

# Management's Discussion and Analysis of Financial Statements for the three and six months ended February 28, 2018

This Management's Discussion and Analysis ("MDA") of Avalon Advanced Materials Inc. (the "Company" or "Avalon") is an analysis of the Company's financial results for the three and six months ended February 28, 2018 (the "Period"). The following information should be read in conjunction with the accompanying unaudited condensed consolidated interim financial statements for the Period and the consolidated financial statements and Annual Information Form for the year ended August 31, 2017. This MDA is prepared as of April 10, 2018.

# Nature of Business and Overall Performance

Avalon is a Canadian mineral exploration and development company that is listed on the Toronto Stock Exchange in Canada, traded on the OTCQX Best Market in the United States and also trades on the Frankfurt Stock Exchange in Germany. The Company seeks to build shareholder value by becoming a diversified sustainable producer and marketer of specialty metals and minerals and by expanding the markets for its mineral products.

Avalon operates primarily in Canada with a focus on the "Technology Metals", including tin, lithium, tantalum, niobium, cesium, indium, gallium, germanium, rare earth elements ("REE"), yttrium, and zirconium.

The Company is in the process of exploring or developing three of its five mineral resource properties. The Company completed a preliminary economic assessment ("PEA") of its Separation Rapids Lithium Project in September, 2016. Previously, the Company completed a feasibility study on its Nechalacho Project in April 2013 ("Nechalacho FS"), and its Report of Environmental Assessment (the "Report of EA") was approved by the Minister of Aboriginal Affairs and Northern Development Canada ("AANDC") in November 2013. Nechalacho is the Company's most advanced development project but has been relatively inactive since 2014, although it could be reactivated at any time as REE demand is recovering.

The Company has embraced the principles of sustainability as core to its business practice and has made a strong commitment toward implementing corporate social responsibility ("CSR") best practices. In November 2017, the Company released its sixth comprehensive Sustainability Report entitled *Concentrating on Cleantech Materials Production* (the "2017 Sustainability Report").

The Company believes that industrial demand for the advanced materials products it seeks to produce, particularly lithium compounds, is growing rapidly due to their importance in an expanding array of applications in new clean technology, notably energy storage and electric vehicles.

## **Exploration and Development Activities**

Resource property expenditures for the three months ended February 28, 2018 (the "Quarter") totalled \$829,002, a 78% increase over the level of expenditures for the same quarter in fiscal 2017 (\$465,723), due primarily to the expenditures on the recently completed drill program at Separation Rapids. Of these expenditures, 83% were incurred on the Separation Rapids Lithium Project, 14% were incurred on the East Kemptville Tin-Indium Project and 3% were incurred on the Nechalacho Project.

No properties were abandoned during the Quarter. An impairment loss of \$3,030 was recognized for the property maintenance costs incurred on the Warren Township Anorthosite Project during the three months ended February 28, 2017.

Resource property expenditures for the six months ended February 28, 2018 (the "Six Month Period") totalled \$1,174,730, a 10% increase over the level of expenditures for the six months ended February 28, 2017 (\$1,068,385). Of these expenditures, 80% were incurred on the Separation Rapids Project, 16% were incurred on the East Kemptville Project, and 4% were incurred on Nechalacho. Expenditures on the Separation Rapids Project increased to \$939,382 from \$718,795 in the same period in fiscal 2017, primarily due to the recently completed drilling program. The expenditures on the East Kemptville Project increased to \$190,590 from \$156,146 in the prior period as a result of additional geological resource modelling work done on the existing ore stockpile. Expenditures on Nechalacho decreased to \$44,758 from \$81,304 in the prior period as no fieldwork was conducted in 2018. A brief site visit was conducted to do the camp maintenance work and do some geological sampling in Q1 of fiscal 2017. No properties were abandoned during the Six Month Period. An impairment loss of \$3,030 was recognized for the property maintenance costs incurred on the Warren Township Anorthosite Project during the six months ended February 28, 2017.

