none	
Iron Dissolved (µg/L)	64	<5	<5		none	
Iron Total (µg/L)	247	<5	<5-34	0	≤ 300	Aesthetic
Lead Total (µg/L)	<0.5	<0.5	<0.5	0	10	Health
Magnesium Total (µg/L)	191	170	135-244		none	
Manganese Dissolved (µg/L)	13.6	2.1	1.3-4.6		none	
Manganese Total (µg/L)	14.7	5.2	1.7-12.0	0	≤ 50	Aesthetic
Mercury Total (µg/L)	<0.05	<0.05	<0.05	0	1.0	Health
Molybdenum Total (µg/L)	<0.5	<0.5	<0.5		none	
Nickel Total (µg/L)	<0.5	<0.5	<0.5		none	
Nitrogen - Ammonia as N (mg/L)	<0.02	<0.02	<0.02		none	
Nitrogen - Nitrate as N (mg/L)	0.07	0.06	0.03-0.09	0	45	Health
Nitrogen - Nitrite as N (mg/L)	<0.01	<0.01	<0.01	0	3.0	Health
pH	6.5	7.2	7.0-7.4	0	6.5 to 8.5	Aesthetic
Phenols (µg/L)	<5	<5	<5		none	
Phosphorus Total (µg/L)	<5	<5	<5		none	
Potassium Total (mg/L)	162	152	134-183		none	
Residue Total (mg/L)	21	24	18-29		none	
Residue Total Dissolved (mg/L)	12	18	11-22	0	≤ 500	Aesthetic
Residue Total Fixed (mg/L)	12	18	14-21		none	
Residue Total Volatile (mg/L)	9	6	3-8		none	
Selenium Total (µg/L)	<0.5	<0.5	<0.5	0	50	Health
Silica as SiO ₂ (mg/L)	3.6	3.4	3.0-4.4		none	
Silver Total (µg/L)	<0.5	<0.5	<0.5		none	
Sodium Total (mg/L)	0.63	1.51	1.34-1.78	0	≤ 200	Aesthetic
Sulphate (mg/L)	0.8	1.0	0.8-1.3	0	≤ 500	Aesthetic
Turbidity (NTU)	1.72	0.012	0.07-0.27	0	≤ 1.0	Health
Uranium Total (µg/L)	0.043	0.009	0.009	0	20	Health
UV254 (Abs/cm)	0.076	0.011	0.007-0.016		none	
Zinc Total (µg/L)	<3	<3	<3	0	≤ 5000	Aesthetic

These figures are average values from a number of laboratory analyses done throughout the year. Where the range is a single value no variation was measured for the samples analysed. Methods and terms are based on those of "Standard Methods for the Examination of Water and Waste Water" 22nd Edition 2012. Less than (<) denotes not detectable with the technique used for determination. Untreated water is from the intake prior to the raw water tunnel, treated water is from a single site in the GVWD distribution system downstream of SCFP clearwell. Guidelines are taken from "Guidelines for Canadian Drinking Water Quality - Sixth Edition" Health and Welfare Canada 1996, updated to Oct 2014. Treated turbidity guideline applies to Indivial Filter Effluent readings. Capilano Source was operational for 366 days in 2016.

