



Canada Nickel Demonstrates Carbon Sequestration Potential of Tailings from the Crawford Nickel Sulphide Project

Highlights:

- Initial lab scale testing demonstrates that Crawford tailings have the potential to capture 17.5 kg CO₂ per tonne of tailings - more than 3 times the amount required to offset the Project's projected carbon footprint. Any amounts in excess of projected 4.6 kg CO₂ per tonne could be sold for carbon credits.

TORONTO, November 10, 2021 – Canada Nickel Company Inc. ("Canada Nickel" or the "Company") (TSXV: CNC)(OTCQX: CNIKF - <https://www.commodity-tv.com/ondemand/companies/profil/canada-nickel-company-inc/>) is pleased to report the results of the first phase laboratory scale testing, which demonstrates the potential for carbon sequestration in tailings at its Crawford Nickel-Sulphide Project ("Crawford" or the "Project") near Timmins, Ontario.

The laboratory tests were conducted by researchers from Kingston Process Metallurgy and Queen's University and demonstrate that the project tailings naturally sequester CO₂ into a mineralized form, which industry research has demonstrated is permanent. This is a critical foundation of Canada Nickel's NetZero initiative to become the first zero carbon nickel operation. Canada Nickel's wholly-owned Net Zero Metals subsidiary has successfully applied and registered trademarks in various jurisdictions for NetZero Nickel™, NetZero Cobalt™ and NetZero Iron™ in expectation that the Company believes it can be successful in achieving its zero carbon initiatives.

Mark Selby, Chair and CEO of Canada Nickel commented, "Today's announcement is a critical demonstration that our tailings have the fundamental capacity to capture CO₂ in amounts that exceed what we believe will be required to achieve net zero carbon production for our concentrates. Any CO₂ sequestration in excess of the 4.6 kg per tonne of tailings level would be potentially available for sale as carbon credits. Work is underway on a series of larger scale tests aimed at demonstrating that Crawford tailings can be exposed to enough CO₂ for a sufficient time period to achieve the sequestrations levels that were achieved at a lab scale. We look forward to seeing the results over the coming year."

What is mineral carbonation

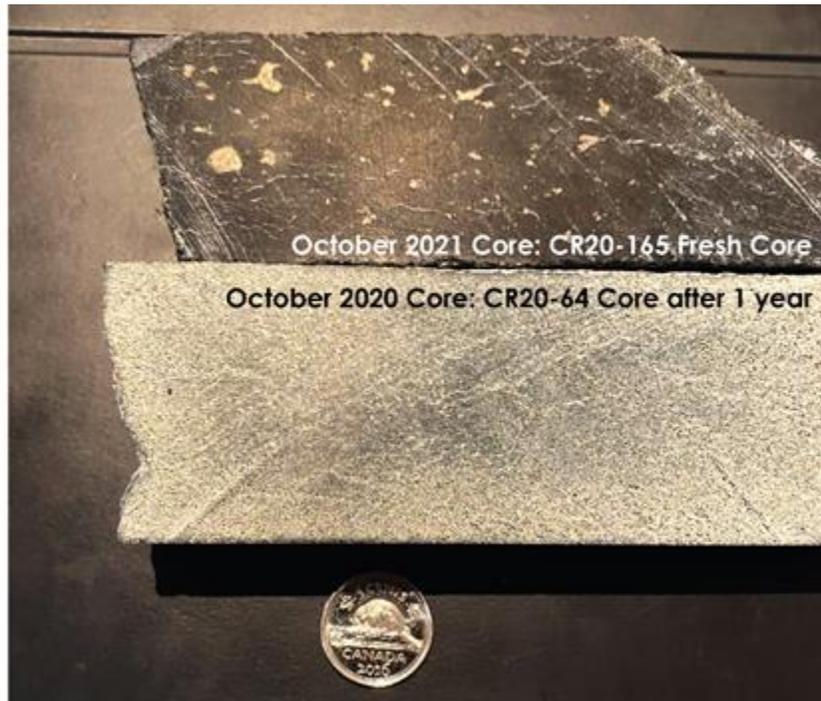
The tailings and waste rock produced from the Company's Crawford Nickel-Sulphide Project are anticipated to spontaneously and permanently capture CO₂ when exposed to the atmosphere. Canada Nickel is developing processes to optimize the carbon capture potential of the Project to offset project emissions and work towards developing a potentially carbon negative nickel mining operation in Timmins, Ontario.

