# Avalon Rare Metals Inc.

(TSX: AVL) (NYSE MKT: AVL)

November 11, 2015

# RB MILESTONE GROUP

EQUITY RESEARCH AND MARKET INTELLIGENCE

Price (as of Nov 10, 2015):	CAD \$0.11
Beta:	3.3
Price/Book:	0.2
Debt/Equity Ratio:	N/A
Listed Exchanges:	TSX & NYSE MKT



### Recent News

**03-Nov-15:** Avalon provides update on the East Kemptville Tin-Indium Project

**08-Oct-15:** Commencement of process work by a third party in Germany to validate production of high quality lithium mineral for Separation Rapids mine.

**17-Aug-15:** Avalon invests CAD\$750,000 at Separation Rapids for the commencement of the pilot plant program.

**05-Aug-15:** Avalon receives a letter from NYSE MKT LLC stating non-compliance with the listing standards of the exchange due to low selling share price.

**15-Jun-15:** Avalon commences a CAD \$1.3 million work program which includes diamond drilling, metallurgical process and preliminary environment studies at the East Kemptville Tin-Indium Project in Nova Scotia.

**27-May-15:** Avalon issues 6.4 million shares at CAD \$0.39 and 4.4 million units at CAD \$0.34 for total gross proceeds of CAD \$4.0 million.

Forex Rate (as of Nov 10, 2015): 1 CAD = 0.75 USD Shares Outstanding: 152,785,482 shares Market Cap: CAD \$16.8 million 52-Week Range (Low-High): CAD \$0.10 - \$0.47

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### Advanced Materials Player in a Rapidly Growing Lithium Market

Avalon Rare Metals Inc. ("Avalon" or "Company") is a Canadian based mineral exploration and development company focusing on advanced materials including lithium, tin, indium and the heavy rare earths. The Company is primarily focused on advancing two of its six projects, namely Separation Rapids (lithium) and East Kemptville (tin-indium). All six projects are 100% owned by Avalon. Presence of high quality rare lithium minerals (petalite) at Separation Rapids shows great promise. Avalon is headquartered in Toronto, Canada and its common stock is listed on the Toronto Stock Exchange (TSX: AVL) and the New York Stock Exchange (NYSE MKT: AVL).

## **Investment Rationale**

# Separation Rapids Project contains giant "Complex-type" rare metal pegmatite at favorable economics

The Separation Rapids project in Northwestern Ontario, Canada contains one of the largest deposits of the high-purity lithium mineral petalite, with content averaging at 25%. Management expects mining to be economically feasible due to its size and near-surface location, which will make it amenable to low cost, open pit mining. The deposit also has low presence of impurities such as iron and other metal oxides, making it extremely desirable for glass and ceramic manufacturers. Currently, only one other large-scale producer of petalite exists, located in Zimbabwe. The rarity of such high quality lithium deposits enhances the prospects for development of the Separation Rapids project. The high enrichment and purity of the deposit also makes it amenable for recovery of lithium chemicals for batteries.

### Dynamics of lithium markets should benefit Avalon

Global demand for lithium has grown over 80% in the last five-year period ending in 2014, with the lithium consumption for battery applications growing by 166% during the same period. Battery makers and users such as Tesla, BYD, AESC, Samsung, etc. are seeking to reduce the cost of battery production, depending heavily on the availability of high-purity lithium. With over one third of the lithium demand coming from batteries, the market is estimated to grow at more than 7.4% CAGR until 2025. The growth in demand is anticipated to outpace supply growth. The Separation Rapids project, containing high-grade lithium minerals, is well positioned to benefit from the encouraging dynamics of the lithium end market in rechargeable batteries.

# Strategic East Kemptville tin asset and forecasted revival of tin prices could offer a significant upside

East Kemptville was the only primary tin producer in North America. Previous owners operated the asset from 1985 to 1992, but it closed due to low tin prices. With significant tin resources left unmined, the project has access to paved highways, grid power, ample water supply and skilled labor. Further, exploration programs undertaken by Avalon have shown evidence of presence of high grade tin and significant indium. Preliminary estimates of operating costs at CAD\$15 per metric ton (including waste) make East Kemptville potentially economically feasible to mine at current price levels. Although London Metal Exchange ("LME") tin prices have recently slumped to US\$15,000 from over US\$20,000 per metric ton in 2014, increasing demand for tin from electronic, automobile, solar energy and battery manufacturers along with declining production should help tin prices recover in the long run.

# Ability to raise funds through equity markets and efficient management of cash burn rates

At normalized burn rates, the Company can sustain for a minimum period for six months without raising equity. Avalon has been prudent and extremely successful in raising equity capital in the past. During fiscal year 2015, the Company has so far raised CAD \$8.1 million (up to May 2015). Avalon's financing initiatives are superior when compared to peers in the industry. Such fundraising capability strengthens investor confidence in the assets as well as management experience and underscores the Company's ability to withstand challenging economic situations.

### Results of Feasibility Study at Nechalacho project are also attractive

The Nechalacho project's Feasibility Study estimated an impressive 22.5% pre-tax internal rate of return ("IRR") equaling CAD \$1.35 billion in net present value and 19.6% post tax IRR amounting to CAD \$900 million NPV, although the project shows a relatively high CAPEX estimate of CAD \$1.5 billion. As per industry sources, the demand for total rare earth oxides is forecast to grow at 9% CAGR until 2018. With Molycorp's bankruptcy, the lack of new supply sources from outside China will continue to create long term security of supply issues for these critical raw materials.

### Exceptional social and environmental performance a key differentiator

Avalon is a leader among junior companies in the implementation of exceptional environmental and social performance into its business plan. The Company is the only junior we know of that produces an annual GRI-compliant sustainability report and it has been doing so for 4 years now. It has very good relationships with the Aboriginal groups located near its projects, which is a key risk factor for most mineral developers in Canada.

# Canadian government's initiatives to bolster Rare Earth Elements ("REE") industry should strengthen Avalon

Initiatives from the Canadian government should help Avalon move up the value chain and enhance its production and revenue generation capabilities. In 2013, the Canadian government recognized the untapped potential of the Country's REE (including zirconium, niobium, tantalum, indium, etc.) deposits. Meanwhile, the Canadian Rare Earth Elements Network ("CREEN") has set a target for Canada to secure 20% of world's REE supply by 2018. At present, China is the dominating player in the REE market with contributions standing at 90%. CREEN's primary objectives include identifying research funding opportunities, facilitating collaboration, promoting and disseminating findings and establishing an accessible inventory of REE projects. As Avalon is among a few in the Canadian REE industry, the Company stands to benefit significantly from the establishment of a dedicated industry association.

# **Company Overview**

Avalon is a mineral exploration and development company operating primarily in Canada with a key focus on advanced materials such as lithium, tin, indium and heavy Rare Earth Elements ("HREE"). Results from earlier exploration activity suggest that the Company's lithium and tin-indium deposits are significant in terms of size and grade. The Company also has an advanced HREE project. Of the six projects owned by Avalon, two are currently under active development and are host to high quality lithium ore (Separation Rapids) and tin-indium (East Kemptville). The Nechalacho project, although advanced, is inactive at the present time due to reduced market interest in REE. The remaining three earlier stage projects have good potential but are lower priority given current market conditions.





Source: Avalon Corporate Presentation

# Key Assets

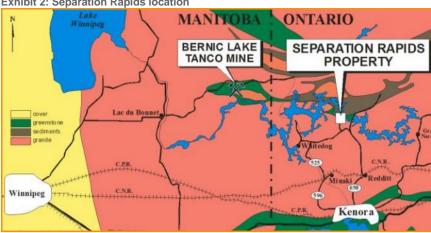
This section presents each project in detail, highlighting the project location and geology, its current status, project feasibility, exploration activity carried out, followed by resource estimation and finally the future strategy of the project.

### Separation Rapids Lithium Project

### **Location and Mineral Tenure**

Separation Rapids, an advanced lithium project, is located 70 kilometers north of Kenora, Ontario in Canada. The project covers approximately 1,455 hectares, including a 400-hectare mining lease. The mining lease covers a lithium deposit and neighboring areas that may be required for mine development. The geology of the deposit is a complex type rare metals pegmatite, which is enriched in lithium, tantalum, niobium and rubidium minerals. The Separation Rapids pegmatite is one of only four in the world to be of sufficient size to be of significant economic importance. The project is also unique as it is only the second to contain the rare lithium mineral petalite. The presence of petalite should enable Avalon to position itself as a supplier of high quality raw materials for the ceramics and glass industry, as well as supplier of lithium for rechargeable battery applications. Avalon is targeting both of these end use applications and is well positioned to gain from growing demand in both markets. Exhibit 2 presents the location of Separation Rapids in Ontario.