## Separation Rapids Lithium Project

During the Quarter, the Company incurred \$687,865 (2017 - \$296,698) in expenditures on the Separation Rapids Lithium Project near Kenora, Ontario. Approximately 74% was incurred on the diamond drilling and geological work in support of the drilling program, which comprised of six drill holes totaling 1,548 metres. 18% was spent on additional metallurgical laboratory testwork toward optimization of both the petalite and lepidolite flotation process flowsheets as well as the lithium hydroxide production process, while 8% was spent on engineering, on-going environmental studies and permitting. The engineering work included generation of a basic layout for a demonstration size flotation circuit. Environmental work focused on baseline data collection and analysis and assessing the chemistry of water run-off and leachate from process tailings, ore and aggregate stockpiles. Including the additional mineral claims acquired in 2017, the Company now controls 2,869 hectares (7,090 acres) in mineral claims and a mining lease in the area which covers the northwest strike length of the favourable geology for some 7 kilometres.

#### 2018 Winter Drilling Program

The 2018 winter diamond drill program was completed in February 2018 with six drill holes totaling 1,548 metres. Drilling on the main deposit involved four of the holes.

Drill holes SR18-77 and 78 tested depth extensions on the west side of the main deposit to approximately 250 metres below surface and intersected mainly Petalite Zone ("PZ") mineralization outside the existing deposit resource volume. The intercepts of 1.1% Li<sub>2</sub>O over 50.9 metres cumulative thickness in hole 77 and 1.33% Li<sub>2</sub>O over an 18.7 metre thickness in hole 78 will add to the total lithium resources. These thicknesses are similar to those of nearby existing drill holes.

Drill holes SR18-79 and 80 tested the east side of the main deposit to similar depths and intersected a wider zone of lepidolite-rich Lepidolite-Petalite Zone ("LPZ") lithium mineralization than expected. Drill hole SR18-79 intersected 62.27 metres of LPZ mineralization within an interval of 77.05 metres averaging 1.27% Li<sub>2</sub>O, which also includes other zones of PZ mineralization. This represents an estimated true thickness of 33.46 metres of LPZ mineralization. Drill hole SR18-80 intersected 1.51% Li<sub>2</sub>O over a cumulative thickness of 62.85 metres of which 37.75 metres was LPZ mineralization and the remainder was PZ petalite mineralization. The LPZ mineralization in these two holes is largely outside the existing resource model, thus increasing the overall resource and confidence levels in this part of the deposit.

Two holes (SR18-75 and 76) were drilled on the Western Pegmatite, about 700 metres to the west of the main deposit. Both intersected significant petalite mineralization over true widths of up to three metres, confirming lateral continuity of the deposit to the west over relatively narrow widths.

A revised resource estimate incorporating these drill results is expected to be available by the end of April.

The Company is continuing detailed mineralogical studies of the deposit with a focus on lithium micas. Qemscan® studies are enabling determination of mineral abundance in various geological units of the deposit. Electron microprobe and laser ablation-ICP analyses of mineral chemistry are revealing details of lithium mica chemistry, and have recognized a variety of lepidolite, that is exceptionally rich in lithium. These studies are important for optimizing lithium process flowsheets.

#### Metallurgical Process Testwork

Initial testwork has shown that lepidolite can be recovered as the first step in a sequential flotation process prior to flotation of petalite. Concentrates of lepidolite are attracting increasing interest as a feedstock for production of lithium carbonate due to innovative low cost process technology such as the L-Max® process of Lepidico Ltd. As reported in the Company's news release dated February 6, 2017, Avalon signed a letter of intent with Lepidico under which it is contemplated that Avalon would sell a minimum of 15,000 tonnes per annum of lepidolite concentrate produced from its Phase 1 plant to Lepidico for processing at Lepidico's planned Phase 1 commercial lithium carbonate production facility. Lepidico now contemplates building this facility in Ontario.

