

Emp Metals Announces Successful DLE Pilot Project And Production Of Battery Grade Lithium Carbonate; Provides Update On Pea

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VANCOUVER, Dec. 5, 2023 - [EMP Metals Corp.](#) (CSE: EMPS) (OTCQB: EMPPF) ("EMP Metals" or the "Company") is report significant advancements and milestones of its lithium project: (i) successful results from a direct lithium extraction pilot project, (ii) successful production of pure battery grade lithium carbonate, (iii) expected timing of direct lithium extraction pilot, (iv) increased acreage in core operating area, and (v) update on the delivery of the Preliminary Economic Assessment ("PEA").

Direct Lithium Extraction: Pilot Test Results

Hub City Lithium Corp. ("HCL"), a subsidiary company to EMP, has successfully completed a large-scale pilot using the Platform developed by Energy Source Minerals ("ESM"), a privately held process technology company focusing on Direct Lithium Extraction in North America. The pilot, which processed 87,000 litres of brine from the Viewfield project area, successfully recovered 8,300 litres of concentrated eluent with an average lithium concentration of 1,430 mg/L (representing a 7.5x concentration from the feed brine provided). An average lithium recovery of >90% and an impurity rejection rate of 99.6% also verified by ESM. HCL plans to ship the highly concentrated eluent to a 3rd party for refinement into battery grade Lithium Carbonate.

Production of Battery Grade Lithium Carbonate

HCL has confirmed successful production of 99.95% pure battery grade lithium carbonate (Li₂CO₃), the Company's first brine-to-battery-grade lithium carbonate production.

Saltworks Technologies Inc. ("Saltworks"), a global leader in designing and delivering industrial wastewater treatment and refinement solutions, saw brine sourced from wells in HCL's Viewfield project area refined into battery grade lithium carbonate. Viewfield lithium-containing brine represents the highest concentrations of lithium discovered in Canada to date with minimal pretreatment requirements.

After DLE, the eluent was refined into battery-grade chemicals at Saltworks' headquarters in British Columbia. This work was executed with Saltworks' proprietary concentrating, refining, and converting technology and expert technical team, employing technology that lowers the cost and greenhouse gas impact of lithium chemical production.

This project tested and de-risked the end-to-end flow sheet, resulting in multiple samples of battery-grade lithium carbonate that have been analyzed and validated by an independent 3rd party laboratory. The captured data enables the acceleration of full-scale plant design and dispatch. Details below.

Chemical Analysis Summary

Battery Grade Spec - Li₂CO₃ Produced Li₂CO₃

Li ₂ CO ₃ wt%	99.5 %	99.95 %
H ₂ O wt%	<0.5%	<0.05%
Na wt%	<0.05%	0.0146 %
Ca wt%	<0.04%	0.0027 %
Fe wppm	<5	<5
Al wppm	<10	<5
Cu wppm	<5	<5
Ni wppm	<6	<2.5
Cl wt%	<0.01%	<0.002%
SO ₄ wt%	<0.1%	0.0129 %

Note: Independent laboratory testing was conducted by Kemetco Research Inc. (Richmond, British Columbia)

Abbreviations: Li₂CO₃, Lithium Carbonate; H₂O, Water; Na, Sodium; Ca, Calcium; Cl, Chlorine; SO₄, Sulphate; Fe, Iron; Al, Aluminum; Cu, Copper; Ni, Nickel; Wt%, Weight Percentage; Wppm, Weight Parts per Million; Mg/l, Milligrams per Litre

Rob Gamley, CEO of EMP Metals, commented "The results of our DLE to battery grade lithium project exceeded expectations. Our partnership with Saltworks has proven to be a powerful collaboration, setting the stage for future advancements in the Canadian lithium industry. This achievement fuels our confidence in a dynamic future for all involved and the Canadian mineral sector."

Megan Low, Saltworks Technologies VP of Process Solutions Lithium & Industrial Water, commented, "The Saltworks team is proud to continue to support EMP Metals and ROK Resources to develop an important Canadian brine-to-battery chemicals project. We've been impressed by EMP Metals' methodical but rapid approach to take the right steps to de-risk their project and merge commercial innovations into their flowsheet that improve economics and scalability."

Viewfield Field Pilot

HCL is currently undergoing a Treatability Study ("Study") with Koch Technology Solutions ("KTS") to test 1,000 litres of feed brine from the Viewfield project area. The Study is in preparation for a DLE field pilot (one of the first in Saskatchewan) on the HCL well that previously tested 258 mg/L of lithium. The pilot, scheduled to begin in Q1 2024, will treat Viewfield brine and convert it into a highly concentrated lithium chloride eluent. It is expected to run for 3 to 4 months and will operate 24/7, processing approximately 6,500 - 9,000 litres of feed brine per day.

Viewfield Acreage Purchase

At the November 2023 Crown Public Offering HCL increased its land holdings in its Viewfield project area by 4,065 net acres (7% increase) to 59,000 net acres (23,900 hectares), for total consideration of \$1.17 million.

HCL now holds greater than 196,000 net acres (79,300 net hectares) of Subsurface Dispositions and numerous strategic wellbores in Southern Saskatchewan.

Preliminary Economic Assessment Update

The PEA, which focuses on a Phase 1 development at Viewfield, is nearing completion with anticipated final approvals and release in January 2024. The release delay can be attributed to capital and operating cost adjustments within the PEA, a result of the ongoing Viewfield brine testing and processing with multiple DLE vendors.

Lithium Brine Properties Joint Venture

The lithium brine properties consist of more than 196,000 net acres (79,300 net hectares) of Subsurface Crown Mineral Dispositions in the Williston basin of Southern Saskatchewan.

EMP holds 75% of the joint venture with [ROK Resources Inc.](#) (ROK.V) holding the balance.

Qualified Person

The technical content of this news release has been reviewed and approved by Greg Bronson, P. Geo., a qualified person for the purposes of National Instrument 43-101.

About Saltworks

Saltworks Technologies is a global leader in designing and delivering industrial wastewater treatment and lithium refinement solutions. Saltworks' best-in-class systems are built around our core principles: scalable modularity and smart digitization. From its headquarters in Richmond, BC, Canada, Saltworks designs, builds and operates full-scale plants, and offers comprehensive onsite and offsite testing and pilot services.

For more information, please contact us via info@saltworkstech.com, or visit our website:

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About EMP Metals

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