

FPX Nickel Subsidiary CO2 Lock Corp. Secures B.C. Site and Completes Kinetic Testing for Standalone Carbon Capture and Storage Project

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VANCOUVER, April 24, 2023 - [FPX Nickel Corp.](#) (TSXV: FPX) (OTCQB: FPOCF) ("FPX" or the "Company") is pleased to provide an update on the activities of CO2 Lock Corp. ("CO2 Lock"), its majority-owned subsidiary focused on establishing standalone operations for the permanent storage of carbon dioxide in brucite-rich serpentinized peridotite ("BRSP") host rock. Since its founding in 2022, CO2 Lock has made significant progress in two important respects, acquiring a highly prospective land package in central British Columbia for future carbon capture and storage ("CCS") operations, and completing laboratory testwork to demonstrate that the superior carbon reactivity of brucite can lead to permanent carbon storage with significant advantages over nature-based and other geologic solutions.

Highlights

- CO2 Lock has acquired a 100% interest in the SAM project, a 41 km² land package strategically located near large industrial carbon dioxide emission sources in Prince George
- Sampling program at SAM has demonstrated significant brucite values over a large area, with at least 4 km x 2 km of brucite, mineralization levels comparable to those observed at FPX's Decar Nickel District
- Successful completion of laboratory testwork utilizing rock and water samples designed to fully characterize the kinetics of the reaction rates, and sequestration potential of BRSP deposits for standalone CCS projects
- Upcoming field and laboratory work to incorporate hydrogeology, geology, water and bulk rock sampling for CCS process development and scale-up towards pilot-scale and field demonstrations, including the development of detailed techno-economic analysis ("TEA") and life cycle assessment ("LCA") for standalone CCS operations

"We are pleased to see the significant progress made by CO2 Lock during its first year of existence," commented Martin Martini, FPX's President CEO. "In acquiring a highly prospective land package and advancing the technical understanding of carbon mineralization in brucite-rich geological settings, the CO2 Lock team is aggressively advancing along the path to commercialization of large-scale, standalone CCS projects, providing FPX shareholders with free exposure to this generational market opportunity."

Background

On March 30, 2022, FPX announced the formation of CO2 Lock as a self-funding entity to pursue geoscience-related CCS opportunities. FPX retains 100% of the carbon credits associated with CCS on its own properties, and will retain a right of first refusal of charge, any intellectual property developed by CO2 Lock for the benefit of FPX's own properties.

CO2 Lock is working on three pathways to commercial CO₂ storage utilizing BRSP deposits; ex-situ rock, ex-situ water, and in-situ rock. All three pathways utilize labile magnesium cations which combine with CO₂ to form stable carbonate minerals. The ex-situ rock pathways involve processing material from BRSP deposits above ground, mixing rock or water with CO₂ through various chemical processes, and generating carbon minerals at surface. The in-situ pathway involves injecting CO₂ rich water into BRSP deposits at depth; this process is similar to Project Orca in Iceland where a joint venture between Carbfix and Climeworks utilize basalt to permanently mineralize CO₂ in-situ.

SAM Project in Central British Columbia

The SAM project is CO2 Lock's proposed initial location for CCS based on brucite-rich serpentinized peridotite host rock. Located approximately 50 kilometers southwest of Prince George, BC, the 41 km² SAM Project was staked in 2022 based on regional geological mapping and geophysics showing a large, serpentinized ultramafic body composed primarily of harzburgite, dunite, and olivine. This ultramafic assemblage is very similar to FPX's Decar Nickel District, where foundational research on CO₂ mineralization has been conducted, and which forms the basis for CO2 Lock's process.

CO2 Lock conducted a rock sampling program at the SAM property over two phases in 2022. The initial phase focused on reconnaissance with widespread sample coverage over mapped ultramafics. The second phase was a focused program targeting higher-grade brucite zones identified from the analytical results of the first phase and structural mapping. A total of 115 representative chip samples and two bulk samples were collected over the claims between the two phases. The SAM sampling program demonstrated significant brucite values over a large area, with at least 4 km x 2 km over 2.0% brucite, mineralization levels greater than those observed in surface samples at FPX's Decar Nickel District.

