



Environmental Threats from Eastern Refineries Exposed

A review of environmental incidents at Eastern Canadian refineries along TransCanada's proposed Energy East pipeline route

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Introduction

TransCanada's proposed Energy East pipeline would transport 1.1 million barrels of oil per day from Alberta's oil sands to Saint John, New Brunswick. While almost none of the oil would stay in Canada¹, the small amount not exported could feed three refineries along the pipeline route: the Suncor refinery in Montreal, Quebec; the Valero refinery in Lévis, Québec; and the Irving refinery in Saint John, New Brunswick.

Ecology Action Centre has compiled research into the environmental records of these refineries. Incidents of environmental contamination from the refineries are listed for the period January 1st, 2012 to December 31st 2014. Where possible, details about the impacts of the incident and events surrounding the reporting are provided.

Over a two-year period, 19 incidents were reported at the Irving refinery in New Brunswick, a record that is significantly worse than the other two refineries. The largest incidents occurred in 2014; a spill of 10,000 litres of vacuum gas oil and a spill of 40,000 litres of diesel. Both were due to tanks being overfilled.

Meanwhile Suncor in Montreal had three reported incidents and Valero in Lévis had 14 during the same time frame, the largest involving a spill at the Valero refinery of 15,000 litres of crude oil.

The environmental record of these refineries is crucial to assessing the potential environmental impact of the Energy East pipeline. This is particularly true in the case of the Irving refinery, the largest of the three, given Irving Oil's plans to build and operate an export terminal that would ship much of the oil coming through the pipeline through the Bay of Fundy and out to the Atlantic Ocean.

Given the colossal scale of the export terminal², careful scrutiny of Irving Oil's environmental record in Saint John is critical. Irving Oil's history of environmental management at its Saint John refinery has bearing on the management that can be expected for its export terminal. It is incumbent upon relevant governments to protect citizens and the Bay of Fundy by demanding world-class environmental standards from Irving Oil before the company is allowed to expand its operations for any project.

TransCanada has been granted a two-year delay for its Energy East proposal while the company looks for a possible additional port. The National Energy Board should not proceed with a review, even at that later time, until stronger environmental regulations are firmly in place and the regulatory review process is overhauled.

¹ TransCanada's Energy East Pipeline: For Export, Not Domestic Gain (<https://www.ecologyaction.ca/pipeline>)

² The new Canaport Energy East Marine Terminal would be located adjacent to Irving Oil's existing import terminal in Saint John. Up to 18 storage tanks, each with a capacity to store up to 500,000 barrels (approx. 79.5 million litres), would be built on the site. The Terminal would be able to support the loading of very large crude carriers with carrying capacities of 1.1 million to 2.2 million barrels.

Energy East Pipeline Project Description (https://docs.neb-one.gc.ca//eng//lisapi.dll/fetch/2000/130635/2428790/Volume_1_Energy_East_Project_Description_ENGLISH_4-Mar-14_-_A3V0S2.pdf?nodeid=2428599)

Summary of Findings

(see Appendix for charts detailing incidents at each of the refineries in the given time period)

Irving refinery (Saint John, New Brunswick)

- > From Jan 1, 2012 to Dec 31, 2014, there were 19 incidents reported that are connected to the refinery or the terminals where it receives and exports crude on waterborne tankers.
- > Of the 19 incidents, 12 occurred in 2012, four in 2013, and three in 2014.
- > Five of these incidents involved emissions of sulfur dioxide, four involved the dumping of petroleum sludge above permitted amounts, three involved crude oil, three involved refined product, two involved the spilling of sulfuric acid, and two involved the spilling of contaminated fluids.
- > The largest incidents occurred in 2014, one a spill of 10,000 litres of vacuum gas oil, the other a spill of 40,000 litres of diesel. Both of these incidents were due to tanks being overfilled.
- > Though smaller, other measured incidents are significant, with spills between 1,000-2,000 litres and excess dumping of thousands of pounds of petroleum sludge.
- > In this time period, Irving was issued letters of warning for failing to immediately report incidents three times, twice in 2012 and once in 2013. Irving Oil was never fined.

Details on the record of environmental contamination incidents for the New Brunswick refinery are taken from incident disclosures maintained by the New Brunswick Department of Environment and Local Government, obtained through a Right to Information Act request by Reuters reporter Richard Valdmanis.

Valero refinery (Lévis, Québec)

(Note: this refinery is often referred to as the Ultramar refinery or by its name, the Jean-Gaulin refinery. Valero owns Ultramar 100%)

- > From Jan 1, 2012 to Dec 31, 2014, there were 14 incidents reported in this registry that are connected to the refinery or the berths where it receives crude from waterborne tankers.
- > Of the 14 incidents, five occurred in 2012, 6 occurred in 2013 and three occurred in 2014.
- > Some of these incidents involved crude oil, some involved refined product, some involved waste water and some involved air emissions such as smoke or sour gas.
- > The largest incident involved a spill of 15,000 litres of crude oil in 2014.
- > The second largest incident involved 3,000 litres of light hydrocarbons related to feed for the refinery's catalytic cracker in 2013.
- > Other incidents involved much smaller amounts, such as a crude oil spill of 5 cubic meters on March 27, 2013.
- > In 2013, Valero was fined an amount of \$5,000 for reporting a spill late.