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#### **Exhibit 2: Separation Rapids location**

Source: Separation Rapids Factsheet

#### **Current Project Status**

To date, Avalon has incurred cumulative exploration expenditures of CAD \$6.2 million since it first started working on the project in 1996. As reported in the press release dated October 8, 2015, a 30 metric ton crushed ore sample was received by an independent third party laboratory based in Germany and metallurgical process work is underway. The goal of the process work is to produce high quality lithium mineral concentrate by employing the Company's proven process of recovering the petalite from the ore (known as a flow sheet). On August 17, 2015, the Company announced a CAD \$0.75 million pilot plant program which will conclude with the production of at least one metric ton of petalite concentrate and offer insight into the new flow sheet. Product samples will be sent to several potential customers in the glass-ceramics industry. Initial tests conducted in 2014 confirmed the purity of the material resulting in requests for larger volume samples which will be produced in the current pilot plant.

As per the press release dated July 13, 2015, the Company also undertook additional laboratory testing of metallurgical properties of the test samples to evaluate the feasibility of producing lithium hydroxide and lithium carbonate. Subsequently, the Company completed an initial market study of the lithium chemicals market to learn what form of chemical and purity is now preferred by battery manufacturers. The study concluded that the market is moving toward increased use of lithium hydroxide as the primary lithium chemical feedstock for cathode manufacture.

### **Project Feasibility**

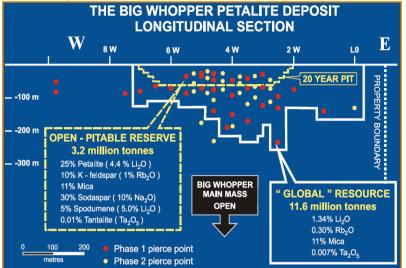
In 1998-99, Avalon completed a Preliminary Feasibility Study ("PFS") to ascertain the viability of initiating an industrial minerals operation based mainly on sales of petalite to the glass-ceramics industry. The project did not go ahead at that time due to significant change in the market when Corning Incorporated exited the glass-ceramics cookware business. Currently, the Company is preparing for the commencement of a Feasibility Study building on prior exploration work and integrating a lithium chemicals business into the development model. Avalon is targeting completion of this study by 2017. In the interim in 2016, it expects to complete a Preliminary Economic assessment ("PEA") on the lithium chemicals business opportunity. Given the demand and price outlook for lithium chemicals in batteries as well the petalite product in glass-ceramics, the project is expected to be feasible.

### **Exploration Activity**

Avalon's initial exploration of the project began in 1997-98, shortly after the deposit was first discovered by an Ontario government geologist who called it the "Big Whopper." The Company undertook several drilling programs over the years, with results indicating a high quality petalite resource. In 2000-01, the Company initiated a tantalum focused program with a JV partner. In 2006, the Company extracted a 300 metric ton of bulk sample for evaluation in a potential new application in non-combustible composites.

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Exhibit 3 displays the project's substantial mineral reserves and resources as defined for the PFS in 1999.





Cautionary Note to investors: These are historical resources and reserves estimates from 2001 that need updating to comply with current NI 43-101 requirements and should therefore not be relied upon. The Probable Mineral Reserves include only Indicated Mineral Resources. No Inferred Mineral Resources were utilized in the open pit design.

Exhibit 4 displays a typical geological cross-section of the Big Whopper pegmatite deposit (as it was known at the time).

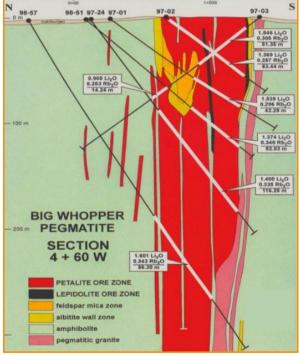


Exhibit 4: Exploration activity indicated existence of 15 plus metric tons of reserves

Source: Corporate Presentation

Source: Corporate Presentation

### **Resource Estimation**

Indicated resources, as reported in 1999, stand at 8.9 million metric tons averaging 1.34% lithium oxide (open at depth) with very low iron oxide levels (impurity). This ranks among the largest undeveloped high purity lithium minerals deposits in the world. Further, inferred resources stand at 2.7 million metric tons. As per the Company, lithium grades are consistent and petalite consistently 25% of the ore. The mineralized zone is well-exposed at the surface (as illustrated below in Exhibit 5), making the zone amenable to open pit surface mining at low costs.



Exhibit 5: High surface mineralization should facilitate low cost bulk mining

Source: Corporate Presentation

### **Future Plans & Strategy**

In 2016, the Company plans to extract up to 8,000 metric tons of material to produce larger volumes of petalite concentrate for full scale production batch tests by potential customers in the glass ceramics industry. By February 2016, Avalon plans to send a second batch of petalite concentrate to glass-ceramic manufacturers who have already expressed interest in the product. Avalon also plans to expand its marketing initiatives by identifying new potential customers and improve its understanding of end market dynamics. Further, the Company plans to undertake additional process development work with the goal of producing high quality lithium chemicals demanded by the battery manufacturers and a PEA of this specific business opportunity. These samples will be obtained from the petalite produced from the process work currently underway in Germany. By the end of 2016, the Company plans to conclude a process flow sheet for the lithium chemical product. Further, the Company aims to do a new cost analysis and develop an updated economic model based on end market trials. By 2017, the Company plans to identify the plant site and complete a Feasibility Study for a potential two-phase development of the project. The first phase will be the production of petalite concentrate; the second will be a value-added lithium chemical production facility. Total CAPEX requirements for the first phase are roughly estimated at CAD \$100 million.

## East Kemptville Tin-Indium Project

### **Location and Mineral Tenure**

The East Kemptville project encompasses the former East Kemptville Tin Mine and neighboring exploration lands, all located 45 km northeast of Yarmouth, Nova Scotia, Canada. The total area covers 4,000 hectares through four contiguous exploration licenses and 1,165 hectares through a Special License covering the old mine site. The project is easily accessible by a secondary paved highway. The Special License, first granted in 2005, was renewed in March 2015 for a three year term covering the entire mining area and encompassing all the known tin deposits. However, the Special License does not yet convey the surface land rights and the Company needed to obtain an access right from the surface right holders, which was first obtained in 2014 and extended through 2015.

The project is host to tin, zinc and copper minerals along with significant indium and other potentially recoverable rare metals such as gallium, germanium and lithium. Tin is a commodity that is little known amongst US investors since there is no current primary tin production in North America and no public traded tin equities on US exchanges. In fact, East Kemptville was the only primary tin producer ever in North America. Few investors realize that tin is no longer just about tin cans and bronze, but is now a critical metal in consumer electronics due to its use in solders as an alternative to lead, which has been legislated out of use due to its toxicity.



Source: Separation Rapids Factsheet

### **Current Project Status**

On June 15, 2015, the Company commenced a CAD \$1.3 million work program involving a minimum 2,000 meter diamond drilling program along with metallurgical process testing and preliminary environmental studies. The Company expects the program to conclude by November 2015 and will complete a Preliminary Economic Assessment ("PEA") by November 30, 2015 from the data generated by the exploration program. Further, work has commenced with an environmental consulting firm (Stantec) with the objective of completing an environmental assessment. Avalon has also commenced metallurgical testing at a United Kingdom based laboratory with expertise in tin recovery.

### **Project Feasibility**

No comprehensive Feasibility Report has been presented to date; however, in February 2015, the Company employed Hains Engineering Company Limited of Toronto ("Hains") to conduct a Conceptual Redevelopment Study. Hains proposed a conventional open pit mine with a milling rate of 10,000 metric tons per day. Hains also recommended leveraging the recent innovation (gravity flotation techniques) in tin ore recovery technology for improved recovery of tin along with by-products such as zinc and copper. Recoveries based on preliminary test work estimated tin recovery at 87%, zinc at 85% and copper at 75%. The proposed model estimated capital expenditures of CAD \$200 million and operating costs of CAD\$15 per metric ton of ore mined, equating to CAD \$53 million per annum. Assuming long term metal price assumptions of US\$23,500 per metric ton for tin, US\$1.00 per pound for zinc and US\$3.00 per pound for copper, the annual revenues are estimated at US\$107 million with 85% of revenues coming from tin. This exercise was also undertaken with no credit for indium. The Company emphasizes that this study was very preliminary in nature and that more work needs to be done.

