From: Bob Irwin <email address removed>
Sent: Tuesday, February 3, 2026 9:25 PM
To: Nuclear Waste / Déchets Nucléaires (IAAC/AEIC)
Subject: THE REVELL SITE SUITABILITY, TOXICITY RISKS AND HISTORICAL PRECEDENT AT THE REVELL LAKE HEADWTERS

.**To:** Impact Assessment Agency of Canada
Attention: Project Review Team
RE: Public Comment on the Initial Project Description – Project #88774
Project Name: Deep Geological Repository for Canada's Used Nuclear Fuel
Location: Revell Lake (Ignace/Wabigoon Lake Ojibway Nation Area)

SUBMISSION NO. 1. REGARDING THE REVELL SITE SUITABILITY, TOXICITY RISKS, AND HISTORICAL PRECEDENTS AT THE REVELL LAKE HEADWATERS

1. The Porter Standard: Inherent Risk and Toxicity

The 1978 Porter Commission interim report, *"A Race Against Time,"* remains the authoritative benchmark for quantifying the permanent hazard of nuclear waste.

- **Immediate Lethality:** A single CANDU waste bundle, just one year out of the reactor, is so fiercely radioactive that it would kill a person standing one metre away in a matter of minutes.
- **The Lake Superior Dilution Scale:** Dr. Gordon Edwards (CCNR) cites Porter Commission data showing that the waste generated by **just one reactor in a single year** would require **12,100 cubic kilometres of water**—the entire volume of **Lake Superior**—to dilute it to safe drinking levels.
- **Wabigoon Lake Comparison:** Scaling this down to a single canister (approximately one tonne), the dilution required would be equivalent to **more than 300 Wabigoon Lakes**. There is simply not enough water in all of Northwestern Ontario to begin to make a dent in the required dilution should a leak occur. These local river systems lack the volume necessary to buffer such an extreme toxic hazard.
- **Toxicity Quantification Over Time:** Per pages 91–93 of the Porter report, ingestion toxicity remains a permanent threat for millions of years. This data illustrates that there is **never a "safe" period**, as the dilution volumes required remain astronomical indefinitely.

2. Geographical Vulnerability: Revell Lake vs. Nordic Precedents

A fundamental flaw in the NWMO's siting is its location at a high-elevation headwater, which lacks the **natural passive safety** found in international models.

- **Revell Site (Headwater Risk):** The proposed Canadian site is located at an elevation exceeding **370 metres** above sea level. It sits at the **headwaters** of the Wabigoon and Turtle River watersheds. Gravity will drive any leak directly into the freshwater systems and Indigenous traditional lands that downstream communities depend on.
- **The Nordic Sites (Coastal Containment):** In contrast, the world's leading repositories—**Onkalo (Finland)** and **Forsmark (Sweden)**—are located on the **Baltic Sea coastline** at near-sea-level elevations to **provide passive containment of the nuclear waste.**
- **Passive Control: This coupled with the passive control offered by the nearby sea --- ensures** that any potential leakage would migrate away from inland drinking water and toward a massive body of water for natural dilution.
- **Strategic Failure:** While the Nordic sites leverage geography for **passive control**, the Revell site is located at the "beginning of the pipe," placing the entire regional water network at risk.

3. Historical Precedents: Secrecy and Irreversible Harm

The proposal to bury high-level waste at Revell Lake must be evaluated against the devastating legacy of industrial mismanagement in Ontario.

- **The Grassy Narrows Mercury Crisis:** Between 1962 and 1970, 9–11 tonnes of mercury were dumped into the Wabigoon River system upstream from Dryden. For decades, officials claimed the river would "clean itself," yet as of 2026, the people of **Grassy Narrows** and **Wabaseemoong** still suffer from incurable mercury poisoning. This history proves that industrial "containment" can fail with catastrophic, multi-generational consequences.
- **The Port Hope Nuclear Legacy:** For over 50 years, the true extent of radioactive contamination in Port Hope was downplayed or kept secret from residents. As of **January 2026**, the massive cleanup is still ongoing and has exceeded $1.2 billion in costs, demonstrating that once nuclear contamination enters the environment, it is nearly impossible to remediate.
- **A Pattern of Secrecy:** Both cases illustrate a precedent where the public was misled about safety while irreversible harm occurred. Siting a repository at a headwater increases the risk that any future failure will repeat these tragedies on a radioactive scale.

4. Conclusion: A Calculated Risk with Certain Catastrophe

The NWMO's proposal for the Revell Lake site is a reckless gamble with the future of Northern Ontario's freshwater.

- **Failure of the Precautionary Principle:** By selecting a headwater site that lacks the **natural passive safety** and **passive control** of the Nordic repositories, the NWMO has chosen a site where any single failure is **geographically guaranteed** to migrate through the human food chain.
- **Contradiction of Geography:** No amount of engineered "confidence" can overcome the fact that there is not enough water in the entire region to dilute even a single canister of leaking waste. The NWMO is asking this region to accept a hazard that requires **300 Wabigoon Lakes** for safety, in a location that provides zero natural buffer.
- **The Burden of History:** Given the legacies of **Grassy Narrows** and **Port Hope**, the people of this region have every reason to reject the NWMO's assurances. We have seen that industrial "safety" is often a mask for institutional secrecy.

To place the world's most lethal waste at the headwaters of a region already scarred by industrial negligence is an environmental injustice. On the grounds of **unmitigable risk** and **geographical unsuitability**, this project must be rejected.

Sincerely

Robert Irwin

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