



**AVALON**  
ADVANCED MATERIALS INC.

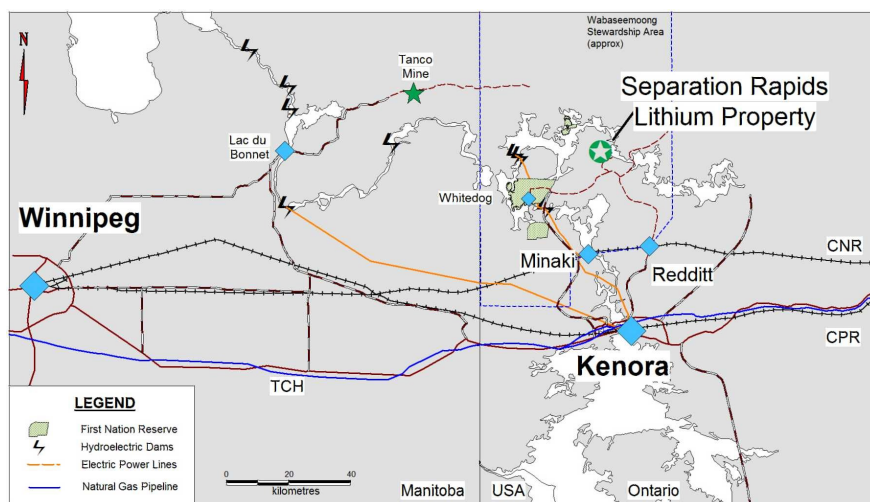
TSX: AVL & OTCQB: AVLNF

As at May 13, 2020

## Separation Rapids Lithium Project: A unique deposit of the rare lithium mineral petalite

### Project Overview

The 100% owned Separation Rapids property is host to a “complex-type” lithium-cesium-tantalum (LCT) pegmatite deposit, unusual in its enrichment in the rare, high purity lithium mineral petalite. Separation Rapids is a potential producer of lithium minerals for glass and ceramics and lithium chemicals for the lithium ion battery market. The property covers a total of 6,000 acres and is situated close to road, rail and power infrastructure approximately 70 km north of Kenora, Ontario, Canada.



### PEA Development Model

The current development model results in a small environmental footprint, including low GHG emissions and almost non-existent air emissions.

There are no anticipated environmental impacts of concern, with the mineral deposit and waste rock being non-toxic and non-acid generating and minimal water discharge being anticipated.

#### PEA (August 2018) highlights include:

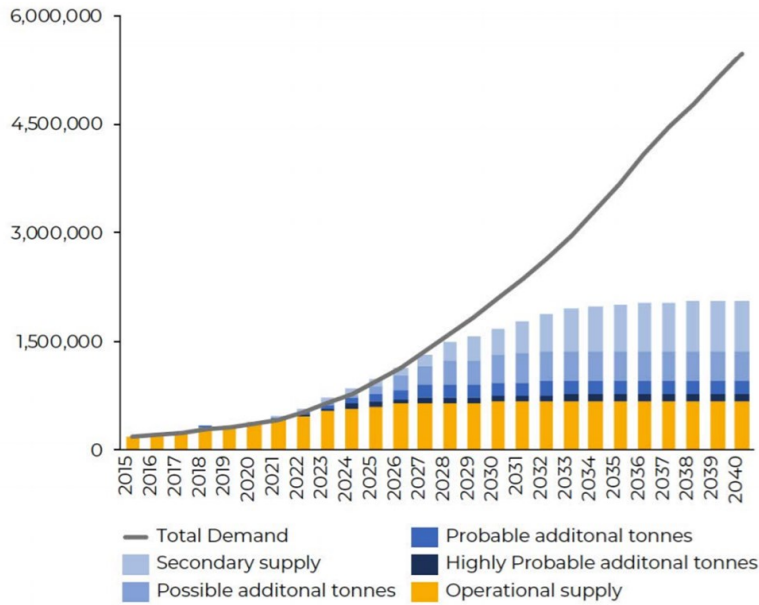
- Simplified business model with initial focus on production of lithium mineral concentrates for glass and ceramics
- Production of 71,500 tpa petalite, 11,800 tpa lepidolite
- Initial CAPEX: C\$77.7m (475,000 tpa mill capacity)
- Feldspar circuit added in Year 6 (C\$13.7m CAPEX)
- 20 year operational life
- Average Annual Revenues: C\$90m
- Average Annual Costs: C\$60m
- NPV pre-tax (8% discount rate): \$156m
- IRR (pre-tax): 27.1%
- IRR (post tax): 22.7%