### **Exploration Activity**

In September 2014, the Company completed a first phase seven-hole confirmation drilling program. Further, as earlier mentioned, in June 2015, the Company announced the commencement of a second phase CAD \$1.3 million work program.



Exhibit 7: Ore displayed at East Kemptville project

Source: Company website

### **Resource Estimation**

The 2014 drilling program was designed to provide confirmation of historical resource estimates so that the Company could report them in compliance with Canadian securities regulations under NI 43-101. The drill results confirmed indicated resources at 18.47 million metric tons with average mineralization at 0.176% of tin, 0.173% of zinc and 0.064% of copper. Further, inferred resources stood were estimated at 16.95 million metric tons with mineralization averaging at 0.148% of tin, 0.122% of zinc and 0.062% of copper at a 0.10% cut-off grade for tin (the cut-off grade used historically during operations).

Exhibit 8 presents the detailed resource estimation at East Kemptville.

Classification	Tin Cut-off Grade	Tonnes (million metric tons)	Tin	Zinc	Copper
	>= 0.05	46.07	0.104%	0.132%	0.051%
	>= 0.10	18.47	0.176%	0.173%	0.064%
INDICATED	>= 0.15	6.83	0.239%	0.204%	0.077%
	>= 0.20	3.16	0.337%	0.268%	0.093%
	>= 0.25	2.93	0.344%	0.275%	0.092%
INFERRED	>= 0.05	34.29	0.102%	0.104%	0.052%
	>= 0.10	16.95	0.148%	0.122%	0.062%
	>= 0.15	2.66	0.203%	0.130%	0.075%
	>= 0.20	0.82	0.311%	0.138%	0.120%
	>= 0.25	0.58	0.342%	0.171%	0.117%

Exhibit 8: Details of resource estimation at East Kemptville

Source: Corporate Presentation

### **Future Plans & Strategy**

The Company plans to complete a comprehensive Feasibility Study by 2017 based on the recent CAD \$1.3 million work program which includes a two phase drilling program, metallurgical testwork with the objective of increasing confidence on the inferred resource and confirming metallurgical recoveries and costs. Further, additional environmental studies will be undertaken to assess costs associated with environmental remediation work related to historic mine tailings. After completion of the above mentioned activities, a formal PEA will be completed (by November 30, 2015) followed by completing the transfer of surface tenure and securing project financing for the Feasibility Study, estimated at roughly CAD \$15 million. Exhibit 9 displays the estimate timeline of milestones the Company is expected to accomplish.

### Exhibit 9: Estimated Timeline of Milestones at East Kemptville

Milestone	Period
Environmental assessment including waste water management studies	2016-17
Definition drilling (20,000m program)	2016-17
Mine and plant engineering	2016-17
Feasibility Study	2016
Project Permitting	2017
Project Financing	2017
Construction, Pit de-watering	2017-18
Commissioning & initial production	2019

Source: Corporate Presentation

### Nechalacho Rare Earth Elements Project

### **Location and Mineral Tenure**

The Nechalacho Rare Earth Elements project is an advanced stage project with a completed feasibility study and project permitting largely in place. The project is located in the Northwest Territories, Canada, and the project area totals 6,109 hectares and comprises five contiguous mining leases totaling 4,249 hectares, and three mineral claims totaling an area of 1,860 hectares. The project contains high concentrations of very scarce heavy rare earths and is also rich in zirconium, tantalum and niobium resources, with low levels of uranium and thorium. The deposits are at shallow depth and the geology offers easy rock mechanics, enabling high probability of feasible underground bulk mining techniques for extraction.

REE include both Heavy Rare Earth Oxides ("HREO") and Light Rare Earth Oxides, combined under Total Rare Earth Oxides ("TREO"). HREO is the total concentration of europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium and yttrium. TREO includes HREO elements in addition to the Light Rare Earth Oxides (lanthanum, cerium, praseodymium, neodymium and samarium).



Exhibit 10: Nechalacho location marked by the star, near Thor Lake

Source: Nechalacho Factsheet

### **Current Project Status**

The Company received the Class A Land Use Permit ("LUP") in April 2014 and Class B Water License ("WL") in May 2014, enabling the Company to carry out pre-construction work. Despite holding permits for pre-construction work, the date of commencement of construction work remains uncertain, due to depressed REE prices and unfavorable market conditions for obtaining project financing. The Project is currently on hold, pending renewed interest in rare earth production outside China. Since acquiring the project in 2005, the Company has made investments of over CAD \$100 million. Further, as per the press release dated July 14, 2015, the Company's exploration expenditures on Nechalacho for the nine months ended May 31, 2015 decreased to CAD \$1.3 million from CAD \$6.5 million in the same period in 2014. The Company cited reduced metallurgical development work, cessation of field operations and preparation for a second Feasibility Study as the primary reason for decreased expenditures.

### **Project Feasibility**

Avalon is currently planning to undertake an updated Feasibility Study based on an alternative hydrometallurgical process in order to reduce CAPEX and OPEX. Further, the updated study includes reviewing and reworking the process design criteria, revisiting cost estimates and finalizing plant designs. This new study is proposed to commence once a new plant location is finalized and the final pilot trial is concluded. A discounted cash flow analysis was also undertaken in 2013, yielding a 22.5% pre-tax

internal rate of return ("IRR") and a 19.6% post-tax IRR, assuming only equity financing. The analysis returned a pre-tax net present value ("NPV") of CAD \$1.351 billion and a post-tax NPV of CAD \$900 million. The Feasibility Study analysis resulted in a payback period of 4.3 years with the total project capital costs estimated at CAD \$1.575 billion, including CAD \$122 million in sustaining capital for construction of mining capacity of 2,000 metric tons per day underground mine and other facilities such as a concentrator, hydrometallurgical processing plant along with a refinery with an annual capacity of 10,000 metric tons of separated rare earth oxides. The Company estimated the average operating cost at CAD \$362 per metric ton mined and average revenue at CAD \$885 per metric ton mined.

Factor	Result			
Estimated Net Present Value	CAD 1.35 billion pre-tax; CAD 900 million post-tax			
Projected IRR	22.5% pre-tax; 19.6% post-tax			
Payback period	4.3 years			
Estimated Capital Expenditure	CAD 1.575 billion			
Assumed Mining Capacity	2000 metric tons per day			

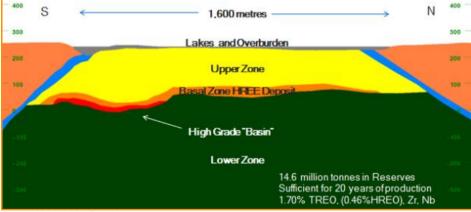
### Exhibit 11: Initial Project feasibility study returned favorable analysis in 2013

Source: Nechalacho Factsheet

### **Exploration Activity**

Since acquiring the project in 2005, the Company has made investments of over CAD \$100 million. As per the press release dated October 8, 2014, the Company announced the conclusion of a one-month drilling program. Seven large diameter holes were drilled totaling 1,773 meters, bringing the total drilled inventory to approximately eight metric tons. To date, the total diamond drill holes stood at more than 559 holes with over 120,197 meters drilled. The results indicated presence of high-grade mineral sub-zone, known as the Basal Zone. Further, the Company has also undertaken several metallurgical, geology, market and environmental studies. Exhibit 12 displays the vertical cross section of the deposit.





Source: Nechalacho Factsheet

### **Resource Estimation**

Feasibility estimates indicate probable and proven mineral resources standing at 14.6 million metric tons with TREO averaging at 1.70% and HREO at 0.46% along with deposits of zirconium and niobium, forecasting a total twenty-year mine life. Recent flotation investigations have raised the estimate for TREO recovery to more than 91.5% versus the reported 89% in December 2013 and 78% reported in the initial Feasibility Study. Exhibit 13 displays the summary of proven and probable resources.

### Exhibit 13: Nechalacho's proven and probable resources

	Tonnage	TREO	HREO	TREO/HREO
Proven	3,682,347	1.73%	0.47%	27.26%
Probable	10,917,653	1.69%	0.45%	26.61%
Proven and Probable	14,600,000	1.70%	0.46%	26.78%

Source: Avalon's Nechalacho Factsheet

Measured and indicated mineral resources at 65.86 million metric tons could potentially support a much longer mine life. A higher cut-off grade implies extraction from deeper depths where mineral concentration is higher but mineral reserves are lower.

