SOURCEROCK LITHIUM BRINE PROJECT

Ontario's First Lithium Brine Project – Metal Energy Controls A Dominant Land Position of Untested Regional Lithium Brine Targets

Forward-Looking & Cautionary Statements

We Are In The Mineral Exploration & Development Business. It Is Inherently Risky, And All Investors Should Be Keenly Aware Of This

This presentation contains forward-looking statements. All statements, other than of historical fact, that address activities, events or developments that Metal Energy Inc. believes, expects or anticipates will or may occur in the future (including, without limitation, statements regarding the estimation of mineral resources, exploration results, potential mineralization, potential mineral resources and mineral reserves) are forward-looking statements. Forward-looking statements are generally identifiable by use of the words “may”, “will”, “should”, “continue”, “expect”, “anticipate”, “estimate”, “believe”, “intend”, “plan” or “project” or the negative of these words or other variations on these words or comparable terminology. Forward-looking statements are subject to a number of risks and uncertainties, many of which are beyond Metal Energy Inc.’s ability to control or predict, that may cause the actual results of the project to differ materially from those discussed in the forward-looking statements. Factors that could cause actual results or events to differ materially from current expectations include, among other things, without limitation, failure to establish estimated mineral resources, the possibility that future exploration results will not be consistent with Metal Energy Inc.’s expectations, changes in world commodity markets and other risks disclosed to the Canadian provincial securities regulatory authorities. Any forward-looking statement speaks only as of the date on which it is made and, except as may be required by applicable securities laws, Metal Energy Inc. disclaims any intent or obligation to update any forward-looking statement.

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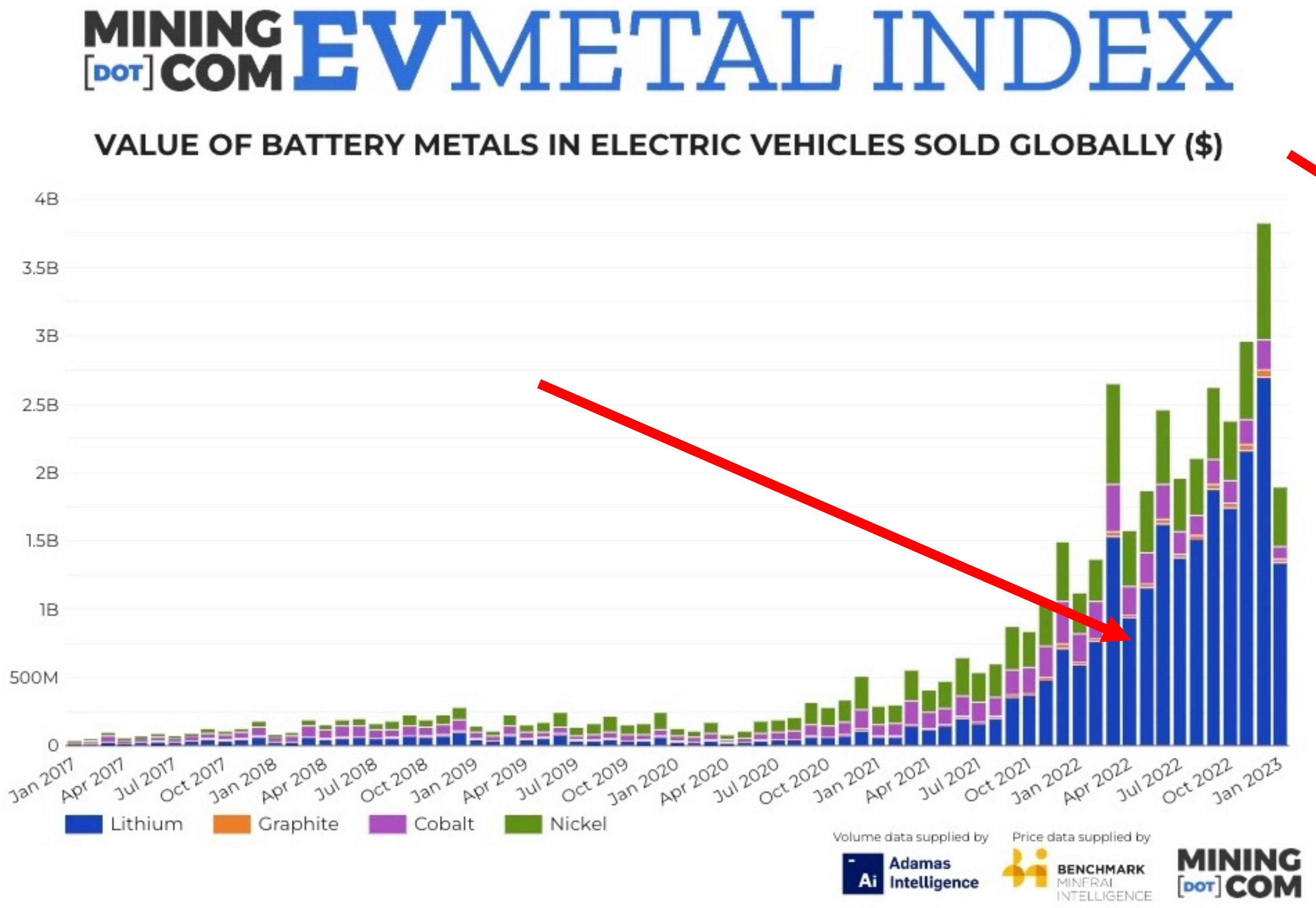
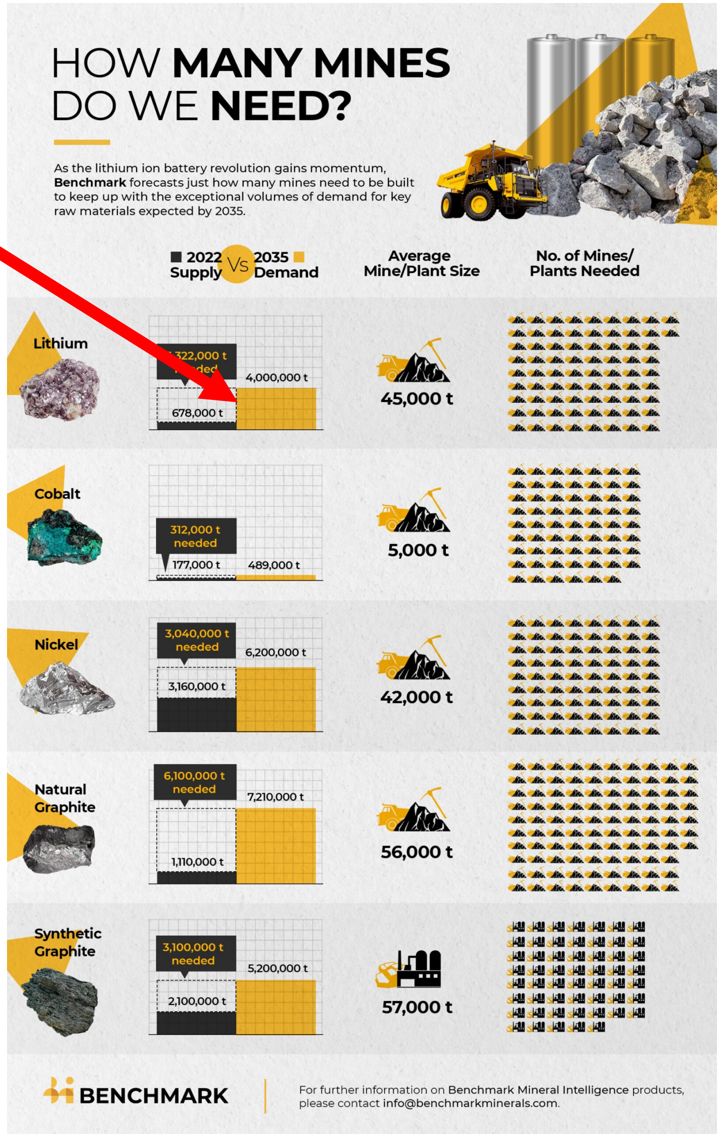
- The reader is cautioned that Metal Energy Inc. has not undertaken any independent investigation of the dimensions, quantity or grade of the mineralization referred to above, therefore this historical data should not be relied upon. Metal Energy Inc. views this historical data as a conceptual indication of the potential size and grade of deposits in the area, and this data is relevant to ongoing exploration efforts. In view of when the resources were estimated and the differences in metal price and operating costs prevailing at the time compared to today.
- Metal Energy Inc. does not consider the resources to be compliant with respect to requirements of NI43-101. Metal Energy Inc. does not treat any of the historical resources as current mineral resources or mineral reserves
- The technical information contained in this Metal Energy Inc. Presentation has been reviewed and approved by Mike Sweeny, P.Geo, Vice-President, Exploration & Development of Metal Energy Inc., who is a Qualified Person as defined in "National Instrument 43-101, Standards of Disclosure for Mineral Projects." All currency numbers are in $CAD unless otherwise stated.
- *Note on Conceptual Exploration Targets: The potential tonnage and grade of these targets are conceptual in nature. There has been insufficient exploration to define them as mineral resources and it is uncertain if further exploration will result in the targets being delineated as mineral resources. Metal Energy Inc only considers these targets to be an indication of the presence of mineralization on the property and of the potential of property to host an economic deposit at this time. Metal Energy Inc advises that no one should consider these targets as mineral resources.

