CO_2LOCK

Using the earth's minerals to remove carbon from the atmosphere — permanently.

December 14, 2023

www.co2lockcorp.com

The world is in a race to Net Zero, looking for solutions to dramatically reduce the amount of carbon in the earth's atmosphere.

At CO_2 Lock, we are using science to accelerate and optimize what already happens in nature: mineralizing carbon in certain rocks.

We call it **Hard Rock Carbon Removal**.

A decade of our research demonstrates a mineral called brucite reacts with CO_2 best, removing and locking carbon away permanently. We have mapped the world for large geological formations containing brucite, and we believe it will be invaluable to any future Net Zero scenario.

Rocks cooled the earth before. They can do it again.

The earth cooled dramatically 25 million years ago after India crashed into Asia and uplifted the Tibetan Plateau

The newly formed Himalayas began to weather and erode. Countless megatonnes of carbon in the atmosphere were captured and permanently locked away.

Hard rock carbon removal is using the same process to tackle today’s climate challenges.

Moving past first-generation carbon offsetting

Early carbon capture has often been nature-based with methods like reforestation seen as a leading method of pulling carbon from the air.

But it's not a permanent solution; when trees die, carbon is released back into the atmosphere.

Not so with mineralization.

When carbon reacts with minerals like brucite, new minerals form and the carbon is locked away for geologic time — ***forever***.

There are concerns over . . . reliability and cost-effectiveness of [nature-based solutions] compared to engineered alternatives, and their resilience to climate change.

The Royal Society
https://royalsocietypublishing.org/doi/10.1098/rstb.2019.0120

Underground reservoir storage poses problems

Depleted hydrocarbon reservoirs and saline aquifers are also used for CCS, however there are issues with this storage as well.

Leakage is a concern, both through natural rock fractures as well as unused or abandoned wellbores.

Not so with mineralization.

CO_2 is stored in a stable, mineral form where it can be verified - *at any time.*

“One major concern with CCS is that CO_2 could leak out of these underground reservoirs into the surrounding air and contribute to climate change, or taint nearby water supplies.”
O’Callaghan, 2018. This was originally published in Horizon, the EU Research and Innovation magazine
https://ec.europa.eu/research-and-innovation/en/horizon-magazine/storing-co2-underground-can-curb-carbon-emissions-it-safe

We are CO_2 Lock

- Focused on commercializing hard rock CO2 removal using Brucite-Rich Serpentinized Peridotite (BRSP)
- Acquired 6 years of significant lab and field work that confirms the high-CCS potential of BRSP
- BRSP is far-superior host for carbon mineralization compared to other host rocks, resulting in faster and larger CO2 storage volumes at a lower unit cost
- Strategically located, wholly owned tenure for project development
- Advancing 3 CCS methods to progressively increase technical and commercial knowledge Ex-situ water from BRSP Ex-situ CO2 injection into processed BRSP In-situ injection directly into BRSP at depth
- Key differentiators are volume, price, verification and permanency
- Experienced management team with project development, financing, and technical experience to advance commercialization
- Spun out of FPX Nickel, a Canadian resource company currently developing the Decar Nickel District deposit in British Columbia, where research highlights brucite's superior CO_2 removal potential

A proven, experienced management team

Science-based and laser focused on our mission: to think beyond the mine site and solve problems at global scale.

David Molinski, BA, MNRM

INTERIM CEO & FOUNDING DIRECTOR

- 25-year career in energy sector and clean technology sectors
- Extensive leadership experience with the BC Government and private sector

Dr. Nader Mosavat, PHD

CTO

- Scientist and Engineer (P.Eng.) with 12 years experience in research & technology development in the fields of CCUS, Energy, and Environment
- Significant international leadership experience in strategic R&D, innovation management, and spearheading industrial & technical programs

Dr. Peter Bradshaw, P.Eng.