Exhibit 14: Nechalacho's in	dicated resources	support a higher	mine life probability

Basal Zone	Tonnes (in millions)	TREO	HREO	TREO/HREO	ZrO2
At U	JS\$ 345 NM	R Cut-Off (	(reflects ei	ntire Basal Zon	e)
Measured	12.56	1.71%	0.38%	22.50%	3.20%
Indicated	49.33	1.62%	0.35%	21.27%	3.07%
A	t US\$ 800 N	MR Cut-O	off (High G	Frade "Basin")	
Measured	5.11	2.20%	0.58%	26.17%	4.23%
Indicated	16.15	2.20%	0.55%	24.87%	4.13%
At US\$ 1000 NMR Cut-Off (selected parts of High Grade "Basin")					
Measured	2.49	2.49%	0.68%	27.38%	4.77%
Indicated	6.99	2.52%	0.66%	26.03%	4.66%

Source: Nechalacho Factsheet

**NOTE:** NMR is defined as "Net Metal Return", which is the in situ value of all payable metals, net of estimated metallurgical recoveries and off-site processing costs.

### **Future Plans & Strategy**

The Company is monitoring the rare earths market and new research into rare earth extraction techniques that can reduce both operating costs and capital costs. CAPEX was estimated at CAD \$1.5 billion in the feasibility study. Renewed work on the Project is contingent upon recovery in demand and pricing for rare earths and lower capital costs.

## **Company Timeline and Key Events**

Exhibit 15 below shows the reverse chronological timeline of the evolution of Avalon, summarizing some key annual events for the Company since 1991.

### Exhibit 15: Timeline summarizing significant events

Dates	Events
03-Nov-15	Avalon provides update on the East Kemptville Tin-Indium Project
08-Oct-15	Commencement of process work by a third party in Germany to validate production of high quality lithium mineral for Separation Rapids mine.
17-Aug-15	Avalon commenced pilot plant program on the Separation Rapids Lithium Project with an investment of CAD \$750,000.
05-Aug-15	Received a letter from NYSE MKT LLC, stating the Company's non-compliance with the listing standards of the exchange due to low selling share price.
15-Jun-15	Commenced CAD \$1.3 million work program on the East Kemptville Tin-Indium Project in Nova Scotia.

27-May-15	Avalon closed a public offering through which the Company received gross proceeds of CAD \$4 million.
25-Feb-15	The Company announced the completion of Conceptual Redevelopment Study conducted at East Kemptville Tin Deposit by Hains Engineering Company Limited. The study confirmed the potential for redevelopment of the East Kemptville Tin Deposit.
19-Dec-14	Avalon closed a non-brokered private placement of 8.9 million common shares for gross proceeds of approximately CAD \$2.4 million.
31-Oct-14	The Company reported first National Instrument 43-101 resource estimate for the East Kemptville deposit in Nova Scotia.
30-Apr-14	Received 'Class A' Land Use Permit from the Mackenzie Valley Land and Water Board for starting pre-construction work at the Nechalacho Rare Earth Elements Project.
03-Mar-14	Avalon entered into an agreement with Solvay for conversion of the Company's rare earth concentrates into pure rare earth oxides for a period of 10 years from start of deliveries.
27-Nov-13	The Company entered into an agreement with Lincoln Park Capital Fund, LLC, through which Avalon may sell up to CAD \$30 million worth of shares over the period of 36 months.
05-Nov-13	Report of Environmental Assessment for the Nechalacho Rare Earth Elements Project was approved by the Minister of Aboriginal Affairs the Honorable Bernard Valcourt and Northern Development Canada.
25-Sep-13	Avalon entered into an agreement with Cowen and Company, LLC pursuant to which the Company may from time to time sell common shares that would result in gross proceeds of up to CAD \$25 million.
26-Nov-12	The Company's updated resource estimate at Nechalacho Rare Earth Elements Deposit indicated increased mineral resources at project site.
27-Jul-11	Avalon priced its underwritten public offering of 7.1 million common shares at CAD \$6.15 to yield gross proceeds of CAD \$43 million.
27-Jan-11	The Company provided an update on the development work on the Nechalacho Rare Earth Elements deposit, which reported an increase in Indicated Mineral Resources to 57.49 million metric tons from the earlier estimate of 20.45 million metric tons.
21-Dec-10	Avalon's shares authorized to trade on NYSE MKT.
30-Sep-10	The Company closed public offering of 9.2 million shares at CAD \$3.25 to raise gross proceeds of CAD \$30 million.
08-Sep-10	Result from the 2010 winter drilling program indicated a 40% increase in the Indicated Resources at Nechalacho Rare Earth Elements Deposit.
17-Sep-09	The Company completed private placement of special warrants and flow-through special warrants for a gross proceeds of CAD \$17.5 million.
18-Feb-09	The Company's name changed to Avalon Rare Metals Inc. from Avalon Ventures Ltd ("Avalon Ventures").
15-Dec-08	Avalon Ventures closed non-brokered private placement of 3 million shares to raise gross proceeds of CAD \$1.5 million.
27-Feb-08	The Company's stock began trading at Toronto Stock Exchange with the symbol of "AVL".
08-Jan-08	Assay results from Thor Lake Phase 1 drilling program confirmed the presence of high grade rare earth mineralized zones in the deposit.
23-Nov-07	Avalon closed private placement of 7.6 million common shares for gross proceeds of CAD \$16.8 million.
13-Mar-06	The Company commences Phase 2 Bulk Sampling Program at Separation Rapids Lithium Minerals Project, Kenora, Ontario.
29-Sep-94	Avalon's name was changed to Avalon Ventures Ltd. from Keith Resources.
24-Jul-91 Source: Compa	The Company was formed under the name of name Keith Resources Ltd. ("Keith Resources") pursuant to the amalgamation of Meadfield Mining Corp. and Rockridge Mining Company.

# **Industry Overview**

We now discuss briefly relevant aspects of the Canadian mineral industry and demand drivers for lithium, tin and REE markets. We emphasize here industry dynamics for lithium and tin as these elements are the current priorities for the Company.

Canada is one among the top mineral producing nations across the world producing more than sixty metals and minerals. The industry is the largest private sector employer with more than 380,000 employed directly. The industry also has more than 3,400 companies supplying engineering, environmental, geotechnical, financial and other services to mining operations.

# Lithium demand driven by batteries and extraordinary growth in Electric Vehicles (EV)

Lithium manufacturers across the world stand to benefit from rapidly increasing consumption of lithium batteries. Exhibit 16 shows global end use markets for lithium.

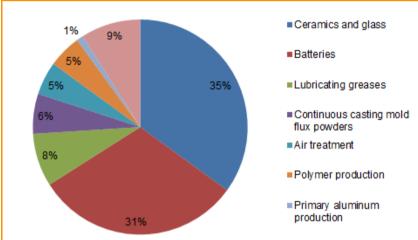


Exhibit 16: Ceramics & Glass and Batteries are major end-use markets for Lithium

Source: U.S. Geological Survey (USGS), Mineral Commodity Summaries, January 2015

Although there are a number of applications, demand for rechargeable batteries is the largest growth area for lithium compounds. According to the USGS, lithium consumption for batteries has grown significantly in recent years due to the extensive use of rechargeable lithium batteries in the growing market for portable electronic devices. They are also increasingly used in electric tools, electric vehicles and grid energy storage applications. According to independent industrial minerals market analyst, Roskill Information Services, global consumption of lithium increased by 80% over the five year period ending 2014, while consumption of lithium for battery applications grew by 166%.

Further, as per research estimates from Stormcrow Capital (materials consulting firm), global lithium demand is forecast to reach 410,000 metric tons in 2025 from the current level of 200,000 metric tons as shown in Exhibit 17.

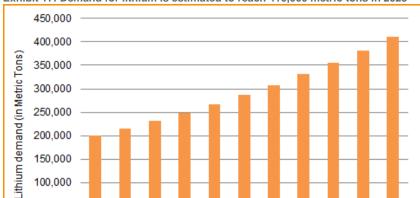


Exhibit 17: Demand for lithium is estimated to reach 410,000 metric tons in 2025

300,000 250.000 200,000 150.000 100.000 50,000 0

Further, the demand from automobile manufacturers generally could support this trend in the market. Tesla, a leading electric car manufacturer, has announced its plan to build a large lithium-ion battery plant in the US, capable of producing up to 500,000 lithiumion vehicle batteries per year by 2020. These industry trends could further enhance the demand for lithium and related minerals.