SourceRock Li Brine Project | The Market



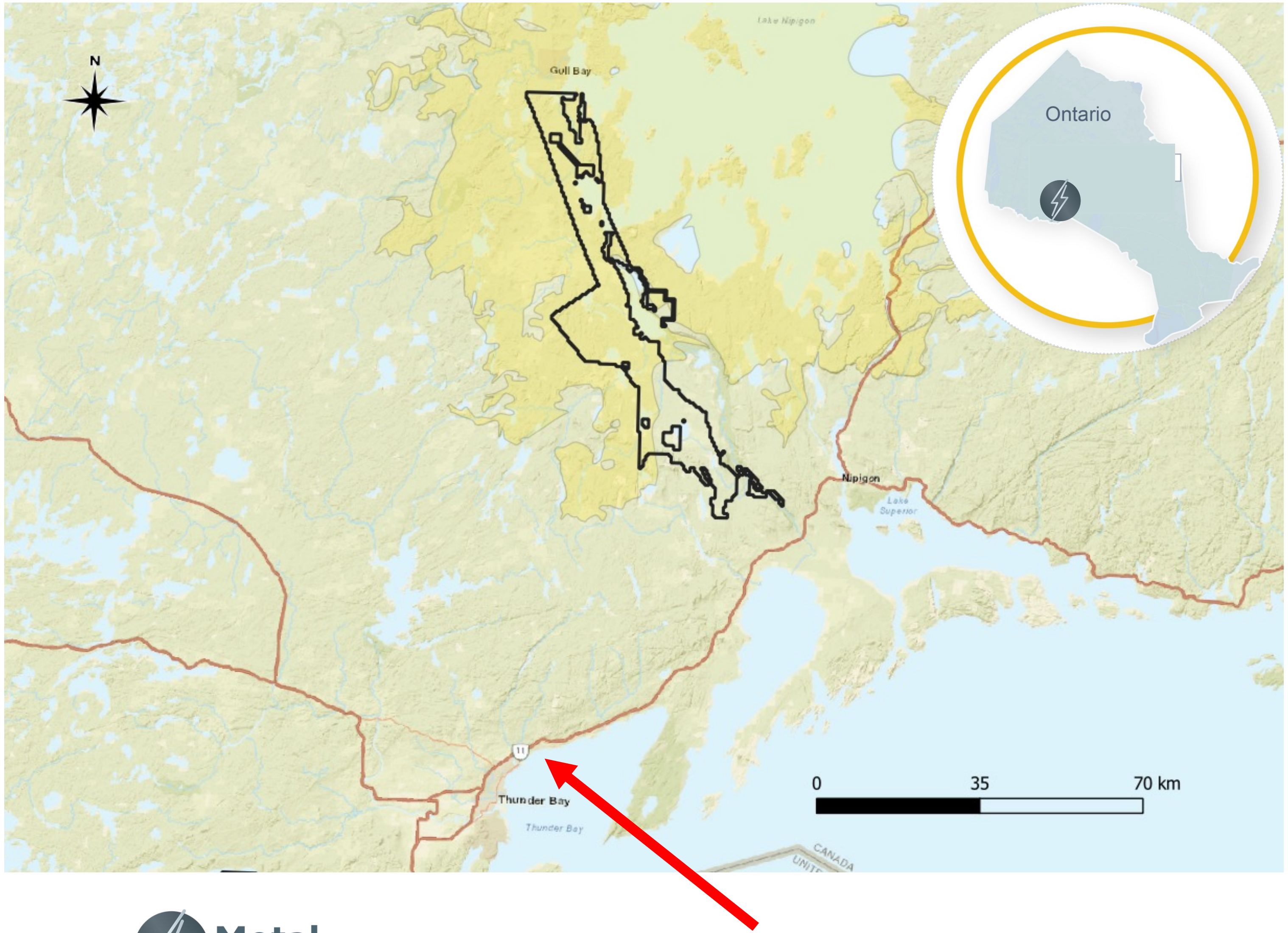


SourceRock Li Brine Project | Location

- Thunder Bay area – northwestern Ontario's exploration and mining hub for more than 100 years and counting

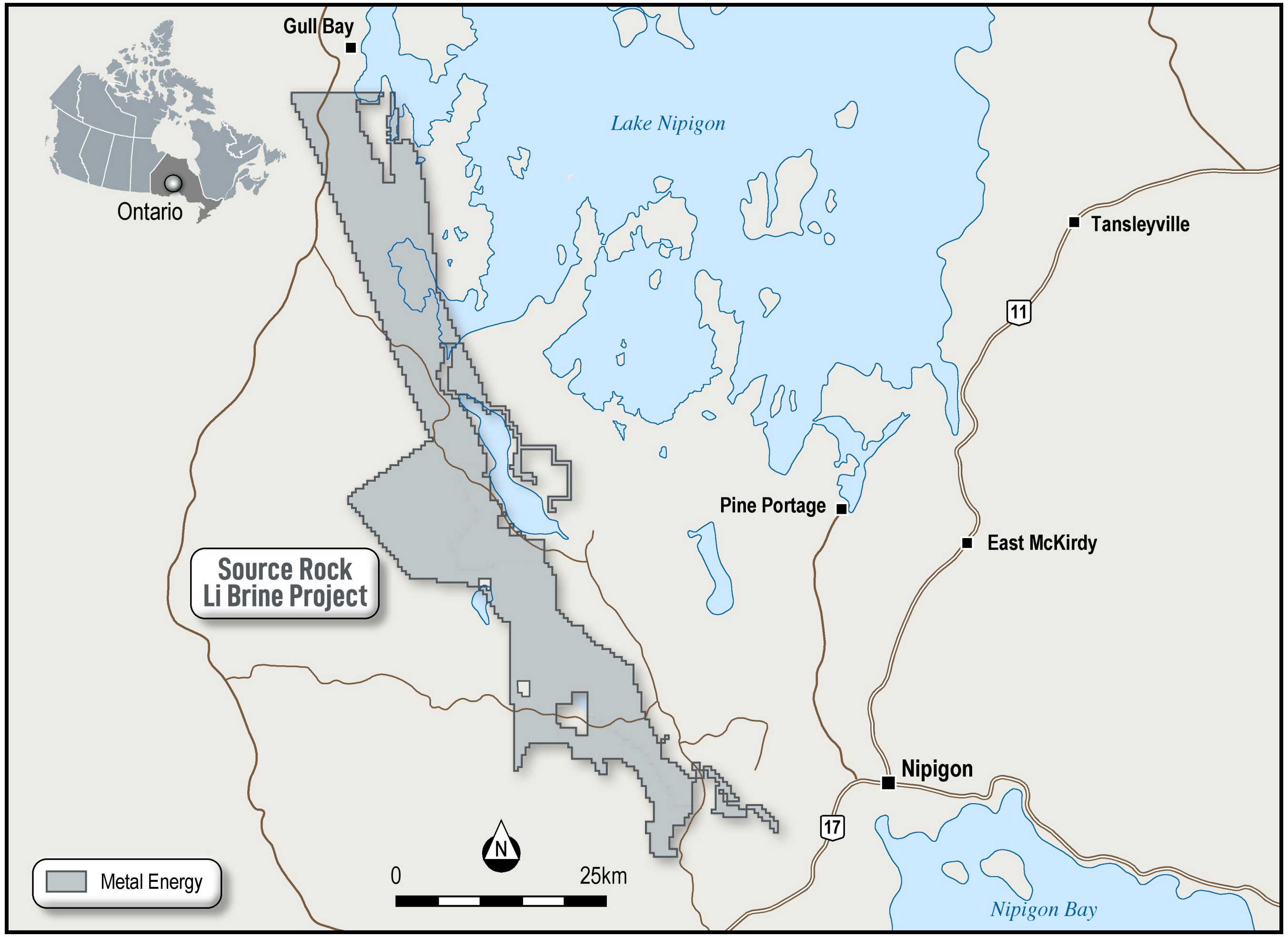
- Excellent infrastructure
    - highways
    - railroad
    - international seaport
    - powerlines
    - gas lines
    - labour force

