

AMENDING APPROVAL

PROVINCE OF ALBERTA

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

APPROVAL NO. 639-02-07

APPLICATION NO. 086-639

EFFECTIVE DATE: April 30, 2008

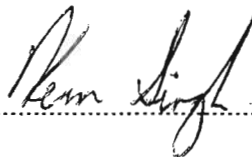
EXPIRY DATE: May 31, 2015

APPROVAL HOLDER City of Edmonton

.....
ACTIVITY: Construction, operation and reclamation of a wastewater collection system,
wastewater treatment plant and storm drainage system for the City of Edmonton
.....

is subject to the attached terms and conditions.

Designated Director under the Act



Date Signed April 30, 2008

TERMS AND CONDITIONS ATTACHED TO APPROVAL

Environmental Protection and Enhancement Act Approval No 639-02-00 is hereby further amended as follows:

1. All terms and conditions of this approval are repealed and replaced with the following:

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) "application" means the written submissions to the Director in respect of application number 086-639;
 - (c) "Director" means an employee of the Government of Alberta designated as a Director under the Act; and
 - (d) "ISO 17025" means the international standard, developed and published by International Organization for Standardization (ISO), specifying the management and technical requirements for laboratories to demonstrate their technical competence to perform defined tests and produce valid data and results.

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 *Environmental Protection and Enhancement Act* Approval No. 639-01-00, amended, is cancelled.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 2.1.4 The approval holder shall analyze all samples required by this approval in a laboratory accredited pursuant to ISO 17025 standard, as amended, for the specific parameter(s) to be analyzed, unless otherwise authorized in writing by the Director.
- 2.1.5 The approval holder shall comply with the requirements of any written exemption from the Director in 2.1.4 as if each requirement were a term or condition of this approval.

PART 3: OPERATIONS AND PLANNING

SECTION 3.1: OPERATIONS

- 3.1.1 The approval holder shall implement the *Wastewater Treatment Operations Plan* as authorized in writing by the Director.
- 3.1.2 The approval holder shall implement the *Collection Systems Operations Plan* as authorized in writing by the Director.
- 3.1.3 The approval holder shall implement the *Combined Sewer Overflow Control Strategy* as outlined in the *Combined Sewer Overflow Control Strategy Implementation Plan*, June 1, 2000.

OPERATIONS PLANS

- 3.1.3 The *Wastewater Treatment Operations Plan* shall include, at a minimum, all of the following:
- (a) Preventative Maintenance Treatment Capacity Protocol;
 - (b) Nitrification Maintenance Protocol;
 - (c) Nitrification Recovery Strategy Protocol;
 - (d) Treatment facility hydraulic and organic loading capacity estimates and plans for future capacity and/or effluent quality improvements;
 - (e) Sludge and Solids disposal protocol;
 - (f) Wastewater Treatment System Chemical Usage Protocol;
 - (g) Effluent Toxicity Testing Protocol;
 - (h) Effluent reuse Protocol;
 - (i) Monitoring Protocol;
 - (j) Digester Gas Protocol;

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- (k) Lab accreditation program that includes quality assurance and calibration procedures for all testing and monitoring equipment;
- (l) Enhanced Primary Treatment Protocol; and / or
- (m) as otherwise authorized in writing by the Director.

3.1.4 If the *Wastewater Treatment Operations Plan*, or any part of it, is found to be deficient by the Director, the approval holder shall correct all deficiencies as outlined by the Director within 120 days of the deficiency letter.

3.1.5 The *Standard Operating Procedure of the BNR Processes* shall include, at a minimum all of the following:

- (a) Nitrification Maintenance Protocol;
- (b) Nitrification Recovery Strategy Protocol;
- (c) Improved Nitrogen Removal Protocol; and
- (d) Phosphorus Removal Protocol.

3.1.6 The *Collection Systems Operations Plan* shall include, at a minimum, all of the following:

- (a) Snow Storage Site Selection, Design and Monitoring Protocol;
- (b) River Water Quality Monitoring Protocol;
- (c) Collection System Monitoring Protocol;
- (d) Collection System Chemical Usage Protocol; and
- (e) River Load Calculation Protocol.

3.1.7 If the *Collection Systems Operations Plan*, or any part of it, is found to be deficient by the Director, the approval holder shall correct all deficiencies as outlined by the Director within 120 days of the deficiency letter.

3.1.8 The Approval holder shall, in consultation with the Director, conduct yearly reviews of the *Wastewater Treatment Operations Plan*, the *Collection Systems Operations Plan*, and the *Standard Operating Procedure of the BNR Processes*.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 3.1.9 At all times the wastewater collection system and the wastewater treatment plant operation shall be performed by certified operators in accordance with the *Standards and Guidelines for Municipal Waterworks, Wastewater, & Storm Drainage Systems*, as amended.

SECTION 3.2: PLANNING

- 3.2.1 The approval holder shall construct and upgrade snow storage sites as described in the Snow Storage Site Selection, Design and Monitoring Protocol listed, or as otherwise authorized in writing by the Director.

STORM WATER QUALITY CONTROL STRATEGY

- 3.2.2 The approval holder shall develop a comprehensive *Storm Water Quality Control Strategy* and a plan for implementing this strategy.
- 3.2.3 The approval holder shall submit the *Storm Water Quality Control Strategy* report to the Director by June 1, 2008.
- 3.2.4 The approval holder shall implement the *Storm Water Quality Control Strategy* as authorized in writing by the Director.

