

HIGH GRADE LITHIUM CARBONATE FROM PRAIRIE

High purity lithium chemical produced at Lithium Research Centre, including 99%+ Li_2CO_3

HIGHLIGHTS

- AZL Chief Technical Officer, Brett Rabe, and his team at the Lithium Research Centre (LRC) successfully converted the lithium precursor into several high purity lithium products in a single step, including high purity lithium carbonate assaying over 99%.
- Testing at the LRC confirms that brine material from Prairie, after applying the current Direct Lithium Extraction (DLE) technology, can produce very high grade lithium carbonate with minimal processing.
- The rejection of impurities at the DLE step enables a very high quality product to be produced.
- The development is significant as it demonstrates that a highly automated extraction and concentration process, located remotely on a well pad, has the potential to produce a variety of high purity lithium chemicals at significantly lower CAPEX and OPEX than conventional technology.
- Results of the lithium carbonate have been validated by a 3rd party laboratory.
- AZL is preparing for a third and final phase of (DLE) pilot plant testing in November on its Prairie Lithium Project in Saskatchewan, Canada.
- Prairie is the highest grade Indicated lithium brine resource in Canada, with the majority of the Indicated resource at 127 mg/L Li.
- Prairie PFS on schedule for completion in December 2023.



Figure 1- High grade Lithium carbonate produced from Prairie Brine

Arizona Lithium Limited (ASX: AZL, AZLO, AZLOA, OTC: AZLAF) (“Arizona Lithium”, “AZL” or “the Company”), a company focused on the sustainable development of two large lithium development projects in North America, the Big Sandy Lithium Project (“**Big Sandy**”) and the Prairie Lithium Project (“**Prairie**”), is pleased to announce that it has successfully converted a lithium precursor involving Direct Lithium Extraction (DLE) and Cross Flow Reverse Osmosis (CFRO) technology to a variety of high purity battery chemicals, including 99%+ lithium carbonate.

The development is significant as it demonstrates that a highly automated extraction and concentration process, located remotely on a well pad, has the potential to produce a variety of high purity lithium chemicals at significantly lower CAPEX and OPEX than conventional technology. AZL plans to leverage the new design and production philosophy to rapidly bring the Prairie Lithium Project into production, with a study currently underway to develop final design details. In November, a DLE pilot plant will be commissioned in Saskatchewan that will produce over 10,000 litres of concentrate that will be converted into finished products at AZL’s Lithium Research Centre in Tempe, Arizona. The finished products will be used to negotiate off-take agreements and strategic partnerships for AZL.

The Prairie Project resource was recently increased from 4.1 mt of LCE¹ to 5.7 mt of LCE (refer ASX Announcement 17 August 2023), representing a 39% increase in resource size, with a resource upgrade also successfully completed. 4.0 mt of LCE was upgraded to Indicated and 1.7 mt of LCE remains Inferred. This marked the first known lithium brine resource to be upgraded to Indicated in Saskatchewan and represents the highest-grade Indicated lithium brine resource in Canada. The majority of the targeted resource resides in the Middle Wymark Unit with a representative concentration of 127 mg/L Li (Figure 2).

Arizona Lithium Managing Director, Paul Lloyd, commented: *“Following the recently announced successful resource upgrade, we are very excited to have produced lithium carbonate at our Lithium Research Centre in Arizona. This further justifies the investment we have made into research, which will ultimately be rewarded by fast tracking both the Big Sandy and Prairie Lithium projects. We are focused on the rapid development of the Resource at the Prairie Project and producing Lithium Carbonate is a very positive step. We are all eagerly awaiting the upcoming DLE pilot plant operation in November 2023, which will allow us to produce further lithium concentrate and ultimately move Arizona Lithium one step closer to its first commercial facility, first Lithium production and the corresponding cash flows.*

Arizona Lithium CTO, Brett Rabe, commented: *“The higher the purity of a midstream precursor, the lower the CAPEX, OPEX, environmental footprint and risk associated with final conversion. This is the beginning of a transition in the lithium supply chain, whereby advances in midstream processing will begin to re-shape the downstream and move the industry away from massive megaprojects with low process capability. I’m proud of the role that the Prairie Lithium Project, our process technology partners, and the Lithium Research Centre is playing in introducing new processing technologies which will ultimately result in more affordable EVs. Our collective work is beginning to show, and more advances are on the way.”*