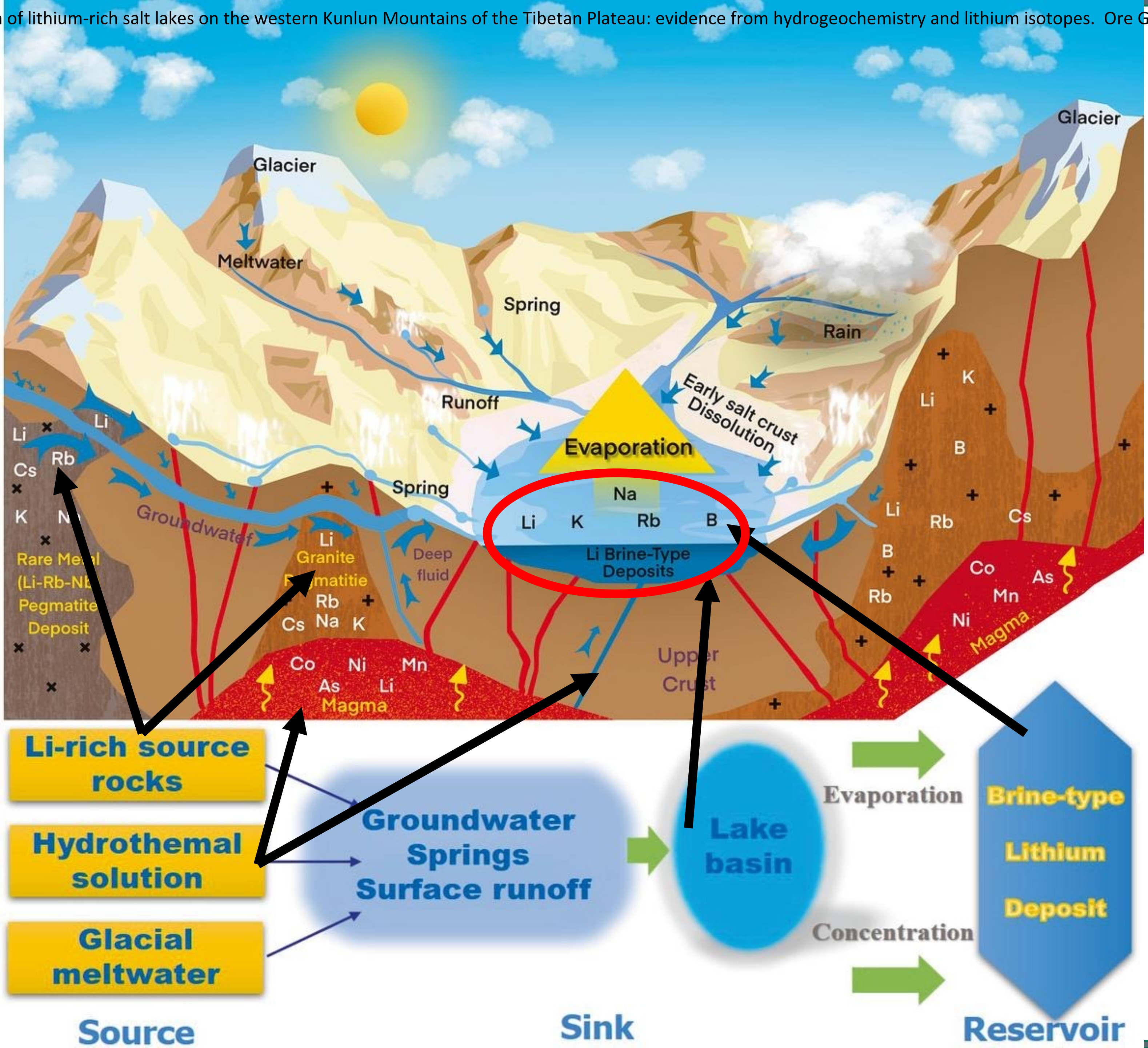
- Ontario and Federal government recently announced financial support for hard rock Li development for 3 separate companies in the area (Rock Tech Lithium, Green Technology Metals, Avalon Advanced Materials)

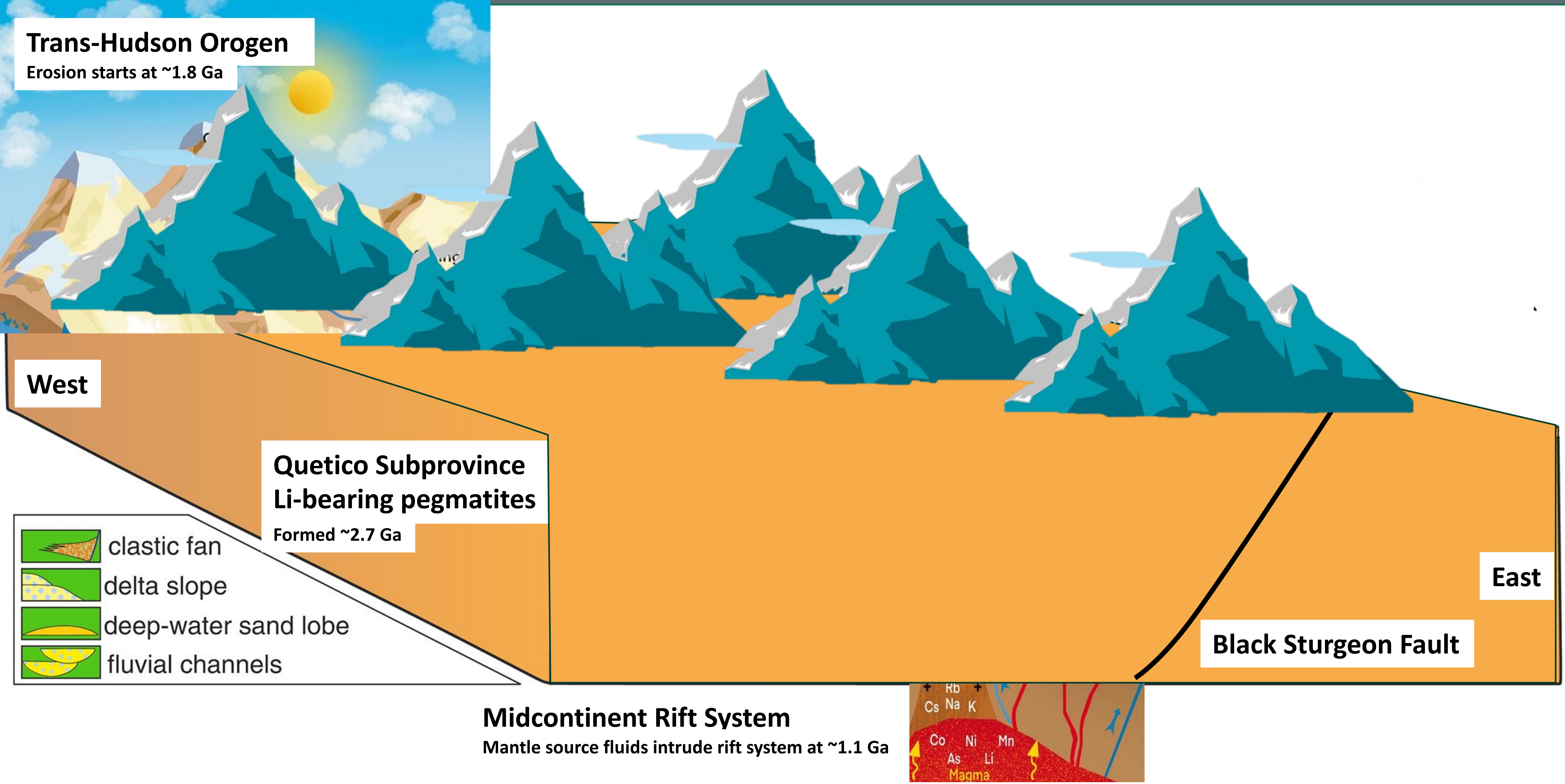


SourceRock Li Brine Project | The Project

- **Original project earn-in (6,468 hectares)**
- **Staked an additional 84,820 hectares**
- **Total land package 91,288 hectares (913 km^2)**
- **Measures ~ 10 to 20 km wide x 95 km long**
- **Covers the deepest parts of the Sibley sedimentary basin, with sedimentary thickness between 500 m and 1,000 m**