Physical and Chemical Analysis of Water Supply
Greater Vancouver Water District

2016 - Seymour Water System

Parameter	Untreated	SCFP Treated			Canadian Guideline Limit	Reason Guideline Established
	Average	Average	Range	Days Guideline Exceeded		
Alkalinity as CaCO ₃ (mg/L)	3.8	7.1	4.5-8.9		none	
Aluminium Dissolved (µg/L)	50	22	13-34		none	
Aluminium Total (µg/L)	93	27	14-51	0	200	Aesthetic
Antimony Total (µg/L)	<0.5	<0.5	<0.5	0	6	Health
Arsenic Total (µg/L)	<0.5	<0.5	<0.5	0	10	Health
Barium Total (µg/L)	3.5	2.8	2.4-2.9	0	1000	Health
Boron Total (mg/L)	<10	<10	<10		5	
Bromate (mg/L)	<0.01	<0.01	<0.01	0	0.01	Health
Bromide (mg/L)	<0.01	<0.01	<0.01	0	none	Health
Cadmium Total (µg/L)	<0.2	<0.2	<0.2	0	5	Health
Calcium Total (mg/L)	1.67	3.04	2.20-3.54		none	
Carbon Organic Dissolved (mg/L)	1.64	0.66	0.5-1.0		none	
Carbon Organic Total (mg/L)	1.70	0.64	0.5-1.0		none	
Chlorate (mg/L)	<0.01	0.03	0.01 - 0.05	0	1.0	Health
Chloride Total (mg/L)	<0.5	2.4	2.1-3.0	0	≤ 250	Aesthetic
Chromium Total (µg/L)	0.16	<0.05	<0.05 - 0.05	0	50	Health
Color Apparent (ACU)	22	<1	<1		none	
Color True (TCU)	12	<1	<1	0	≤ 15	Aesthetic
Conductivity (umhos/cm)	14	26	21-34		none	
Copper Total (µg/L)	20	<0.5	<0.5	0	≤1000	Aesthetic
Cyanide Total (mg/L)	<0.02	<0.02	<0.02	0	0.2	Health
Fluoride (mg/L)	<0.05	<0.05	<0.05	0	1.5	Health
Hardness as CaCO ₃ (mg/L)	4.9	8.5	6.1-9.9		none	
Iron Dissolved (µg/L)	105	<5	<5		none	
Iron Total (µg/L)	222	<5	<5-9		≤ 300	Aesthetic
Lead Total (µg/L)	<0.5	<0.5	<0.5	0	10	Health
Magnesium Total (µg/L)	155	170	134-243		none	
Manganese Dissolved (µg/L)	4.3	6.8	2.5-18.0		none	
Manganese Total (µg/L)	6.8	7.2	2.8-21.7	0	≤ 50	Aesthetic
Mercury Total (µg/L)	<0.05	<0.05	<0.05	0	1.0	Health
Molybdenum Total (µg/L)	<0.5	<0.5	<0.5		none	
Nickel Total (µg/L)	<0.5	<0.5	<0.5		none	
Nitrogen - Ammonia as N (mg/L)	<0.02	<0.02	<0.02		none	
Nitrogen - Nitrate as N (mg/L)	0.05	0.06	0.03-0.09	0	45	Health
Nitrogen - Nitrite as N (mg/L)	<0.01	<0.01	<0.01	0	3.0	Health
pH	6.6	7.2	6.9-7.4	0	6.5 to 8.5	Aesthetic
Phenols (µg/L)	<5	<5	<5		none	
Phosphorus Total (µg/L)	<5	<5	<5		none	
Potassium Total (µg/L)	161	152	134-184		none	
Residue Total (mg/L)	20	22	16-25		none	
Residue Total Dissolved (mg/L)	18	19	15-22	0	≤ 500	Aesthetic
Residue Total Fixed (mg/L)	12	15	12-16		none	
Residue Total Volatile (mg/L)	8	7	4-9		none	
Selenium Total (µg/L)	<0.5	<0.5	<0.5	0	50	Health
Silica as SiO ₂ (mg/L)	3.3	3.4	3.0-4.4		none	
Silver Total (µg/L)	<0.5	<0.5	<0.5		none	
Sodium Total (mg/L)	0.56	1.53	1.32-1.79	0	≤ 200	Aesthetic
Sulphate (mg/L)	1.2	1.0	0.8-1.3	0	≤ 500	Aesthetic
Turbidity (NTU)	0.87	0.11	0.06-0.24	0	≤ 1.0	Health
Uranium Total (µg/L)	0.039	0.009	0.009		20	Health
UV254 Abs/cm	83	97.4	95.9-98.2		none	
UV254A Abs/cm True	0.078	0.011	0.007-0.016		none	
Zinc Total (µg/L)	<3	<3	<3	0	≤ 5000	Aesthetic

