



ALBERTA
ENVIRONMENT

*Office of the Minister
MLA, Medicine Hat*

Ministerial Order
11/2007

Environmental Protection and Enhancement Act
R.S.A. 2000, c. E-12

Order Respecting Environmental Appeals Board
Appeal Nos. 05-053 & 05-054

I, Rob Renner, Minister of Environment, pursuant to section 100 of the *Environmental Protection and Enhancement Act*, make the order in the attached Appendix, being an Order Respecting Environmental Appeals Board Appeal Nos. 05-053 & 05-054.

Dated at the City of Edmonton, in the Province of Alberta, this 18th day of May, 2007.

Rob Renner
Minister

Appendix

Order Respecting Environmental Appeals Board Appeal Nos. 05-053 and 05-054

With respect to the decision of the Director, Southern Region, Regional Services, Alberta Environment (the "Director"), to issue Amending Approval No. 1190-01-13 (the "Amending Approval"), under the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12, to the Town of Strathmore (the "Approval Holder"), I, Rob Renner, Minister of Environment, order that the decision of the Director to issue the Amending Approval is varied as follows:

INCIDENTAL CHANGES

1. Section 2 of the Amending Approval should be varied by deleting condition 3.1.25 and replacing it as follows:

"The approval holder shall at least twice per year until December 1, 2008 offer to host an update meeting at which the approval holder will provide representatives of the Siksika Nation and the Siksika Nation Elders Committee with the following verbal and written information:

 - (a) a summary of all assessments, studies, plans, and work done to deal with the disposal of treated wastewater, including information about the quality and quantity of treated wastewater that has been discharged to the Bow River;
 - (b) any non-compliance with this approval that has occurred since the last meeting and what effect, if any, this non-compliance may have had on the Siksika Nation; and
 - (c) any operational problems that have been experienced with the disposal of treated wastewater.
2. Section 2 of the Amending Approval should be varied by deleting condition 3.1.28 and replacing it as follows:
 - (a) The approval holder shall submit to the Director an Emergency Response Plan for Reporting and Responding to the Siksika Nation (the "Emergency Response Plan").
 - (b) The approval holder shall submit an updated Emergency Response Plan upon the written request of the Director, in accordance with the terms of that written request.
 - (c) The approval holder shall provide a copy of the Emergency Response Plan or updated Emergency Response Plan to the Siksika Nation and the Siksika Nation Elders Committee within one week of providing it to the Director."

MANAGEMENT OF DISCHARGES TO THE BOW RIVER

3. Section 6 of the Amending Approval should be varied by deleting condition 4.7.4 and replacing it as follows:
“(e) to a treated wastewater pipeline discharge to the Bow River at SE ¼ 7-22-24-W4M in accordance with conditions 4.8.6(d), 4.8.9, 4.8.26, and 4.8.27.”
4. Section 7 of the Amending Approval should be varied by deleting condition 5.1.1 and replacing it as follows:
“(d) from the treated wastewater storage cells to a treated wastewater pipeline discharging to the Bow River, if the requirements of Table 5.1C are met in accordance with conditions 4.8.6(d), 4.8.9, 4.8.26, and 4.8.27.”

NUMBERING CORRECTIONS

5. Section 7 of the Amending Approval should be varied by deleting the phrase “TABLE 5.1D: LIMITS FOR TOWN OF STRATHMORE TREATED WASTEWATER DISCHARGE TO THE BOW RIVER” and replacing it with the phrase “TABLE 5.1C: LIMITS FOR TOWN OF STRATHMORE TREATED WASTEWATER DISCHARGE TO THE BOW RIVER”.
6. Sections 8, 10, and 11 of the Amending Approval should be varied by deleting the phrase “TABLE 6.3A” and replacing it with the phrase “TABLE 6.0A” wherever it appears.

ENVIRONMENTAL APPEALS BOARD RECOMMENDATIONS

7. The Amending Approval should be varied by adding the following immediately after section 11:

“12. PART 4: OPERATIONS is amended to include the following immediately after 4.7.30:

SECTION 4.8: MANAGEMENT OF TREATED WASTEWATER UNTIL APPROVAL RENEWAL

IMMEDIATE MOVE TO IRRIGATION

- 4.8.1 The approval holder shall immediately begin preparations to allow for the disposal of treated wastewater by irrigation as soon as possible to the maximum amount reasonably possible.
- 4.8.2 The approval holder shall immediately request any authorizations that are required from the Director to begin the disposal of treated wastewater by irrigation as soon as possible and to the maximum amount reasonably possible.