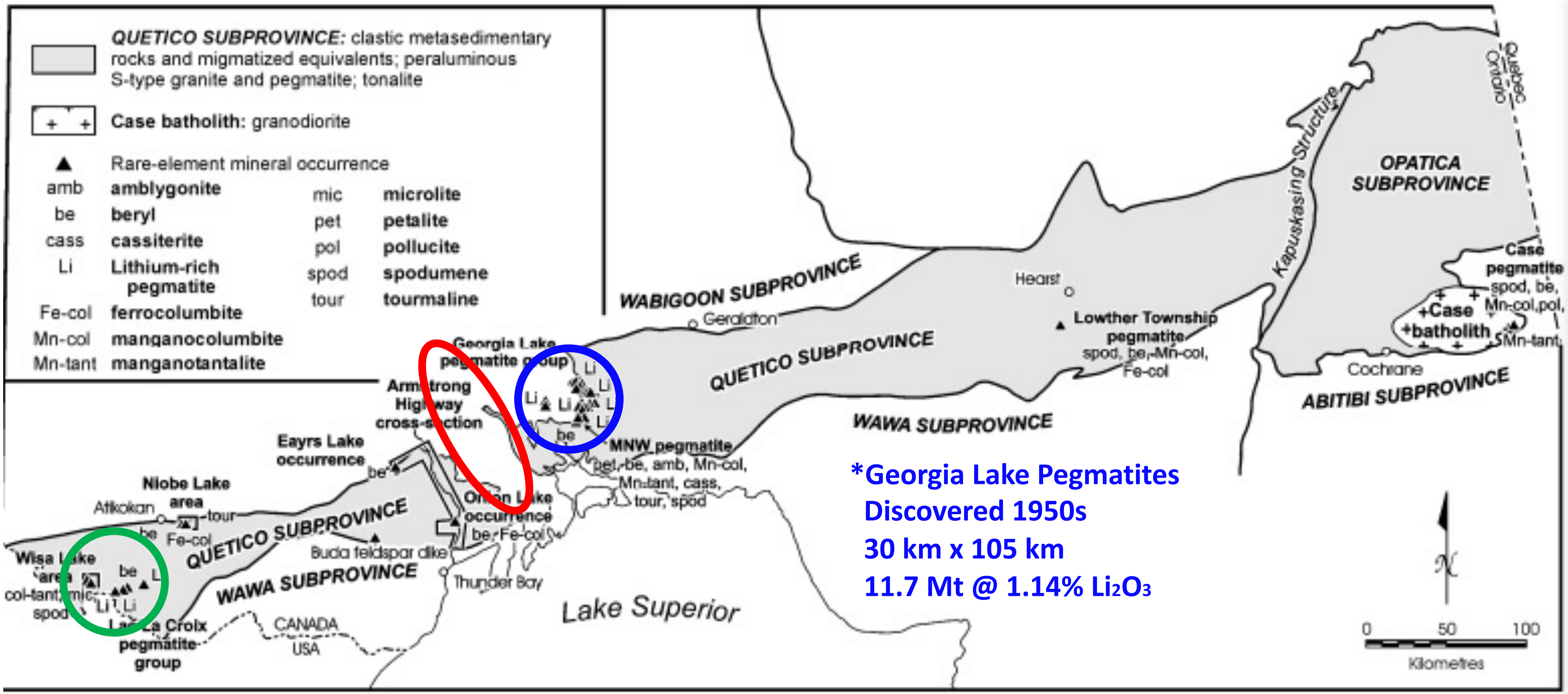

Glacier
Glacier
Meltwater
Spring
Rain
Runoff
Early salt crust Dissolution
Evaporation
Spring
Groundwater
Na
Li K Rb B
Li Brine-Type Deposits
Deep fluid
Rare Metal (Li-Rb-Nb) Pegmatite Deposit
Granite Pegmatite
Upper Crust
Magma
Magma
Li-rich source rocks
Hydrothermal solution
Glacial meltwater
Groundwater Springs Surface runoff
Lake basin
Evaporation
Concentration
Brine-type Lithium Deposit
Source
Sink
Reservoir



Balazs, A. et. al. 2017. Tectonic and climatic controls on asymmetric half-graben sedimentation: inferences from 3-D numerical modeling. Tectonics, volume 36, issue 10. Pages 2123 - 2141

Metal ENERGY

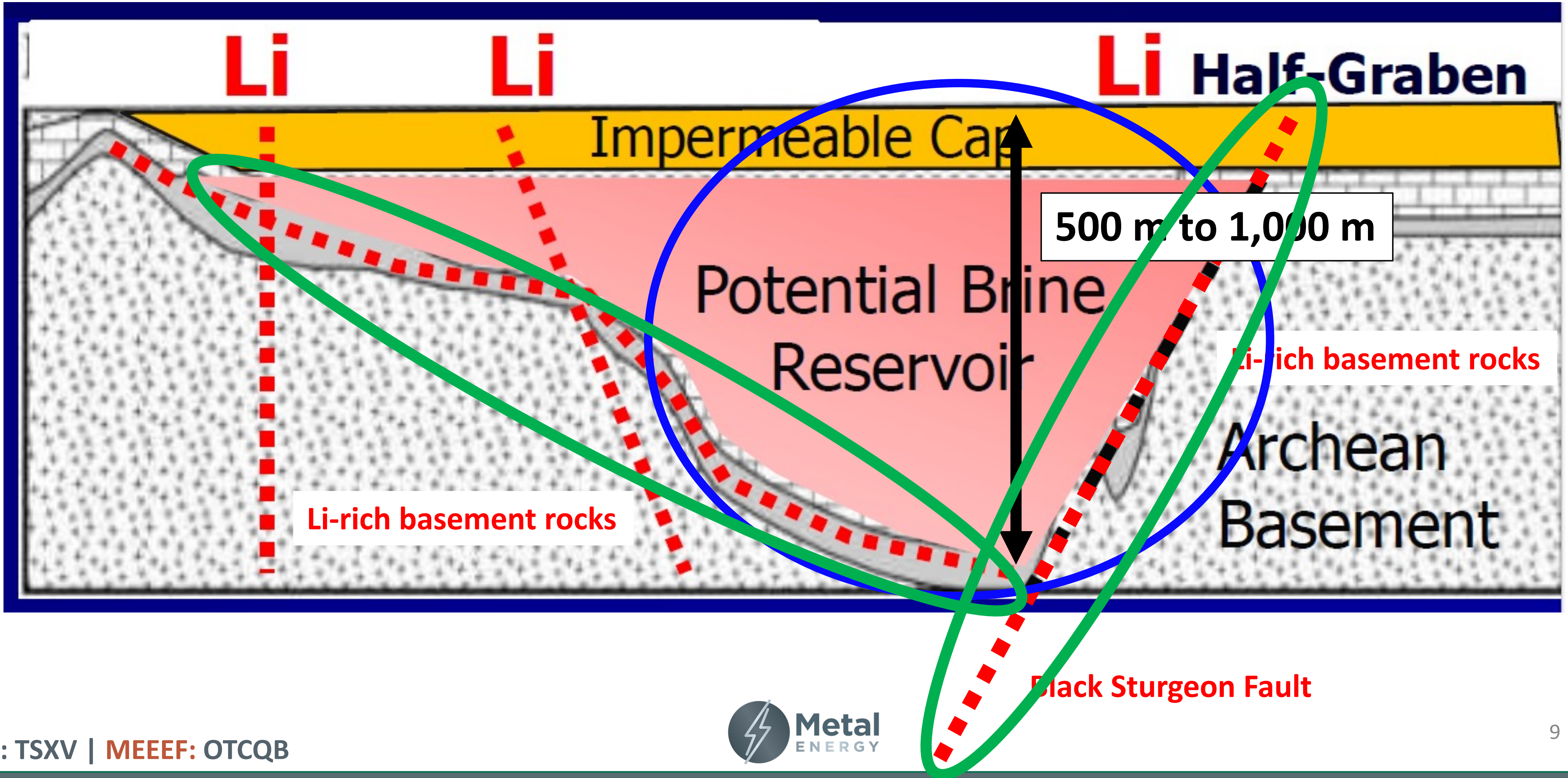
SourceRock Li Brine Project | Geological Setting



