



**Environmental and Municipal
Management Services Division**

Permit to Operate a Waterworks

Altered Pursuant to Section 28(1)(h) of
The Environmental Management and Protection Act, 2010

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Permit No.: 00050083-07-00

File: 21020-50/WW/OP/BPWTC

To: **Buffalo Pound Water Treatment Corporation (the Permittee)**, formerly known as the Buffalo Pound Water Administration Board, the person responsible for the waterworks consisting of a **Class IV** water treatment facility, located in the **Rural Municipality of Moose Jaw No. 161, S $\frac{1}{2}$ 33-18-25 W2nd and the N $\frac{1}{2}$ 28-18-25 W2nd**, which must provide water for human consumptive use to the City of Regina, City of Moose Jaw, Buffalo Pound Provincial Park, and the Saskatchewan Water Corporation, in the Province of Saskatchewan.

PURSUANT to Section 28(9) of *The Environmental Management and Protection Act, 2010*, the Permit to Operate a Waterworks No.00050083-06-00 issued to the Permittee on January 1st, 2019, whose waterworks located in the **Rural Municipality of Moose Jaw No. 161, S $\frac{1}{2}$ 33-18-25 W2nd and the N $\frac{1}{2}$ 28-18-25 W2nd**, is hereby altered and amended, subject to the terms and conditions attached to this Permit.

This Permit takes effect on the **1st day of January, 2021.**

This Permit expires on the **1st day of January, 2023,** unless canceled or suspended before that date.

Issued

A handwritten signature in black ink, appearing to read "A. Hickey", with a horizontal line underneath.

Andrew Hickey
Environment Officer
Water Security Agency
Environmental and Municipal Management Services Division
Moose Jaw Office

* This digital signature affixed to the permit is legally binding and is considered a sufficient electronic signature as required under *The Electronic Information and Documents Act, 2000.*

Terms and Conditions

Section One: Definitions

- 1.1 All words and phrases have the same definitions as set out in *The Environmental Management and Protection Act, 2010*, or *The Waterworks and Sewage Works Regulations*, as the case may be.
- 1.2 In this Permit:
- (a) “Act” means *The Environmental Management and Protection Act, 2010*;
 - (b) “Regulations” means *The Waterworks and Sewage Works Regulations*;
 - (c) “Environmental and Municipal Management Services Division” means the Environmental and Municipal Management Services Division of the Water Security Agency;
 - (d) “Accredited” means a laboratory accredited pursuant to the requirements of the Canadian Association for Laboratory Accreditation in accordance with the parameters for which the laboratory has been accredited;
 - (e) “Positive Bacteriological Result” means a test result showing the presence of total coliforms, *Escherichia coli* or 200 or more organisms per 100 milliliters as an overgrowth of background bacteria.
 - (f) “Remote Monitoring” is the ability to continuously receive real time data, operational conditions, and alarms indicating adverse operational conditions from a remote location via various methods of electronic data transfer
 - (g) “Remote Process Control” is the ability to employ “Remote Monitoring” in addition to having the ability to make operational or process adjustments from a remote location.
 - (h) “Water rights license” is a water rights license issued pursuant to section 50 of *The Water Security Agency Act*.
 - (i) “Approval to Operate a Surface Water Works/Ground Water Works” is an approval to operate a raw water supply works that is issued pursuant to section 59 of *The Water Security Agency Act*.
 - (j) “Environment Officer” has the same meaning as defined in the Act.

