

# CLEAN RESOURCES

## CRITICAL MINERALS AND EMERGING TECHNOLOGY

### MINING AND EXTRACTION TECHNOLOGIES

## FUNDING DETAILS

### denaLi™ 1.0 Green Lithium Extraction Pilot

Summit Nanotech has developed a proprietary solution to extract lithium from brines that will be deployed as plug-and-play modular units to well sites in the field. Summit Nanotech will be designing, building, and testing the modular direct lithium extraction (DLE) unit in the field to validate the technology with existing operators in Chile to gather data and verify scaling parameters to operate in Alberta with Albertan brines.

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**RECIPIENT:**  
Summit Nanotech



**PARTNERS:**  
Several Mining  
Partners



**TOTAL BUDGET:**  
\$3,131,224



**AI FUNDING:**  
\$500,000



**PROJECT DATES:**  
AUG 2021 –  
OCT 2022



**PROJECT TRL:**  
Start: 5  
End: 6

#### Our Solution

Our denaLi™ DLE (Direct Lithium Extraction) technology is a modular, skid loadable extraction unit that covers the entire end to end process.



## APPLICATION

Summit Nanotech is commercializing green lithium extraction technology that doubles the yield, reduces GHG emissions by 50%, reduces land use area by 26x, and cuts chemical waste by 90% compared to traditional methods. Resource owners need this technology to get a more consistently reliable, high-quality product to market faster, more economically, with reduced operation costs and lower environmental impact.



## PROJECT GOALS

The key goals of the project are to:

- Pilot successfully in the field in Chile (South America).
- Validate the technology with existing operators to then be able to implement the technology in Alberta.
- Gather data and verify scaling parameters to be used to validate commercial operating expense and design scaled up versions of the extraction process which can be deployed in South America, USA and Alberta.
- Achieve key operation metrics of: same day lithium production, 80% yield, eliminate/minimize freshwater usage, and cut chemical waste by 90% to increase feasibility to operate with Albertan brines.

## BENEFITS TO ALBERTA

The successful implementation of this technology could result in:

- Unlocking Alberta's lithium resources by gathering data to optimize the technology and verify scaling parameters to reduce lithium extraction operating expenditure requirements.
- Developing derivative markets for Alberta's oil and gas industry as Alberta hosts some of the world's best production and disposal infrastructure to support lithium extraction operations.
- Introducing new markets for Albertan companies whose technologies are being used in Summit Nanotech's technology.
- Growing the research and innovation hub in Alberta by introducing direct lithium extraction research, which attracts talent (chemistry, engineering, geoscience), involves universities, increases employment, and draws foreign capital investment (greater than \$10M USD).
- Reinjecting funds into Alberta economy as the pilot units are assembled locally utilizing Albertan vendors and contractors.



**1 New  
Product/Service**



**5 Project Jobs**

## CURRENT STATUS

### OCT 2022

Summit Nanotech has successfully commissioned and operated their pilot plant in Chile. Through operational testing and analysis, Summit Nanotech was able to meet the project's performance metrics including same-day lithium production targets. The company continues to operate its denaLi™ C pilot in Chile and is currently processing asset owner brines for the purpose of reporting on performance, implementing functional adaptations, and ensuring denaLi™ is well-adapted for its commercial scaleup phase.