***Georgia Lake Pegmatites**
Discovered 1950s
30 km x 105 km
11.7 Mt @ 1.14% Li_2O_3

Image: Breaks, F.W. et. al. 2003. Fertile Peraluminous Granites and Related Rare-Element Mineralization in Pegmatites, Superior Province, Northwest and Northeast Ontario: Operation Treasure Hunt. OGS. Open File Report 6099
*Breaks, F.W. et. al. 2008. The Georgia Lake Rare-Element Pegmatite Field and Related S-Type, Peraluminous Granites, Quetico Subprovince, North-Central Ontario. OGS. Open File Report 6199

SourceRock Li Brine Project | Geological Setting



SourceRock Li Brine Project | Geological Setting

- **A 500 – 1,000 m deep, ancient salar basin (1.6 – 1.1 Ga)**
- **Pre-existing major Archean pegmatite field with notable Li occurrences (fertile parental Li source rock)**
- **Faulted (Black Sturgeon Fault, half-graben formation), sediments deposited (Proterozoic Sibley Basin), rifted (Midcontinental Rift System),**
- **<u>BILLIONS</u> of years of faulting and fluid-rock interactions increase potential for concentrating Li in brines**
- **Salt (Na) and sylvite (K) previously observed in drill holes in both sediments and basement rocks (pathfinders)**

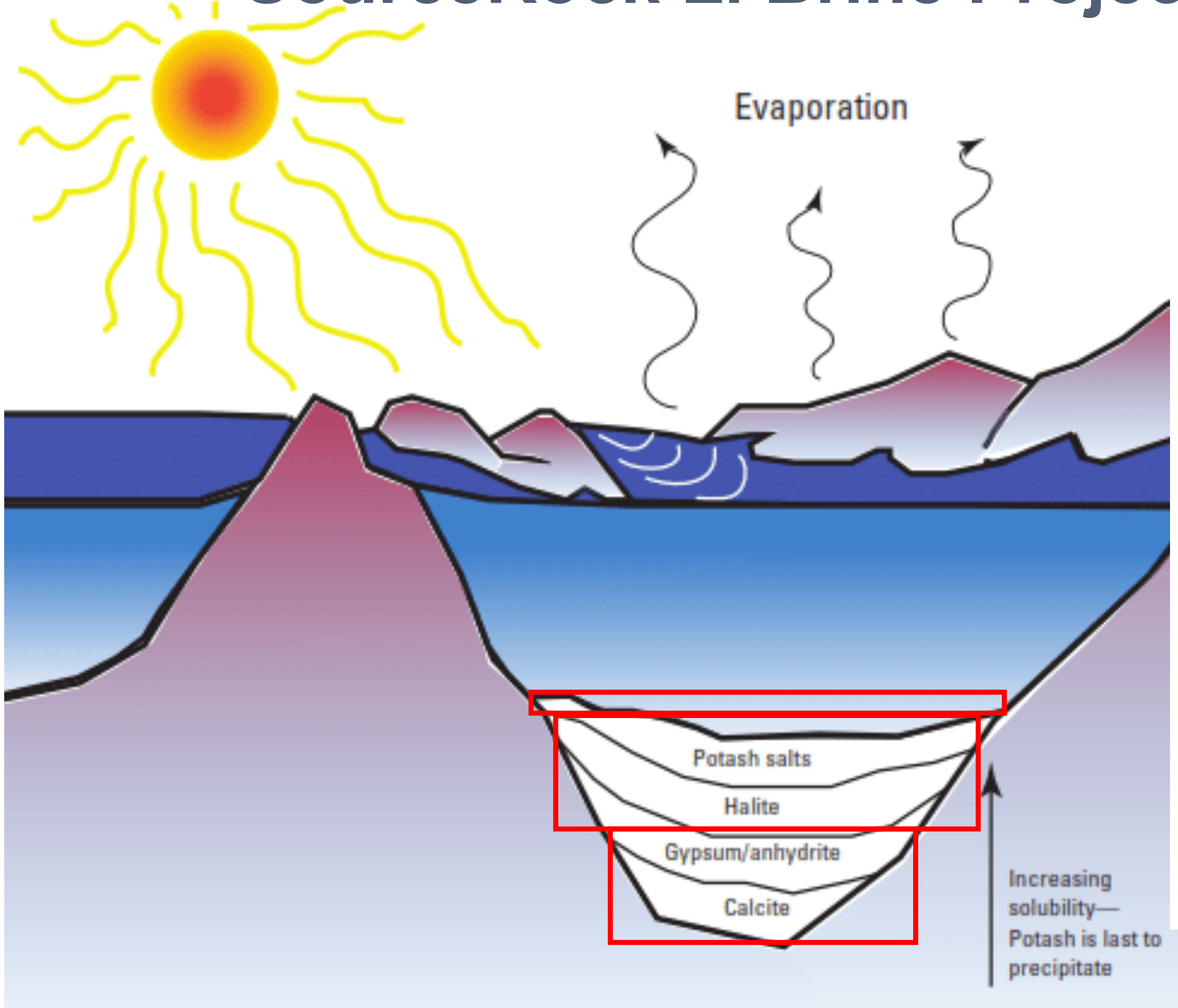
SourceRock Li Brine Project | Exploration History

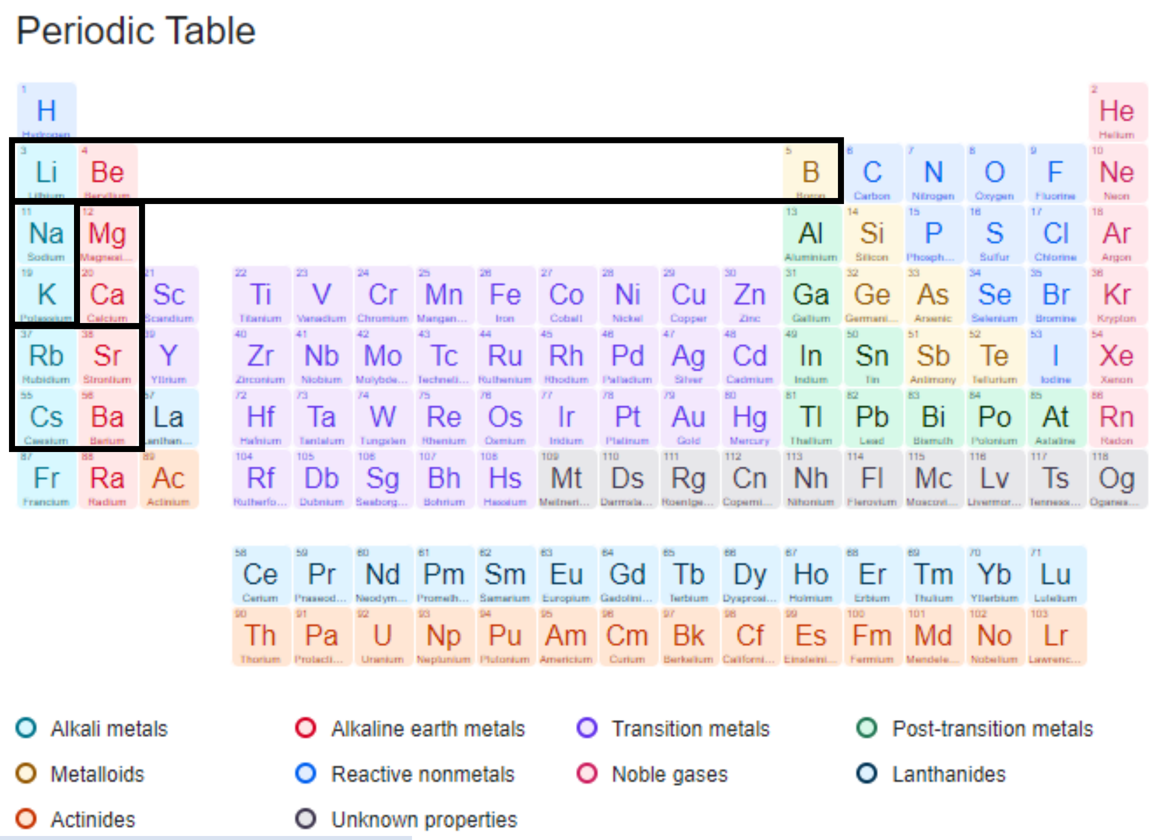
- **Early 2000's, Sibley Basin saw increased exploration for Ni-Cu-Co-PGE's and U**
  - Extensive airborne EM surveys identified laterally extensive EM anomalies, diamond drilling completed