SCIENTIFIC ADVISOR & FOUNDING DIRECTOR

- Chairman, FPX Nickel Corp.
- Geologist with 45 years international mineral exploration and R&D experience in over 30 countries
- Founder or co-founder of several successful companies which are now public
- Member, Canadian Mining Hall of Fame
- Founder of BRIMM (Bradshaw Research Initiative for Minerals and Mining) at UBCw

Martin Turenne, CPA, CA

FOUNDING DIRECTOR

- President, CEO and Director of FPX Nickel Corp.
- Senior executive with over 15 years' experience in the commodities industry
- Extensive leadership experience in strategic management, fundraising, economic analysis, financial reporting, regulatory compliance and corporate tax

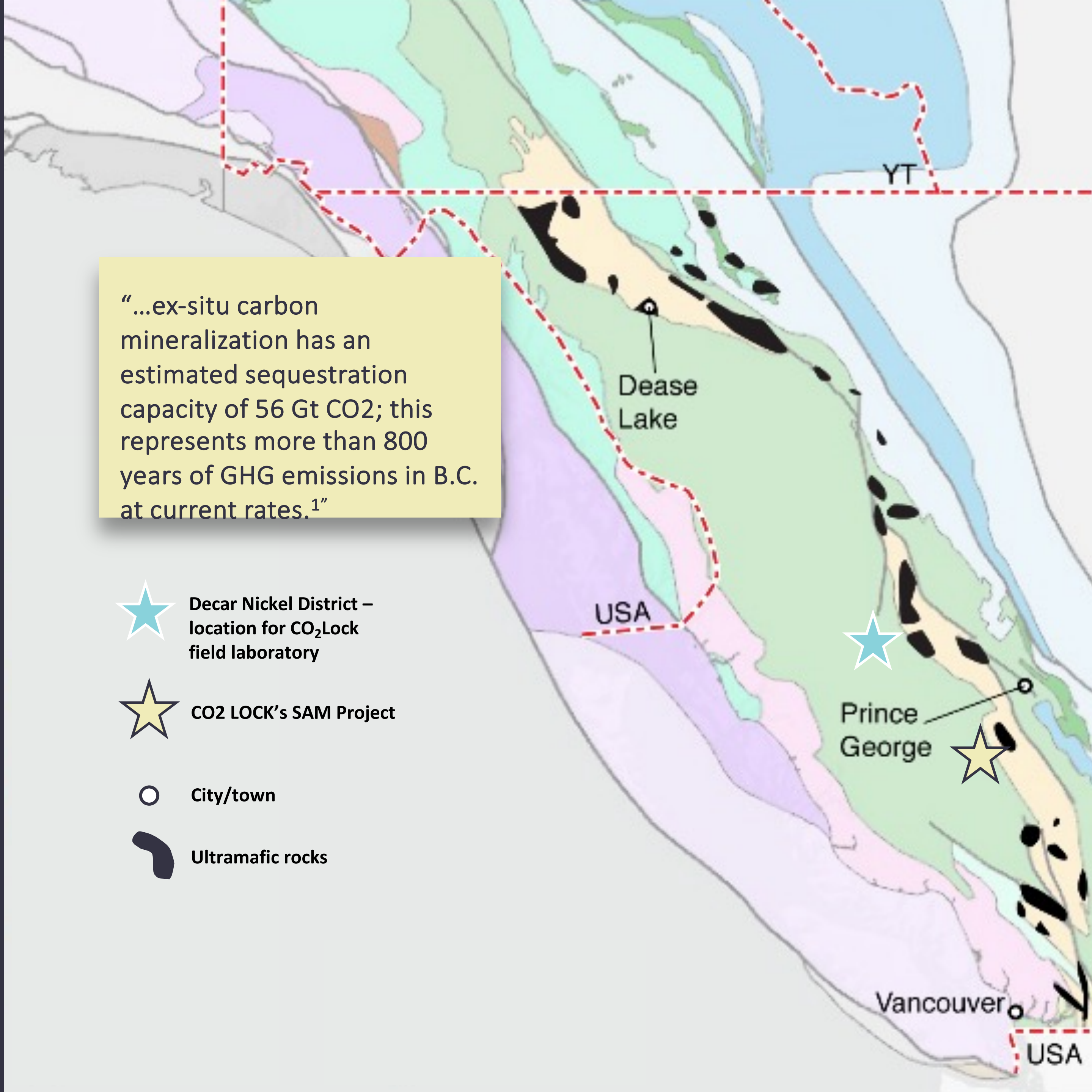
Carbon Removal project “must haves”