As disclosed in the Company's news releases dated <u>October 26, 2017</u> and <u>November 16, 2017</u>, Avalon is proceeding with further testwork to optimize the flowsheet designed for recovery of a concentrate of lepidolite. Previous testwork has already demonstrated that a lepidolite flotation concentrate assaying 4.5% lithium oxide (Li<sub>2</sub>O) can be readily recovered from Separation Rapids ore. Additional testwork on the lepidolite flowsheet initiated in November and is now nearing completion is designed to confirm or improve upon the 90% recovery previously achieved, as well as to increase the Li<sub>2</sub>O content of the concentrate. This work has included additional work on the petalite concentrate flowsheet through further locked-cycle tests that will generate additional petalite concentrate for product marketing purposes and hydrometallurgical process optimization. The feldspar production potential from the lepidolite ore is also being examined.

The current flotation flowsheet for petalite includes a magnetic separation stage to remove ironbearing minerals which would otherwise report to the petalite concentrate. Since the main ironbearing minerals in the ore are micas that also contain significant lithium, the magnetic material is effectively another lithium concentrate. Additional testwork has also been completed to attempt to upgrade this concentrate and create another potential economic feed for the production of lithium battery materials from the Separation Rapids resource. Results from this work will be available before the end of the current quarter.

In a separate flotation test program, Avalon has designed a process to produce a high grade petalite concentrate (4.5% Li<sub>2</sub>O) with greatly reduced levels of sodium and potassium to meet some potential customers' requirements for a specialized, high purity product. Results have achieved the targeted very low levels of sodium oxide (Na<sub>2</sub>O) and potassium oxide (K<sub>2</sub>O). A 25kg sample of this material has been produced and sub-samples sent to two customers for evaluation. Positive feedback has been received from both customers who are now interested in this material as a potential lithium feedstock for their manufacturing process. This high purity petalite concentrate (which the Company has branded as "Super Petalite") will be a premium quality material for certain specialty glass applications. Approximately 600kg of petalite concentrate produced during the 2016 pilot program was recently tested by a major glass producer and passed their internal evaluation criteria. Discussions are to follow with regards to the next step to meeting this potential customer's supply requirements.

Avalon's Phase 1 plant would also include a pilot-scale hydrometallurgical process circuit to produce lithium hydroxide from petalite using the innovative new process flowsheet developed by the Company in 2016. The Company has filed an application for patent protection of this new petalite hydrometallurgical process flowsheet as disclosed in the Company's news release dated November 16, 2017. Lithium hydroxide produced from the Separation Rapids petalite concentrate

material was sent to the National Research Council ("NRC") where it was confirmed that it represents a suitable precursor for lithium ion battery cathode materials. NRC determined that the material compared well with another commercially available lithium battery material.

Hydrometallurgical process optimization work continued during the Quarter. The potential use of fluidized bed roasting for pre-treating the petalite has been evaluated and results suggest further evaluation is warranted but only once a bulk sample of petalite is available for processing through a pilot sized roaster. In the meantime, a test program to optimize the water leach process using a conventional roasting process has been initiated and is also nearing completion. Results to date have confirmed previous operating conditions for both the decrepitation and acid leach processes and have either met or exceeded previous performance criteria. In a new program initiated in November, Avalon engaged the services of an international specialist consultant in the field of membrane technology to conduct a series of trials in their laboratory utilizing potential membrane alternatives. The work has been focusing on simplifying the current three-stage impurity removal processes, as well as generating a more concentrated intermediate lithium sulphate stream ahead of conversion to lithium hydroxide. The introduction of specially tailored membranes into the petalite hydrometallurgical flowsheet has the potential to significantly reduce plant operating and capital costs, as well as greatly lowering energy requirements and the overall environmental footprint of the operation. Preliminary results indicate that these membranes will achieve the desired performance improvements.