2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025

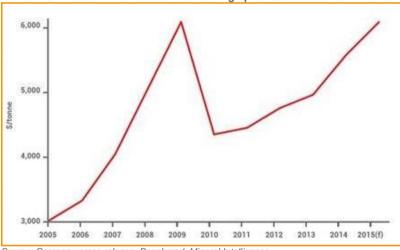


Exhibit 18: Price of lithium carbonate trending upwards could benefit miners

Source: Company press release, Benchmark Mineral Intelligence

Exhibit 18 above shows the upturn in price of lithium carbonate beginning in 2011. For the past few years, as demand for lithium and related metals has been rising, the prices of lithium carbonate have correspondingly increased. The increasing price trend makes new lithium development projects very attractive investment opportunities.

### Recent price weakness belies looming tin supply shortage

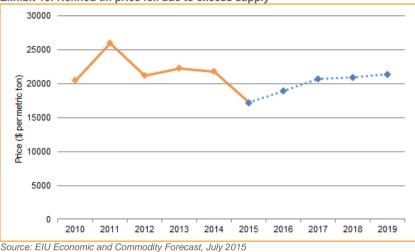
We now present an overview of the tin industry. Unlike lithium, global tin prices have softened due to reduced demand with the global economic slowdown. Demand for tin primarily comes from its use in solders for consumer electronics (accounts for 52% of tin demand), as well as its continued use in tinplate (16%), production of chemicals (13%), brass & bronze (6%) and glass (2%). Data from the Economist Intelligence Unit suggest that consumption of tin grew at a rate of 2.1% in 2014 and expected to grow about 2% for the year 2015-16. However, production of refined tin rose by almost 5% in 2014, pushing the global tin market into surplus. Such increased production in excess of demand has negatively affected the refined tin prices across the world. However, much of the new supply comes from artisanal sources in Myanmar which are unlikely to be

Source: Stormcrow Capital

RB MILESTONE GROUP

sustainable in the long term. Exhibit 19 shows the EIU's estimates of tin price, expected to modestly increase in future years.





However, the supply situation is expected to rebalance in 2015-16 as the rate of increase in refined tin production slows in line with a probable moderation in mine output from other parts of the world. Supply from Myanmar could continue to be a risk factor. According to a Reuters survey published October 26, 2015, analysts' base metals forecasts of annual average LME tin prices for 2016 had a mean value of \$16,760/tonne (forecast price range: \$15,000/t - \$19,500/t for tin). There has been little investment in new tin production over the past 10 years and as production goes off-line in South America and Indonesia, a supply deficit is likely to occur to boost tin prices again.

### Electronic applications of indium should drives growth prospects

Avalon stands to benefit in many ways from the expected continued growth in demand for electronic devices. Indium has major use as Indium Tin Oxide (ITO) in the manufacture of flat panel devices including flat screen computer monitors, smartphones, televisions and tablets. Particularly, applications of indium in touchscreen and smart devices should drive demand for indium in the coming years. According to IDC Research, the combined market for smartphones, tablets and PCs is estimated to be 1.8 billion units in 2014 and it is set to grow to 2.5 billion units by 2019. Exhibit 20 shows that the market for smartphones should dominate growth of other applications through 2019. Such positive outlook for the indium end markets should help Avalon advance their East Kemptville project to the next stage.

Category	2014 Shipment Volume (in millions)	2019 Shipment Volume* (in millions)	CAGR
Smartphone	1,300	1,959	8.50%
Tablets plus 2-in-1	230	269	3.20%
Portable PC	174	170	-0.40%
Desktop PC	134	121	-2.00%
Total	1,838	2,520	6.50%
* represente forecest			

Exhibit 20: Global Smart connected shipments is forecast to grow at a CAGR of 6.5%

\* represents forecas

Source: IDC Worldwide Quarterly Smart Connected Device Tracker, March 20, 2015

### Technology-driven demand for REE should improve growth

Despite a wide range of already existing applications, increasing use of REE in new technology trends has opened avenues for REE production companies. Traditionally, REE have found use in the fields such as machinery, metallurgy, chemicals, petroleum, glass, ceramics, agriculture, light industry and textiles. Evolution of new metal alloys and specialty chemicals such as permanent magnet materials, luminescent materials and hydrogen storage materials have significantly increased the demand for REE. For example, discovery of the neodymium magnet (neodymium-iron-boron alloy or "Nd2-Fe14-B alloy"), which is the most powerful magnetic material produced at industrial scale, has led the way for product miniaturization in number of industries such as automobile, wind turbines, mobile computing and telephony, aircraft, satellites, defense and many others. Dysprosium additions to the neodymium-iron-boron alloy, which is used as Rare Earth Permanent Magnet ("REPM"), makes the battery capable of withstanding higher operating temperatures, up to 220°C. These are high-performance and compact magnets now critical to electric motors, hard drives and direct-drive wind turbines. According to Patrice Christmann, Head of Unit Mineral Resources Strategy, BRGM (French Geological Survey), demand for neodymium and dysprosium is estimated to grow at a CAGR of 9% and 12.5% respectively till 2016 due to expected growth in the REPM market.

Exhibit 21 provides information on the quantity of TREO produced in 2011 and the estimated demand in 2020 along with their applications.

Industry	Rare Earth Elements	Applications	2011 Production (in Metric Tons)	Demand for REE in 2020 (Metric Tons)
Permanent Magnets	Nd, Dy, Pr	Windmills, hard-disk drives, automobile, defense and many more	21,000	42,0000- 69,900
Nickel–metal hydride batteries	La, Ce	Batteries, especially in hybrid vehicles	21,000	30,000- 50,3000
Phophoros	Eu, Tb, Y, Ce, Dy, Gd, La, Pr	Videoscreens (TV, computers) ; compact fluorescent lightbulbs, LEDs, banknotes	8,000	12,000- 20,000
Catalysts for the oil & gas industry	La, Ce, Pr, Nd	Cracking of larger hydrocarbon molecules into light products for the production of fuels	20,000	22,300- 37,100
Polishing powder	Ce, La, Nd	Polishing powder for automobile windshields	14,000	16,300- 27,100
Catalysts for the automotive industry	Ce, La, Nd	Reduction of particulates, Sox and Nox in exhaust gas	7,000	10,100- 16,800
Glass industry	Ce, La, Nd, Er, Pr, Eu	UV filtering (Ce in windshields), La for optical glass (cameras), other for coloring	8,000	8,900- 14,900

Source: Research paper published by Dr.Patrice Christmann

# Favorable initiatives and China's export restrictions should benefit REE industry in Canada

Support from the Canadian government for production of REE and other critical metals should benefit the Company. In 2013, the Canadian Rare Earth Elements Network ("CREEN") set a target for Canada to secure 20% of world's REE supply by 2018. CREEN's primary objectives include identifying research funding opportunities, facilitating collaboration, promoting and disseminating findings and establishing an accessible inventory of REE projects. It is considering expanding its business to include other critical materials such as lithium which also needs an industry association to

support lobbying efforts in Ottawa. Further, the Government of Canada in the Economic Action Plan 2015 has proposed to allocate CAD \$23 million over the next five years, starting in 2015-16, from Natural Resources Canada for stimulating the technological innovation needed to develop sectors related to rare earth elements and chromite.

Currently, the industry is dominated by China contributing around 90% of the world's REE supply. Since 2005, the Chinese government has been imposing trade restrictions on its REE exports. This has resulted in significant price increases of REE, making it favorable for exploration and development of REE projects across the rest of the world, especially Canada. In early 2015, China replaced its controversial rare earth quota system with special export licenses, which may in fact increase China's restrictions on the exports of rare earths to the rest of the world.

Such positive strides in favor of the REE industry could support junior mining companies, as they lack financial resources necessary to advance their projects to next stage.

# SWOT

We now briefly study the strategic outlook for Avalon by summarizing the strengths and weaknesses of the Company, along with the opportunities and threats in the external environment.

### **Strengths**

### Niche lithium mineral has few competitors

Avalon is developing a resource of the rare high purity lithium mineral called petalite at its Separation Rapids project site. The mineral is produced at only one other site in the world, which is located in Zimbabwe. Petalite is a preferred mineral for manufactures of zero thermal expansion glass, ceramic glazes and clay cookware. Well-known consumer applications include Corning ware cookware and Ceran glass-ceramic stovetops. In addition, petalite is preferred over other lithium minerals in glass ceramic applications due to low level of impurities in the mineral. Such high purity minerals are also desired in the production of ultra-high purity lithium chemicals for rechargeable battery applications. As potential supply sources of petalite are limited, the Company has the potential to carve out a niche market in the production of petalite from its Separation Rapids project.