The key minerals that are responsible for this spontaneous reaction at Crawford are serpentine, olivine and brucite, which make up more than 80% of the resource material at Crawford. Brucite is the most reactive mineral, with an average content of 1.9% in Crawford based on 999 distinct QEMSCAN mineralogy analyses across the Crawford Main and East Zones as reported in the Preliminary Economic Assessment ("PEA") dated May 25, 2021. Based on the brucite concentration above, it is estimated that only 31% of the brucite in Crawford needs to be carbonated to offset all of the estimated emissions from the PEA to make the operation carbon neutral.

Evidence of mineral carbonation can be seen on the surface of drill core over time. Figure 1 shows drill core taken from Canada Nickel's Crawford Project after one year of storage. The surface of the drill core has turned white due to carbonation reactions with atmospheric CO₂.

Figure 1. Canada Nickel Drill Core – October 2021 vs October 2020 Demonstrating Spontaneous CO₂ Capture (white minerals on surface are carbonated minerals)

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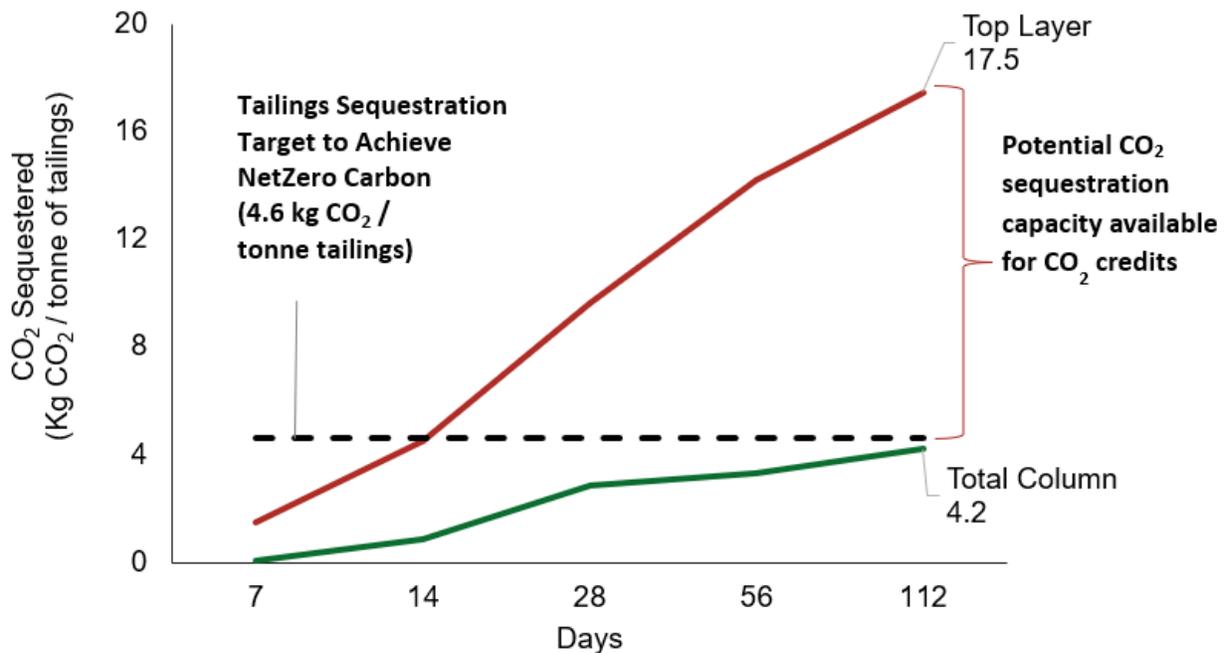


Description of Current Results

Based on analysis by Skarn Associates, Canada Nickel estimates a preliminary emission intensity of 2.8 tonnes CO₂ / tonne of Nickel equivalent concentrate production using data from the Crawford PEA. In order to offset all of the estimated Scope 1 and 2 emissions from the proposed mine and mill, the

Company estimates that a carbon capture rate of 4.6 Kg CO₂ per tonne of tailings produced is required. Figure 2 shows that a sample of Crawford tailings are surpassing this capture rate in the upper tailings layer after approximately 14 days. At 112 days, the top layer has achieved carbon capture of 17.5 kg CO₂ per tonne of tailings and the carbon capture rate of the entire column has nearly surpassed the 4.6 kg CO₂ per tonne threshold. This highlights the carbon capture potential of the Crawford tailings, the potential for the generation of carbon credits, as well as the importance of tailings deposition for optimized mineral carbonation. The next stage of test work will evaluate on a larger scale sample how much of this potential can be realized.