#### Mineral Resources

The Mineral Resources estimate for Separation Rapids was updated in November 2017 to distinguish the lepidolite-rich portions of the deposit from that where lithium is hosted largely in petalite and to incorporate the data from results of the 2017 drill program into an updated resource block model. Results from 74 diamond drill holes (69 historic holes plus the 5 holes from the 2017 spring drilling program) totalling 11,644 metres were used to create a 3-D model of the lithium pegmatite. The new estimate has total Measured and Indicated Resources of 8.12 million tonnes at a grade of 1.37% Li<sub>2</sub>O at a 0.6% Li<sub>2</sub>O cutoff grade. In addition, the deposit includes an estimated Inferred Resource of 1.20 million tonnes at 1.33% Li<sub>2</sub>O. Within this total resource, the estimated resource for the lepidolite-rich Measured and Indicated portion of the deposit is 1.85 million tonnes at 1.38% Li<sub>2</sub>O. This represents 23% of the total tonnage of Measured and Indicated Resources at virtually the same Li<sub>2</sub>O grade as the petalite rich portion of the deposit. Although there was no material change in the overall tonnage and grade of the updated lithium resource, the drilling enabled improved delineation of the lithium mineralogical zoning in the deposit. The estimate of the feldspar content of these resources did not change and remains at 39% feldspar. The 2017 updated resource will be further updated during the current quarter to incorporate the results of the winter 2018 drilling program described above.

Class	Petalite Zone (PZ)			Lepidolite-I	Petalite Zo	ne (LPZ)	Total			
	Tonnes	onnes Li <sub>2</sub> O		Tonnes	Li₂O	Rb <sub>2</sub> O	Tonnes	Li₂O	Rb <sub>2</sub> O	
	(Mt)	(%)	(%)	(Mt)	(%)	(%)	(Mt)	(%)	(%)	
Measured	2.86	1.39	0.313	1.18	1.38	0.467	4.04	1.39	0.358	
Indicated	3.42	1.36	0.338	0.67	1.40	0.484	4.09	1.37	0.362	
Measured plus Indicated	6.28	1.37	0.327	1.85	1.38	0.473	8.12	1.37	0.360	
Inferred	0.94	1.30	0.321	0.26	1.42	0.505	1.20	1.33	0.361	

# Separation Rapids, Mineral Resource Estimate at 0.6% Li\_2O Cut-off Grade as at November 15, 2017

Footnotes:

1. CIM definitions were followed for Mineral Resources.

2. The Qualified Person for this Mineral Resource estimate is William Mercer, PhD, P.Geo. (ON)

- 3. The resource estimate is based on 74 drill holes totalling 11,644 metres drilled between 1997 and 2017 by Avalon.
- 4. Drill data was organised in Maxwell DataShed and for estimation purposes was transferred to the Geovia GEMS 6.8 software, wherein the block model was developed.
- 5. The geological units were modeled as outlined by drill core logs.
- 6. Resources were estimated by interpolating composites within a block model of 10 x 10 x 3 metre blocks.
- 7. Grade interpolation used the Ordinary Kriging method combined with variograms and search ellipses modeled for each rock unit.
- 8. Measured material was defined as blocks using composites from ≥ 4 drill holes and a distance ≤ 25 m to the nearest composite and additional blocks with excellent geological and grade continuity, while indicated material includes blocks using ≥ 3 drill holes and a distance ≤ 35 m to the nearest composite and blocks with geological and grade continuity, and inferred material was defined as blocks with composites from ≥ 2 drill holes and interpolated geological continuity up to 40 m below diamond drill holes.
- 9. Two metre composites were used and no capping was necessary.
- 10. The mean density of 2.65 t/m<sup>3</sup> was used for unit PZ and 2.62 t/m<sup>3</sup> for unit LPZ.
- 11. The cut-off grade reported in this resource estimate, 0.6% Li<sub>2</sub>O, is consistent with the previously published resource estimate by Avalon (Preliminary Economic Assessment, 2016).
- 12. Mineral resources do not have demonstrated economic viability and their value may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other issues.
- 13. All figures are rounded to reflect the relative accuracy of the estimates. Summation of individual columns may not add-up due to rounding.