These figures are averaged values from a number of laboratory analyses done throughout the year. Where the range is a single value no variation was measured for the samples analysed. Methods and terms are based on those of "Standard Methods for the Examination of Water and Waste Water" 22nd Edition 2012. Less than (<) denotes not detectable with the technique used for determination. Untreated water is from the intake or a sample site prior to coagulation, treated water is from a sample site downstream of SCFP clearwell. Guidelines are taken from "Guidelines for Canadian Drinking Water Quality - Sixth Edition" Health and Welfare Canada 1996, updated to Oct 2014. Seymour source water is filtered, disinfected with UV light and sodium hypochlorite for primary disinfection, lime is added to increase pH and alkalinity while CO₂ is added to adjust pH. Treated turbidity guideline applies to Individual Filter Effluent readings. Seymour Source was operational for 366 days in 2016.

Physical and Chemical Analysis of Water Supply
 Greater Vancouver Water District

2016 - Coquitlam Water System

Parameter	Untreated	Treated			Canadian Guideline Limit	Reason Guideline Established
	Average	Average	Range	Days Guideline Exceeded		
Alkalinity as CaCO ₃ (mg/L)	1.8	10	8.6-12.1		none	
Aluminium Dissolved (µg/L)	59	60	37-88		none	
Aluminium Total (µg/L)	84	80	48-106		none	
Antimony Total (µg/L)	<0.5	<0.5	<0.5	0	6	Health
Arsenic Total (µg/L)	<0.5	<0.5	<0.5	0	10	Health
Barium Total (µg/L)	2.5	2.4	2.2-2.6	0	1000	Health
Boron Total (mg/L)	<0.01	<0.01	<0.01	0	5	Health
Bromate (mg/L)	<0.01	<0.01	<0.01	0	0.01	Health
Bromide (mg/L)	<0.01	<0.01	<0.01		none	
Cadmium Total (µg/L)	<0.2	<0.2	<0.2	0	5	Health
Calcium Total (mg/L)	0.86	0.86	0.79-0.93		none	
Carbon Organic Dissolved (mg/L)	1.62	1.52	1.2-2.1		none	
Carbon Organic Total (mg/L)	1.63	1.53	1.2-2.2		none	
Chlorate (mg/L)	<0.01	<0.01	<0.01	0	1.0	Health
Chloride Total (mg/L)	0.52	1.9	1.7-2.1	0	≤ 250	Aesthetic
Chromium Total (µg/L)	<0.05	<0.05	<0.05	0	50	Health
Color Apparent (ACU)	15	2	<1-5		none	
Color True (TCU)	9	<1	<1	0	≤ 15	Aesthetic
Conductivity (umhos/cm)	9	29	26-34		none	
Copper Total (µg/L)	4.9	<0.5	<0.5		≤ 1000	Aesthetic
Cyanide Total (mg/L)	<0.02	<0.02	<0.02	0	0.2	Health
Fluoride (mg/L)	<0.05	<0.05	<0.05	0	1.5	Health
Hardness as CaCO ₃ (mg/L)	2.5	2.5	2.4-2.7		none	
Iron Dissolved (µg/L)	17	18	15-26		none	
Iron Total (µg/L)	45	45	34-59	0	≤ 300	Aesthetic
Lead Total (µg/L)	<0.5	<0.5	<0.5		10	Health
Magnesium Total (µg/L)	98	97	89-103		none	
Manganese Dissolved (µg/L)	3.5	2.2	1.9-2.5		none	
Manganese Total (µg/L)	3.9	2.8	2.4-3.4	0	≤ 50	Aesthetic
Mercury Total (µg/L)	<0.05	<0.05	<0.05	0	1.0	Health
Molybdenum Total (µg/L)	<0.5	<0.5	<0.5		none	
Nickel Total (µg/L)	<0.5	<0.5	<0.5		none	
Nitrogen - Ammonia as N (mg/L)	<0.02	<0.02	<0.02		none	
Nitrogen - Nitrate as N (mg/L)	0.087	0.085	0.05-0.12	0	45	Health
Nitrogen - Nitrite as N (mg/L)	<0.01	<0.01	<0.01	0	3.0	Health
pH	6.3	7.3	6.6-7.5	0	6.5 to 8.5	Aesthetic
Phenols (µg/L)	<5	<5	<5		none	
Phosphorus Total (µg/L)	<5	<5	<5		none	
Potassium Total (µg/L)	116	110	104-124		none	
Residue Total (mg/L)	15	29	28-30		none	
Residue Total Dissolved (mg/L)	8	20	16-25	0	≤ 500	Aesthetic
Residue Total Fixed (mg/L)	9	20	18-21		none	
Residue Total Volatile (mg/L)	6	9	8-11		none	
Selenium Total (µg/L)	<0.5	<0.5	<0.5	0	50	Health
Silica as SiO ₂ (mg/L)	2.5	2.5	2.4-2.7		none	
Silver Total (µg/L)	<0.5	<0.5	<0.5		none	
Sodium Total (mg/L)	0.48	5.2	2.9-6.8	0	≤ 200	Aesthetic
Sulphate (mg/L)	0.6	0.6	0.6-0.7	0	≤ 500	Aesthetic
Turbidity (NTU)	0.33	0.28	0.21-0.39			
Uranium Total (µg/L)	0.044	-	-	0	20	Health
UV254 (Abs/cm)	0.063	0.011	0.007-0.016		none	
UV254 App (Abs/cm)	0.07	0.022	0.015-0.035			
Zinc Total (µg/L)	<3	<3	<3	0	≤ 5000	Aesthetic