Section Two: Operation

- 2.1 The Permittee shall comply with the *Act* and the *Regulations*, and the Terms and Conditions of this Permit.
- 2.2 In the event of an inconsistency between the *Act* and this Permit, or the *Regulations* and this Permit, the more stringent requirement shall apply.
- 2.3 The Permittee shall have a valid “Water Rights License” and a valid “Approval to Operate a Surface Water Works/Groundwater Works” issued pursuant to *The Water Security Agency Act*.
- 2.4 The Permittee shall not extend or alter the Waterworks without approval of the Environmental and Municipal Management Services Division.
- 2.5 The Permittee shall have a written quality assurance and quality control policy in place that is satisfactory to the Minister. The Permittee shall update its quality assurance and quality control policy from time to time to incorporate changes to the waterworks equipment, operational procedures, chemical use, or any other matter or thing which could affect the quality of the water produced by the waterworks. The Permittee shall:
- (a) provide a copy of the policy to any employee, agent or contractor performing work or service in relation to the waterworks; and
 - (b) inform the persons mentioned in 2.5(a) of the contents of the quality assurance and quality control policy.
- 2.6 Where all or part of a distribution system is new, extended, altered or repaired, the Permittee shall, before the commencement of its use, after completion of the new waterworks or the alteration, extension or repair:
- (a) disinfect the portion of the distribution system that is new or has been extended, altered or repaired in accordance with “AWWA C651-14 Disinfecting Water Mains”; and
 - (b) take water samples from the distribution system that is new or has been extended, altered or repaired, and have the samples analyzed for bacteria.
- 2.7 The Permittee shall ensure that the operation, repair and maintenance of the waterworks is under the direction of an operator who holds at least the corresponding certificate for the classification of the waterworks as set out in the Saskatchewan Water and Wastewater Works Operator Certification Standards, December 2016.
- 2.8 The Permittee shall complete a follow up study to the Downstream Use and Impact Study (DUIS) conducted by AECOM and dated June 2014, which will review the effects of, and recommend limits for, total suspended solids, aluminum, and any other possible contaminants of concern that may be found in residuals/effluent discharged back to Buffalo Pound Lake as a result of the proposed updated treatment processes. This report shall be completed by the Permittee by July 31, 2021.

Section Three: Sampling and Monitoring and Water Quality

- 3.1 The Permittee shall cause water samples to be taken from the waterworks to test for bacteria, turbidity, chlorine and for the other parameters listed in Appendix A, at the locations, times and frequency set out in Appendix A.
- 3.2 The Permittee shall ensure that the water provided to consumers does not exceed the limits set out in Appendix B for bacteria, turbidity, and the chemical parameters listed in that Appendix. The Permittee shall cause to be maintained the chlorine residuals as set out in Appendix B
- 3.3 Subject to 3.4, the Permittee shall have water samples required by Appendix A to be analyzed by an accredited laboratory in accordance with the *Regulations*.
- 3.4 The Permittee may perform water sampling and analysis for chlorine residuals, fluoride and turbidity by means of on-site testing (non-accredited) or by continuous water quality monitoring equipment when authorized to do so.
- 3.5 The Permittee shall take water samples in accordance with the instructions provided by the institution or laboratory which provides the sampling bottles or containers.

- 3.6 The Permittee shall ensure that all water quality monitoring and testing equipment be maintained and calibrated on a frequency as recommended by the manufacturer; verification of the accuracy of online continuous monitoring equipment shall occur weekly.
- 3.7 The Permittee shall perform and record the turbidity analysis and chlorine analysis manually and by means of on-site test equipment every 0.5 hours in the event of an unplanned continuous online turbidimeter or chlorine analyzer failure or outage. (*Devices which are used to record regulatory requirements*)
- 3.8 The Permittee shall perform and record the fluoride analysis manually and by means of on site test equipment every 6 hours in the event of an unplanned continuous Fluoride analyzer failure or outage.
- 3.9 The Permittee shall immediately notify the Minister if a continuous analyzer or continuous online turbidimeter failure or outage is expected to last longer than 24 hours.
- 3.10 The permittee must calibrate the UV intensity sensors in each UV reactor as indicated by the manufacturer.
- 3.11 The permittee must have the reference sensors used for calibrating the UV system calibrated at least once per year by a qualified independent third party.
- 3.12 The permittee shall, for the duration of this permit, evaluate the operation of the on-line UVT analyzer by comparing the on-line UVT measurements to UVT measurements using a benchtop spectrophotometer at a minimum of once per week and record these results into the plant records.
- 3.13 The Permittee shall cause wastewater samples to be taken from the water treatment plant effluent discharged to the environment for the parameters listed in Appendix C, at the locations, times and frequency set out in Appendix C.
- 3.14 Subject to 3.13, the Permittee shall have water samples Aluminum and Acute Lethality required by Appendix C to be analyzed by an accredited laboratory in accordance with the *Regulations*.
- 3.15 The Permittee may perform wastewater sampling and analysis for chlorine residuals, pH and total suspended solids by means of on-site testing (non-accredited).
- 3.16 The Permittee shall ensure that the water treatment plant effluent discharged to the environment does not exceed the limits set out in Appendix D for the chemical parameters listed in that Appendix.