### Diversified resource base reduces investor risk

The Company has six mineral properties, all 100% owned, of which three are advanced development projects, namely, Separation Rapids, East Kemptville and Nechalacho. At the Separation Rapids project site, the Company is developing a large lithium minerals resource. It is a 100% owned project with 8.9 million metric tons of indicated resources and 2.7 million metric tons of inferred resources. Avalon has planned to complete the Feasibility Study and identify a plant site for the project by 2017.

At the East Kemptville tin project, the Company explores for tin and indium. The recent drill results estimated indicated resources of 18.47 million metric tons and estimated inferred resources stood at 16.95 million metric tons.

At the Company's Nechalacho project, it is developing a large resource rich in the scarce Heavy Rare Earth Oxides. It has probable and proven mineral resources of 14.6 million metric tons. See Key Assets section for more details. Exposure to a broad range of specialty minerals and metals reduces the investment risk of high price volatility and over-supply compared to a single commodity play.

### Management team

Avalon's management team has considerable expertise in technical and financial aspects of the advanced materials business, which is a major strength of the Company compared to many of its industry peers. The Company's top executives have more than

130 years of combined experience in the mineral industry. Mr. Donald S. Bubar, president and CEO of the Company, is a geologist with more than 35 years of experience in the mining industry. The Company's CFO and Vice President-Finance started his career with the mining services team at Coopers & Lybrand in Toronto and has more than 20 years of experience in the mining industry. Similarly, Mr. Mark Wiseman, Vice President-Sustainability; Dr. William Mercer, Vice President-Exploration; and Mr. Dave Marsh, Senior Vice President-Metallurgy and Technology Development each have widespread knowledge, expertise and experience related to the mining industry. Mr. Pierre Neatby, VP Sales and Marketing, brings over 20 years of market development experience to the Company: an area of expertise that is critical to success in non-exchange traded commodities such as lithium and rare earths.

### **Good capital raising capabilities**

Ability to raise capital (both in Canada and in the US) consistently to cover planned project development costs indicates investor confidence in the prospects of the Company. Most recently, in May 2015, the Company closed a public offering of its common shares to raise CAD \$4 million. Similarly, in December 2014, Avalon closed a non-brokered private placement to raise CAD \$2.4 million. Since November 2012, on average, the Company has raised capital of CAD \$1.7 million per quarter to meet the cost of exploration, despite an overall bear market environment in the minerals and metals sector. Such initiatives portray the strength of the Company's assets and investors' confidence in the management team.

### Sustainability part of the corporate culture

Avalon is a leader among junior companies in the implementation of exceptional environmental and social performance into its business plan. Avalon is the only junior we know of that produces an annual GRI-compliant sustainability report and it has being doing so for 4 years now. It has a very good reputation for engagement with Aboriginal communities. This emphasis on sustainability greatly reduces social license risk, permitting risk, and enhances its reputation amongst consumers of specialty metals in the cleantech industry.

### Weaknesses

### Lack of cash flow from operations

Though Avalon has been in operation for more than two decades, it has no cash flow from operations yet and continues to rely on the equity markets to finance its operations, which are challenging for resource companies at the present time.

### Rare Earths out of favor with investors

Avalon is known in the US mainly for its rare earths project, as this was its primary focus when it listed on the NYSE-MKT. However, low rare earth prices and the failure of US industry leader Molycorp to meet investor expectations have resulted in greatly reduced investor interest in the sector. Avalon is in the process of re-branding to help investors recognize that it is not solely a rare earths company.

### **Opportunities**

### **Rising demand for lithium and related products**

With rising use of mobile and portable electronic devices, consumption of lithium has grown significantly. This has changed the lithium consumption in the battery sector accounting for 27% in 2012 as compared to 20% in 2007. The demand for batteries is set to grow further due to the rapid demand for electric vehicles ("EV"). The overall global demand for EV's stood at 76%, with the total EV registrations increasing two fold per year between 2012 and 2014. See Industry Overview section for more details. Avalon could capitalize on the increasing demand for lithium minerals, which could enhance its growth prospects.

### Looming supply deficit in the tin market

The International Tin Research Institute ("ITRI") and other tin industry observers note that there has been little investment in new tin production capacity over the past 10 years. With tin production going off-line in Peru and Indonesia, a supply deficit is likely to arise over the next few years. Current low tin prices actually create opportunity for Avalon as the on-going bear market is not encouraging much investment in new tin exploration and development.

# Support from Canadian government for development of advanced materials sector

The Government of Canada in its Economic Action Plan 2015 has proposed some policies beneficial to the companies in the specialty minerals and metals sector of the mineral development industry. These include:

- CAD \$23 million allocated over five years, to stimulate the technological innovation required to separate and develop rare earth elements and chromite.
- CAD \$22 million allocated over five years, to renew the Targeted Geoscience Initiative.
- Extended the 15% Mineral Exploration Tax Credit for flow-through share investors till March 2016.
- Funding support for new technology related to sustainable development including extractive technology for advanced materials such as lithium and rare earths

### **Threats**

### Competition

Avalon operates in an industry where the mineral exploration companies compete for mineral concessions, partners for joint ownership, infrastructure assets and attention from investors. There are a number of companies in the industry with significantly greater financial resources, operational expertise and technical capabilities than that of the Company. Further, increases in rare metals prices could attract more competitors to the sector. Increased competition could adversely affect Avalon's ability to attract required capital funding or acquire suitable properties or to make investment in exploration blocks for its future prospects.

### **Regulations and China's export restrictions**

Avalon's operations are subject to various restrictions as federal, provincial, territorial and local laws and regulations related to the metals and mining industry in Canada. The Company must abide by regulations, which govern exploration laws, price controls, labor laws and environment protection and remediation, occupational health and safety, mine safety and other regulations. Changes in laws and regulatory procedures could add to compliance costs or even disrupt the Company's operations. Further, any further relaxation of China's export restrictions could adversely affect the REE market.

### **Changes in technology**

Research and development in the field of batteries could change the technological landscape. Research across the world currently is focused on extending the battery life or using fewer amounts of lithium while attaining the same power density. Researchers are mulling ways of using aluminum along with lithium to create batteries, which has four times the capacity of lithium-ion batteries with ability to degrade less over time. Such technological breakthroughs could potentially decrease lithium demand. However, most market experts feel this is highly unlikely in the near term. It has taken nearly 20 years for the lithium ion battery technology to achieve broad acceptance in the marketplace. Nevertheless, this may present a challenge for the Company's growth prospects in the future.

# **Financial Performance**

We now discuss the financial performance of Avalon Rare Metals Inc. for the nine months ended May 31, 2015. The Company follows the fiscal financial period of September-August.

As previously discussed, the Company does not generate any revenue from any of its development projects. The Company requires significant capital and time for the proper execution of the Nechalacho project, which Avalon can support through their cash resources. However, after exhausting their cash resources, the Company may have to depend on equity markets to raise further capital for its exploration and development programs. Avalon may also need to finance its exploration project through joint ventures or other strategic partnerships.

Exhibit 22 offers an insight into Avalon's cash burn rate and its financial sustainability. The Company's fundraising capabilities have been good, with equity funding including exercise of options averaging at CAD \$1.7 million per quarter for the last three years. The Company's burn rate averages CAD \$1.5 million per month or CAD \$4.5 million per quarter. At these burn rates, the Company's survival period in months averaged 6.6 months. During the nine months ended May 2015, the Company's equity financing stood at CAD \$7.5 million.

At the end of the quarter ended May 2015, Avalon's cash balance was CAD \$7.6 million. At current operational levels, the survival period stands at 18 months, mainly due to reduced operational and exploration expenditures. The burn rate analysis takes into account the net investing cash flow as the exploration business is asset heavy and requires significant capital expenditures in the initial stages of exploration.

