

LinkedIn Article: <https://www.linkedin.com/pulse/niobay-metals-inc-nby-v-announces-results-from-testing-eric-lemieux-5hese/?trackingId=F9bAWxw9SUOwCi0nr8VEEw%3D%3D>

NioBay Metals Inc (NBY-V)

NioBay announces results from metallurgical testing on concentrate from the James Bay Deposit

On January 13, 2025, NioBay announced successful results of metallurgical testing conducted by SGS on concentrate from the James Bay Niobium Project. NioBay holds, in addition to others, a 100% interest in the James Bay Niobium Project located ~45 km south of Moosonee, in the Moose Cree Traditional Territory of the James Bay Lowlands in Ontario. NioBay commissioned SGS to perform metallurgical tests on the concentrate derived from ore samples collected during the drilling phase of the James Bay Niobium Project. On December 20, 2024, NioBay received a report detailing the production of Ammonium Niobium Oxalate (ANO) (<https://niobaymetals.com/wp-content/uploads/2025/01/16075-05-FINAL-Report-Appendices-combined-April-9-2024.pdf>).

Key Highlights of the Test Program: A flotation concentrate sample, provided by the SGS Mineral Processing team, served as feedstock for the metallurgical test program. The sample assayed 60.2% Nb₂O₅ (42.1% niobium). The test program compared two processes for generating a pregnant leach solution (PLS) rich in niobium with minimal impurities:

- i) Strong Acid Agitated Baking followed by water leaching.
- ii) Hydrofluoric Acid Leaching.

Strong Acid Agitated Baking did not demonstrate sufficiently promising results to continue pursuing this process, showing a maximum recovery to the leach liquor of 9% of the niobium found in the feed concentrate.

Hydrofluoric Acid Leaching consistently achieved niobium dissolution in excess of 95% when testing acid dosages ranging from 90% to 130% of the stoichiometric requirement of hydrofluoric acid for a selection of prevalent elements (Nb, Ti, Si, and Fe). The strip liquor was then added to a pre-measured dosage of 100% of the stoichiometric requirement of ammonium hydroxide for Nb, Ti, and Fe at 60°C for two hours in a “reverse precipitation” test

to precipitate ~90% of the dissolved niobium with very low levels of impurity co-precipitation. This test produced a residue assaying at 59.4% Nb. To sum up, production of Ammonium Niobium Oxalate (ANO) was completed.

We understand the test program demonstrated a reliable flowsheet incorporating Hydrofluoric Acid Leaching, solvent extraction using 1-octanol, and precipitation with ammonium hydroxide. NioBay currently holds a mining lease which is valid until 2028. The first drilling campaign and the start of the second have demonstrated this project's strong potential with a preliminary economic study in 2020 showing a NPV (8%) after tax of \$1.0 billion and an IRR of 27.5% (see: https://www.linkedin.com/posts/eric-lemieux-9468715_ontario-moosonee-jamesbay-activity-6963673285045682176-ZLN2?utm_source=linkedin_share&utm_medium=member_desktop_web).

Recall that following the environmental characterization work, the revision of the positioning of a future drilling campaign, and the submission of an authorization request to the Government of Ontario, on December 11 2024, NioBay was mandated by the Ministry of the Environment, Conservation and Parks to conduct consultations with the Moose Cree First Nation. This activity began on December 16, 2024 (see: Update December 19, 2024 - <https://www.linkedin.com/pulse/niobay-metals-inc-nby-v-intercepts-niobium-extension-main-lemieux-otcbe/?trackingId=PvqEXSM0SRWX4UyrngVHBw%3D%3D>).

Jean-Sebastien David, President and CEO of NioBay Metals stated: *"We are pleased that the SGS results confirm that mineralization from the James Bay Niobium Project can also be processed to produce high-purity niobium. Our primary focus has always been on the steel mill market through ferroniobium production. However, these tests reveal an exciting opportunity to target markets that demand high-purity niobium".*

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See also: <https://www.linkedin.com/pulse/niobay-metals-inc-nby-v-confirms-commencement-drilling-eric-lemieux/>

<https://niobaymetals.com/en/niobay-results-metallurgical-testing-james-bay/>



An Investigation into
THE DISSOLUTION, PURIFICATION, AND PRECIPITATION OF NIOBIUM AND TANTALUM
FROM FLOTATION CONCENTRATE GENERATED FROM THE

JAMES BAY DEPOSIT

prepared for

NIOBAY METALS

Project 16075-05 – Final Report
April 9, 2024

James Bay Niobium Project

Description

- 42 km south of Moosonee, in the James Bay Lowlands, Ontario, Canada
- Infrastructure:
 - Airport (2 runways. 1.2 km & 1 km)
 - Rail line from Cochrane
 - Powerline 38 km away
- Winter Road (Wetum Road) – 12 km away
- Located within Moose Cree First Nation Homeland
- Mineralization is open at depth and to the north
- Project is now entering advanced exploration and development stages
- Environmental protection agreement signed December 2022

James Bay Resource

Classification (cut-off 0.3%Nb ₂ O ₅)	Tonnes (Mt)	Grade (%Nb ₂ O ₅)	Contained Nb ₂ O ₅ (M kg)
Indicated	29.7	0.53	158
Inferred	33.8	0.52	177
Crown Pillar	7.2	0.50	36

NSR Valued: \$184/t

Project Map



Important Disclosures

Company	Ticker	Disclosures*
NioBay Metals Inc.	NBY-V	C, R

* Legend

- A The Mining Analyst, in his own account or in a family related account, owns securities in excess of 1,000 shares of the issued and outstanding equity securities of this issuer.
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- V The Mining Analyst has visited material operations of this issuer.
- P This issuer paid a portion of the travel-related expenses incurred by the Mining Analyst to visit material operations of this issuer.
- Q This issuer has directly paid the Mining Analyst.
- R This issuer has indirectly paid the Mining Analyst.

Mining Analyst Certification

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