

# APPROVAL

## PROVINCE OF ALBERTA

### ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT R.S.A. 2000, c.E-12, as amended.

APPROVAL NO. 623-03-00 .....

APPLICATION NO. 013-623 .....

EFFECTIVE DATE: February 01, 2018 .....

EXPIRY DATE: February 1, 2028 .....

APPROVAL HOLDER Mayor .....

Town of Drumheller

ACTIVITY: Construction, operation and reclamation of a wastewater system for the

Town of Drumheller

is subject to the attached terms and conditions.

Designated Director under the Act



Todd Aasen, P.Eng.

Date Signed February 01, 2018 .....

## TERMS AND CONDITIONS ATTACHED TO APPROVAL

### PART 1: DEFINITIONS

#### SECTION 1.1: DEFINITIONS

- 1.1.1 All definitions from the Act and the regulations apply except where expressly defined in this approval.
- 1.1.2 In all PARTS of this approval:
- (a) "Act" means the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c.E-12, as amended;
  - (b) "Alternate Laboratory Program" means the program developed by Alberta Environment to assist municipal and industrial facilities that conduct limited analyses and use portable analysis equipment or simple bench instruments to provide the Alberta Environment analytical data that meets the objectives of Alberta Environment's Laboratory Data Quality Assurance Policy;
  - (c) "application" means the written submissions to the Director in respect of application number 010 and any subsequent applications for amendments of approval number 623-02-00;
  - (d) "arithmetic mean" means the sum of all the sample analysis results divided by the total number of samples per reporting period;
  - (e) "BOD<sub>5</sub>" means the Biochemical Oxygen Demand in milligrams per litre measured at 20°C over a 5 day period;
  - (f) "CBOD" means the carbonaceous BOD<sub>5</sub> in milligrams per litre which is measured after the nitrogenous demand has been inhibited with an inhibitory chemical;
  - (g) "chemical" means any substance that is added or used as part of the treatment process;
  - (h) "composite sample" means a sample consisting of not less than twenty-four portions of equal volume which are representative of the stream sampled, with a minimum of one sample collected every hour over a 24 hour period;
  - (i) "continuous monitoring" means sampling or flow measurement through equipment that creates an uninterrupted output of the analysis or flow measurement;
  - (j) "day" means any sampling period of 24 consecutive hours;

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- (k) "Director" means an employee of the Government of Alberta designated as a Director under the Act;
- (l) "geometric mean" means the calculated  $n^{\text{th}}$  root of the product of all the sample analyses within the reporting period, where  $n$  equals the total number of samples within the reporting period, as follows;

Geometric Mean:  $\sqrt[n]{S_1 x S_2 x S_3 x \dots x S_n}$

where,

$n$  = the total number of samples within the reporting period

$S_1$  = the 1<sup>st</sup> sample analysis value

$S_n$  = the  $n^{\text{th}}$  sample analysis value

- (m) "grab sample" means an individual sample collected in less than 30 minutes and which is representative of the substance sampled;
- (n) "ISO 17025" means the international standard, developed and published by International Organization for Standardization (ISO), specifying management and technical requirements for laboratories;
- (o) "regulations" means the regulations issued pursuant to the Act and as amended;
- (p) "TSS" means the total suspended solids or non-filterable residue (NFR) measured in milligrams per litre;
- (q) "uncommitted hydraulic reserve capacity" means the design capacity of the wastewater treatment plant minus the sum of the peak daily flow and the peak daily flow that would be used by development that is approved but not yet built;
- (r) "wastewater treatment plant" means the physical components of the wastewater system that are used to treat wastewater including components associated with the management of any wastes generated during treatment and includes the land located within LSD 16, Section 36, Township 28, Range 20, West of the 4<sup>th</sup> Meridian, that is being or has been used or held for or in connection with the Drumheller Wastewater plant;
- (s) "week" means any consecutive 7-day period; and
- (t) "year" means calendar year.

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## TERMS AND CONDITIONS ATTACHED TO APPROVAL

### PART 2: GENERAL

#### SECTION 2.1: GENERAL

- 2.1.1 The approval holder shall immediately report by telephone any contravention of the terms and conditions of this approval to the Director at 1-780-422-4505.
- 2.1.2 In addition to reporting pursuant to 2.1.1, the approval holder shall submit, within 7 days from any contravention of the terms and conditions of this approval, a written report to the Director.
- 2.1.3 The terms and conditions of this approval are severable. If any term or condition of this approval or the application of any term or condition is held invalid, the application of such term or condition to other circumstances and the remainder of this approval shall not be affected thereby.
- 2.1.4 *Environmental Protection and Enhancement Act* Approval No. 623-02-00 is cancelled.

#### SECTION 2.2: RECORD KEEPING

- 2.2.1 The approval holder shall record and retain all the following information in respect of any sampling conducted or analyses performed for a minimum of three years:
- (a) the place, date and time of sampling;
  - (b) the dates the analyses were performed;
  - (c) the analytical techniques, methods or procedures used in the analyses;
  - (d) the names of the persons who collected and analyzed each sample; and
  - (e) the results of the analyses.