Section Four: Record Keeping

- 4.1 The Permittee shall maintain records containing the following information:
 - (a) total water pumped into the distribution system on a daily basis or the total raw water used;
 - (b) the types, dosages and total amounts of chemicals or Ultraviolet light applied to the water for treatment;
 - (c) the locations from which samples for any tests conducted by the Permittee of the waterworks were taken in accordance with this permit and the name of the person who conducted the sampling or testing and the results of those tests;
 - (d) any departures from normal operating procedures that may have occurred and the time and date that they occurred;
 - (e) any instructions that were given during operation of the Waterworks to depart from normal operating practices and the name of the person who gave the instructions;
 - (f) any upset condition or bypass condition, the time and date of the upset condition or bypass condition and measures taken to notify others and resolve the upset condition or bypass condition;
 - (g) any condition of low disinfectant levels, the time, date and location of occurrence and measures taken to restore disinfectant levels to required values;
 - (h) the dates and results of calibrating any metering equipment and testing instruments; and
 - (i) the dates and types of maintenance performed on equipment and any actions taken to ensure the normal operation of the waterworks.
- 4.2 The Permittee shall cause the operational records or logs mentioned in 4.1 to be recorded and maintained in the following manner:
 - (a) operational records or logs must be made in chronological order, with the dates, times and testing locations clearly indicated;
 - (b) entries in an operational record or log must only be made by the Permittee, which includes by definition any principal or agent of a Permittee;
 - (c) any person making an entry in an operational record or log must do so in a manner that allows the person to be unambiguously identified as the maker of the entry; operational records or logs must be maintained on a daily basis and retained for at least five years;
 - (d) any anomalies or instances of missing entries in an operational record or log must be accompanied by explanatory notes;
 - (e) operational records or logs must only contain data or information that is actually observed or produced;
 - (f) operational records or logs must not contain default values generated manually or by automated means;
 - (g) operational records or logs maintained pursuant to clause (d) must be made available promptly on request of the Minister.
- 4.3 The Permittee shall review the records and logs mentioned in 4.1 on a monthly basis to ensure that the operating parameters are being achieved and that the limits set out in Appendix B are not exceeded.
- 4.4 The Permittee shall report the findings to the Minister as soon as is reasonably practicable after each review required by 4.3 should the review of the records and logs indicate that the quality of water from the waterworks has been adversely affected, that any upset condition, bypass condition or event at the waterworks has not been reported, or that on-site water quality testing records are missing.

Section Five: Reporting and Consumer Reporting

- 5.1 The Permittee shall submit the results of water sampling analysis performed in accordance with this Permit to the Minister:
 - (a) in the case of a positive bacteriological result, within 24 hours following completion of the sampling analysis;
 - (b) in the case of all other parameters, within 7 days following completion of the sampling analysis.