About the Prairie Lithium Project

AZL’s Prairie Lithium Project is located in the Williston Basin of Saskatchewan, Canada. The Prairie Project resource is 5.7 MT of LCE, composed of 4.0 MT LCE Indicated and 1.7 MT LCE Inferred². Located in one of the world’s top mining friendly jurisdictions, the projects have easy access to key infrastructure including electricity, natural gas, fresh water, paved highways and railroads. The projects also aim to have strong environmental credentials which should result in less use of freshwater, land and waste, aligning with AZL’s sustainable approach to lithium development.

Arizona Lithium also holds a proprietary lithium extraction process technology that selectively removes lithium from Brine. The Prairie Lithium Ion Exchange (“**PLIX**”) is an ion-exchange material that selectively extracts lithium from brine, using equipment which is anticipated to be readily available at commercial scale. PLIX may have a global application, with the process currently being tested on lithium resources from around the world (including encouraging results with Big Sandy). While Prairie Lithium continues to develop, scale and operate its own DLE technology, the Company is also testing other DLE technologies to ensure it deploys the most cost-effective technology onto its resource.

¹ ASX Announcement: Prairie Lithium - “Acquisition of Canada’s Highest Grade Lithium Brine Resource” – 21 December 2022

² PRAIRIE PROJECT RESOURCE UPGRADED 39% - ASX Announcement (August 17, 2023)

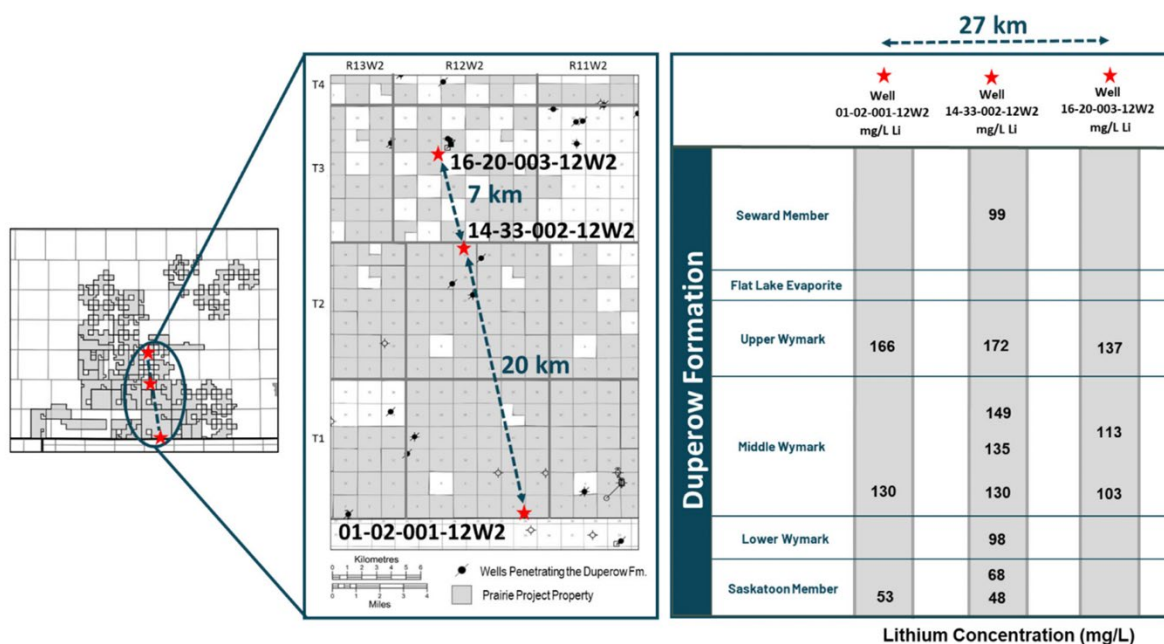


Figure 2 - Location map and representative lithium concentrations from Arizona Lithium's test wells³