#### SECTION 2.3: ANALYTICAL REQUIREMENTS

- 2.3.1 Collection, preservation, storage, handling and analysis of samples, and reporting shall be conducted in accordance with the following unless otherwise specified in writing by the Director:
- (a) the *Standard Methods for the Examination of Water and Wastewater* published jointly by the American Public Health Association, American Water Works Association, and the Water Environment Federation, as amended; or
  - (b) an analytical method as authorized in writing by the Director.

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2.3.2 The approval holder shall ensure that the monitoring and testing equipment used for analysis of samples required by this approval is:

- (a) installed; and
- (b) calibrated;

in accordance with the monitoring or testing equipment manufacturers' specifications.

2.3.3 The approval holder shall conduct all analyses required by this approval in:

- (a) an ISO 17025 approved laboratory; or
- (b) as otherwise authorized in writing by the Director.

### **PART 3: CONSTRUCTION AND UPGRADING REQUIREMENTS**

#### **SECTION 3.1: CONSTRUCTION AND UPGRADE**

##### **CONSTRUCTION REQUIREMENT**

Not used at this time.

##### **RECEIVER WATER IMPACT ASSESSMENT**

3.1.1 The approval holder shall submit to the Director the following, on or before December 1, 2018, unless otherwise authorized in writing by the Director:

- (a) a receiving water impact assessment report; and
- (b) a wastewater treatment plant capacity assessment report.

3.1.2 The receiving water impact assessment report referred to in 3.1.1 shall be completed by following the recommendations and procedures described in the *Department of Environment and Parks, Water Quality Based Effluent Limits Procedures Manual*.

3.1.3 The approval holder shall correct all deficiencies in the reports identified in 3.1.1 as required in writing by the Director.

##### **PHOSPHORUS MANAGEMENT PLAN**

3.1.4 The approval holder shall submit to the Director, a phosphorus management plan report including a wastewater treatment plan for phosphorus removal on or before December 1, 2019, unless otherwise authorized in writing by the Director.

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- 3.1.5 The approval holder shall correct all deficiencies in the phosphorus management plan report as required in writing by the Director.
- 3.1.6 The approval holder shall submit an amendment application for the implementation of the phosphorus management plan within one year of the Director's written approval of the phosphorus management plan.

**TREATED WASTEWATER DISINFECTION PLAN**

- 3.1.7 The approval holder shall submit to the Director, a treated wastewater disinfection plan report on or before December 1, 2019, unless otherwise authorized in writing by the Director.
- 3.1.8 The approval holder shall correct all deficiencies in the treated wastewater disinfection plan report as required in writing by the Director.
- 3.1.9 The approval holder shall submit an amendment application for the implementation of the treated wastewater disinfection plan report within one year of the Director's written approval of the treated wastewater disinfection plan report.

**PART 4: OPERATIONS**

**SECTION 4.1: DRAINAGE SYSTEMS**

**WASTEWATER COLLECTION AND TREATMENT**

- 4.1.1 The approval holder shall not release any substances from the wastewater system to the surrounding watershed except as authorized under this approval.

**WASTEWATER TREATMENT PLANT**

- 4.1.2 The approval holder shall operate a wastewater system which shall include:
  - (a) the wastewater collection system;
  - (b) an activated sludge wastewater treatment plant, including all of the following:
    - (i) screening and grit removal,
    - (ii) flow equalization,
    - (iii) primary clarification,
    - (iv) extended aeration, and
    - (v) secondary clarification;

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(c) a treated wastewater outfall discharging to Red Deer River located in the LSD 16 36-25-20 W4M; and

(d) sludge treatment, including all of the following:

(i) mechanical dewatering,

(ii) sludge drying located in the LSD 16-36-28-20 W4M,

(iii) sludge storage located in the LSD 16-36-28-20 W4M, and

(iv) aerobic sludge digestion;

as described in the application, or as otherwise authorized in writing by the Director.

**SECTION 4.2: CERTIFIED OPERATOR REQUIREMENTS**

4.2.1 At all times the operation of the:

(a) wastewater treatment plant shall be performed by, or under the direction of a person who holds a valid wastewater treatment certificate of qualification at a minimum of Level II; and

(b) wastewater collection system shall be performed by, or under the direction of a person who holds a valid wastewater collection certificate of qualification at a minimum of Level II.

**SECTION 4.3: SLUDGE DISPOSAL**

4.3.1 The approval holder shall only dispose of sludge:

(a) to an approved waste management facility; or

(b) as authorized in writing by the Director.

**SECTION 4.4: CHEMICALS USED**

4.4.1 The approval holder shall not use any chemicals in the wastewater treatment process except as provided for in this approval or as otherwise authorized in writing by the Director.

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**PART 5: LIMITS**

**SECTION 5.1: WASTEWATER**

5.1.1 Treated wastewater from the wastewater treatment plant shall be discharged as follows:

- (a) continuously to the Red Deer River;
- (b) or as otherwise authorized in writing by the Director.