- 5.2 The Permittee shall direct the laboratory performing its water sampling analysis to submit the results within the timeframes mentioned in 5.1 directly to the Environmental and Municipal Management Services Division, in a format in accordance with the Environmental Management System) Lab/Operator (LAB-OPR) Data File Format, in addition to submitting the written results to the Permittee.
- 5.3 The Permittee, and every employee, agent, or contractor engaged by the permittee shall immediately report to the Minister any known or anticipated upset condition, bypass condition or events at or affecting a Waterworks that could adversely affect the quality of water produced by the waterworks. The Permittee shall immediately report to the Minister any instance where:
- (a) disinfection equipment fails;
 - (b) the level of disinfection identified in Appendix B is not achieved or is not anticipated to be achieved;
 - (c) any other parameter level identified in Appendix B is not achieved or is not anticipated to be achieved;
 - (d) there is a, retirement, suspension, resignation, scheduled absence or termination of employment of any certified waterworks treatment operator, or any anticipated retirement, suspension, resignation or termination that results in the waterworks not being under the direction of a certified operator that holds at least the corresponding certificate for the classification of those works; or
 - (e) a system depressurization has occurred.
- 5.4 The Permittee shall instruct its employees, agents and contractors performing work or service in relation to the waterworks, of their obligation under section 34(1) of the *Regulations* and to report to the Minister any instance as described in 5.4 and any known or anticipated upset condition, bypass condition or events at or affecting a waterworks that could adversely affect the quality of water produced by the waterworks.
- 5.5 The Permittee shall as soon as reasonably practical report any events other than the events mentioned in 5.3 and 5.4 to the Minister.
- 5.6 The Permittee shall, once per calendar year, provide the consumers supplied by the waterworks with a notification of:
- (a) the quality of water produced or supplied by the waterworks in comparison with the levels set out in this permit;
 - (b) the Permittee's compliance with sample submission requirements described in this permit.
- 5.7 Within 30 days after providing consumer notification required by 5.7, the Permittee shall provide a written copy of the notification to the Minister.
- 5.8 The Permittee shall maintain records of all required testing indicated as "on site testing" in Appendix A and Appendix C and make them available to the Minister upon request. For all other parameters, the Permittee shall ensure that reporting is conducted in accordance with Section 37 of *The Waterworks and Sewage Works Regulations*.
- 5.8.1 The Permittee shall submit an annual operating report to the Water Security Agency by March 31st of the following year of operation, which shall include a summary of all monitoring data as required by Appendix C, a summary of any failure to collect samples as required by Appendix C or meet limits in Appendix D.

Section Six: Inspection

- 6.1 An Environment Officer may enter the waterworks at any time to conduct an inspection to ensure that the Permittee is complying with this Permit, the *Act* or the *Regulations*.
- 6.2 Upon the request of an Environment Officer, the Permittee shall immediately provide any books, records, logs, graphs, papers, documents, or data, including any computer, digital or electronic records, logs, graphs, files or data maintained with respect to the waterworks.

Section Seven: General

- 7.1 A copy of this Permit shall be posted in a conspicuous place at the waterworks.
- 7.2 The Permittee shall provide each operator of the waterworks with a copy of this Permit and the *Regulations*.
- 7.3 The Minister may cancel, alter or suspend this Permit for the reasons and in the manner set out in the *Act*.
- 7.4 The Permittee shall apply for renewal/alteration of this permit at least 60 days prior to its expiry.
- 7.5 In the event of any inconsistency between a previously issued "Permit to Operate a Waterworks", and the Terms and Conditions of this "Permit to Operate a Waterworks", the Terms and Conditions of this Permit prevail.
- 7.6 This Permit to Operate does not replace or supersede any approvals, licenses or authorizations that may be required from municipal, provincial, or federal legislation. The Permittee shall maintain in force any and all such approvals, licenses or authorizations that may be required.
- 7.7 Where any notice or reporting is required to be given by the Permittee, it shall be provided to:

Water Security Agency
Andrew Hickey
100-111 Fairford Street East
Moose Jaw SK
S6H 7X9
Telephone (306) 694-3900
Fax: (306) 694-3212

After hours, weekends and holidays, the Agency can be contacted by calling the 1-844-536-9494 Upset Report Line.