WHAT THE MARKET NEEDS	CO_2 LOCK DELIVERS
Large volume Initially 1 Mtpa & Scaling 10 to 100 times	✓
Low cost $100US/ton or less	✓
Verifiable Confirmed CO_2 storage	✓
Permanent storage Geological time	✓

We are built on a foundation of proven science

Independent research supported by Geoscience BC and UBC studying Serpentinized Peridotites (ultramafic rocks) in BC found they have massive CCS potential

"…ex-situ carbon mineralization has an estimated sequestration capacity of 56 Gt CO2; this represents more than 800 years of GHG emissions in B.C. at current rates.[1]"



1. The Carbon Mineralization Potential Of Ultramafic Rocks In British Columbia: A Preliminary Assessment Mitchinson, D., Cutts, J., Fournier, D., Naylor, A., Dipple, G., Hart, C.J.R., Turvey, C., Rahimi, M., Milidragovic, D. (2020). Geoscience BC Report 2020-15/MDRU Publication 452,

The brucite advantage

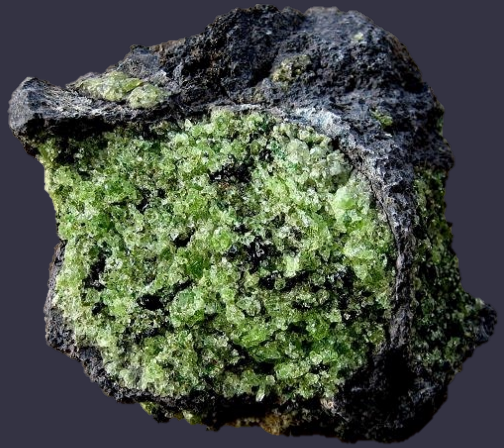
Faster CO_2 reaction rate and larger volume than basalts means lower cost and faster offsets

CO_2 LOCK stores CO_2 in hard rock called serpentinized peridotites – the brucite-rich form is a superior host with significantly faster and larger storage potential than basalts

