

Enbridge Northern Gateway Pipeline – risks for downstream communities and fisheries

The Enbridge Northern Gateway Pipeline proposal includes two 1,170 kilometre long pipelines from the tar sands in Alberta to the coast at Kitimat. The pipelines will carry an average of 525,000 barrels per day of crude oil to the ocean,¹ and 193,000 barrels a day of condensate, a toxic kerosene-like natural gas by-product used to dilute crude oil so that it can be transported by pipeline, to Alberta.²

The pipelines will cross over 1,000 streams and rivers, including the headwaters of the Fraser River (crossing the Stuart, Endako and Crooked Rivers) and the headwaters of the Skeena River (crossing the Morice and Bulkley watersheds). Each of these stream crossings will require two pipeline crossings, as the project consists of twinned pipelines. The project has the potential to seriously affect the rights of First Nations downstream of these crossings. The toxic effects of a spill could be felt for hundreds of kilometres, stretching down the entire length of the Fraser River to the sea.³

Impact on fisheries

Oil and condensate spills and leaks at stream crossings can be devastating for rivers and streams. Areas downstream of a spill are at significant risk of short and long term negative impacts, such as the death or disease of fish, aquatic insects, birds and other wildlife, and contamination of water supplies.

Construction risks: Construction and operation can impact fish through the sediment that is released into streams and rivers during road building, road washouts and the construction of water crossings. Certain concentrations of sediment can kill fish directly.⁴ Sediments can also increase the amount of stress that fish experience, disrupting their feeding, growth, social behaviour and susceptibility to disease. Sediments may also impact fish eggs and affect the survival of juvenile fish, and make water cloudy, interfering with light penetration, reducing the number of plants, and decreasing the habitat for insects that fish rely on for food. Road building practices by industry users can threaten salmon spawning grounds with siltation due to slumping of stream banks.⁵

Oil and condensate spill risks: Once the pipelines are operational, communities downstream of the pipeline crossings will be at risk of spills. An oil spill on a river is impossible to fully contain or to

¹ Enbridge Information Brochure, January 2009, accessed at www.northerngateway.ca/files/NGP-Brochure.pdf.

² *Ibid.*

³ Correspondence with Professor Jack Stanford, Professor of Ecology, Director of Flathead Lake Biological Station, University of Montana, May 13, 2009.

⁴ I.K. Birtwell, 1999. Effects of sediment on fish and their habitat. Pacific Scientific Advice Review Committee (PSARC) Research Document HAB-99-1. Fisheries and Oceans Canada, Canadian Stock Assessment Secretariat, Ottawa p.34.

⁵ *Carrier Sekani Tribal Council Aboriginal Interests & Use Study on the Enbridge Gateway Pipeline*, 2006, p.22. accessed at www.cstc.bc.ca/cstc/67/enbridge.

clean up. The oil in the pipeline will be under high pressure, meaning that a leak or rupture has the potential to expel large volumes of oil before the flow is cut off. On a river, the resulting surface oil slick could quickly travel downstream, and be many kilometres in length. In cold rivers, the oil can bead and separate, making it more difficult to retrieve.⁶ Toxins from the oil – including the condensate mixed in with it – can mix with the water and pollute a potentially wider area than the oil itself. River water is likely to take toxins and contaminants with it as it penetrates into the ground, mixing with ground water contained in aquifers and gravel beneath the river's flood plain.⁷ Condensate spilling from its own pipeline into the river, even without an oil leak, is acutely toxic and poses a risk to water and fish. Condensate contains a number of chemicals known to cause cancer, and many other severe illnesses.⁸

An oil spill into the Fraser or Skeena river systems could have a devastating impact on fish, and destroy both traditional fishing and commercial fishing access. Toxins from oil can have impacts on salmon eggs, fry and smolt even at very low concentrations, affecting a fish's heart and circulatory system during the fish's embryonic stage.⁹ Oil on the banks can eliminate river edge habitat for birds and mammals.

Even after a cleanup, oil can linger in the environment for many years before it breaks down, continuing to affect fish, wildlife, and humans. Twenty years after the massive oil spill from the *Exxon Valdez*, Alaska's coast still has high concentrations of oil on the beaches and in the ground, and in some places, is still as toxic today as it was a few weeks after the spill.¹⁰

In addition to downstream impacts, oil can potentially be transported upstream of a spill by returning fish contaminated as they swim through oiled waters, affecting eggs and smolt in spawning areas.¹¹ Fish travelling through a spill zone may be contaminated as they ingest oiled particles and prey.¹² The damage to fish and their habitat downstream of a spill also naturally has an impact on the availability of fish upstream.

The oil spill risk to downstream communities is real

We have already seen pipeline disasters right here in British Columbia. In August 2000, a Pembina Pipeline Corporation oil pipeline ruptured and spilled roughly one million litres of crude oil into the Pine River, which flows into the Peace River in northeastern British Columbia. The spill was reported to be 21 kilometres long.¹³ The spill killed tens of thousands of fish, and it took years for stocks to recover. Many birds and beaver also died.¹⁴ Although the spill occurred 110 km upstream of the town of Chetwynd, the town's water supply was contaminated.¹⁵ At the time of the spill, the

⁶ BC Ministry of Environment, "Ministry Working to Contain Oil Spill Near Chetwynd" (Aug 1, 2000), accessed at www2.news.gov.bc.ca/archive/pre2001/2000/august/ib149.asp.