Suncor refinery (Montréal, Québec)

- > From Jan 1, 2012 to Dec 31, 2014, there were 3 incidents reported in this registry that are definitely connected to the refinery and tank farm. No incidents appear to have happened at Suncor's berths on the Saint Lawrence river.
- > Two of these three incidents occurred on the same day.
- > The largest incident involved a spill of 3,200 litres of distillate on October 4, 2012. Also on that day, a separate spill of 800 litres occurred, for a total of 4,000 litres.
- > The other incident that was reported to this registry involved an unknown amount of black smoke from a fire at the refinery on December 23, 2012.

Details on the record of environmental contamination incidents for the two Quebec refineries are taken from the Québec Environment Ministry's registry of emergency responses to all environmental incidents (Registre des interventions d'Urgence-Environnement, http://www.mddelcc.gouv.qc.ca/ministere/urgence_environnement/#region), which captures reports of even very small incidents from any source.

Conclusions

Findings show that Irving Oil's environmental record at its Saint John refinery is significantly worse than the environmental records of Suncor and Valero refinery operators. The number and size of incidents at the Suncor refinery (3) are quite small. While the number of incidents at the Valero refinery in the time period assessed (14) is close to the number of incidents at the Irving refinery in the same period (19), incidents at the Irving refinery were consistently larger than those at Valero.

The observed differences in environmental records are likely attributable in part to differences in relevant regulations between Quebec and New Brunswick. Bylaws governing the Quebec refineries limit heavy oil combustion to fuels with less than 1% sulfur content, for instance.

Irving Oil's operating culture, history of regulatory compliance, and relationship with regulators also play a role in determining its environmental record. On this note, Ecology Action Centre offers the following:

- > While Valero was fined an amount of \$5,000 the one time it failed to report an incident in a timely manner, Irving failed to immediately report incidents three separate times during the assessment period and each time received no more disciplinary action than a warning letter.
- > Irving Oil is apparently allowed to forgo environmental assessment and regulation on occasion. New Brunswick's Department of Environment approved Irving Oil's Saint John oil-by-rail terminal in June 2012 without requiring the company to conduct an environmental impact study based on Irving Oil's assertion the terminal would have no environmental impact. Since opening, the terminal has emitted steadily increasing amounts of volatile organic compounds (VOCs), afflicting surrounding communities with health impacts.³
- > Saint John residents frequently complain of lack of transparency and communication from Irving Oil surrounding its operations in the city. Irving has tried to address this by establishing a community liaison committee to improve the flow of communication from the company to communities. Yet even that committee fails to seriously address environmental concerns, having turfed its resident environmental advocate, Gordon Dalzell, in fall 2014.⁴

These findings show the environmental mismanagement that can be expected from Irving Oil if it processes oil from TransCanada's proposed pipeline. Further, it highlights the risk of allowing Irving Oil to operate a huge export terminal on the shores of the Bay of Fundy.

³Air quality problems dog Irving's oil-by-rail terminal (<http://www.cbc.ca/news/canada/new-brunswick/air-quality-problems-dog-irving-s-oil-by-rail-terminal-1.2750181>)

⁴Irving Oil turfs Gordon Dalzell, clean-air activist, from group (<http://www.cbc.ca/news/canada/new-brunswick/irving-oil-turfs-gordon-dalzell-clean-air-activist-from-group-1.2777338>)

Appendix

Irving refinery - Incidents of environmental contamination January 1st, 2012 – December 31, 2014

Date	Location	Spill Details
May 16, 2012	Refinery 340 Loch Lomond, Saint John NB	Refinery glitch triggers release of sulfur dioxide into the air, triggering levels deemed potentially dangerous to public health in surrounding neighborhood. New Brunswick's minister of the environment briefed by regulators on the incident. Warning letter issued by regulators because Irving did not immediately report the spill.
May 20, 2012	Rail yard East Saint John Terminal	1,000 litres of Albertan crude oil sprayed from oil train tanker car during offloading. Warning letter issued by regulators because Irving did not immediately report the spill.
Nov 25 – Dec 14, 2012	Refinery 340 Loch Lomond, Saint John NB	Repeated instances of total reduced sulfur emissions from a storage tank at the refinery caused by a leak seal. The releases triggered repeated complaints from nearby residents complaining of smells, and three of the releases were classified as environmental emergencies.
Nov 28, 2012	Refinery 340 Loch Lomond, Saint John NB	1,000 litres of sulfuric acid spilled after leak in pipeline at the refinery.
Nov 29, 2012	Refinery 340 Loch Lomond, Saint John NB	1,000 litres of heavy oil spilled after leak in pipeline at the refinery.
Nov 30, 2012	Refinery 340 Loch Lomond, Saint John NB	Several thousand pounds of petroleum sludge release into Biox Pond in excess of permitted amount.
Dec 3, 2012	Refinery 340 Loch Lomond, Saint John NB	Several thousand pounds of petroleum sludge release into Biox Pond in excess of permitted amount.
Dec 7, 2012	Refinery 340 Loch Lomond, Saint John NB	Several thousand pounds of petroleum sludge release into Biox Pond in excess of permitted amount.
Dec 17, 2012	Courtenay Bay	2 litres of hydraulic fluid spilled into Courtenay Bay while ship arm was being moved from terminal dock.
Dec 19, 2012	Refinery 340 Loch Lomond, Saint John NB	Several thousand pounds of petroleum sludge release into Biox Pond in excess of permitted amount. Release affected nearby Little River and Courtenay Bay.