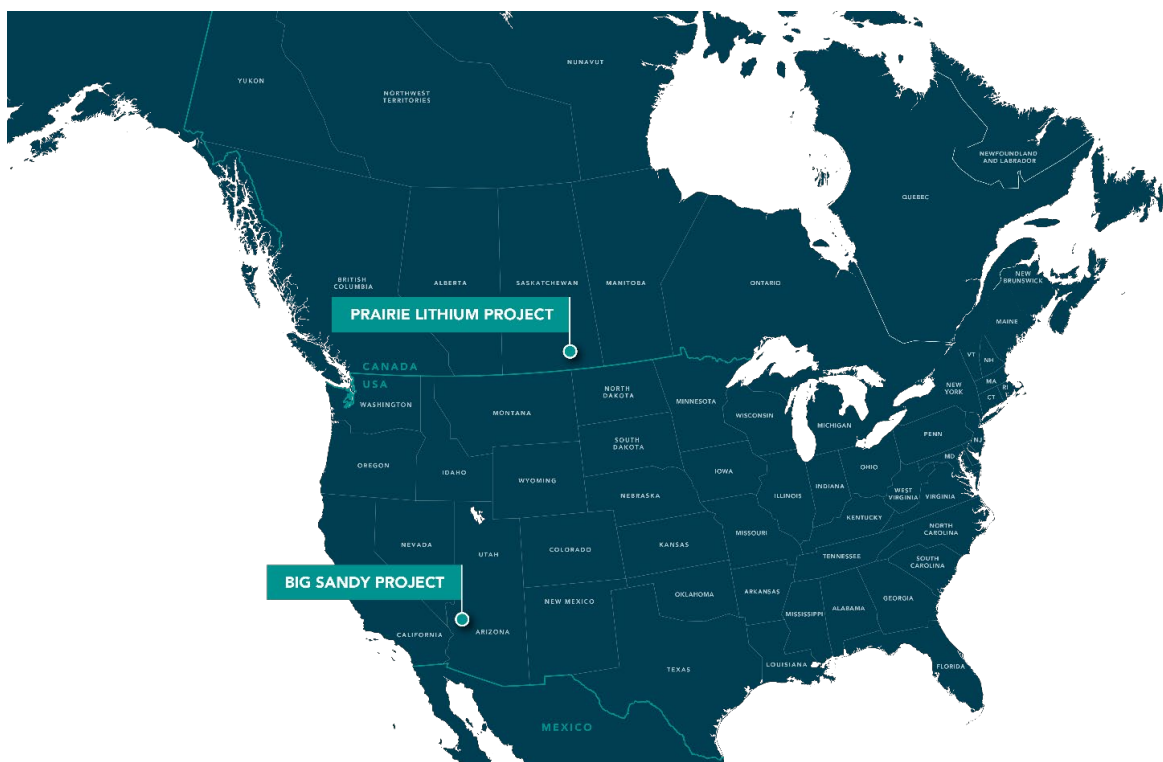


Figure 3 – Location of AZL's Lithium development projects.

This announcement has been authorised for release by the Managing Director.

³ Lithium concentrations measured by Isobrine Solutions and confirmed by one other commercial laboratory in Edmonton, Alberta

FOR FURTHER INFORMATION PLEASE CONTACT:

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Competent Persons statement

Gordon MacMillan P.Geol., Principal Hydrogeologist of Fluid Domains, who is an independent consulting geologist of a number of brine mineral exploration companies and oil and gas development companies, reviewed and approves the technical information provided in the release. Mr. MacMillan is a member of the Association of Professional Engineers and Geoscientists of Alberta (APEGA), which is ROPO accepted for the purpose of reporting in accordance with the ASX listing rules. Mr. MacMillan has been practising as a professional in hydrogeology since 2000 and has 22 years of experience in mining, water supply, water injection, and the construction and calibration of numerical models of subsurface flow and solute migration. Mr. MacMillan is also a Qualified Person as defined by NI 43-101 rules for mineral deposit disclosure.

Information in this announcement that relates Exploration Results or to Mineral Resources have been extracted from the Company's announcement released to ASX on 14 August 2023. The announcement is available to view on the Company's website: www.arizonalithium.com. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which Mr MacMillan's findings are presented have not been materially modified from the original market announcement.