- 4.8.3 The approval holder shall begin the disposal of treated wastewater by irrigation as soon as possible and to the maximum amount reasonably possible upon receiving any authorizations required from the Director and as soon as conditions permit.
- 4.8.4 Subject to the alternate disposal methods reasonably available the approval holder shall minimize discharges of treated wastewater to the Bow River within a reasonable period of time of beginning irrigation.
- 4.8.5 The approval holder shall notify the Siksika Nation and the Siksika Nation Elders Committee in writing:
- (a) when it receives any required authorizations from the Director to begin irrigation;
 - (b) when it commences irrigation; and
 - (c) detailing the effects of irrigation on the discharge of treated wastewater from the pipeline to the Bow River.
- 4.8.6 Once the discharge to the Bow River has been minimized in accordance with condition 4.8.4 and until a new operational plan has been authorized by the Director in accordance with condition 4.8.19, the approval holder shall provide the Director with an interim operational plan, to the satisfaction of the Director, that minimizes the discharge of treated wastewater to the Bow River and includes the following activities:
- (a) implementation of water conservation strategies to reduce the daily wastewater production by the approval holder;
 - (b) disposal of the treated wastewater (that cannot be disposed of by irrigation) by trucking it to another disposal facility as authorized by the Director;
 - (c) storage of the treated wastewater (that cannot be disposed of by irrigation) in the wastewater stabilization ponds if space is available;
 - (d) discharge of the treated wastewater (that cannot be disposed of by irrigation or other methods acceptable to the Director) through the treated wastewater pipeline to the Bow River in accordance with a Peak Flow Discharge authorized by condition 4.8.9 of this approval.

PEAK FLOW DISCHARGE

- 4.8.7 The approval holder shall prepare an assessment of when peak flows in the Bow River are high enough during the term of this approval so that the impacts of the discharge of treated wastewater are minimized (the "Peak Flow Assessment") and develop a plan

for discharge (the “Peak Flow Discharge”) of treated wastewater to the Bow River at full or partial pipeline capacity (the “Peak Flow Discharge Plan”) during the peak flow period.

4.8.8 In the Peak Flow Discharge Plan, the approval holder shall consider ways to:

- (a) draw down the treated wastewater being stored by the approval holder as much as practical;
- (b) minimize impacts on the Siksika Nation;
- (c) minimize impacts on the Bow River ecosystem; and
- (d) consider ways to minimize water quality impacts on the secondary channel, including making use of the maximum flow in the secondary channel and any other practical methods to maximize movement of the treated wastewater discharge from the secondary channel into the main channel of the Bow River.

4.8.9 The approval holder shall submit the Peak Flow Assessment and the Peak Flow Discharge Plan to the Director on or before June 15, 2007, and once the approval holder receives the written authorization of the Director, the approval holder shall implement a Peak Flow Discharge in accordance with the written authorization from the Director.

4.8.10 The approval holder shall:

- (a) provide a copy of the Peak Flow Assessment, the Peak Flow Discharge Plan, and the Director’s authorization to the Siksika Nation and the Siksika Nation Elders Committee within one week of each of these documents becoming available; and
- (b) notify the Siksika Nation and the Siksika Nation Elders Committee in writing a minimum of 24 hours before starting any Peak Flow Discharge.

4.8.11 During a Peak Flow Discharge the approval holder shall

- (a) measure the total volume of wastewater being discharged; and
- (b) provide this information to the Director, the Siksika Nation, and the Siksika Nation Elders Committee on a weekly basis.

4.8.12 During a Peak Flow Discharge and for a minimum of three days after the discharge is complete, the approval holder shall:

- (a) conduct the monitoring as described in the table entitled “Table 4.1: Monitoring Program for Strathmore’s Treated

Wastewater, the Bow River, and the Ayoungman Water Treatment Plant”; and

- (b) provide this monitoring information to the Director, the Siksika Nation, and the Siksika Nation Elders Committee on a weekly basis.