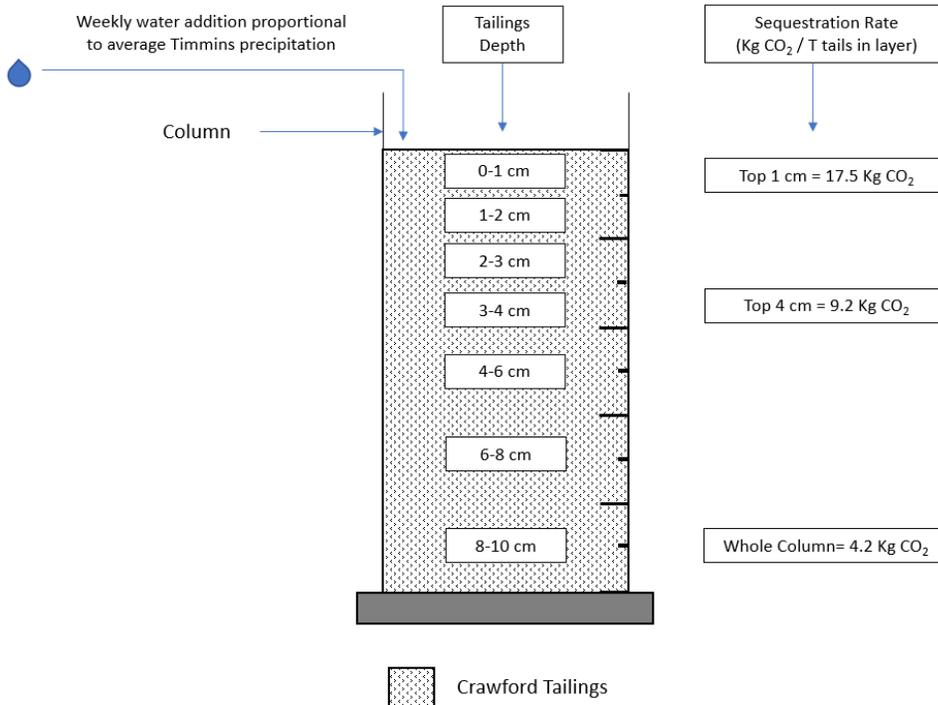
Figure 2. Carbon Sequestration Potential of Crawford Tailings



These results are the product of experimental work that was completed at Queen’s University to measure the effect of time and tailings deposition depth on the progress of mineral carbonation reactions using tailings produced from Canada Nickel’s metallurgical test program. Figure 3 outlines the experimental set up that was used for this first set of tests, as well as the amount of carbon captured for each layer of tailings within the column with no active effort to accelerate the rate of mineral carbonation.

This first column cell test, which was completed on a sample with typical brucite concentration and with no active effort to accelerate the reactions, show a maximum carbon sequestration rate of 17.5 Kg CO₂ /tonne of tailings in the upper 1 cm layer of tailings, an average carbonation rate of 9.2 Kg CO₂/tonne of tailings in the upper 4 centimetres of the column and an average of 4.2 Kg CO₂ /tonne of tailings throughout the entire column after 112 days in laboratory setting. Mineral carbonation reactions decrease with depth in the experimental cell because there is less CO₂ transported to the mineral reaction site. Canada Nickel is developing strategies to inject CO₂ laden off-gases into the tailings storage facility as well as other opportunities, to increase the supply of CO₂ to the mineral site and in turn the carbon capture of the tailings.

Figure 3. Carbon Capture Rate according to depth in column cell tests after 112 days



Description of Current Test Program

Canada Nickel is working with Kingston Process Metallurgy and Queen’s University to optimize the carbon sequestration potential of waste rock and tailings that will be potentially produced from Crawford. Our approach to optimizing the mineral carbonation potential of the project is to complete techno-economic evaluations of various strategies to accelerate mineral carbonation and pursue the options that are thought to be viable from a capital and operating cost perspective at current carbon prices. Our integrated academic-industrial team has identified a number of opportunities to accelerate the mineral carbonation reactions which will be tested in two stages of pilot studies starting in 2022.

In addition to the experimental work that is being completed, Canada Nickel is conducting an aggressive mineralogy program to map out the key economic minerals of the deposit and understand the areas of the deposit that have the highest potential for carbon sequestration. To date, more than 1500 distinct samples have been characterized mineralogically across the breadth of Crawford. The mineralogy results will eventually be incorporated into the block model so that the carbon sequestration potential of extracted material can be incorporated into the mine schedule.