Dec 28, 2012	Refinery 340 Loch Lomond, Saint John NB	Release of sulfur dioxide due to refinery glitch.
Dec 29, 2012	Refinery 340 Loch Lomond, Saint John NB	Release of sulfur dioxide due to refinery glitch.
Jan 26, 2013	Refinery 340 Loch Lomond, Saint John NB	1,500 litres of sulfuric acid spills at refinery due to pipeline leak.
Feb 11, 2013	Refinery 340 Loch Lomond, Saint John NB	1,500-2,000 litres of furnace oil spilled from a leaking tanker truck
Aug 1, 2013	Canaport Terminal Mispec Point	500 litres of crude oil spilled due to a leak in a storage tank. Warning letter issued by regulators because Irving did not immediately report the spill.
Aug 27, 2013	Saint John Harbour	250 litres of ballast water containing oil products leaks from ship during offloading in Courtenay Bay.
April 2, 2014	Refinery 340 Loch Lomond, Saint John NB	10,000 litres of vacuum gas oil spills from storage tank at refinery after it is overfilled.
April 19, 2014	Refinery 340 Loch Lomond, Saint John NB	Refinery glitch triggers release of sulfur dioxide into the air, triggering levels deemed potentially dangerous to public health in surrounding neighborhood.
April 20, 2014	East Saint John Terminal	40,000 litres of diesel spilled onto a berm after a storage tank was overfilled, with unknown amount of oil leaching into Courtenay Bay.

Source: Incident disclosures maintained by the New Brunswick Department of Environment and Local Government, obtained through a Right to Information Act request

**Valero refinery - Incidents of environmental contamination
 January 1st, 2012 – December 31, 2014**

Date	Location	Spill Details
Feb 24, 2012	Marine Terminal Near berth 86	Hydrocarbons spilled onto infrastructure (interior and surface) at berth 86, operated by Valero. Type and volume unknown.
Mar 1, 2012	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	Emission of sour gas (sulphur emissions) -- volume unknown.
April 10, 2012	Marine Terminal Berth and riprap	Oil residues (type unknown) -- volume unknown.
June 8, 2012	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	60 litres refined petroleum spilled.
Oct 3, 2012	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	20 litres diesel spilled.
Feb 13, 2012	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	150 cubic metres diesel spilled at storage tank 5005.
Feb 19, 2013	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	5 cubic metres light oil spilled at storage tank 1204.
Mar 27, 2013	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	5 cubic metres crude oil spilled.
June 7, 2013	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	Dust, airborne emissions, unspecified type and amount.
July 2, 2013	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	3000 litres light hydrocarbons spilled from catalytic cracking.
July 3, 2013	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	Smoke and VOC emissions -- volume unknown.
Jan 23, 2014	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	Treated water -- details and volume unknown, spill was to the ground.
Oct 11, 2014	Jean-Gaulin Refinery 165 chemin des Îles, Lévis QC	15,000 litres crude oil spilled.
Oct 26, 2014	Marine Terminal Berth area	Hydrocarbons spilled; unspecified type and volume.

Source: Registre des interventions d'Urgence-Environnement,
http://www.mddelcc.gouv.qc.ca/ministere/urgence_environnement/#region

**Suncor refinery - Incidents of environmental contamination
 January 1st, 2012 – December 31, 2014**

Date	Location	Spill Details
Dec 23, 2010	Suncor Refinery 11701 Sherbrooke East, Montréal Est	Emission of black smoke from a minor fire in one of the storage tanks. Volume not specified. No spills occurred.
Oct 4, 2012	Suncor Refinery 11701 Sherbrooke East, Montréal Est	800 litres of petroleum distillate spilled.
Oct 4, 2012	Suncor Refinery 11701 Sherbrooke East, Montréal Est	3200 litres of petroleum distillate spilled.

Source: Registre des interventions d'Urgence-Environnement,
http://www.mddelcc.gouv.qc.ca/ministere/urgence_environnement/#region