TABLE 4.1: MONITORING PROGRAM FOR STRATHMORE’S TREATED WASTEWATER, THE BOW RIVER, AND THE AYOUNGMAN WATER TREATMENT PLANT

Location (Sampling locations to be approved by the Director.)	Parameters (Additional parameters may be specified by the Director.)	Frequency (Frequency may be varied by the Director.)
Treated Wastewater.	<i>E. Coli</i> , Faecal Coliforms, Total Coliforms, Total-P, Dissolved-P, Ammonia-N, Total Kjeldahl-N, Nitrate-Nitrite-N, Total Suspended Solids, Total Dissolved Solids, Electrical Conductivity, C-BOD5, Turbidity, Colour, TOC, DOC, SAR, and pH.	Daily.
Bow River upstream of Secondary Channel.	<i>E. Coli</i> , Total-P, Ammonia-N, Nitrate-Nitrite-N, Turbidity, and Colour.	Weekly.
Bow River downstream of Secondary Channel.	<i>E. Coli</i> , Total-P, Ammonia-N, Nitrate-Nitrite-N, Turbidity, and Colour.	Weekly.
Bow River within 1m of shoreline at the location of Infiltration Wells for the Ayoungman Water Treatment Plant.	<i>E. Coli</i> , Total-P, Ammonia-N, Nitrate-Nitrite-N, Turbidity, and Colour.	Weekly.
Raw Water from the Infiltration Wells for the Ayoungman Water Treatment Plant.	<i>E. Coli</i> , Total-P, Ammonia-N, Nitrate-Nitrite-N, Turbidity, and Colour.	Weekly.
Treated Water after disinfection from the Infiltration Wells for the Ayoungman Water Treatment Plant.	<i>E. Coli</i> , Faecal Coliforms, Total Coliforms, Total-P, Ammonia-N, Nitrate-Nitrite-N, Total Dissolved Solids, Electrical Conductivity, Turbidity, Colour, and Chlorine Residual.	Daily.

Any monitoring on the Siksika Nation Lands is only required where the approval holder has written consent granting access to the lands. This monitoring is required to be done in addition to any other monitoring required in the approval. The approval holder shall conduct any additional monitoring that is required by the Director upon receiving written directions from the Director.

DYE STUDY

4.8.13 The approval holder shall conduct a continuous injection dye dispersion study (the “Dye Study”) to determine the actual dilution of the continuous discharge from the treated wastewater pipeline outfall to the point in the Bow River adjacent to the infiltration wells of the Ayoungman Plant under river flow conditions that will allow for a meaningful study to be performed and that will assure that worker safety is not placed in jeopardy.

- 4.8.14 In the Dye Study the approval holder shall assess the mixing characteristics of a discharge to the Bow River in this region under conditions of minimum transverse mixing behaviour.
- 4.8.15 The approval holder is only required to perform work required on Siksika Nation Lands for the Dye Study upon having the written consent granting access to the lands.
- 4.8.16 The approval holder shall ensure that the results, analysis, and full interpretation of the Dye Study (the "Dye Study Report") is prepared by a professional engineer qualified to interpret river mixing studies.
- 4.8.17 The approval holder shall provide the Dye Study Report to the Director, the Siksika Nation, and the Siksika Nation Elders Committee within one week of the report being completed.

OPERATIONAL PLAN

- 4.8.18 The approval holder shall develop an operational plan (the "Operational Plan") that minimizes the discharges of treated wastewater to the Bow River, for dealing with the approval holder's treated wastewater until a new approval can be issued.
- 4.8.19 The approval holder shall submit the Operational Plan to the Director, the Siksika Nation, and the Siksika Nation Elders Committee on or before August 1, 2007, and once written authorization has been received from the Director, the approval holder shall implement the Operational Plan.
- 4.8.20 (a) If any extensions are requested respecting this approval or upon receiving written notice from the Director, the approval holder shall update the Operational Plan to deal with the wastewater until a new approval can be issued.
(b) Within two months of making the request for an extension or receiving the written notice from the Director, the approval holder shall provide the updated Operational Plan to the Director, the Siksika Nation and the Siksika Nation Elders Committee.
- 4.8.21 The approval holder shall provide the Director, the Siksika Nation, and the Siksika Nation Elders Committee with monthly updates during the development and implementation of the Operational Plan and, among other things, the monthly updates shall include:
 - (a) a description of all steps taken in the last month;
 - (b) a description of all steps planned for the next month;
 - (c) information that demonstrates to the Director that all reasonable means are being pursued to maximize water conservation strategies to reduce the daily wastewater

production by the approval holder and to maximize the disposal of wastewater by means alternate (including irrigation disposal) to discharges of treated wastewater to the Bow River; and

- (d) any other information the Director specifies in writing.