Quarters	May-13	Aug-13	Nov-13	Feb-14	May-14	Aug-14	Nov-14	Feb-15	May-15	Average
Net operating cash flow	\$ (1.4)	\$ (1.5)	\$ (1.6)	\$ (1.5)	\$ (1.1)	\$ (1.2)	\$ (1.1)	\$ (1.1)	\$ (0.8)	\$ (1.3)
Net investing cash flow	\$ (3.6)	\$ (3.3)	\$ (3.6)	\$ (2.0)	\$ (2.6)	\$ (2.0)	\$ (1.8)	\$ (0.7)	\$ (0.5)	\$ (3.2)
Net financing cash flow	\$ 0.2	\$-	\$ 3.4	\$ 0.4	\$ 1.4	\$ 6.0	\$ 0.3	\$ 3.3	\$ 3.9	\$ 1.7
Cash position (quarter end)	\$ 15.1	\$ 10.3	\$ 8.6	\$ 5.5	\$ 3.2	\$ 6.0	\$ 3.4	\$ 5.0	\$ 7.6	\$ 10.0
Burn Rate per month		\$ (1.6)	\$ (1.7)	\$ (1.1)	\$ (1.2)	\$ (1.0)	\$ (1.0)	\$ (0.6)	\$ (0.4)	\$ (1.5)
Survival period (in months)	9.0	6.4	5.0	4.8	2.6	5.8	3.6	8.3	18.0	6.6

Exhibit 22: Historical burn rate estimates imply a survival of 6.6 months

Source: RBMG Research

### Exhibit 23: Balance Sheet as on May 31, 2015 and 2014

Balance Sheet for the nine months ended May 31	2015	2014	%change
Assets			
Current Assets:			
Cash and cash equivalents	7,580,276	3,167,996	139%
Other receivables	315,953	334,090	-5%
Prepaid expenses and deposits	474,385	884,439	-46%
Non-Current Assets:			
Exploration and evaluation assets	8,199,960	6,721,414	22%
Property, plant and equipment	103,586,230	100,405,287	3%
Total Assets	120,156,804	111,513,226	8%
Liabilities			
Current Liabilities:			
Accounts payable	353,356	686,018	-48%
Accrued liabilities	701,091	608,341	15%
Deferred flow -through share premium	489,473	-	NM
Warrants denominated in foreign currency	870,118	-	NM
Non-Current Liabilities:			
Site closure and reclamation provisions	236,600	236,600	0%
Total Liabilities	2,650,638	1,530,959	73%
Shareholders' Equity			
Share Capital	164,887,173	154,923,457	6%
Reserve for Warrants	4,019,784	3,661,080	10%
Reserve for Share Based Payments	16,046,691	15,884,009	1%
Reserve for Brokers' Compensation Warrants	219,238	-	NM
Accumulated Deficit	(67,666,710)	(64,486,279)	5%
Total Shareholder's Equity	117,506,176	109,982,267	7%
Total Liabilities and Shareholder's Equity Source: Company Filings	120,156,814	111,513,226	8%

Source: Company Filings

Exhibit 23 presents the Company's balance sheet as of May 31, 2015. The Company had a cash balance of CAD \$7.58 million and working capital of CAD \$7.31 million to sustain its cash burn rate and to finance its operating expenditures. The accounts payable and accounts receivables decreased 45.5% and 5.2% for the nine month ended May 31, 2015, primarily due to management's current efforts towards reducing the overall overhead costs. Prepaid expenses decreased to CAD \$0.4 million during the nine months ended May 31, 2015 from CAD \$0.8 million in the same period of 2014.

Exhibit 24: Income Statement for the nine months ended May 31

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Income Statement for the nine months ended May 31 (CAD\$)	2015	2014	% Change
Revenue			
Interest	44,103	66,732	-34%
Expenses			
Corporate and administrative expenses	3,089,811	4,201,496	-26%
Impairment loss on exploration and evaluation assets	6,406	25,109	-74%
Write-off of land acquisition option payments	212,960	175,104	NM
General exploration	30,148	5,618	437%
Depreciation	43,271	126,260	-66%
Share based compensation	633,092	1,010,432	-37%
Foreign exchange loss (gain)	(18,992)	23,028	-182%
Financing transaction costs	-	-	NM
Decrease in fair value of warrants denominated in foreign currency	(850,504)	-	NM
Total Expenses	3,146,192	5,567,047	-43%
Net Loss before Income Taxes	(3,102,089)	(5,500,315)	-44%
Deferred Income Tax Recoveries	151,924	-	
Net Loss and Total Comprehensive Loss for the period	(2,950,165)	(5,500,315)	-46%
Loss per Share Basic and Diluted	(0.02)	(0.05)	-57%
Weighted Average Number of Common Shares Outstanding, Basic and Diluted	135,548,697	109,006,410	

Source: Company Filings

Exhibit 24 shows the Company's income statement for the nine months ended May 31, 2015. Currently, interest income is the only source of revenue for Avalon and the Company witnessed a decline of 76% in interest income for the nine month ended May 31, 2015, is as a result of lower cash balance compared to the same period in 2014. The Company's cost reduction efforts are yielding results, as its corporate and administrative expenses for the nine months ended May 31, 2015, decreased 26% compared to same period in 2014. Net Loss for the nine month ended May 31, 2015, stood at CAD \$3.0 million, a decrease of 46% compared to CAD \$5.5 million in the same period of 2014.

Exhibit 25: Cash Flow Statement for the nine months ended May 31, 2015 and 2014

Cash flow statement for nine months ended May 31 (CAD\$)	2015	2014	% change
Cash Flow from Operating Activities			
Cash paid to employees	(1,548,648)	(1,996,888)	-22%
Cash paid to suppliers	(1,399,309)	(2,206,367)	-37%
Interest received	41,115	63,744	-35%
Cash Used by Operating Activities	(2,906,842)	(4,139,511)	-30%
Cash Flow from Financing Activities			
Proceeds from equity offerings	7,464,430	4,873,885	53%
Proceeds from exercise of stock options	11,000	252,500	-96%
Proceeds from exercise of warrants	-	-	NM
Proceeds from exercise of brokers' compensation warrants	-	-	NM
Share issuance costs	-	-	NM
Cash Provided by Financing Activities	7,475,430	5,126,385	46%
Cash Flow from Investing Activities			
Exploration and evaluation assets	(1,126,402)	(882,625)	28%
Property, plant and equipment	(1,898,500)	(7,227,023)	-74%
Cash Used by Investing Activities	(3,024,902)	(8,109,648)	-63%
Change in Cash and Cash Equivalents	1,543,686	(7,122,774)	-122%
Foreign Exchange Effect on Cash	18,992	(23,028)	NM
Cash and Cash Equivalents – beginning of period	6,017,598	10,313,798	-42%
Cash and Cash Equivalents – end of period	7,580,276	3,167,996	139%

Source: Company Filings

Exhibit 25 presents the cash flow statement for the nine months ended May 2015 and 2014. During the nine months ended May 2015, the Company raised CAD \$7.5 million via equity versus CAD \$5.1 million during the same period in 2014, an increase of 46%. The Company significantly reduced its investment in property, plant and equipment from CAD \$7.2 million for the nine months ended May 2014 to CAD \$1.9 million for the same period ended 2015. Further, the Company increased its investments in exploration and evaluation of assets. As a result of the tapering activities in development assets, the Company's new investments in resource properties dropped by 63% for the nine months ended May 2015 vs. the same period ended May 2014. The Company is now striving to reduce operational burn levels by maintaining optimum human resource and cutting personnel expenditures.

## **Key Risk Factors**

### No operating revenues and a history of losses

Currently, the Company has no operating revenues as it has yet to commence production at its project sites. As noted before, the Company is currently developing two of its six mineral resource properties. Until the Company is able to advance the remaining projects to production stage, losses maybe expected to continue.

### Ability to secure additional financing for business operations

The Company currently does not have adequate funds to complete the development and construction of the Nechalacho project. The Company anticipates that it can raise some of the required funds in Canada through "Flow-through" type equity financing for which there is typically interest near year end as this instrument offers tax benefits to the investor. However, over the last few years, the environment for financing in the mining industry has been challenging. Failure to raise required financing for the project may negatively affect the development of the project resulting in delays.

### **Risks related to nature of operations**

Avalon operates in the mineral development industry, which is highly speculative in nature. Though there are estimates of mineral deposits, reserves and production costs, factors such as unforeseen technical difficulties, unexpected geological formations, weather and permitting delays could materially affect the feasibility of the projects.

# Changes in market price of commodities related to Avalon could affect the viability of projects

Demand and prices of commodities that the Company explores have fluctuated recently. Factors affecting the prices of those commodities include global economic and political conditions, supply of commodities from China, regulation and quota restrictions from the major suppliers and demand from end markets. Substantial fall in the demand and prices of commodities explored could impair the Company's ability to mine economically and find purchasers for its products at the prices acceptable to the Company.