These figures are average values from a number of laboratory analyses done throughout the year. Where the range is a single value no variation was measured for the samples analysed. Methods and terms are based on those of "Standard Methods for the Examination of Water and Waste Water" 22nd Edition 2012. Less than (<) denotes not detectable with the technique used for determination. Untreated water is from the intake prior to treatment, treated water is from a single site in the GVWD distribution system downstream of CWTP. Guidelines are taken from "Guidelines for Canadian Drinking Water Quality - Sixth Edition" Health and Welfare Canada 1996, updated to Oct 2014. Coquitlam water is treated with ozone, then UV for primary disinfection. Soda ash is added to increase pH. Chlorine is added for secondary disinfection. Coquitlam source was operational for 366 days in 2016.

APPENDIX – 7

PHYSICAL AND CHEMICAL ANALYSIS – COQUITLAM WATER SYSTEM

Analysis of Source Waters for Herbicides, Pesticides, Volatile Organic Compounds and Uranium

	Units	Date Sampled	MAC	AO	Capilano	Seymour	Coquitlam
Atrazine	µg/L	12-Oct-16	5		<0.5	<0.5	<0.5
Azinphos-Methyl	µg/L	12-Oct-16	20		<2.0	<2.0	<2.0
Bendiocarb	µg/L	12-Oct-16	40		<2	<2	<2
Benzene	µg/L	12-Oct-16	5		<0.4	<0.4	<0.4
Benzo(a)pyrene	µg/L	12-Oct-16	0.04		<0.0050	<0.0050	<0.0050
Bromoxynil	µg/L	12-Oct-16	5		<0.50	<0.50	<0.50
Carbaryl	µg/L	12-Oct-16	90		<5	<5	<5
Carbofuran	µg/L	12-Oct-16	90		<5	<5	<5
Carbon Tetrachloride	µg/L	12-Oct-16	2		<0.50	<0.50	<0.50
Cyanobacterial toxins—Microcystin-LR	µg/L	Apr-Nov-16	1.5		<0.20	<0.20	<0.20
Chlorpyrifos	µg/L	12-Oct-16	90		<2.0	<2.0	<2.0
Diazinon	µg/L	12-Oct-16	20		<2	<2	<2
Dicamba	µg/L	12-Oct-16	120		<1.0	<1.0	<1.0
Dichlofop-Methyl	µg/L	12-Oct-16	9		<0.90	<0.90	<0.90
Dichlorobenzene, 1,2-	µg/L	12-Oct-16	200	≤ 3	<0.50	<0.50	<0.50