4.8.22 In the Operational Plan, the approval holder shall identify and evaluate:

- (a) ways to increase the use of irrigation, to the maximum reasonably possible, including finding and using potential irrigation users along the pipeline or elsewhere and the potential to acquire more land by purchase or lease to expand the irrigation system;
- (b) the feasibility of alternate storage options for treated wastewater that could be used to avoid having to discharge treated wastewater to the Bow River, including the potential to acquire more land for the construction of short-term and long-term storage, until a new approval is issued;
- (c) the feasibility of discharge options to local waterways, including but not limited to existing water bodies, other than the Bow River, as well as constructed wetlands which could be implemented immediately after the irrigation season ends and into the winter;
- (d) water conservation strategies to reduce the daily wastewater production by the approval holder, including but not limited to: reducing sewer infiltration, stormwater dilution, commercial water use restrictions, and ways to reduce domestic water consumption;
- (e) any other options to deal with the approval holder's treated wastewater that minimize discharging it to the Bow River;
- (f) ways to minimize water quality impacts on the secondary channel and the Bow River, including making use of maximum flow and any other practical methods to maximize movement of the treated wastewater discharge into the Bow River (including the potential for diffusion, other treated wastewater outfall structures into the main channel of the Bow River, and other practical methods); and
- (g) a detailed description of the steps that would have to be taken to implement any of the options, including but not limited to any regulatory steps that would have to be taken.

DISCHARGES TO THE BOW RIVER

- 4.8.23 If the Operational Plan concludes there are no other viable alternatives, in whole or in part, to deal with the approval holder's treated wastewater other than discharging it to the Bow River, then no less than two months prior to any request to the Director to undertake such a discharge to the Bow River, the approval holder shall commission a full risk assessment (the "Full Risk Assessment") of all impacts on water uses by the residents of the Siksika Nation and other downstream users by an independent qualified expert (the "Expert") satisfactory to the Director.
- 4.8.24 The Expert shall offer a reasonable opportunity to the Siksika Nation and the Siksika Nation Elders Committee to provide comments on the scope of the Full Risk Assessment.
- 4.8.25 In preparing the Full Risk Assessment, the Expert shall consider all the monitoring data collected during the stay or otherwise, the evaluation of the physical ice characteristics conducted under the stay, and the Dye Study.
- 4.8.26 The approval holder shall provide the Full Risk Assessment to the Director, the Siksika Nation, and the Siksika Nation Elders Committee within one week of receiving it from the Expert, and upon receiving the written authorization of the Director, the approval holder may discharge treated wastewater to the Bow River in accordance with the written authorization and in accordance with conditions 4.8.28 to 4.8.32 inclusive.

EMERGENCY CIRCUMSTANCES

- 4.8.27 In an emergency situation, the approval holder may apply to the Director for authorization to discharge treated wastewater from the pipeline to the Bow River and upon receiving the written authorization from the Director, the approval holder may discharge treated wastewater to the Bow River in accordance with the written authorization and in accordance with conditions 4.8.28 to 4.8.32 inclusive.

MONITORING DISCHARGES TO THE BOW RIVER

- 4.8.28 The approval holder shall limit all discharges of its treated wastewater from the pipeline to the Bow River, with the exception of a Peak Flow Discharge, to a maximum of 4500 m³/day or as otherwise specified in Operational Plan authorized by the Director.
- 4.8.29 When the approval holder is discharging any of its treated wastewater from the pipeline to the Bow River the approval holder shall measure the total volume of wastewater being discharged and provide this information to the Director, the Siksika Nation, and the Siksika Nation Elders Committee on a weekly basis.

4.8.30 When the approval holder is discharging any of its treated wastewater from the pipeline to the Bow River the approval holder shall:

- (a) conduct the monitoring as described in the table entitled “Table 4.1: Monitoring Program for Strathmore’s Treated Wastewater, the Bow River, and the Ayoungman Water Treatment Plant”;
- (b) provide this monitoring information to the Director, the Siksika Nation, and the Siksika Nation Elders Committee on a monthly basis; and
- (c) continue the monitoring for a minimum of three days after the end of the discharge of treated wastewater from the pipeline.