Description of Future Test Program

Canada Nickel is planning two larger scale pilot tests to continue to evaluate the carbon sequestration potential of tailings produced from the company’s metallurgical test program, as well as to test various strategies for accelerated mineral carbonation. Pilot scale testing will be completed in two phases starting

in the first quarter of 2022, with a tote test loaded with 1-tonne of tailings and then followed by an approximately 25 tonne test starting in the second half of 2022, which will be completed in a dynamic, outdoor environment in Timmins, Ontario near to the project site. Canada Nickel has already started the design of the 1-tonne tote test and has produced the tailings required for this. The 25-tonne pilot test will require a mineral processing pilot plant to generate the tailings which provides the additional opportunity to demonstrate the metallurgical flowsheet at scale and generate bulk concentrate for testing in flowsheet development efforts aimed at the downstream processes. The larger scale pilot test is being planned for the second half of 2022.

Cautionary Statement

The test results described herein are preliminary in nature and may not be representative of conditions or results in an operating environment, particularly as it pertains to the representativeness of mineralization, moisture content, changes in weather conditions, process water chemistry and tailings emplacement configuration, including the rate at which tailings are covered with fresh material, among other parameters. There is no certainty that the results reported herein will be realized in an operating environment. Further studies are recommended to expand the scale of testing to better understand the potential for carbon sequestration to be realized in an operating environment.

Qualified Person and Data Verification

Arthur G. Stokreef, P.Eng (ON), Project Metallurgist of Canada Nickel and a "qualified person" as such term is defined by National Instrument 43-101, has reviewed the technical information in this news release on behalf of Canada Nickel Company Inc.

About Canada Nickel

Canada Nickel Company Inc. is advancing the next generation of nickel-cobalt sulphide projects to deliver nickel and cobalt required to feed the high growth electric vehicle and stainless steel markets. Canada Nickel Company has successfully registered and applied for trademarks in various jurisdictions for NetZero Nickel™, NetZero Cobalt™ and NetZero Iron™ and is pursuing the development of processes to allow the production of net zero carbon nickel, cobalt, and iron products. Canada Nickel provides investors with leverage to nickel and cobalt in low political risk jurisdictions. Canada Nickel is currently anchored by its 100% owned flagship Crawford Nickel-Cobalt Sulphide Project in the heart of the prolific Timmins-Cochrane mining camp. For more information, please visit www.canadanickel.com.

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Cautionary Statement Concerning Forward Looking Statements

This press release contains certain information that may constitute "forward-looking information" under applicable Canadian securities legislation. Forward looking information includes, but is not limited to, the metallurgical results, the timing and results of the feasibility study, the results of Crawford's PEA, including statements relating to net present value, future production, estimates of cash cost, proposed mining plans and methods, mine life estimates, cash flow forecasts, metal recoveries, carbon footprint and sequestration levels, estimates of capital and operating costs, timing for permitting and environmental assessments, realization of mineral resource estimates, capital and operating cost estimates, project and life of mine estimates, ability to obtain permitting by the time targeted, size and ranking of project upon achieving production, economic return estimates, the timing and amount of estimated future production and capital, operating and exploration expenditures and potential upside and alternatives. Readers should not place undue reliance on forward-looking statements.

Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Canada Nickel to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. The PEA results are estimates only and are based on a number of assumptions, any of which, if incorrect, could materially change the projected outcome. There are no assurances that Crawford will be placed into production. Factors that could affect the outcome include, among others: the actual results of development activities; project delays; inability to raise the funds necessary to complete development; general business, economic, competitive, political and social uncertainties; future prices of metals or project costs could differ substantially and make any commercialization uneconomic; availability of alternative nickel sources or substitutes; actual nickel recovery; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; accidents, labour disputes, the availability and productivity of skilled labour and other risks of the mining industry; political instability, terrorism, insurrection or war; delays in obtaining governmental approvals, necessary permitting or in the completion of development or construction activities; mineral resource estimates relating to Crawford could prove to be inaccurate for any reason whatsoever; additional but currently unforeseen work may be required to advance to the feasibility stage; and even if Crawford goes into production, there is no assurance that operations will be profitable.

Although Canada Nickel has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results to differ from those anticipated, estimated or intended. Forward-looking statements contained herein are made as of the date of this news release and Canada Nickel disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise, except as required by applicable securities laws.