Appendix A
 File: 21020-50/WW/OP/BPWTC
Waterworks Monitoring Schedule

Parameter	Station Number	Testing Required	Limit ¹ Applied	Treated Water Sampling Locations and Minimum Sampling Frequency
		Yes	Yes	
1. Giardia and Cryptosporidium	SK05JG0128	X		Once (1) every 3 months and following upsets or significant events that may affect raw water quality, from the raw water entering the water treatment plant
2. Bacteriological Total Coliform <i>Escherichia Coli.</i>	SK05JG0017	X	X	Once (1) every week from the treated water. Repeat and Special samples resulting from follow-up to a contaminated regular sample are not considered as regular sample submission.
3. Chlorine Residual (on-site testing)	SK05JG0017	X	X	Continuously for free residual in the treated water in the clear well; AND at the same frequency and locations as for bacteriological sampling, for free and total residuals
4. Turbidity (on-site testing)	SK05JG0017	X	X	Continuously from the treated water from the filter effluent from each filter; AND continuously for treated water in the clearwell; AND at the same frequency and locations as for bacteriological sampling.
5. Fluoride (on-site testing)	SK05JE0001	X	X	Continuously in the water entering the Moose Jaw distribution system when fluoridation is occurring;
6. Chemical - General Alkalinity Bicarbonate Calcium Carbonate Chloride Conductivity Fluoride Hardness Magnesium Nitrate pH Sodium Sulphate Total dissolved solids	SK05JG0017	X	Limits apply to Nitrate and Fluoride	Once (1) every 3 months, from the treated water at the treatment plant. One sample must be taken in each of the following periods: (January to March, April to June, July to September and October to December).
7. Chemical – Health Category Aluminium Antimony Arsenic Barium Boron Cadmium Chromium Copper Iron Lead Manganese Selenium Silver Uranium Zinc	SK05JG0017	X	Limits apply to Arsenic, Barium, Boron, Cadmium, Chromium, Lead, Selenium and Uranium	One (1) every 6 months, from the treated water at the water treatment plant. One sample must be taken in each of the following periods of every year ;(January to June and July to December).
8. Pesticides Atrazine Bromoxynil Carbofuran Chlorpyrifos Dicamba 2,4-D Diclofop-methyl Dimethoate Glyphosate Malathion MCPA Pentachlorophenol Picloram Trifluralin	SK05JG0017	X	X	Once (1) every year from the treated water at the water treatment plant.
9. Trihalomethanes	SK05JG0017	X	X	Once (1) every month from the treated water at the water treatment plant.

10. Haloacetic Acids (HAA₅)	SK05JG0017	X	X	Once (1) every 3 months from the treated water at the water treatment plant. One sample must be taken in each of the following periods of every year: (January to March, April to June, July to September, and October to December)
11. Cyanide and Mercury	SK05JG0017	X	X	Two (2) every year, from the treated water at the water treatment plant. One sample must be taken in each of the following periods of every year: (January to June and July to December).
12. Synthetic Organics Benzene Benzo(a)pyrene Carbontetrachloride Dichlorobenzene 1,2 Dichlorobenzene 1,4 Dichloroethane 1,2 Dichloroethylene 1,1 Dichloromethane Dichlorophenol 2,4 Ethylbenzene Monochlorobenzene Perfluorooctane-sulfonate Perfluorooctanoic Acid Tetrachloroethylene Tetrachlorophenol 2,3,4,6 Toluene Trichloroethylene Trichlorophenol 2,4,6 Vinyl chloride Xylene	SK05JG0017	X	X	Once (1) every year from the treated water at the water treatment plant.
13. Radiological Gross Alpha Gross Beta Lead-210 Radium-226 Tritium Strontium-90 Iodine-131 Cesium-137 Potassium-40	SK05JG0017	X	X	Once (1) every year from the treated water at the water treatment plant for Gross Alpha and Gross Beta. Compliance may be inferred if the measurements for gross alpha and gross beta activity are less than 0.5 Bq/L and 1 Bq/L respectively. If either the gross alpha or gross beta activity levels are exceeded upon initial screening then the treated water supply must be monitored for the suite of radiological isotopes listed.
14. Microcystin LR or total Microcystin toxins	SK05JG0017	X	X	Once (1) every month from the treated water at the water treatment plant during the algal bloom period (May, June, July, August, September, and October)
	SK05JG0128	X		Once (1) every month from the raw water at the water treatment plant during the algal bloom period (May, June, July, August, September, and October)
15. Ultraviolet Dosage mJ/cm² (on-site testing)	SK05JG0017	X	X	Continuously

