

ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT

BEING CHAPTER E-12 R.S.A. 2000

ENFORCEMENT ORDER NO EO-2015/02-SSR

Horse Creek Water Services Inc.
400-1100 8 Avenue SW
Calgary, AB. T2P 3T8

("Horse Creek")

WHEREAS on July 20, 2004, Alberta Environment and Parks ("AEP") issued Approval No. 205071 under the *Environmental Protection and Enhancement Act* ("EPEA") to Medallion Cochrane Lakes Land Development Corporation which expired on July 1, 2015 (the "Former Approval");

WHEREAS the Former Approval was issued for the purpose of construction, operation and reclamation of a waterworks system for the Cochrane Lakes Development, a residential subdivision in the Municipal District of Rocky View located in SE-27-26-4 W5M ("the Facility");

WHEREAS on June 28, 2006, the Approval was transferred from Medallion Cochrane Lakes Land Development Corporation to Cochrane Lake Water Company Ltd. (subsequently re-named as "Regional Water Services Ltd.");

WHEREAS Horse Creek Water Services Inc. ("Horse Creek") acquired the physical assets from Regional Water Services Ltd., and the Approval was transferred to Horse Creek on January 6, 2015;

WHEREAS while preparing for the annual inspection of the Facility in August of 2015, the AEP Inspector identified that the Approval had expired as of July 1, 2015, and that Horse Creek had not submitted a renewal application to AEP prior to the expiry date;

WHEREAS section 61 of *EPEA* states that no person shall commence or continue any activity that requires an approval unless the person holds the required approval;

WHEREAS section 227(j) of *EPEA* makes it an offence to contravene section 61 of *EPEA*;

WHEREAS Horse Creek requires authorization under *EPEA* to operate the Facility in accordance with the terms of the Former Approval until such time that a new *EPEA* approval can be applied for;

THEREFORE, I, Craig Knaus, Compliance Manager, South Saskatchewan Region, pursuant to section 210 of *EPEA*, DO HEREBY ORDER:

General

1. All of the definitions contained in the Former Approval (No. 205071-00-00, as amended) apply in respect of this Order.

Monitoring, Operation and Reporting

2. Horse Creek shall immediately report by telephone any contravention of any of the clauses of this Order to the Director at 1-780-422-4505.
3. If any equipment used for disinfection fails or is shut down for any reason, Horse Creek shall immediately report this occurrence to the Director at 1-780-422-4505.
4. If the presence of any organism is detected in any sample of treated water, Horse Creek shall immediately report to the Director by telephone at 1-780-422-4505.
5. In addition to Clauses 2, 3, and 4 of this Order, within 7 days of reporting to the Director, Horse Creek shall submit to the Director, a written report (the "7 Day Report").
6. In the 7 Day Report, Horse Creek shall include, at minimum, all of the following:
 - a. A detailed description of the contravention;
 - b. A detailed description of the circumstances leading to the contravention;
 - c. Corrective actions taken to remedy the contravention; and
 - d. Steps taken to prevent reoccurrence of the contravention, and
 - e. Any other information as required by the Director.
7. At all times, the day to day operation of the water treatment plant and treated water distribution system shall be under the direction of, or by, a certified operator who holds a valid Level II (or higher) Water Treatment Operators Certificate and a valid Level I (or higher) Water Distribution Operators Certificate.
8. Horse Creek shall
 - a. immediately; and
 - b. continue to until further written notice from the Director.

at all times provide water through the Waterworks System that meets all of the following limits:

PARAMETERS	DESIGNATED SAMPLING LOCATION	LIMIT
<p>The Ultra Violet Dose in each reactor:</p> <p>-shall be greater than the Ultra Violet Dose specified by the Ultra Violet system manufacturer's validation certificate to achieve the log reduction of <i>Giardia</i> and <i>Cryptosporidium</i> required in this approval; and</p> <p>-may be out of the validated range for less than 2% of the time daily and 1% of the time monthly.</p>		
Treated Water Volume	Entering the treated water distribution system	Shall not exceed the water treatment plant's ability to produce water, meeting the required water quality limits in Clause 8
Treated Water pH	Entering the treated water distribution system	6.5 – 8.5
Treated Water Turbidity	Combined filtered effluent entering the treated water reservoir	<p>a) When the monthly average of daily raw water turbidity is ≥ 2.5 NTU the combined filtered water turbidity shall:</p> <ul style="list-style-type: none"> • be < 0.5 NTU in at least 95% of the measurements or time in each month; • not exceed 0.5 NTU for more than 12 consecutive hours; • not exceed 1 NTU at any time; <p>b) When the monthly average of daily raw water turbidity is < 2.5 NTU, the combined filtered water turbidity shall:</p> <ul style="list-style-type: none"> • be < 0.3 NTU in at least 95% of the measurements or time in each month; • not exceed 0.3 NTU for more than 12 consecutive hours • not exceed 1 NTU at any time.
Treated Water Turbidity	Random location in the treated water distribution system	≤ 5 NTU
Ultra Violet Light Transmittance of filtered water	Combined Filtered Water (prior to Ultra Violet light reactor)	$\geq 80\%$ per cm
Maximum Flow Rate through each Ultra Violet reactor	UV Reactor #1 UV Reactor #2	65.7 Liters / sec
Ultra Violet light Sensor (or Dose) Reading	UV Reactor #1 UV Reactor #2	As a percentage to demonstrate > 40 mJ/cm ²
Minimum Treated Water Reservoir Volume (CT)	In the Treated Water Reservoir	909 M ³
CT performance Ratio (Viruses)	Entering the treated water distribution system	≥ 1.0
Free Chlorine Residual of Treated Water	Random location in the treated water distribution system	≥ 0.1 mg/L
Free Chlorine Residual of Treated Water	Entering the treated water distribution system (At the point T ₁₀ is measured for CT calculation)	≥ 0.5 mg/L

9. Horse Creek shall, by October 30, 2015, and before the 30th day of each month thereafter,
- a. collect samples; and
 - b. analyze parameters;

for the water in the Waterworks System in accordance with the entirety of the following table:

PARAMETERS	FREQUENCY	SAMPLE TYPE	SAMPLING LOCATION	NON-EMERGENCY REPORTING FREQUENCY	
				MONTHLY	ANNUAL
WATERWORKS SYSTEM					
Raw water Turbidity	Once per day	Grab sample	Entering water treatment plant (Prior to chemical addition)	Clause 12	Clause 13
Raw water pH	Once per day	Grab sample	Entering water treatment plant (Prior to chemical addition)		
Raw water Temperature	Once per day	Grab sample	Entering water treatment plant (Prior to chemical addition)		
Raw water Volume	Once per week	Metered	Entering water treatment plant		
Raw water <i>Giardia</i> levels	Once every three months	Grab sample	Entering water treatment plant		
Treated Water Volume	Once per day	Metered	Entering the treated water distribution system		
Treated Water Turbidity	Continuous	Continuous monitoring	Combined filtered effluent entering the treated water reservoir		
Treated Water Turbidity	Once per week	Grab sample	Random location in the treated water distribution system		
Treated Water pH	Once per day	Grab sample	Entering the treated water distribution system		
CT _{lowest actual} by Free Chlorine (<i>Giardia</i>)	Daily	Calculated	Entering the treated water distribution system		
CT _{lowest actual} by Free Chlorine (Viruses)	Daily	Calculated	Entering the treated water distribution system		
CT _{required} by Free Chlorine (<i>Giardia</i>)	Daily	Determined from the "CT Values for Inactivation of <i>Giardia</i> Cysts by Free Chlorine" in Appendix A of the AENV standards			
CT _{required} by Free Chlorine (Viruses)	Daily	Determined from the "CT Values for Inactivation of Viruses by Free Chlorine" in Appendix B of the AENV standards			
CT performance ratio (<i>Giardia</i>)	Daily	CT _{lowest actual} / CT _{required}	Entering the treated water distribution system		
CT performance ratio (Viruses)	Daily	CT _{lowest actual} / CT _{required}	Entering the treated water distribution system		
Free Chlorine Residual of Treated Water	Continuous	Continuous monitoring	Entering the treated water distribution system (At the point T ₁₀ is measured for CT calculation)	Clause 12	Clause 13
Free Chlorine Residual of Treated Water	Once per week	Grab sample	Random location in the treated water distribution system		
Bacteria in Treated Water (Bacteriological Analysis)	4 samples per month (or as required by the GCDWO)	Grab sample	Random location in the treated water distribution system		