BRUCITE-RICH
SERPENTINIZED PERIDOTITE

HIGH Rate of Reaction with CO_2

HIGH Mineralization potential

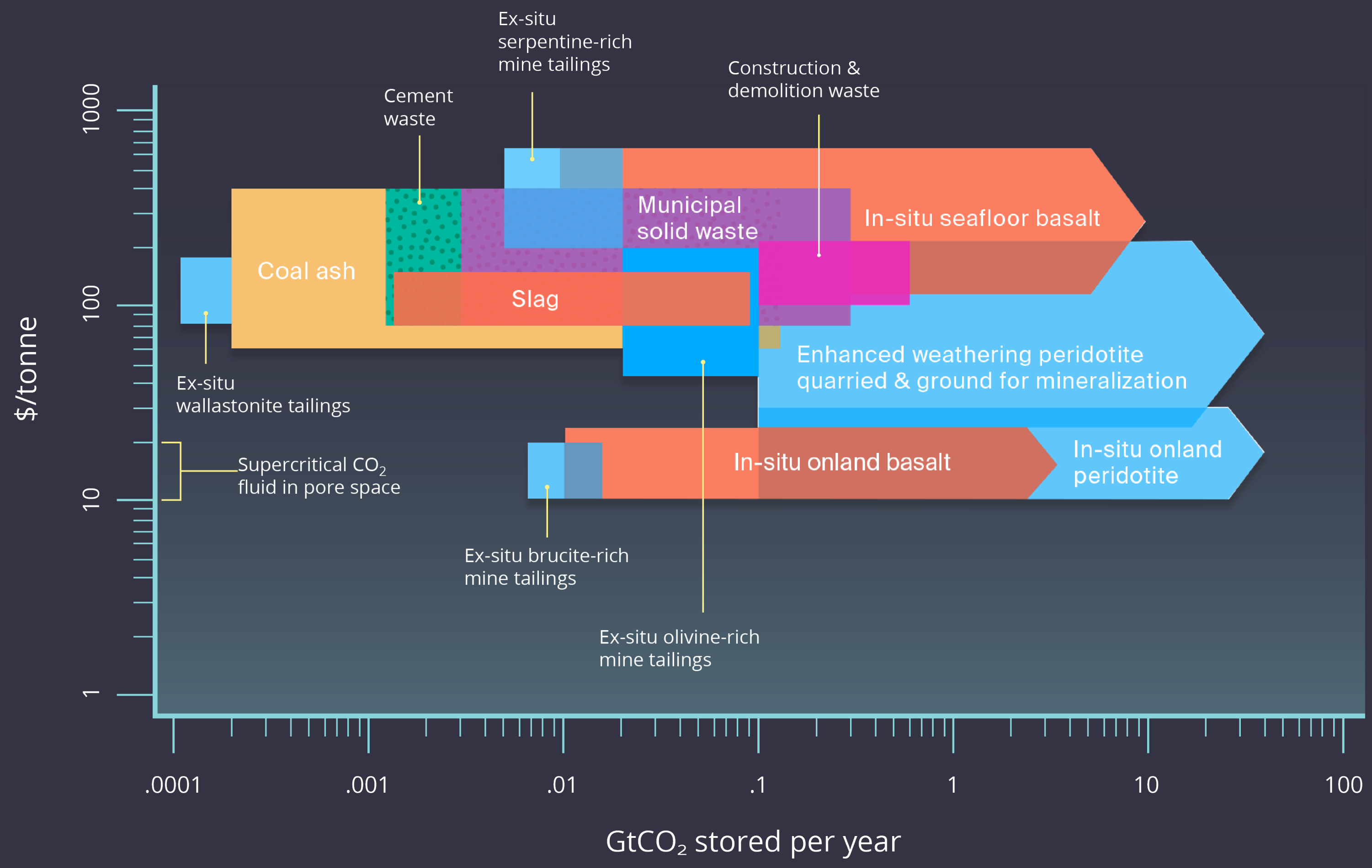


OLIVINE
(basalts, peridotites)

LOW Rate of Reaction with CO_2

LOW Mineralization potential

Peridotites provide enormous sequestration capacity

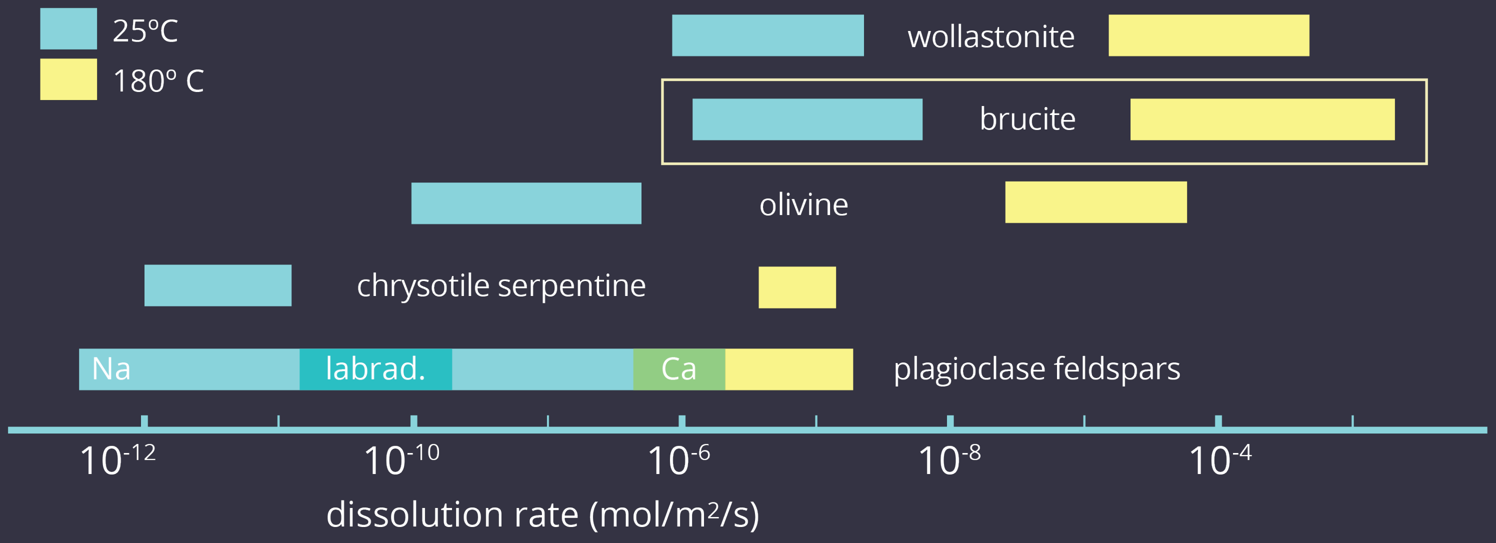


+ Global sequestration capacity of peridotites is higher than nearly all other potential carbon mineralization sinks