4.8.31 When the approval holder is discharging any of its treated wastewater from the pipeline to the Bow River, with the exception of a Peak Flow Discharge, the approval holder shall:

- (a) conduct the monitoring as described in the table entitled “TABLE 4.2: Monitoring Program for Individual Wells”;
- (b) provide this monitoring information to the Director, the Siksika Nation, and the Siksika Nation Elders Committee on a monthly basis; and
- (c) continue the monitoring for a minimum of one month after the last discharge of treated wastewater from the pipeline.

TABLE 4.2: MONITORING PROGRAM FOR INDIVIDUAL WELLS

Location (Sampling locations to be approved by the Director.)	Parameters (Additional parameters may be specified by the Director.)	Frequency (Frequency may be varied by the Director.)
Individual Wells identified by the Siksika Nation.	<i>E. Coli</i> , Faecal Coliforms, Total Coliforms, Nitrate-Nitrite-N, Total Dissolved Solids, Electrical Conductivity, Turbidity, and Colour.	Monthly.

Any work required on the Siksika Nations Lands is only required where the approval holder has written consent granting access to the lands and the verbal consent of the individual controlling access to each individual well. The Director has the discretion to increase or decrease the number of individual wells that must be monitored, including adding or deleting wells for a particular round of monitoring. This monitoring is required to be done in addition to any other monitoring required in the approval. The approval holder shall conduct any additional monitoring that is required by the Director upon receiving written directions from the Director.

4.8.32 When the approval holder is discharging any of its treated wastewater from the pipeline to the Bow River, with the exception of a Peak Flow Discharge, the approval holder shall:

- (a) make arrangements for the availability of an alternate supply of potable water satisfactory to the Director, for

consumption at the rate of 2 L/d per person for a population of 3,000 to a reasonable location (to be approved by the Director) on the Siksika Nation Lands;

(b) continue the availability of an alternate supply of potable water for a minimum of three days after the last discharge of treated wastewater from the pipeline; and

(c) where the Full Risk Assessment has been done, taking into account the findings of the risk assessment, the Director may waive any one or more of the requirements to provide an alternate supply of potable water, monitoring in accordance with 4.8.30, or monitoring in accordance with 4.8.31.

MONITORING DATA

4.8.33 The approval holder shall provide all monitoring data collected under the approval and under the stay letter of February 16, 2007 (Revised) to Health Canada and Indian and Northern Affairs Canada to allow these agencies to advise the Siksika Nation about any health risk to their potable water supplies.

APPLICATION FOR THE NEW APPROVAL

4.8.34 By September 1, 2007, the approval holder shall submit to the Director a complete renewal application (the "Renewal Application") for this approval.

4.8.35 The approval holder shall include, at a minimum, the following information in the Renewal Application:

- (a) a summary of all consultation the approval holder has undertaken with the Siksika Nation and the Siksika Nation Elders Committee with respect to what is being applied for in the Renewal Application;
- (b) an implementation plan for upgrading the wastewater treatment plant to meet a phosphorus limit of 0.5 mg/L in the treated wastewater;
- (c) an implementation plan for other proposed upgrades of the wastewater treatment plant, including rationale and implementation plans/schedules;
- (d) a meaningful assessment of all the alternatives for the disposal of treated wastewater to minimize discharge of the treated wastewater through the pipeline to the Bow River as currently configured, to satisfy all relevant Alberta Environment policies and guidelines, including but not limited to those discussed in the Environmental Appeals Board Report and Recommendations dated April 18, 2007, and to fairly balance the valid interests of regional

- stakeholders;
- (e) the treated wastewater disposal options shall include a description of:
 - (i) where the treated wastewater will enter the environment,
 - (ii) the expected quality and quantity of the treated wastewater that will enter the environment,
 - (iii) an assessment of the potential effects the treated wastewater discharge will have on the receiving environment, and
 - (iv) an assessment of any adverse impacts on downstream water users within 20 km of the discharge;
 - (f) an evaluation of the monitoring data collected to date including, but not limited to:
 - (i) an assessment of the location of the treated wastewater outfall,
 - (ii) an assessment of the aquatic environment in the secondary channel, and
 - (iii) an assessment of the potential impacts to the Siksika Nation's Ayoungman Water Treatment Plant;
 - (g) status and next steps with respect to the Siksika Nation Traditional Effects Uses Study; and
 - (h) any other information specified in writing by the Director.”

VACATE STAY OF DECISION

8. The stay of the Environmental Appeals Board dated February 16, 2007, as amended, is vacated.