Additional field work at SAM is planned in summer 2023, incorporating hydrogeology, geology, water and bulk rock sampling for CCS process development and scale-up towards pilot-scale and field demonstrations.

Kinetics Testwork

CO2 Lock performed a series of experiments on rock and water samples at BC Research Inc. ("BCRI") and their Technology Commercialization and Innovation Center. BCRI is part of a group of companies vertically integrated to provide clients with a unique technology development and commercialization ecosystem in the industrial area of chemical, petrochemical, and materials processes and technologies.

Experimentation at BCRI consisted of bringing CO₂ in contact with alkaline water collected from Decar; the water contained high magnesium and calcium cation concentrations and exceeded pH 11. During the testwork program, labile cations bonded with CO₂ in the aqueous phase, causing precipitation of solid, stable carbonate minerals, locking away CO₂. The initial testwork completed by CO₂ Lock aligns with expectations, showing carbonate precipitation does occur and is sensitive to variations in pH, initial water chemistry, and other parameters. Notably, some water samples began precipitating solid minerals spontaneously in the field, when brought in contact with the atmosphere, demonstrating the potential for efficient kinetics in the carbon mineralization reaction.

Rock-based test work comprised a number of dissolution and mineralization experiments on BRSP rocks collected from CO₂ Lock's SAM property and focused on characterizing brucite-CO₂ reaction kinetics, CO₂ consumption rate, brucite dissolution, and quantifying labile magnesium under different initial conditions. Results showed that under ambient conditions the BRSP sample rapidly reached maximum magnesium liberation in less than a minute, confirming brucite is among the most reactive minerals. After the rapid dissolution associated with the brucite content of the sample, the magnesium liberation continues at a lower rate, an indication of potentially significant CO₂ mineralization contributions from other minerals commonly found in BRSP deposits. CO₂ Lock is undertaking a systematic approach to improve magnesium liberation and CO₂ mineralization performance characteristics.

This bench-scale testing was performed on samples weighing less than a kilogram; planned work through 2023 will upscale this significantly through hundreds of kilograms with surface and sub-surface BRSP from CO₂ Lock's tenures. The pilot tests at the scale of mineralizing kilograms of CO₂ per test are planned to be conducted in summer 2023, with continued increased through to the tonnes-scale in 2024.

The outcomes of the bench-scale testing have been used to develop and validate a computer model of mineralization and development of process flowsheets for storage facilities. Additionally, this experimental work is being combined with previous data to develop computer models for comprehensively capturing the real-world CO₂ mineralization capacity of rocks and water associated with BRSP deposits. This model will be utilized to determine the total mineralization potential of CO₂ Lock's SAM project, potential future acquisitions, upcoming technoeconomic analysis and life cycle assessment work as CO₂ Lock moves towards field deployment and testing. CO₂ Lock will incorporate this work into LCA work and TEA scheduled for later in 2023, which will be key work in determining which of the multiple paths to commercializing BRSP for CCS that CO₂ Lock chooses to advance through to pilot and field demonstrations.

Dr. Peter M.D. Bradshaw, P. Eng., FPX Nickel's Qualified Person under NI 43-101, has reviewed and approved the technical content of this news release.

About FPX Nickel Corp.

[FPX Nickel Corp.](#) is focused on the exploration and development of the Decar Nickel District, located in central British Columbia, and other occurrences of the same unique style of naturally occurring nickel-iron alloy mineralization known as awaruite. For more information, please view the Company's website at www.fpxnickel.com or contact Martin Turenne, President and CEO, at (604) 681-8600 or ceo@fpxnickel.com.

On behalf of [FPX Nickel Corp.](#)

"Martin Turenne"
Martin Turenne, President, CEO and Director

Forward-Looking Statements

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