+ The total sequestration potential of peridotites may be more than 100,000 $GtCO_2$

Wilcox et al, (2021). CDR Primer. Available online at: www.cdrprimer.org

Brucite provides a reaction rate advantage



+ Brucite reacts with CO_2 significantly faster than silicate minerals utilized by other carbon mineralization companies

+ CO2 Lock is targeting brucite rich serpentinized peridotites, which contain high quantities of serpentine, adding additional sequestration capacity

Carbon mineralization landscape

	Ex-Situ Water	Ex-Situ Rock		In-Situ Water+CO_2 Injection	
Companies	CO2LOCK	Heirloom Carbon	CO2LOCK	CarbFix	CO2LOCK
Host Rock	BRSP	Basalt	BRSP	Basalt	BRSP
CO_2 Source	Multiple Options	Passive Atmospheric	Multiple Options	DAC	Multiple Options
Technical Complexity	Low	Low	Low	High	High
Cost/Tonne CO_2	Low	High	Low	High	Low
Carbonization Rate	High	Low	High	Low	High

Our focus

Carbon mineralization using brucite works. Our focus in the immediate term is to determine which of three methods works best.

1. *Ex Situ Water Mineralization*
   Highly alkaline water is extracted from brucite rich rocks. A CO_2 stream is injected into the water to mineralize the CO_2. The end product may be used for agriculture, forestry and other commercial purposes

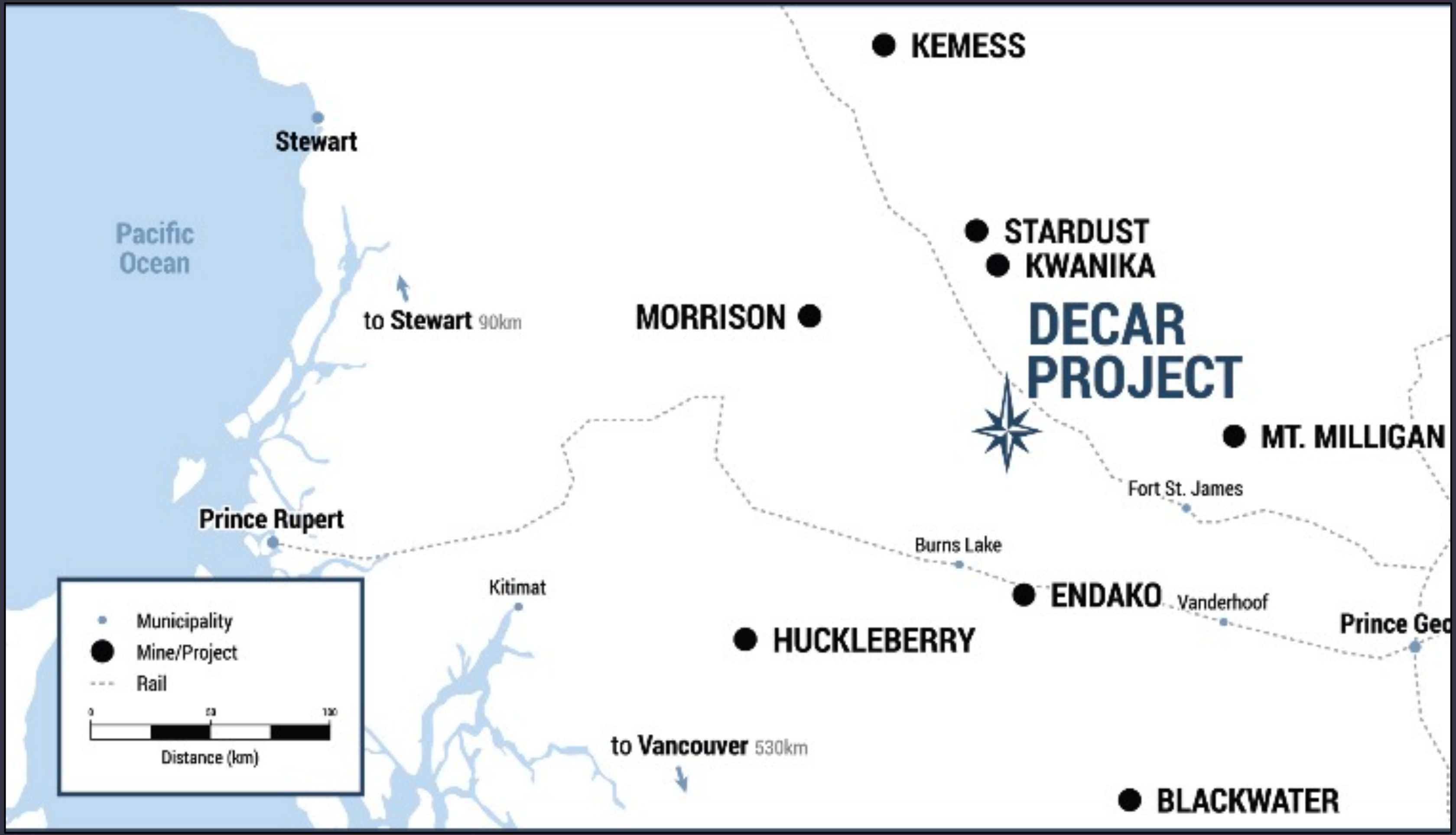
2. *Ex Situ Processed Materials*.
   Brucite rich rocks are extracted and processed. The processed rock is either churned and watered to accelerate and maximize reaction with atmospheric CO_2, or a CO_2 stream is injected into the materials and the end product may be used in certain industrial applications.