5.1.2 The approval holder shall ensure the treated wastewater discharge complies with the limits specified in TABLE 5-1.

**TABLE 5-1 LIMITS FOR TREATED WASTEWATER**

<b>Parameter</b>	<b>Limit</b>
CBOD	≤ 25 mg/L monthly arithmetic mean of daily samples of treated wastewater being discharged to the Red Deer River
TSS	≤ 25 mg/L monthly arithmetic mean of daily samples of treated wastewater being discharged to the Red Deer River
Ammonia Nitrogen (October 1 to June 30)	≤ 10 mg/L monthly arithmetic mean of weekly samples of treated wastewater being discharged to the Red Deer River
Ammonia Nitrogen (July 1 to September 30)	≤ 5 mg/L monthly arithmetic mean of weekly samples of treated wastewater being discharged to the Red Deer River



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**PART 6: MONITORING AND REPORTING**

**SECTION 6.1: WASTEWATER**

6.1.1 The approval holder shall monitor the wastewater system as required in TABLE 6-1.

**TABLE 6-1: MONITORING – DRUMHELLER WASTEWATER SYSTEM**

Parameter	Frequency (Minimum)	Sample Type	Sampling Location
<b>UNTREATED WASTEWATER</b>			
BOD <sub>5</sub>	Once a day	Composite	Untreated wastewater prior to aeration cell.
TSS	Once a day	Composite	Untreated wastewater prior to aeration cell.
Volume of flow	Continuous	Calculated	Untreated Wastewater entering the wastewater treatment plant
<b>TREATED WASTEWATER</b>			
CBOD	Once a day	Composite	Treated wastewater being discharged
TSS	Once a day	Composite	Treated wastewater being discharged
Volume	Continuous	Calculated	Treated wastewater being discharged
Phosphorus	Once a month	Composite	Treated wastewater being discharged
Ammonia-Nitrogen	Once a week	Composite	Treated wastewater being discharged
<b>UNAUTHORIZED RELEASES</b>			
Release Volume	Total Volume	Estimated	Wastewater bypassing the wastewater treatment plant, accidental spills or overflows
Release Volume	Total Volume	Estimated	Wastewater bypassing the lift station(s), accidental spills or overflows
Release Volume	Total Volume	Estimated	Wastewater bypasses, accidental spills or overflows from the wastewater collection system
BOD <sub>5</sub>	During the unauthorized discharge	Grab	At the release point
TSS			
Phosphorus			
Ammonia-Nitrogen			

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<b>Parameter</b>	<b>Frequency (Minimum)</b>	<b>Sample Type</b>	<b>Sampling Location</b>
The amount of any substance other than wastewater or storm water that is spilled or discharged accidentally or intentionally into or from the stormwater collection system	Event Specific	Estimated Volume or Mass	At the release point
<b>SLUDGE DISPOSAL</b>			
Sludge Volume	Total Volume	Estimated	Amount of sludge being disposed of

6.1.2 The approval holder shall compile a Monthly Wastewater Report which includes, at a minimum, the following information:

- (a) the results of the monitoring requirements of TABLE 6-1;
- (b) the name and weekly quantity of any chemical added to the wastewater in the wastewater treatment process;
- (c) the name of the supervising operator responsible for the operation of the wastewater system; and
- (d) a summary of any operational problems.

6.1.3 Submission of Monthly Wastewater Report to the Director is not required at this time, but shall be submitted upon request.

6.1.4 The approval holder shall compile an Annual Wastewater Report which shall include the following:

- (a) the monthly arithmetic mean, including maximum and minimum values, of each parameter monitored, as outlined in TABLE 6-1;
- (b) the annual arithmetic mean, including maximum and minimum values, of phosphorus, as outlined in TABLE 6-1;
- (c) the name of the supervising operator responsible for the operation of the wastewater system;
- (d) a summary of any incidents which required reporting in accordance with 2.1.1;

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- (e) a calculation of the uncommitted hydraulic reserve capacity for the wastewater treatment plant; and
  - (f) a summary of any operational problems.
- 6.1.5 The approval holder shall submit one copy of the Annual Wastewater 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.
- 6.1.6 If the approval holder monitors for any substances or parameters which are the subject of operational limits as set out in this approval more frequently than is required and using procedures authorized in this approval, then the approval holder shall provide the results of such monitoring as an addendum to the Annual Wastewater report required by this approval.

**SECTION 6.2: GROUNDWATER**

Not used at this time

**PART 7: RECLAMATION AND DECOMMISSIONING**

**SECTION 7.1: GENERAL**

- 7.1.1 Within six months of the wastewater treatment plant permanently ceasing operation, the approval holder shall:
- (a) submit a decommissioning and land reclamation plan to the Director; and
  - (b) not commence reclamation or decommissioning until the approval holder has received written authorization from the Director.

DATED February 01, 2018

  
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DESIGNATED DIRECTOR UNDER THE ACT