Dichlorobenzene, 1,4-	µg/L	12-Oct-16	5	≤ 1	<0.50	<0.50	<0.50
Dichloroethane, 1,2-	µg/L	12-Oct-16	5		<0.50	<0.50	<0.50
Dichloroethylene, 1,1-	µg/L	12-Oct-16	14		<0.50	<0.50	<0.50
Dichloromethane	µg/L	12-Oct-16	50		<2.0	<2.0	<2.0
Dichlorophenol, 2,4-	µg/L	12-Oct-16	900	≤ 0.3	<0.10	<0.10	<0.10
Dichlorophenoxyacetic acid, 2,4-(2,4-D)	µg/L	12-Oct-16	100		<1.0	<1.0	<1.0
Dimethoate	µg/L	12-Oct-16	20		<2	<2	<2
Diquat	µg/L	12-Oct-16	70		<7.0	<7.0	<7.0
Diuron	µg/L	12-Oct-16	150		<10	<10	<10
Ethylbenzene	µg/L	12-Oct-16	140	≤ 1.6	<0.40	<0.40	<0.40
Glyphosate	µg/L	12-Oct-16	280		<10	<10	<10
Malathion	µg/L	12-Oct-16	190		<2.0	<2.0	<2.0
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	µg/L	12-Oct-16	100		<2.0	<2.0	<2.0
Methyl t-butyl ether (MTBE)	µg/L	12-Oct-16		≤ 15	<4	<4	<4
Metolachlor	µg/L	12-Oct-16	50		<5	<5	<5
Metribuzin	µg/L	12-Oct-16	80		<5.0	<5.0	<5.0
Monochlorobenzene	µg/L	12-Oct-16	80	≤ 30	<0.50	<0.50	<0.50
N-Nitroso dimethylamine (NDMA)	µg/L	12-Oct-16	0.04		<0.002	<0.002	<0.002
Nitritriacetic Acid (NTA)	mg/L	12-Oct-16	400		<0.050	<0.050	<0.050
Paraquat (as Dichloride)	µg/L	12-Oct-16	10		<1.0	<1.0	<1.0

	Units	Date Sampled	MAC	AO	Capilano	Seymour	Coquitlam
Pentachlorophenol	µg/L	12-Oct-16	60	≤30	<0.10	<0.10	<0.10
Phorate	µg/L	12-Oct-16	2		<1	<1	<1
Picloram	µg/L	12-Oct-16	190		<5.0	<5.0	<5.0
Simazine	µg/L	12-Oct-16	10		<2	<2	<2
Terbufos	µg/L	12-Oct-16	1		<1	<1	<1
Tetrachloroethylene	µg/L	12-Oct-16	30		<0.50	<0.50	<0.50
Tetrachlorophenol, 2,3,4,6-	µg/L	12-Oct-16	100	≤ 1	<0.10	<0.10	<0.10
Toluene	µg/L	12-Oct-16	60	24	<0.40	<0.40	<0.40
Trichloroethylene	µg/L	12-Oct-16	5		<0.50	<0.50	<0.50
Trichlorophenol, 2,4,6-	µg/L	12-Oct-16	≤2	≤ 2	<0.10	<0.10	<0.10
Trifluralin	µg/L	12-Oct-16	45		<5	<5	<5
Uranium	µg/L	12-Oct-16	20		0.043	0.039	0.044
Vinyl Chloride	µg/L	12-Oct-16	2		<0.50	<0.50	<0.50
Xylene (Total)	µg/L	12-Oct-16	90	≤ 20	<0.40	<0.40	<0.40