- **Several deep drill holes indicate highly saline brines and salt features in both Proterozoic sediments and Archean basement rocks**
  - Halite and sylvite veins formed in Archean rocks at depths of up to 180 m beneath the Sibley sediments
  - Most of the Archean rocks are saturated with salt water
  - Pegmatites were intersected in most holes that reached Archean rocks (not assayed for Li?)
  - Sibley sediments sampled, returned ~60 m of 100 to 200 ppm Li (enriched!!)
  - Petrographic evidence indicates some sediments were previously cemented with halite but it has now largely been dissolved
  - Visual observations of salt encrustations forming on the drill rods and core

- **Exploration program results concluded the EM anomalies were likely due to saline fluids and faults**
  - And have never been followed up for Li brine exploration… UNTIL NOW!!

SourceRock Li Brine Project | Li Brine Chemistry





Bakker, E. 2018. L’impact de la croissance des plantes et l’absorption du potasse sur l’evolution mineralogique des argiles du sol. Earth Sciences. HAL ID: tel-01835126

SourceRock Li Brine Project | Li Brine Chemistry

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	Salar de Atacama[1]	Salar de Maricunga[2]	Salar de Olaroz[2]	Salar de Hombre Muerto[2]	Salar de Cauchari[3]
Country	**Chile**	Chile	Argentina	Argentina	Argentina
Lithium (mg/l)	**1,840**	1,250	690	740	590
Potassium (mg/l)	**22,630**	8,970	5,730	7,400	4,850
Magnesium (mg/l)	**11,740**	8,280	1,660	1,020	1,420

Potassium (K) concentration is typically 10x Li concentration in South American salars

At SourceRock, do sylvite veins (high concentrations of K) indicate high potential for Li?

SourceRock Li Brine Project | Salar de Atacama comparison

Lithium mine production (tonnes)

Rank	Country	Year				
		2018[2]	2019[3]	2020[4]	2021[4]	2022[5]
1	Australia	51,000	45,000	39,700	55,000	61,000
2	Chile	16,000	19,300	21,500	26,000	39,000
3	China	8,000	10,800	13,300	14,000	19,000
4	Argentina	6,200	6,300	5,900	6,200	6,200
—	United States	—	—	—	5,000[a]	—
5	Brazil	600	2,400	1,420	1,500	2,200
6	Zimbabwe	1,600	1,200	417	1,200	800
7	Portugal	800	900	348	900	600
8	Bolivia	—	700[8]		540[9]	—
—	Canada	2,400	200	—	—	500
—	Namibia	500	—	—	—	—

https://en.wikipedia.org/wiki/List_of_countries_by_lithium_production

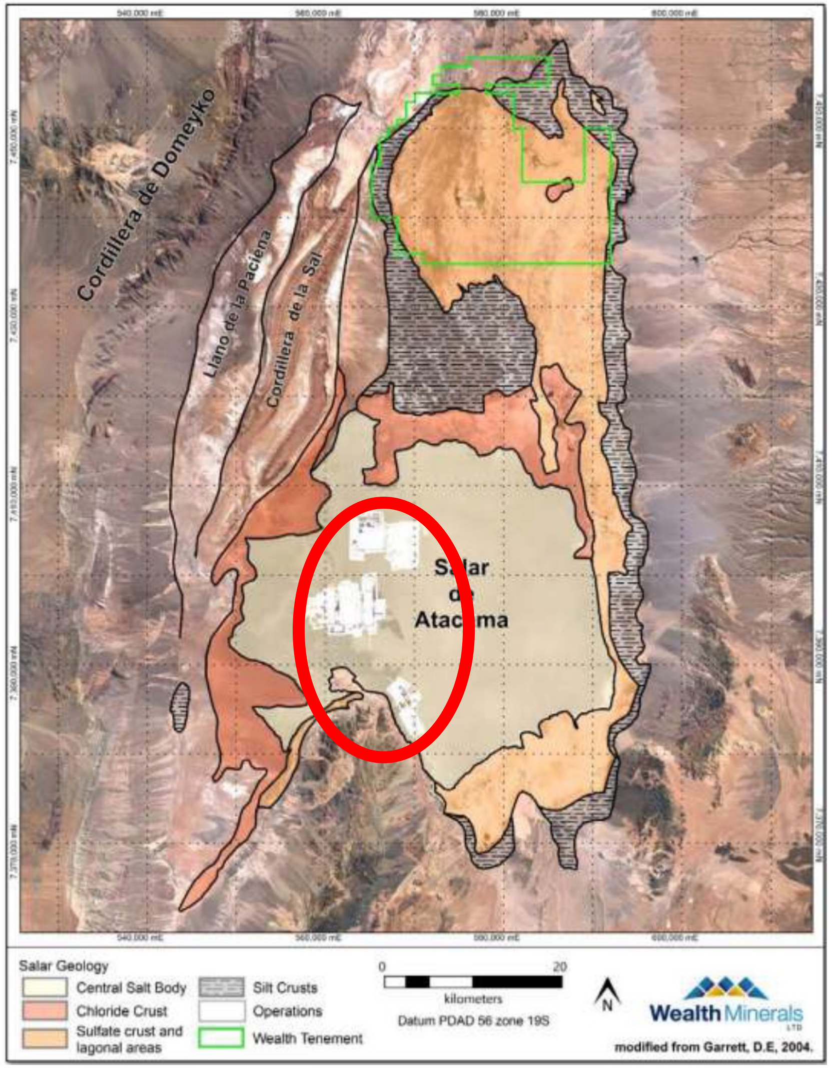
SourceRock Li Brine Project | Salar de Atacama comparison

https://wealthminerals.com/wp-content/uploads/2017/06/Atacama-43-101-final-mar10_17.pdf