¹. Limits for identified parameters are provided in Appendix B

Appendix B Permit Limits

The following Water Quality limits apply where identified in Appendix A

Bacteriological:

- (a) total coliform levels of zero organisms detectable per 100 millilitres;
- (b) *Escherichia coli* levels of zero organisms detectable per 100 millilitres; and
- (c) background bacteria of less than 200 organisms per 100 millilitres or no overgrowth.

Disinfection

- (a) The water treatment facility must achieve a minimum of 4.0 log removal/inactivation of viruses which can be achieved through a combination of physical removal and/or disinfection.
- (b) The water treatment facility must achieve a minimum of 2.0 log inactivation of viruses through disinfection.
- (c) The water treatment facility must achieve a minimum of 3.0 log inactivation/removal of giardia cysts and cryptosporidium oocysts through conventional chemically assisted surface water treatment and disinfection.
- (d) The water treatment facility must achieve a minimum of 0.5 log giardia inactivation through disinfection
- (e) The water treatment facility must maintain a free chlorine residual of not less than 0.1 milligrams per litre in the water entering the distribution systems.

Ultraviolet Dosage

- (a) If ultraviolet disinfection is being utilized to comply with the disinfection requirements of this permit:

The permittee must demonstrate:

A Minimum of 98% of the total volume of water entering the distribution system **per day** is treated by the UV reactors operating within validated limits.

A Minimum of 99% of volume of water entering the distribution system **per month** is treated by the UV reactors operating within validated limits.

(validated dosage of ≥ 5.8 mJ/cm² and minimum Ultraviolet Transmittance of 85% at flows ≤ 205 MLD in order to receive 2.0 log Cryptosporidium inactivation credit.)

Turbidity:

Waterworks, regardless of the source, must maintain turbidity levels for water entering the distribution systems at levels that will always result in acceptable microbiological quality and which will not compromise disinfection.

Requirements by Source/Treatment type:

Source/Treatment	Routine Standard	Max. Allowable Exceedance Duration	Absolute Maximum
Surface water ^{1,2} source with monthly average source turbidity greater than or equal to 1.5 NTU employing chemically assisted filtration	Not to exceed 0.3 NTU, in more than 5% of discrete measurements each calendar month or more than 5% of the time each calendar month if continuous monitoring employed	Not to exceed 0.3 NTU for more than 12 consecutive hours if continuous monitoring employed	Never to exceed 1.0 NTU
Surface water ^{1,2} source with monthly average source turbidity less than 1.5 NTU and employing chemically assisted filtration.	Not to exceed 0.2 NTU, in more than 5% of discrete measurements each calendar month or more than 5% of the time each calendar month if continuous monitoring employed.	Not to exceed 0.2 NTU for more than 12 consecutive hours if continuous monitoring employed	Never to exceed 1.0 NTU

¹ Includes surface waters and groundwater under the influence of surface water
² Turbidity value measured from each filter effluent.

Chemical – Health Category

Parameter	MAC (mg/L)	IMAC (mg/L)
Arsenic	0.010	
Barium	1.0	
Benzene	0.005	
Benzo(a)pyrene	0.00001	
Boron	5.0	
Bromate	0.010	
Cadmium	0.005	
Carbon tetrachloride	0.005	
Chlorate	1.0	
Chlorite	1.0	
Chromium	0.050	
Cyanide	0.200	
Dichlorobenzene, 1,2	0.200	
Dichlorobenzene, 1,4	0.005	
Dichloroethane, 1,2		0.005
Dichloroethylene, 1,1	0.014	
Dichloromethane	0.050	
Dichlorophenol, 2,4	0.900	
Fluoride	1.5	
Haloacetic Acids ¹	0.080	
Lead	0.010	
Mercury	0.001	