#### Lithium Markets

The demand for lithium chemicals, such as lithium carbonate and lithium hydroxide, has been growing rapidly in recent years, driven predominantly by lithium ion rechargeable battery technology now in high demand for electric vehicles and other energy storage applications. Current projections indicate continued growth in lithium demand from the battery sector for the foreseeable future. Because lithium is marketed in different forms, (including lithium minerals used in glass and ceramics) aggregate lithium demand and supply is usually expressed in terms of lithium carbonate equivalent ("LCE").

In 2017, several countries announced new policies to ban the sale of internal combustion engine (ICE) vehicles in the future including Norway by 2025, India by 2030 and France and the UK by 2040. China announced that it would also ban the sale of ICE vehicles in the future without a target date, but further announced minimum EV sales quotas beginning in 2019 at 10% of total vehicle sales. Since some 24 million passenger vehicles were sold in China in 2016, 10% of sales in 2019 is expected to amount to at least 2.4 million vehicles, an aggressive target that will require significant investment in new production facilities, especially for the lithium ion batteries.

In 2017 several auto makers have made announcements revealing significant increases in hybrid (HEV) and electric vehicle (EV) production targets. BMW, Ford, GM, Honda, Mercedes, Volvo, Jaguar, Mazda and Volkswagen have each made significant announcements. Volkswagen stated it would offer 80 electric models by 2025 and 300 models by 2030. A market observer estimated that VW would require more than 50% of the lithium produced worldwide in 2015 (which was approximately 154 Kt LCE) to produce the electric vehicles it expects to sell by 2030. In March 2018, VW announced supply agreements for batteries destined for China and Europe with LG Chem and Samsung of Korea. It is not yet clear where the raw materials for these batteries will be sourced.

It is clear that new lithium supply sources will be needed to meet the growing demand for batteries for electric vehicles. The Separation Rapids Lithium Project will be well-situated to serve new battery production facilities contemplated in North America. Just one well-known example, the lithium battery Gigafactory of Tesla Motors Inc. in Nevada which began production in early 2017, is expected to consume up to 25,000 tonnes per year of lithium hydroxide after it has reached full production. This Gigafactory is the first of many being planned by Tesla and other manufacturers.

For the purposes of its 2016 PEA, Avalon used a price assumption of US\$11,000 per tonne FOB plant for lithium hydroxide consistent with price forecasts developed in mid 2016 by Roskill Information Services. In the April 2018 Review, Benchmark Minerals Intelligence stated that the current price (FOB North America) for lithium hydroxide was US\$ 16,500/t. This represents a 50% increase. Prices reported by Benchmark for the same period for CIF Asia and EXW China were also strong at US\$20,750 and US\$22,000 respectively.

Lithium chemicals are getting most of the attention in the market and the media due to the increased demand projected for lithium ion batteries in electric vehicles. The markets for lithium in high strength glass products are also expected to grow. Many existing and new high strength glass formulations for automotive, aircraft, cell phones, and video displays where durability and light weight are key, require lithium to achieve the desired properties and the Company's new Super Petalite product is very well-suited for this market.

Numerous expressions of interest have been received from potential customers for the Company's lithium products and discussions on off-take commitments are ongoing. Once off-take commitments are secured that define the priority lithium product lines, the Company can finalize the design and engineering of the Phase 1 plant. With demand for lithium growing rapidly and few advanced lithium projects ready to commence production, the Company is well-positioned to bring a new supply to the market to serve priority customers, once project financing is in place.

