

March 31, 2009

Energy Resources Conservation Board  
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**Re: Draft Directive: Requirements for Water Measurement, Reporting, and Use for Thermal In Situ Oil Sands Operations**

The Pembina Institute appreciates the opportunity to provide feedback on this draft directive. Pembina Institute has a long-standing interest in water use by the oil sands industry, and has researched and expressed our concerns about the use of fresh water for the thermal in situ recovery of bitumen since 2003.<sup>1</sup> The draft directive provides a step forward in requiring companies to reduce the consumption of non-saline water and improve the recycling of both non-saline and saline water, but it fails to adequately address the long-term cumulative impact on water resources from increasing in situ oil sands production. In particular, we ask that the draft directive be amended, to require companies by 2015 to increase water recycling beyond what is possible with current technology. This would provide a signal to industry that government is serious about ensuring further reductions in water use and would immediately encourage research to further limit water consumption.

Our further comments are as follows:

1. Purpose of This Joint Directive.

a. Final paragraph on page 2. The ERCB and Alberta Environment should clearly specify that they intend to review the Directive after 5 years (or earlier, if considered necessary) to ensure the goals are being met. This would be a suitable place to indicate that the government intends to introduce more stringent measures at that time, which may be beyond what can be achieved with current technology.

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<sup>1</sup> Mary Griffiths and Dan Woynillowicz, *Oil and Troubled Waters: Reducing the Impact of the Oil and Gas Industry on Alberta's Water Resources* (Drayton Valley, AB, The Pembina Institute, 2003).  
Dan Woynillowicz, Chris Severson-Baker and Marlo Reynolds, *Oil Sands Fever: The Environmental Implications of Canada's Oil Sands Rush*, (Drayton Valley, AB, The Pembina Institute, 2005).  
Mary Griffiths, Amy Taylor, Dan Woynillowicz, *Troubled Waters, Troubling Trends: Technology and Policy Options to Reduce Water Use in Oil and Oil Sands Development in Alberta* (Drayton Valley, AB, The Pembina Institute, 2006).  
Mary Griffiths and Dan Woynillowicz, *Heating Up in Alberta* (Drayton Valley, AB, The Pembina Institute, 2009).



b. This draft directive focuses on improving recycle rates of fresh and brackish water to reduce overall water use at thermal in situ facilities. However, recycling water is an energy and waste intensive method of reducing water use. In situ processes that require less steam injection per barrel of bitumen produced not only reduce water use but also energy consumption. The ERCB and Alberta Environment could use this directive to provide incentive for the development of technologies that reduce overall water by other means than increased recycle rates. This could for example take the form of lower recycle rates if companies can reduce water use by an equivalent degree.

### 3. What's New in This Directive?

We recognize that this section reports only what is new, but under “Water reporting” in the column marked “This directive”, it might be appropriate to remind readers that the new requirements are in addition to the current requirement to report fresh water diversions to Alberta Environment (see section 6.2).

## 6. Water Reporting Requirements for Thermal In Situ Facilities

### 6.2 Reporting to the AENV Water Use Reporting System

Under the Water Act, Alberta Environment is responsible for all water resources in the province. The department has chosen to regulate only surface water and non-saline groundwater. Given the increasing use of saline water for in situ operations and the fact that this resource may be replenished very slowly, it would be wise for Alberta Environment to require reporting of saline water as well as fresh water. The department should use this information, together with monitoring of saline aquifers, to help determine the impacts of water depletion in deeper formations. This is in the interest of those currently using saline aquifers and Albertans. While the protection of non-saline groundwater resources must be the primary concern, it is likely that deeper, saline resources will also be required for other purposes in the future, especially during periods of prolonged drought.

We wish to remind the ERCB and Alberta Environment that the Rosenberg International Water Forum asked consideration for the fact that: “Water of quality in the 4,000 to 10,000 mg/L total dissolved solids range has considerable value as a resource after treatment. Therefore, the definition of groundwater resource should be extended to include this quality range.”<sup>2</sup> We encourage Alberta Environment to adopt this recommendation in the near future, and as a first step to require reporting of all saline water withdrawn, but especially saline water with less than 10,000 mg/L total dissolved solids.

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<sup>2</sup> Rosenberg International Forum on Water Policy, *Report of the International Forum on Water Policy to the Ministry of Environment, Province of Alberta* (University of California, Berkeley, 2007), p. 21, <http://rosenberg.ucanr.org/documents/RegRoseAlbertaFinalRpt.pdf>.

## 8. Audit, Compliance and Enforcement

The draft text gives examples of non-compliance for which enforcement action will be taken once the requirements become effective. These items should be specifically listed in the “Risk Assessed Noncompliance” document on the ERCB web site. Mention should also be made of the fact that failure to report water use to Alberta Environment is also a compliance failure and reference should be made to the Alberta Environment penalties for non-compliance.

### 8.1.3 Criteria for Relaxation of Enforcement for New Scheme and Expansion Start-Ups

The text should include a sentence that states that companies are required to make every effort to comply within the 12-month timeline provided for new scheme start-ups and expansions. Only if there are unforeseen problems should an extension of this period be granted. The criteria for relaxation of enforcement should make it clear that exemptions will not easily be granted.

## 9 Data Publication

We ask that the water information use data, including not only water productivity ratios but the absolute volume of water used from each source (surface, non-saline groundwater and saline groundwater) be reported for each company and project on the ERCB and Alberta Environment web sites. The Crown is the owner of the water resources in this province, so the information should be easily accessible to the public within a specified timeframe.

Finally, we have one additional recommendation. As the current draft directive applies only to thermal in situ recovery, we ask the ERCB and Alberta Environment to take additional measures to reduce the use of non-saline groundwater, for the recovery of bitumen using waterflood. This method of recovery is using an increasing volume of water in the Peace River Basin and in 2007 about one quarter came from non-saline groundwater.

We look forward to the introduction of the new Directive in the near future and trust that you will seriously consider our proposed improvements.

Yours sincerely,



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