⁷ J.A. Stanford *et al.* "The shifting habitat mosaic of river ecosystems" (2005) 29 *Proceedings of the International Association of Theoretical and Applied Limnology* 123 at p. 134.

⁸ Material safety data sheet for natural gas condensate, prepared by Piedmont Natural Gas, available at <http://www.piedmontng.com/residential/aboutNaturalGasSection/uploadedGasLines/MaterialSafetyDatashetDistillateVer020806.pdf>

⁹ Ecotrust. (2005). *Habitat pressures and risk areas – #1 The Oil Pipeline*, Accessed at www.inforain.org/copperriver/content/pages/background/assessment_1.htm

¹⁰ Exxon Valdez Oil Spill Trustee Council, *2009 Status Report – 20th anniversary report*, at p. 10, accessed at www.evostc.state.ak.us.

¹¹ Ecotrust, cited above.

¹² Exxon Valdez Oil Spill Trustee Council, cited above at p. 5.

¹³ Peace River Block Daily News, "Oil spill threatens Chetwynd" (August 2, 2000).

¹⁴ Pembina Institute, *Who Protects the Land? Compliance Issues for Oil & Gas in British Columbia*.

¹⁵ D.J.F. McCubbing *et al.* (2006). "Assessment of the CN sodium hydroxide spill August 5th, 2005 on the fish populations of the Cheakamus River" BC Ministry of the Environment, at p. 6.

river was the town's only municipal source of drinking water, but it had to stop using river water for a number of years. Residents also had to discontinue the use of many groundwater wells near the river.¹⁶ While the Pembina Pipeline Corporation spent over \$30 million dollars to clean up the spill – the most expensive spill in Canadian history – 80,000 litres remain in the environment.¹⁷ In 2001, the year after the spill, the Pine River was identified as the most endangered river in BC.¹⁸

The potential for significant environmental harm from pipelines is high. Federal and provincial regulations and law have failed to prevent pipeline spills and leaks in Canada: Between 1990 and 2005 an average of 803 pipeline failures occurred every year in Alberta.¹⁹ Another study found that pipeline spills outnumber spills from all other sources combined, and that pipelines and fixed facilities are responsible for more than 2/3 of oil split into water or onto land.²⁰ Enbridge reports that, between 2003 and 2007, its pipelines had an average of 67 oil spills each year – “despite our best efforts to prevent them.”²¹ For example, in 2007, an Enbridge pipeline leaked and released 990,000 litres of crude oil into a wetland near Glenavon, Saskatchewan before Enbridge could stop the flow.²²

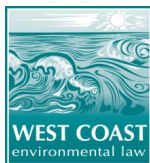
As Enbridge's own experience shows, promises of the advanced technology can't prevent spills from happening, and can't protect the environment and livelihood of downstream communities in the event of a spill.

Federal Crown must consult with downstream First Nations

The federal government is responsible for reviewing this project, but it has only contacted First Nations communities directly on the pipeline route for consultation. However, the construction and operation of the pipeline also has the serious potential to affect the Aboriginal Rights and Title of nations downstream of the pipeline. First Nations who depend on the Fraser River should contact the federal Crown to indicate that they want the federal Crown to consult them, and involve them in the decision on the Enbridge Gateway Pipeline project.

To contact the federal Crown, and to remind it of your right to be consulted on this project, write to:

Brett Maracle, Senior Program Officer, Project Reviews
Canadian Environmental Assessment Agency
160 Elgin Street, 22nd floor
Ottawa ON K1A 0H3 Fax: **(613) 957-0941** Email: **brett.maracle@ceaa-acee.gc.ca**



West Coast Environmental Law
200-2006 West 10th Ave
Vancouver, BC V6J 2B3
Tel: 604-684-7378 / 1 800 330-WCEL
admin@wcel.org / www.wcel.org

The information provided in these materials is for public education purposes only. If you have particular questions about a specific legal question, please contact one of West Coast's lawyers at 1 800 330-WCEL

¹⁶ BC Ministry of the Environment, Environmental Emergency Management Program Incident Report on the Pine River Oil Spill, accessed at http://www.env.gov.bc.ca/eemp/incidents/pembina_00.htm.

¹⁷ *Ibid.*

¹⁸ McCubbing, cited above, at p. 6.

¹⁹ Alberta Utilities and Energy Board. 2007. *Pipeline Performance in Alberta, 1990-2005*.

²⁰ United Nations Environment Programme (www.unep.org); International Tanker Owners Pollution Federation (www.itopg.com); US Environmental Protection Agency (www.epa.org).

²¹ Enbridge Inc. 2008 *Corporate Social Responsibility Report*. Accessed at <http://www.enbridge.com/csr2008/environmental/en23.php>.

²² *Ibid.*