*The PEA is preliminary in nature, includes Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.*

### Avalon's Sustainable Strategy

- Focus on materials that enable clean technology
- Design the operation to minimize environmental impacts and plan for productive use of the land post closure
- Minimize GHG emissions and water impacts
- Focus on process efficiency, minimizing waste and maximizing productive use of the resource
- Engage in dialogue early and often with local Indigenous communities to listen to their concerns and identify opportunities for partnerships, job creation and training
- Apply a staged development approach, starting at a modest scale, to minimize project footprint and potential risks to environment, while also reducing investment risk
- Focus on near-term revenue with growth potential

## Lithium Demand Forecast to 2040



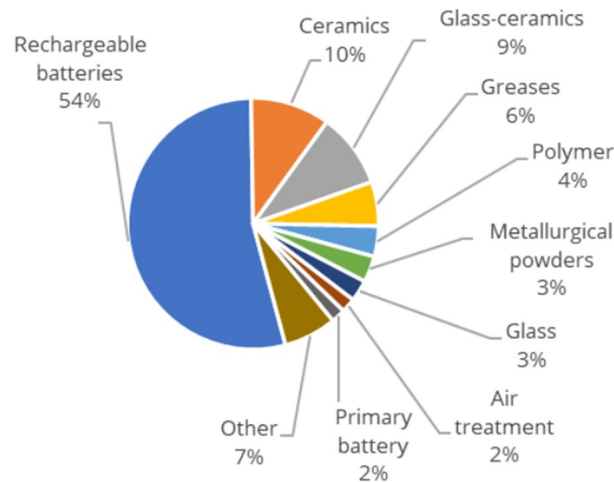
## Current Activities and Future Plans

- Bulk sample processing to produce more lithium mineral product samples and finalize process flowsheet and plant design parameters (summer 2020)
- Secure off-take agreements and arrange project financing
- Complete Feasibility Study-level cost estimates and project engineering
- Complete environmental assessments and advance project permitting

## Lithium Demand by Application:

Batteries dominate with demand growing rapidly, but ceramics and glass and ceramics remain major markets that are also growing.

(Source: Roskill)



Avalon continues to explore for new lithium pegmatites, including a detailed mapping and sampling program on the western extension area.

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## Lithium minerals enable innovation in high strength glass products

Lithium creates thermal shock resistance in glass and ceramic products, such as glass-ceramic stovetops, Corningware® cookware and fireplace shields.

Lithium additions reduce the melting temperature and lower GHG emissions from the furnace, and can strengthen traditional glass formulations to extend the containers' life.

Lithium minerals can also be added to high strength glass products such as computer screens and automobiles.

Avalon can offer two petalite products: one at the standard grade of 4.2% Li<sub>2</sub>O and a second higher grade product (>4.5% Li<sub>2</sub>O) with very low impurity content.

The technical information contained in this document, unless otherwise noted, has been reviewed and approved by Don Bubar P. Geo. (ON), President & CEO of Avalon, the qualified person for the purposes of National Instrument 43-101.

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and expenses, the impact of proposed optimizations at the Company's projects, actual results of exploration activities, mineral reserves and mineral resources and metallurgical recoveries, discrepancies between actual and estimated production rate, mining operational and development risks and delays, regulatory restrictions (including environmental), activities by governmental authorities, financing delays, joint venture or strategic alliances risks, or other risks in the mining industry, as well as those risk factors discussed or referred to in the Company's annual Management's Discussion and Analysis and Annual Report filed with the securities regulatory authorities in all provinces and territories of Canada, other than Québec, and available at [www.sedar.com](http://www.sedar.com). Most of the foregoing factors are beyond Avalon's ability to control or predict. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. There can be no assurance that the plans, intentions or expectations upon which these forward-looking statements are based will occur. The forward-looking statements contained herein are qualified in their entirety by this cautionary statement. Readers should not place undue reliance on the forward-looking statements, which reflect management's plans, estimates, projections and views only as of the date hereof. The forward looking statements contained herein is presented for the purpose of assisting readers in understanding the Corporation's expected financial and operating performance, and the Company's plans and objectives, and may not be appropriate for other purposes. Avalon does not undertake to update any forward-looking statements that are contained herein, except in accordance with applicable securities law.