Salar de Atacama
90km x 50 km

Production Area
25km x 10 km

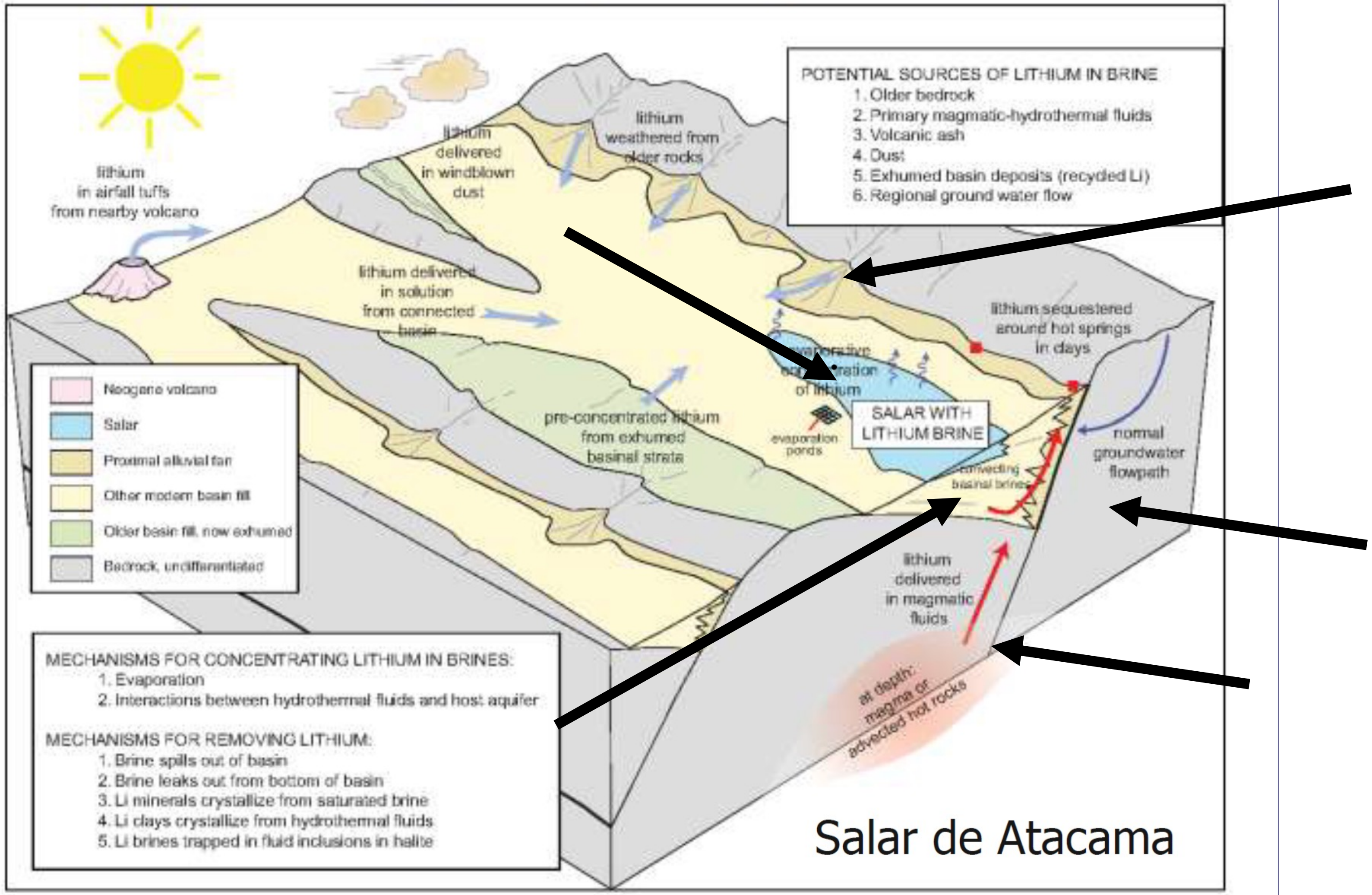
At SourceRock, the Half Graben and Archean Unconformity is comparable in Geological Setting and Scale to the world class Salar de Atacama where a closed fault-bounded basin hosts High-grade Brines up to 4000 ppm Lithium.



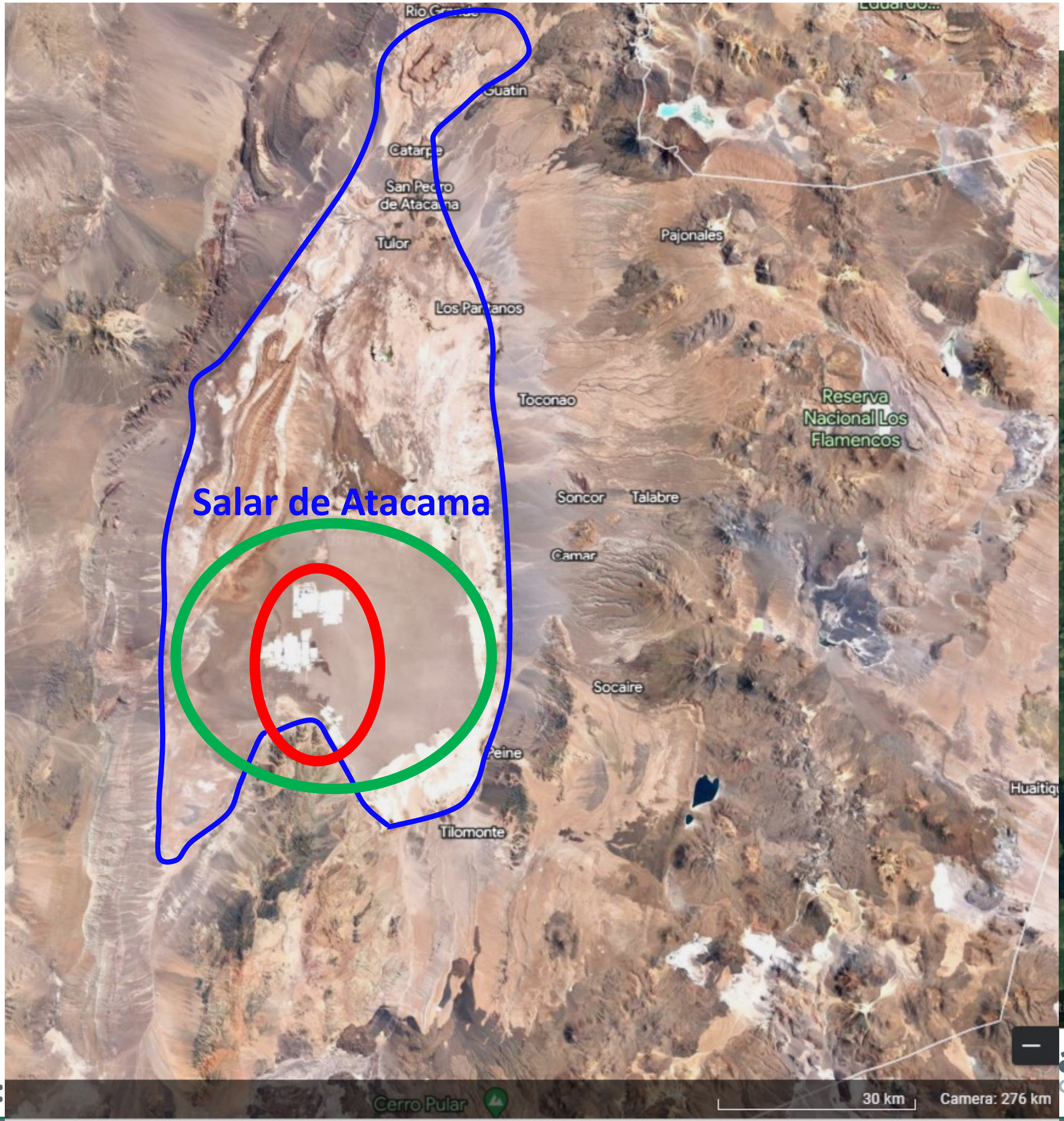
- ~30% of world Li production comes from brines in an area measuring 25 km x 10 km (250 km^2)
- SourceRock project area covers 913 km^2
- If there's Li in the brines at SourceRock, this represents a unique opportunity for Metal Energy dominating a regional geological area