Analysis of Source Water for PAH's

Parameters	Units	Capilano		Seymour		Coquitlam	
		10-Feb	29-Nov	9-Feb	29-Nov	9-Feb	29-Nov
Acenaphthene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene ¹	µg/L	<0.010	<0.005	<0.010	<0.005	<0.010	<0.005
Chrysene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-c,d)pyrene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Naphthalene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pyrene	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Analysis of Source Water for Radioactivity

Radioactivity	Units	Date Sampled	MAC ¹	Capilano		Seymour		Coquitlam	
				MDA ³	Activity	MDA ³	Activity	MDA ³	Activity
Gross Alpha	Bq/L	12-Oct-16	<0.5	0.04	<0.04	0.04	<0.04	0.03	<0.03
Gross Beta	Bq/L	12-Oct-16	<1.0	0.06	0.07	0.06	0.06	0.06	0.06
Cobalt-60	Bq/L	12-Oct-16	2 ²	0.32	<0.32	0.32	<0.32	0.33	<0.33
Cesium-134	Bq/L	12-Oct-16	7 ²	0.30	<0.30	0.31	<0.31	0.34	<0.34
Cesium-137	Bq/L	12-Oct-16	10	0.27	<0.27	0.28	<0.28	0.28	<0.28
Iodine-131	Bq/L	12-Oct-16	6	1.20	<1.20	1.07	<1.07	1.23	<1.23
Lead-210	Bq/L	12-Oct-16	0.2	0.08	<0.08	0.09	<0.09	0.09	<0.09
Radium-226	Bq/L	12-Oct-16	0.5	0.01	<0.01	0.01	<0.01	0.01	<0.01
Radon-222	Bq/L	12-Oct-16	None	0.98	<0.98	0.97	<0.97	0.98	<0.98
Strontium-90	Bq/L	12-Oct-16	5	0.04	<0.04	0.05	<0.05	0.04	<0.04
Tritium (H-3)	Bq/L	12-Oct-16	7000	6.07	<6.07	6.03	<6.03	6.14	<6.14

Footnotes:

¹MAC from Guidelines for Canadian Drinking Water Quality (GCDWQ), Oct. 2014

²MAC from Guidelines for Canadian Drinking Water Quality (GCDWQ), 6th Ed. 1996

³MDA Minimum Detectable Activity

Monitoring of Selected GVWD Water Mains for BTEXs

Parameters	MAC	AO	Maple Ridge Main at Reservoir		Barnston Island Main at Willoughby PS		Jericho-Clayton Main		South Burnaby Main #2
			13-Feb	1-Dec	11-Feb	29-Nov	22-June	29-Nov	
Benzene	µg/L	5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	140	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	60	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes (Total)	µg/L	90	20	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75

APPENDIX – 8

2016 OPERATING PERMIT



HEALTH
PROTECTION

PERMIT TO OPERATE

A Drinking Water System with
301-10000 Connections

Water Supplier:
Facility Name:

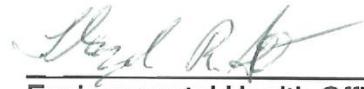
City of Pitt Meadows
City of Pitt Meadows Water System

Conditions of Permit

By December 31, 2014, the drinking water that you provide must have undergone treatment that achieves the following:

1. At least a 4-log (99.99%) reduction and/or inactivation of viruses
 2. At least a 3-log (99.9%) reduction and/or inactivation of Giardia cysts
 3. At least a 3-log (99.9%) reduction and/or inactivation of Cryptosporidium oocysts
- A written update on the status of the plan to meet these terms and conditions shall be submitted to Fraser Health Authority by March 31st of each calendar year.

29-Aug-2013
Effective Date


Environmental Health Officer

*This permit must be displayed
in a conspicuous place and is nontransferable*

