

**FOR IMMEDIATE RELEASE**

**November 15, 2019**

## **New Platform monitors Tailings leakage around Alberta's bitumen mines**

Keepers of the Athabasca, in partnership with GW Solutions<sup>1</sup> team of groundwater scientists (hydrogeologists), developed a new tool funded by the Alberta EcoTrust Foundation. This tool examines 3D images of the subsurface area around the tailing ponds associated with the bitumen mines of northeastern Alberta. We have also compiled publicly available information on water chemistry and used a new interactive data integration and visualisation platform to help understand what is happening to contaminated surface water (tailings).

Presentations on the **data visualization platform** and leaking tailing ponds are now available:

- The 'Leapfrog' Model: <http://keepersofthewater.ca/abtia-leapfrog-model.pdf>
- Dr. Wendling's presentation with background information about tailings (contaminated surface water) and groundwater movement: <http://keepersofthewater.ca/abtia-tar-sands-tailing-ponds-nov.pdf>

This platform is intended for use by communities, researchers, industry groups, and others in order to answer questions about where and how toxic materials from tailing ponds are reaching the Athabasca River.

Government and industry have known about the possibility of tailings leaking into groundwater since 1981<sup>2</sup>. In fact seepage monitoring and groundwater recovery wells are commonly in place next to tailing ponds to return tailings that have leaked out horizontally. There is no such measure for tailings that are leaking vertically, straight down into the groundwater, and in some cases, back up into the Athabasca River. Current tailings management plans do not call for best practices such as compacted clay liners, plastic liners, dual plastic liners, tailings detection and return from between liners, or other common features of contaminated water management used in municipal landfills and other applications.

Naphthenic acids are considered to be a major toxic component of the tailing ponds. Other toxic substances include cyanide, phenols, arsenic, cadmium, chromium, lead and zinc. The amount

<sup>1</sup> <https://www.gwsolutions.ca/>

<sup>2</sup> "Process water treatment in Canada's oil sands industry: 1. Target pollutants and treatment objectives" Erik W. Allen <https://www.nrcresearchpress.com/doi/abs/10.1139/S08-020?journalCode=jees#.XK51W5hKiM8>

of naphthenic acid processed in oil sands operations is estimated at over 100 tonnes per day. Health effects<sup>3</sup> from this chemical include potential cancers, reproductive issues, and endocrine disruption. Until recently, scientific research by industry and Government avoided direct data which could reveal human health impacts, while using language which downplayed or ignored the possibility. There is evidence which does indicate human health impacts.

Despite many opportunities over decades to ensure tailings were not toxic, the annual growth rate of very toxic tailings is over 14 km<sup>2</sup> per year (3500 acres) at current production rates. This growth is increasing and is virtually unregulated, leaving current tailings lakes covering approximately 250 km<sup>2</sup>. The Commission for Environmental Cooperation under NAFTA has been involved in an investigation of Canada's management of tailings since 2011 and is in the process of producing a 'factual record' about the leaks.

### **Plan to Dump Tailings Pond Waste into the Athabasca River Should be Scrapped**

A 'world class monitoring system' for Alberta, promised over a decade ago, has never been put in place, and data from previous monitoring efforts such as the Cumulative Environmental Management Association<sup>4</sup> are no longer publicly available.

Keepers of the Athabasca oppose pilot projects planning to 'treat and release' tailings into the Athabasca River by 2022<sup>5</sup>. We support treatment of existing tailings pond material for recycling and industrial use, and 'full containment' for dangerous tailings. The 'full containment' option includes utilizing fully regulated tanks, and employing active evaporation infrastructure. While oil companies may spend \$50M per year on managing tailings, Keepers of the Athabasca, and Indigenous Knowledge Holders we consult with, feel that their management has not been effective.

Moral questions arise when the Government of Alberta accepts science research which continues to avoid issues regarding environment and human health in Alberta.

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Proposed 'full containment' options for tailings follow:

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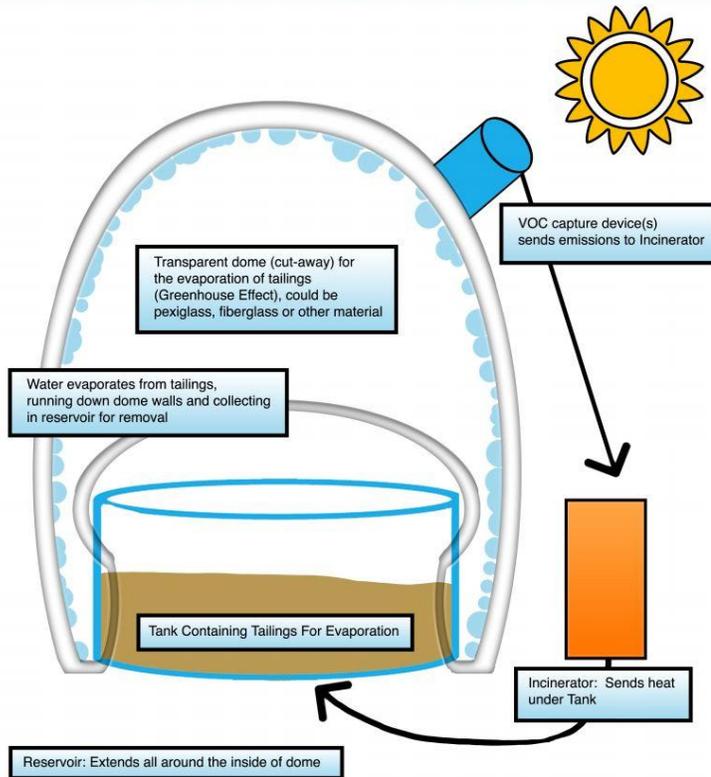
<sup>3</sup> <https://www.sciencedirect.com/science/article/pii/S0048969712002768>

<sup>4</sup> <http://cemaonline.ca/>

<sup>5</sup> <https://open.alberta.ca/dataset/e131074c-825b-4709-94b2-178130b52339>

# ACTIVE EVAPORATION

- Using Evaporation and VOC's to further heat and evaporate tailings



## Evaporation Tanks not tailings ponds - the solution to pollution is containment

Solar panels on top of the roof run fans on the interior of the roof for increased evaporation.

Tailings ponds have not successfully evaporated toxic liquid tailings in Alberta during the past 60 years. Open to the air, tailings ponds have provided a source of air, water, and land pollution.

In order to prevent more aerial pollution, wildlife death, land use issues, and leaks into surface water, specialized storage tanks may be used for the evaporation of liquid tailings.

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