

Lead-Zinc – Pb-Zn

Investment Opportunities NORTHWEST TERRITORIES

Government of
Northwest Territories

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Zinc and lead are commonly found together in deposits and mined as co-products. Zinc is the fourth most consumed metal after iron, aluminum and copper. It bonds well with other metals and resists corrosion; three quarters of global zinc production is used in the manufacturing of galvanized metal.

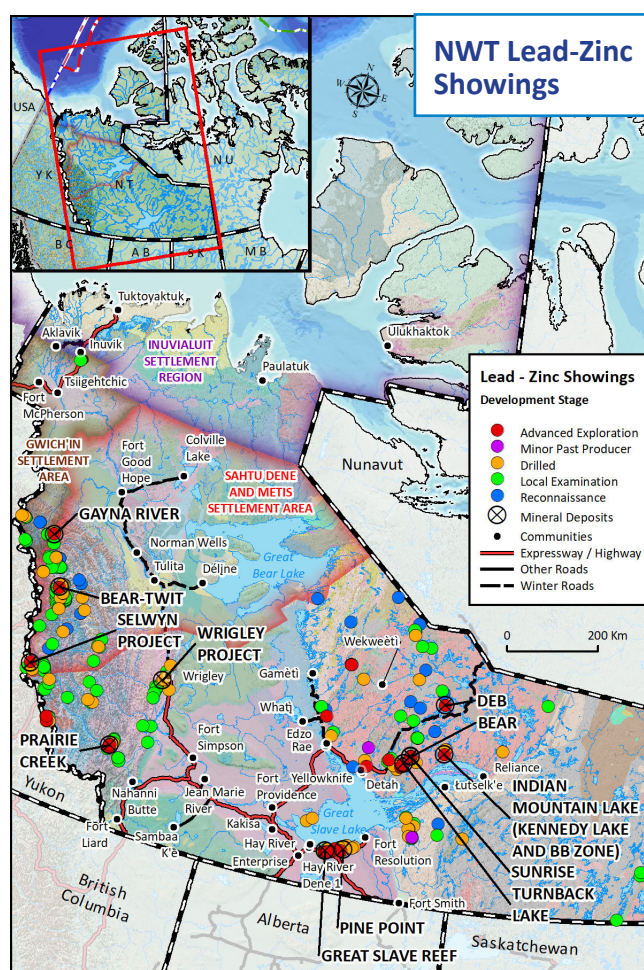
Lead's high density and corrosion-resistant properties make it ideal for use in highly acidic environments; its primary use is in lead-acid storage batteries.

Current NWT Activity

The Northwest Territories (NWT) is home to three advanced-stage lead-zinc exploration projects, namely Prairie Creek Mine, the Pine Point project and the Selwyn Project. Many other projects have identified resources that could lead to economic discoveries.

NorZinc Ltd.'s (CZN) Prairie Creek Mine project has been approved to commence mining and milling, subject to water licence and land use permit conditions. NorZinc has applied for a permit to build and use an all-season access road. Prairie Creek already has extensive infrastructure (e.g. 5 km of underground workings, 1,000-metre airstrip, 180-km winter road, and a 1,000 ton per day mill); the 2017 preliminary feasibility study estimated pre-production capital costs of \$279 million. The study envisioned a 15-year mine life, an after-tax NPV (net present value) of \$188 million and an IRR (internal rate of return) of 18.4 per cent. These values were calculated using lead and zinc prices of US\$1.00 per pound and US\$1.10 per pound, respectively, and a silver price of US\$19 per ounce, plus an exchange rate of \$1.25 Canadian for each US dollar.

Pine Point Mining Ltd. (a wholly-owned subsidiary of **Osisko Metals Inc.**) is actively drilling targets in several zones within the **Pine Point Project**. Historically, the property hosted **Pine Point Mine**, which produced lead and zinc from 51 deposits beginning in 1964 through 1987.



The company released a pit-constrained inferred mineral resource of 38.4 Mt with an average grade of 4.58% zinc and 1.85% lead late in 2018. Some of that resource will be further defined as an indicated resource following 2019 drilling.

Numerous companies hold the rights to other significant NWT lead-zinc deposits: **SSR Mining Inc.** (Sunrise Project); **Panarc Resources Ltd.** (Indian Mountain Lake Project);



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Silver Bear Mines Inc. (Bear Property); **Teck Resources Ltd.** (Turnback Lake Project), and **Blind Creek Resources Ltd.** (AB project) to name a few. Some contain multiple elements (gold, silver and copper) in combination with lead and zinc that will improve project economics.

Selwyn Chihong Mining Ltd.'s (SCML) Selwyn Project is one of the largest undeveloped zinc-lead deposits in the world. The project area hosts 14 drill-defined deposits

within a 40-km-long belt along the NWT/Yukon border. Approximately 10 per cent of the project is located within the NWT. SCML was in the process of getting approval for the upgrade of the access road to the project when a decision was made to wait for a more opportune time. The project as planned has a capital cost of approximately US\$2.12 billion and a mine life of more than 11 years at a mining rate of 35,000 tonnes of ore per day.

Prospects

Project Name	Commodity	Owner	Resource Category Indicated (Ind); Measured	Total Resource tonnes (t); million tonnes (Mt)	Grade grams per tonne (g/t)	Resource Effective Date
Prairie Creek	zinc, lead, silver	NorZinc Ltd.	Meas + Ind	8.70 Mt	9.50% Zn, 8.90% Pb, 136 g/t Ag	Sept. 2015
Pine Point	zinc, lead	Osisko Metals Inc.	Meas + Ind	38.4 Mt	4.58% Zn, 1.85% Pb	Nov. 2018
Selwyn Project	zinc, lead, silver	Selwyn Chihong Mining Ltd.	Ind	185.6 Mt	5.20% Zn, 1.79% Pb	Aug. 2012

Zinc-Lead Uses

- Zinc provides corrosion protection on immersed steel structures such as ships, pipelines, and drill rigs.
- Building and construction industries use zinc in the coated steel strips of roofing and for cladding.
- Zinc oxide is used in the production of rubber (tire industry) and in ceramics, paints and agriculture; it also has medicinal uses.
- Brass is an alloy containing 95 per cent copper and five per cent zinc. Bronze is primarily an alloy of copper with tin, but it may contain zinc. Other zinc alloys are used in automobiles and electrical components.
- Lead is a significant component in batteries, particularly in lead-acid ignition (vehicle) batteries.
- Lead is widely used in manufacturing various alloys.
- Lead is used as ballast in the keel of sailboats.
- Lead is able to shield radiation, so it is commonly used in the medical field to shield x-rays.

This publication is produced by the Department of Industry Tourism and Investment (ITI). The Northwest Territories has one of the most diverse geological environments of any jurisdiction in Canada, one that includes the oldest rocks in the world and geological features that have resulted from modern and ongoing processes. The Northwest Territories Geological Survey (NTGS) surveys, collects, analyzes and makes available public geoscience information gathered from a variety of sources, including information on mineral deposits and geology. NTGS, ITI and the NWT and Nunavut Chamber of Mines host the Yellowknife Geoscience Forum each year in November: www.geoscienceforum.com

For more information about these deposits, please refer to Guide to Selected Mineral Deposits of the Northwest Territories

www.iti.gov.nt.ca/en/files/guide-mineral-deposits-northwest-territories

www.nwtgeoscience.ca

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Please visit company websites for latest information.

Note: Discrepancies in the numbers may differ from published reports due to rounding.