<i>Microcystin-LR</i>	0.0015
<i>Monochlorobenzene</i>	0.080
<i>Nitrate as NO₃</i>	45.0
<i>Selenium</i>	0.010
<i>Tetrachlorophenol,2,3,4,6</i>	0.100
<i>Trichloroethylene</i>	0.050
<i>Trichlorophenol,2,4,6</i>	0.005
<i>Trihalomethanes²</i>	0.100
<i>Uranium</i>	0.020
<i>Vinyl Chloride</i>	0.002

Radiological

Parameter	MAC (Becquerels/L)
<i>Gross Alpha</i>	0.5
<i>Gross Beta</i>	1.0
<i>Lead-210 (²¹⁰Pb)</i>	0.2
<i>Radium-226 (²²⁶Ra)</i>	0.5
<i>Tritium (³H)</i>	7000
<i>Strontium-90 (⁹⁰Sr)</i>	5.0
<i>Iodine (¹³¹I)</i>	6.0
<i>Cesium-137 (¹³⁷Cs)</i>	10.0

Chemical – Pesticides

Parameter	MAC (mg/L)	IMAC (mg/L)
<i>Atrazine</i>		0.005
<i>Bromoxynil</i>		0.005
<i>Carbofuran</i>	0.09	
<i>Chlorpyrifos</i>	0.09	
<i>Dicamba</i>	0.12	
<i>2,4-D³</i>		0.1
<i>Diclofop-methyl</i>	0.009	
<i>Dimethoate</i>		0.02
<i>Glyphoste</i>		0.28
<i>Malathion</i>	0.19	
<i>MCPA⁴</i>	0.10	
<i>Pentachlorophenol</i>	0.06	
<i>Picloram</i>		0.19
<i>Trifluralin</i>		0.045

¹ Haloacetic acids refers to the total of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid and dibromoacetic acid and is based on a locational running average of a minimum of quarterly samples taken from the treated water.

² Trihalomethanes refers to the total of chloroform, bromodichloromethane, dibromochloromethane, and bromoform and is based on an annual average of samples collected from the treated water.

³ 2,4 Dichlorophenoxyacetic Acid

⁴ 2-Methyl-4-Chlorophenoxyacetic Acid

Appendix C
 File: 21020-50/WW/OP/BPWTC
Water Treatment Plant – Wastewater Discharged to Environment
Monitoring Schedule

Parameter	Station Number	Testing Required	Limit ¹ Applied	Treated Water Sampling Locations and Minimum Sampling Frequency
		Yes	Yes	
1. Chlorine Residual² (on-site testing)	SK05JG0233	X	X	Once (1) every week for total residual in the water entering the receiving environment.
2. Aluminum (Total and Dissolved)	SK05JG0233	X		Once (1) every month from a sample collected from the water entering the receiving environment.
3. pH (on-site testing)	SK05JG0233	X		Once (1) every week from a sample collected from the water entering the receiving environment.
4. Total Suspended Solids (on site testing)	SK05JG0233	X	X	Once (1) every week from a sample collected from the water entering the receiving environment.
5. Acute Lethality³	SK05JG0233	X	X	Twice (2) every year from a sample collected from the water entering the receiving environment.

¹. Limits for identified parameters are provided in Appendix D

². If employing the DPD method of Total Chlorine determination, procedures will be completed to compensate for manganese interference.

³. The accredited laboratory must adhere to the following biological test methods:

Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout
(Reference Method EPS 1/RM/13)

Procedure for pH Stabilization during the Testing of Acute Lethality of Wastewater Effluent to Rainbow Trout
(Reference Method EPS 1/RM/50)

Appendix D Permit Limits

The following Water Treatment Plant Wastewater Quality limits apply where identified in Appendix C

Chlorine Residual

Non-detectable levels.

Total Suspended Solids

Shall not exceed 25 milligrams per litre.

Acute Lethality

Shall be Non-Lethal to greater than 50% of test organisms at 100% effluent concentration.