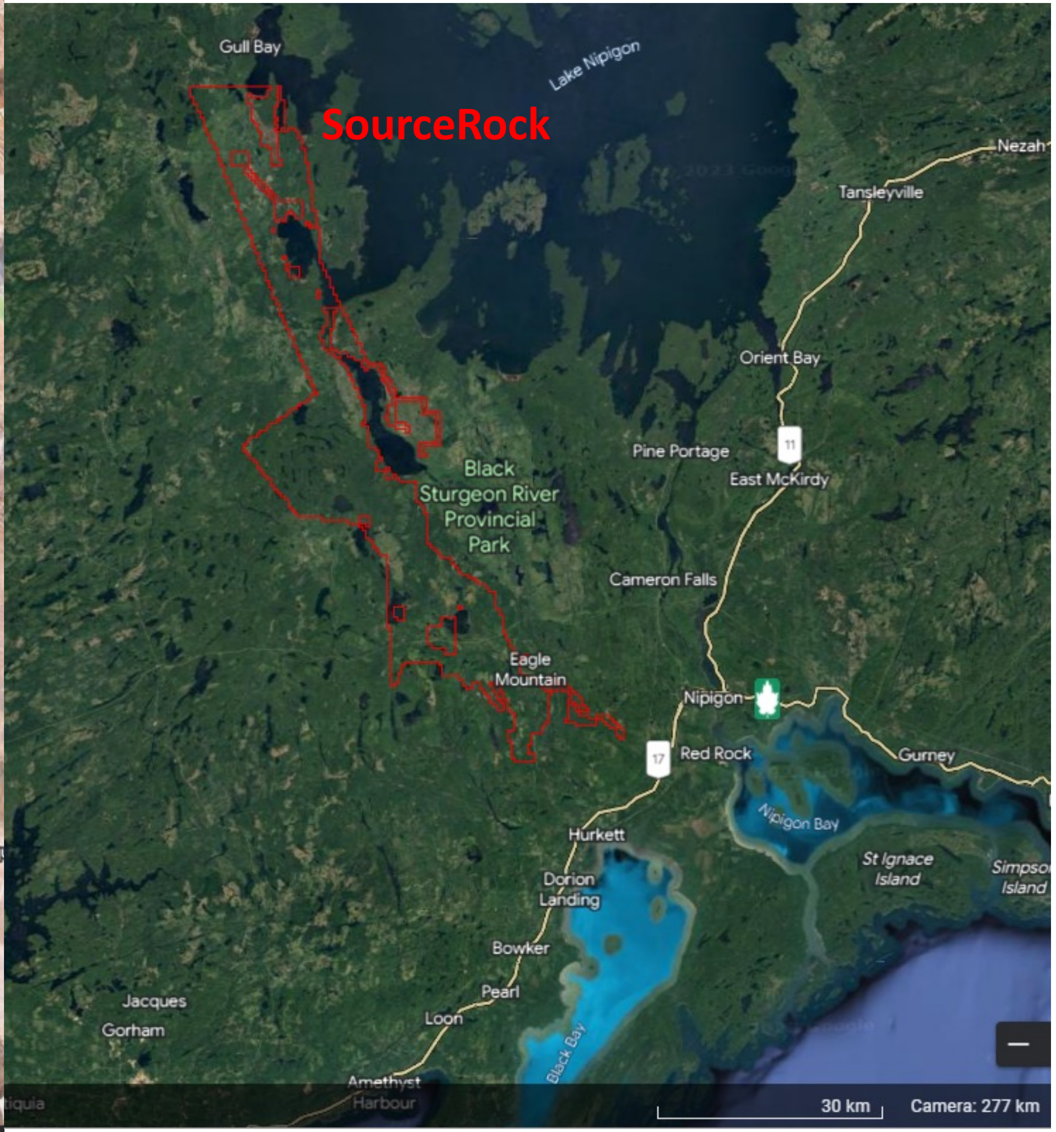
SourceRock Li Brine Project | Salar de Atacama comparison

Figure 10. Continental Lithium Brine Formation (L. Munk, S. Hynek, D. Bradley, D. Boutt, K. Labay, Hillary Jochens, 2016).



SourceRock Li Brine Project | Salar de Atacama comparison





SourceRock Li Brine Project | DLE

Direct Lithium Extraction (DLE):

- Concept is not new and has been around for decades
- Similarities with
  - ISR/ISL operations in the U industry
  - Oil & gas operations
  - REE separation
- Has to be tailored to each project individually
- Small footprints, low operating costs, high purity recovery

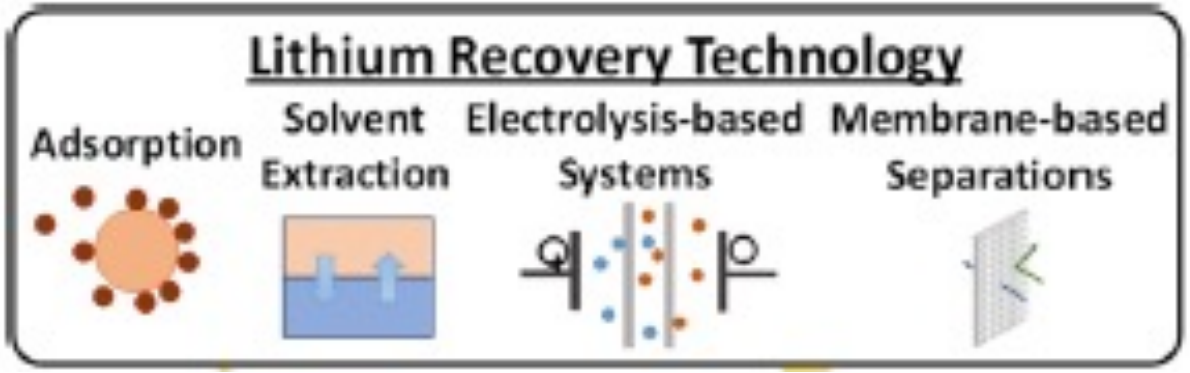
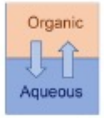
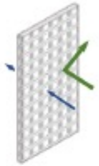


Table 1. Technologies for Li Extraction from Brine

Technology	Mechanism	Developer
Solar evaporation	 Lithium-containing solutions in ponds are concentrated by solar heating; lithium carbonate precipitated on addition of soda ash (sodium carbonate). $2LiCl + Na_2CO_3 \rightarrow Li_2CO_3 + 2NaCl$	Conventional
Phosphate precipitation	Lithium phosphate precipitated on addition of phosphoric acid. $3LiCl + H_3PO_4 \rightarrow Li_3PO_4 + 3HCl$	POSCO[8−10]
Ion exchange resin	 Lithium ions intercalated into layers of aluminum hydroxide on ion exchange resins. $LiCl{+}NaCl \cdot 2Al(OH)_3 \cdot nH_2O \rightarrow NaCl{+}LiCl \cdot 2Al(OH)_3 \cdot nH_2O$	Dow[11−13]
Aluminum based adsorbent	Lithium ions adsorbed onto aluminum hydroxide with the almost same mechanism as ion exchange resin above.	FMC[14−16] Simbol[17,18] Eramet[19]
Manganese based adsorbent	Lithium ions adsorbed within layers of manganese oxide such as $H_{1.6}Mn_{1.6}O_4$ and λ-MnO_2.	JOGMEC[20]
Titanium based adsorbent	Lithium ions adsorbed into layers of titanium oxide such as H_2TiO_3.	Neometals[21]
Solvent extraction	 Lithium ions extracted from water phase by oil phase. $R\text{-}H_{sol} + LiCl_{aq} \rightarrow R\text{-}Li_{sol} + HCl_{aq}$	Tenova[22,23]
Nanofiltration	 Lithium ions concentrated through differences in ion rejection ratios and water flow rejection by membrane	MGX[24,25]

Kumar, A., et. al. 2019. Lithium Recovery From Oil and Gas Produced Water: A Need for a Growing Energy Industry. American Chemical Society Energy Letters 2019, 4, 1471-1474

SourceRock Li Brine Project | Summary

Criteria for Developing Li Brine Potential (USGS)

REQUIREMENTS

- Arid climate
- Closed basin containing a salar or playa
- Tectonically driven subsidence
- Associated igneous or geothermal activity
- Suitable Li source rocks
- One or more "adequate" aquifers
- Sufficient time to concentrate a brine

SOURCEROCK CRITERIA

- **1.6-1.1 Ga, when Prot. rocks were exposed and salar(s) formed**
- **Rift basin, halite (salt) beds, cap rocks**
- **Black Sturgeon fault, half-graben, Midcontinent Rift System**
- **Igneous mantle plume, metamorphism, multiple events**
- **Quetico Subprovince Li pegmatite fields**
- **Highly porous and permeable stratigraphy, ground water under pressure**
- **More than a billion years**

SourceRock Li Brine Project | 2023 Exploration Plans

OBJECTIVES	STATUS
Land acquisition	Complete (~91,288 hectares, 913 km^2)
Initiate consultation with Indigenous and communities	Company introduction letters have been emailed, additional consultation required
Permit applications	Exploration permit issued for preliminary target areas on original project
Data compilation	On-going
Diamond drilling	Planned for Q3/Q4 2023 (proof of concept drill program)

SourceRock Li Brine Project | Future News?

WE HAVEN'T DISCUSSED:

- **Basement rock Li potential (Li fertile pegmatites)**
- **More detailed geological updates from historic operations**
- **Fluids under pressure (methane, helium potential?)**
- **Na batteries for EVs (already in development, CATL/BYD)**

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since spin-out in 2020

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