3. *In Situ CO_2 Injection*.
   CO_2-rich fluids are injected underground into hard rock formations, where the CO_2 reacts with brucite and become locked underground permanently.

Free access to data and samples to advance the business

Complete access to the CCS samples and data on Decar Nickel District through FPX Nickel Corp.

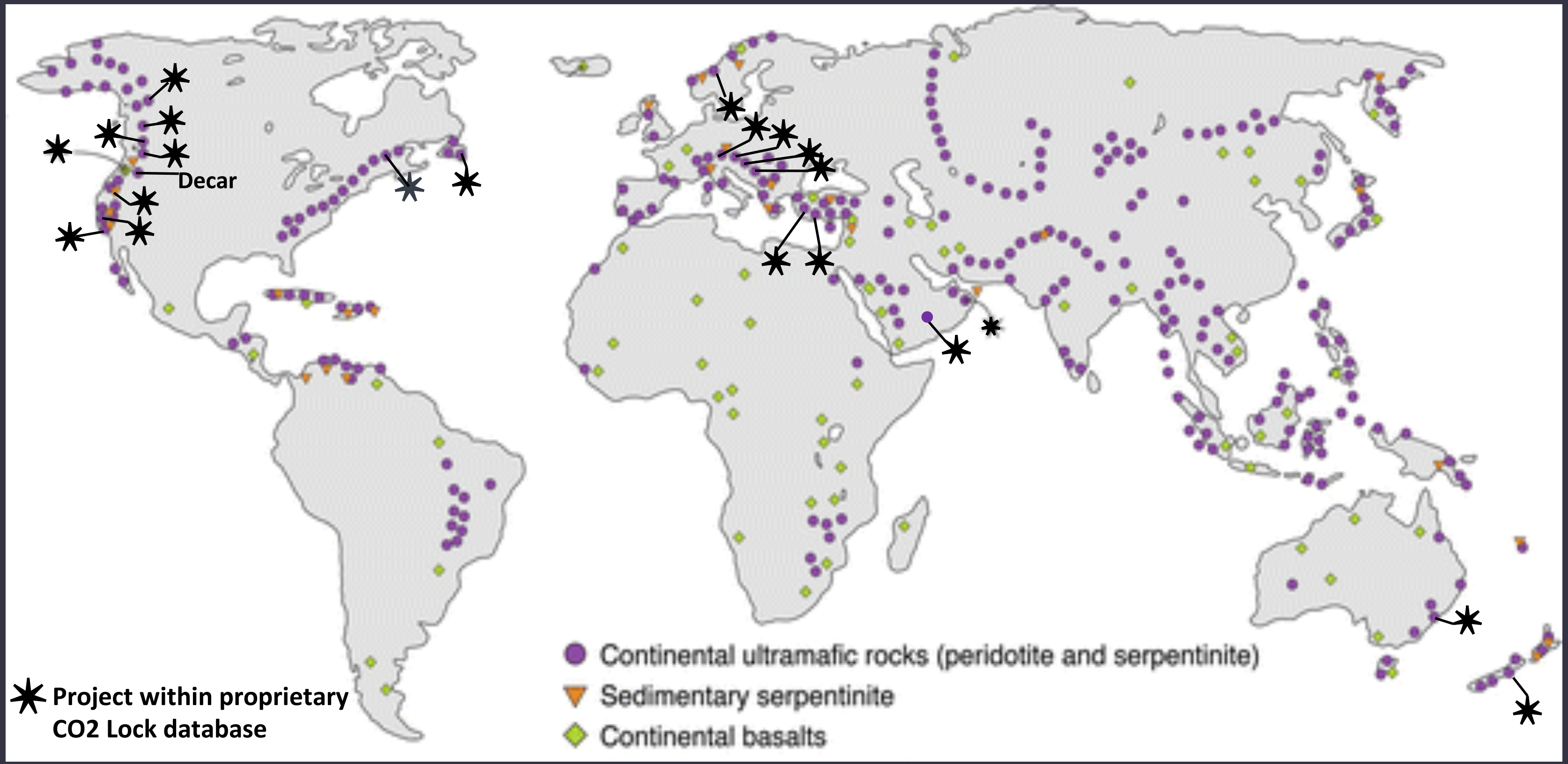
Decar: 245 sq km area in central BC where work to date indicate it is capable of ex-situ permanently storing megatonnes of CO_2 in processed rock