### Avalon operates in a highly competitive industry

The mineral exploration and development industry is highly competitive and there is significant competition for the mineral produce and concessions. Avalon may have to compete with other companies having greater financial resources, technical capabilities and better operational experience. There is intense competition for exploration resources which could lead to price wars, and may result in reduced margins and profitability for the Company.

### Operations are subject to environmental laws and regulations

Every phase of exploration and development are subject to government regulation and environmental laws. Regulations are related to waste management, water discharge management, releasing of hazardous substance and protection of natural resource etc. Non-compliance of these regulations may entail significant capital outflows, resulting in delays in project completion and may increase liabilities.

# **Shareholding Pattern**

At the end of the nine months ended May 2015, the Company had 152,785,482 shares outstanding, including options. Exhibit 26 presents the top shareholders at the end of the quarter ended May 2015.

Name	Shares Held	% of total shares	Date of Portfolio
UBS Global Asset Mgmt Americas Inc	3,469,986	2.42%	6/30/2015
Empery Asset Management, LP	2,586,451	2.03%	12/31/2014
Royal Bank Of Scotland Group PLC.	910,859	0.66%	6/30/2015
CaldwellInvestmentManagementLtd.	1,713,500	1.16%	9/30/2015
Carnegie Capital Asset Management, LLC	328,103	0.24%	6/30/2015
UBS Securities LLC	291,791	0.21%	6/30/2015
CommerzbankAG	275,380	0.20%	6/30/2015
Hauck & Aufhäuser Banquiers Lux S.A.	360,000	0.24%	8/31/2015
Global X Management Company LLC	200,851	0.14%	6/30/2015
Marquest Asset Management Inc.	277,081	0.19%	8/31/2015
Morgan Stanley & Co Inc	181,558	0.13%	6/30/2015
Canada Pension Plan Investment Board	129,810	0.09%	6/30/2015
Next Financial Group, Inc.	82,985	0.06%	6/30/2015
Dimensional Fund Advisors LP	118,100	0.08%	8/31/2015
Guardian Capital Advisors LP	77,000	0.06%	6/30/2015
Maryland Capital Management, LLC	60,000	0.04%	6/30/2015
Creative Planning, Inc.	59,000	0.04%	6/30/2015
Citadel Advisors Llc	56,140	0.04%	6/30/2015
Compagnie Lombard, Odier SCA	39,500	0.03%	6/30/2015
KCG AMERICAS LLC	37,571	0.03%	6/30/2015

Source: Morningstar Data

# **Profile of Directors and Management**

### Brian D. MacEachen, Non-Executive Board Chair (CA)

Mr. MacEachen has served as the Independent Chairman of the Board since January 2013 and has been a Board member since 1998. His core expertise lies in the strategic and financial management of public mining companies. With over 20 years of experience, Mr. MacEachen has held diverse leadership roles including serving as the President and CEO of Linear Metals Corporation. Prior to that, he also was the CFO of Linear Gold and Linear Metals and has also been the Executive VP of sister company, Brigus Gold Corporation. A Chartered Accountant by profession, Mr. MacEachen also holds a Bachelor of Business Administration from St. Francis Xavier University.

### Donald S. Bubar, President and CEO (M.Sc., P. Geo)

Mr. Bubar has been the President and CEO of Avalon since 1995. Currently, he also serves on the Board and the Executive Committee of the NWT and Nunavut Chamber of Mines. Prior to this, he worked at Aur Resources Inc. for more than 10 years as the Exploration Manager and subsequently as the Vice President of Exploration. During his tenure at Aur Resources, he was credited with the discovery of world-class Louvicourt (Copper-Zinc-Gold-Silver) deposit in Quebec. Mr. Bubar is a well-known Consulting Geologist with 30 years of experience. He has also served as the Director of the Prospectors and Developers Association of Canada (PDAC) for a period of nine years and the Chair of Aboriginal Affairs Committee from its inception in December 2004 up to March 2013. Mr. Bubar graduated with a Bachelor of Sciences from McGill University and a Master of Sciences from Queen's University.

### R.J. (Jim) Andersen, Vice President-Finance and CFO (CPA, CA, CGMA)

Mr. Andersen has been serving as Vice President of Finance and the CFO since June 2001. Mr. Andersen has over 20 years of experience in the mining industry and started his mining career with the mining services team at Coopers & Lybrand. Currently, he is also is the Managing Director at Andersen & Company Professional Corporation which he setup in 1994. More recently, Mr. Andersen taught as a part time MBA professor at the Schulich School of Business at York University. He holds a Bachelor in Commerce from the University of Toronto and graduated with high distinction. He also holds a CPA and a CA certification.

### Dave Marsh, Sr. Vice President-Metallurgy and Technology Development (FAusIMM)

Mr. Marsh has served as the Senior Vice President of the Company since August 2012. He brings over 30 years of experience to the engineering and technical side of the Company and also has several years of experience in operations. He has worked in various parts of the world including Africa, Australia and Canada. His previous positions include senior management roles in process, design and implementation. Mr. Marsh holds Bachelor's in Mineral Processing from the University of Leeds, England.

### Dr. William Mercer, Vice President-Exploration (Ph.D., P.Geo)

Dr. Mercer has served as the Vice President of Exploration since June 2007. He has held various senior managerial roles in this mining career spanning a period of over 32 years and has the experience of working in more than 30 countries. Dr. Mercer's expertise lies in management of large exploration groups around the globe, offering technical guidance on acquisitions as part of the Business Development team, negotiations of JV agreements, et cetera. Dr. Mercer has also served on several committees within the mining industry, including as the President of the Canadian Federation of Earth Sciences from 2008 to 2010, President of the Prospectors and Developers Association from 2002 to 2004 and as an Executive on the association. Currently, he also chairs or is a member of PDAC committees, including the Corporate Social Responsibility committee and the Health and Safety Committee. In January 2009, Dr. Mercer was awarded the David Barr Award from the Association for Mineral Exploration in British Columbia for his excellence in innovation and leadership in health and safety space in mineral exploration. He was also honored by the PDAC with the Distinguished Service Award in 2006. Dr. Mercer holds a Bachelor in Sciences in geology from Edinburgh University and a PhD from McMaster University.

### Pierre Neatby, Vice President-Sales and Marketing

Mr. Neatby has been with Avalon since early 2010 as the Vice President of Sales and Marketing. He has over 19 years of experience with the Noranda/ Falconbridge group in various senior sales and marketing roles. Mr. Neatby is an expert in international marketing, sales and has experience in trading metals, chemicals and industrial minerals on the London Metal Exchange. Mr. Neatby is a Bachelor in Arts in Economics from Queen's University and is a Black Belt in Six Sigma with Noranda. He is also a Managing Committee member of the Rare Earth Technology Alliance (RETA), an international rare earth industry association.

### Mark Wiseman, Vice-President, Sustainability

Mr. Wiseman is a biologist with over 30 years of health, safety, environment and social responsibility (HSEC) experience. He is a graduate of Guelph University (BSc, 1979) and Laurentian University (MBA, 1989). Following a period of acid rain research with the Ontario Ministry of Natural Resources, Mr. Wiseman joined Falconbridge Limited in 1980 and worked in progressively responsible HSEC positions in the mining industry, both in operations and large scale projects nationally and internationally. Prior to joining Avalon, Mr. Wiseman was Director of Health, Safety and Environment for Xstrata Nickel's Koniambo Project.

Mr. Wiseman has extensive experience in Social and Environmental Impact Assessment, permitting, HSEC management systems development and implementation, training, risk management, closure planning, auditing and due diligence assessment with the goal of continuous performance improvement. He has R&D experience as well as having developed and implemented innovative and leading edge environmental protection measures. He has participated and chaired numerous multi-stakeholder committees in the development of standards and regulations as well as managing relationships and requirements of local, national and international stakeholders.

## Sources

- Company Website
- SEDAR Filings
- SEC Filings
- Reuters
- FX.com
- Company Presentations
- Mining Association of Canada
- Research Paper by Dr. Patric Christmann
- Industrial Minerals Company of Australia (IMCOA)
- Canadian Rare Earth Elements Network (CREEN)
- U.S. Geological Survey (USGS), Mineral Commodity Summaries, January 2015
- Benchmark Mineral Intelligence
- Stormcrow Capital
- EIU Economic and Commodity Forecast, July 2015
- Roskill Information Services
- House of Commons and Committees, Canada
- Morningstar Data

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