10. In addition to the requirements of Clause 9 above, Horse Creek shall, prior to **March 31, 2016**, obtain a treated water grab sample that include, at a minimum, all of the following:

- a. The treated water grab sample for:

Turbidity Total Dissolved Solids, Calcium, Magnesium, Total Hardness, Sodium, Nitrite-Nitrogen + Nitrate-Nitrogen, Ammonia-Nitrogen, Total Alkalinity, Fluoride, Nitrite-Nitrogen, Total Organic Carbon, Aluminium, Copper, and Lead

shall be collected prior to the water entering the treated water distribution system.
 - b. the treated water collected for Trihalomethane analysis shall be taken from the extreme end of the treated water distribution system; and
 - c. the analyses shall be conducted by an independent laboratory.
11. The bacteriological samples collected pursuant to Clause 9 above (Monthly Sampling of the Waterworks System) shall be forwarded to the Provincial Laboratory of Public Health for analysis.
 12. Horse Creek shall compile and retain a Monthly Waterworks Report which shall include the following:
 - a. the requirements of Clause 9 above;
 - b. name of the supervising operator responsible for the operation of the waterworks system;
 - c. on a weekly basis, the name, concentration and dosage of each chemical that is added to the water treatment process;
 - d. a description of any incidents which required reporting as per Clauses 2, 3, or 4; and
 - e. a summary of any operational problems.
 13. Horse Creek shall compile an Annual Waterworks Report which shall include the following:
 - a. the monthly average of each parameter monitored, as outlined in Clauses 8 and 9 above, excluding bacteriological results, for each month;
 - b. maximum and minimum daily value of each parameter monitored, as outlined in Clauses 8 and 9 above, excluding bacteriological results, for each month;
 - c. a summary of the number, results, and sampling dates of the bacteriological samples analysed for each month;
 - d. the result of the chemical analysis of water as required in Clause 10;
 - e. name of the supervising operator responsible for the operation of the waterworks system;
 - f. a calculation of the uncommitted hydraulic reserve capacity for the water treatment plant;
 - g. any incidence which required reporting as per Clauses 2, 3, and 4; and
 - h. a summary of any operational problems.
 14. Horse Creek shall submit one copy of the Annual Waterworks Report to the Director on or before **February 28** of the year following the year in which the information on which the report is based was collected.

Approval Application

15. Horse Creek shall submit a complete application for a new approval under *EPEA* for the operation of the Facility that is prepared, signed and stamped by a professional engineer certified to practice in Alberta to the Director no later than **March 31, 2016**.

16. In the application, Horse Creek shall include at a minimum:
 - a. A complete and signed application for an approved waterworks system addressing the requirement as listed in Section 3(1) of the *Approvals and Registrations Procedure Regulation*;
 - b. formal third party ultra violet reactor validation that meets the requirements of one of the following standards:
 - i. AWWARF/NWRI Ultra Violet Guideline,
 - ii. USEPA Ultra Violet Guidance Manual, or
 - iii. DVGW Technical Standard W 294;
 - c. an assessment of the UV system to confirm that it was installed in accordance with the Ultra Violet system manufacturer's recommendations;
 - d. an assessment of the UV system to confirm that the operating parameters (UV dose, flow rate and UVT) are achieving the required protozoan inactivation based on a chosen UV validation range in the UV reactor validation certificate; and
 - e. an assessment of the waterworks system to confirm that the system meets the current Alberta Environment and Parks Standards and Guidelines for Municipal Waterworks, Wastewater & Storm Drainage Systems

17. This Order expires **March 31, 2016**.

DATED at the City of Calgary in the Province of Alberta, this 2nd day of October, 2015.

Original Signed by:
Craig Knaus
Compliance Manager
South Saskatchewan Region

Section 91 of the Environmental Protection and Enhancement Act may provide a right of appeal against this decision to the Alberta Environmental Appeals Board. There may be a strict time limit for filing such an appeal. A copy of section 91 is enclosed. For further information, please contact the Board Secretary at #306 Peace Hills Trust Tower, 10011 – 109 Street, Edmonton, Alberta, T5J 3S8; telephone (780) 427-6207; fax (780) 427-4693.

Notwithstanding the above requirements, the Party(ies) shall obtain all necessary approvals in complying with this order.

Take notice that this enforcement order is a remedial tool only, and in no way precludes any enforcement proceedings being taken regarding this matter under this Act or any other legislation.