We've mapped the world for brucite and know where to find it.

CO_2 LOCK
has FPX Nickel's
global data on BRSP

Some of the global locations with BRSP have CCS potential by all three methods



We have a clear path to commercialization.

$1.7M

SEED ROUND COMPLETE

We have a clear and systematic plan to develop a preferred commercial solution to a lower carbon future.

2022

Phase 1: We have acquired land tenures in British Columbia and are currently conducting evaluation of the three mineralization methods to determine which is optimal. Our goal is a field demonstration in 2024. At the same time, we are acquiring land tenures in key international jurisdictions to show the global potential of our climate solution.

2023

Phase 2: We are scaling up prudently in the near-term: from one kilogram of CO_2 for initial lab work, to hundreds then thousands of kilograms planned next year as we prove out process, to a potential 100,000 kg/year of CO_2 at our planned large-scale demonstration project.

2024

Phase 2: 12 month field demonstrations for ex-situ rock, as well as final site investigation work for in-situ field demonstration well.

Initial site work and exploration on new acquisitions in other jurisdictions.

2026

Phase 4 – Operation Ex-Situ Rock and Global Project Short List

Commence initial Commercial Project

Identify and create prioritized list of global projects to advance

2028

2030

2032

Phase 5 – Global Expansion, Create Portfolio of Projects

Focus on global expansion

Create portfolio of global projects

Produce project development plans and economics for highest priority global projects

Our differentiators

Hard rock carbon removal is a permanent solution. Carbon is locked away forever.

We are accelerating a naturally occurring process to permanently store CO_2.

Building on existing technology

Our focus on brucite is independently estimated to be low-cost and high volume compared to other types of permanent and verifiable carbon capture

We are thinking beyond the mine site. We have mapped the world for brucite and know how to find it.

Proven science based on independent research

A proven team of mining and geological research experts in business to solve global problems at scale

Near term plans and catalysts

- Upcoming BC Research Inc experimentation and testing
- Project development preparation at SAM – continued geologic evaluation, site surveys, and hydrogeologic characterization
- Continue building technical team
- Non-dilutive funding opportunities

APPENDIX – The Science

CCS and Carbon Mineralization Market size

"Natural sources of alkalinity… could store on the order of 10GtCo2 per year"

"Worldwide, natural mineral feedstock available for CO2 mineralization is estimated as 108 Gt, which is sufficient to mineralize 5 · 107 Gt CO2"