COMBINED SEWER DISCHARGE STRATEGY

- 3.2.5 The approval holder shall develop a comprehensive *Combined Sewer Discharge Strategy* to address, at a minimum, the following:
- (a) further reduce the discharge of untreated combined sewage flows from Edmonton's combined sewer system, including the plant bypass at the Gold Bar Wastewater Treatment Plant, and
 - (b) work towards the long term goal of sewer separation or its environmental equivalent to protect the North Saskatchewan River water quality.
- 3.2.6 The approval holder shall submit a draft of the *Combined Sewer Discharge Strategy* to the Director by June 1, 2012 and receive a letter of acknowledgement.
- 3.2.7 The approval holder shall submit the *Combined Sewer Discharge Strategy* to the Director by June 1, 2013 and receive a letter of acceptance.
- 3.2.8 The approval holder shall implement the *Combined Sewer Discharge Strategy* as authorized in writing by the Director.

TERMS AND CONDITIONS ATTACHED TO APPROVAL**TOTAL LOADINGS PLAN**

- 3.2.9 The approval holder shall develop a *Total Loadings Plan* to the Director by June 1, 2009 and receive a letter of acceptance.
- 3.2.10 The approval holder shall implement the *Total Loadings Plan* as authorized in writing by the Director.

PART 4: EFFLUENT DISCHARGE LIMITS**SECTION 4.1: EFFLUENT AND DISCHARGE LIMITS**

- 4.1.1 The approval holder shall release treated wastewater from the wastewater treatment plant only as follows:
- (a) continuously:
 - (i) to the North Saskatchewan River; and / or
 - (ii) for effluent reuse water; or
 - (b) as otherwise authorized in writing by the Director.
- 4.1.2 The approval holder shall not release treated wastewater to the North Saskatchewan River containing any of the parameters in excess of the limits specified in TABLE 4-1.

TABLE 4-1 LIMITS FOR TREATED WASTEWATER

Parameter	Limit
CBOD ₅	20 mg/L monthly arithmetic mean
TSS	20 mg/L monthly arithmetic mean of daily composite samples
Total Phosphorus (Effective December 1, 2008)	1.0 mg/L monthly arithmetic mean of daily composite samples
Ammonia-Nitrogen (December 1 to May 31)	10 mg/L monthly arithmetic mean of daily composite samples
Ammonia-Nitrogen (June 1 to November 30)	5.0 mg/L monthly arithmetic mean of daily composite samples
<i>E. coli</i> counts	200 counts per 100 mL/monthly geometric mean of daily grab samples
pH	6.5-9.5 pH unit

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- 4.1.3 The approval holder shall use 1.0 mg/L monthly average concentration of Total Phosphorus as an operating target until the limit in Table 4-1 takes effect.

PART 5: MONITORING AND REPORTING

SECTION 5.1: MONITORING AND REPORTING

- 5.1.1 The approval holder shall monitor the wastewater treatment plant effluent as required in TABLE 5-1.

TABLE 5-1: MONITORING – WASTEWATER TREATMENT PLANT

Parameter	Frequency (Minimum)	Sample Type	Sampling Location
TREATED WASTEWATER			
CBOD ₅	Once a day	Composite	Wastewater treatment plant effluent prior to release to the North Saskatchewan River.
TSS	Once a day	Composite	
Phosphorus	Once a day	Composite	
Ammonia-Nitrogen	Once a day	Composite	
Volume	Continuous, recorded daily	Calculated	
pH	Once a day	Composite	
<i>E. coli</i> counts	Once a day	Grab	After ultraviolet (UV) disinfection.
EFFLUENT REUSE WATER			
Volume of re-use water	Continuous, recorded daily	Calculated	Re-use water transmission main
WASTEWATER PLANT BYPASS			
Release Volume	Any bypass event lasting >2 hours	Calculated	Primary and Secondary treatment bypass of wastewater at the wastewater treatment plant
CBOD ₅		Composite	
TSS			
Phosphorus			
Ammonia-Nitrogen			
<i>E. Coli</i>	Grab		
SLUDGE DISPOSAL			
Sludge Volume	Total Volume	Estimated	Prior to leaving the wastewater treatment plant

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5.1.2 The approval holder shall:

- (a) create; and
- (b) maintain an operating record for the wastewater treatment facility; which shall contain, at a minimum, all of the following information:
 - (i) a copy of this approval;
 - (ii) a copy of all monitoring results as required in 3.1.3 (i);
 - (iii) a copy of all Inspection reports prepared by Alberta Environment;
 - (iv) a copy of each monthly report; and
 - (v) a copy of all Annual Wastewater Reports.

5.1.3 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, excluding *E. Coli* counts, as outlined in TABLE 5-1;
- (b) the monthly geometric mean of *E. Coli* counts;
- (c) the monitoring requirements as outlined in the *Wastewater Treatment Operations Plan* and the *Collection Systems Operations Plan* as per 3.1.3 and 3.1.6; and
- (d) the name of the supervising operator, and certified operators responsible for the operation of the wastewater system as outlined in 3.1.9;
- (e) a summary of any incidents which required reporting in accordance with 2.1.1;
- (f) yearly wastewater collection system and wastewater treatment plant construction program; and
- (g) a summary of any operational problems.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 5.1.4 The approval holder shall submit one copy of the Annual Wastewater Report to the Director on or before March 31 of the year following the year in which the information on which the report is based was collected.

DATED April 30, 2008


DESIGNATED DIRECTOR UNDER THE ACT