#### Environmental Assessment and Community Engagement Update

Avalon is committed to developing the Separation Rapids Project based on modern CSR principles and reporting on its performance in its annual Sustainability Reports. These CSR principles include commitments to minimize environmental impacts, ensuring the health and safety of employees, creating benefits for local communities and providing full transparency in its social and environmental performance. The Company and the project are well known in the local community.

The Company completed site water, sediment, fish, invertebrate and endangered species studies in June and October that successfully advanced the validation of the 1999 environmental baseline study. Initial leachate work has validated that the site rock is not acid generating, and additional work on neutralized tailings is ongoing. The original baseline environmental study prepared in 1999 and updated in 2007, required the spring and fall 2017 data collection to further update this study and align it with recent regulatory changes. A Draft Project Description and Environmental Impact Assessment was subsequently produced.

Permitting has been advanced through a multi-ministry meeting to review the completed Draft Project Description, discuss the provincial permitting process and to obtain regulator input into the project planning and confirm the proposed environmental work program. Separate discussions were held with federal regulators which also included the probable exemption of the project from the Canadian Environmental Assessment Act ("CEAA") due to the low environmental impact of the project and the fact that the project does not exceed any of the regulated triggers under the Act. No fish or fish habitat will be impacted by the project, eliminating the need for associated permits under the Federal Fisheries Act.

Initial studies suggest that aggregate stockpiles, tailings and concentrate storage areas will not contribute effluents of environmental concern. Additional environmental assessment of the waste rock, based on recent drilling validated the earlier work. Dry stacking of tailings and concentrates will minimize long term storage risk, water use and with the smaller tailings quantities expected from the improved metallurgical processes, potentially permit zero discharge from them. A final project description may not be required if the Project is exempted from the CEAA process. The data will be required to support the provincial permit applications only. This has the advantage of shortening the permitting time line significantly.

The Project is located in the traditional land use area of the Wabaseemoong Independent Nations ("WIN") for which they have stewardship under an agreement with the Province. The Company first signed an MOU with WIN in 1999 which was renewed when the Project was re-activated in 2013. Avalon management has been keeping WIN leadership informed on Project activities and remains committed to fulfilling its community consultation obligations and partnering with WIN on business opportunities and providing training for community members. The Company has also initiated dialogue with the Métis Nation of Ontario which holds Aboriginal rights in the area. Following the completion of the Draft Project Description, positive project review meetings were held with the Wabaseemoong Chief and Council and with the Métis Nation of Ontario at a Valued Components

Workshop in order to review the project and obtain guidance and comments on environmental aspects of the project.

Overall, the Company does not anticipate any delays in securing the necessary permits and approvals to proceed with the Phase 1 production facility.

#### Future Work

The Company is primarily focused on the next steps required to move forward with the Phase 1 demonstration scale production facility. Several models for this plant are under consideration involving different throughput rates and variations of the flowsheet depending on the product mix to be recovered. The nature of the resource, with two main lithium minerals, offers considerable flexibility in lithium products. Some consumers are interested in mineral concentrate (either petalite or lepidolite) and some are more interested in the lithium derivative products, either carbonate or hydroxide. The Company continues to talk to potential strategic partners interested in securing lithium supplies. The product mix, final flowsheet and production capacity will be determined in collaboration with our partner(s). Once this is decided, an updated technical report at the Prefeasibility level of confidence will be prepared, incorporating the 2018 resource estimate.

Near term priorities are all related to flowsheet optimization laboratory work and production of small product samples for customer evaluation. Following completion of the current testwork program, the Company will be in a position to proceed with another bulk sample trial in order to generate the information necessary to complete the final flowsheet design and engineering for the Phase 1 Plant. When this work is completed, financing is secured and any necessary operating permits are in place, the Company will be in a position to proceed with Phase 1 plant construction possibly as early as late 2018.

The present concept is to build this facility at a scale that would facilitate on-going profitable smallscale production. A throughput rate in the order of 100,000 tonnes per annum of ore is envisioned. A Phase 1 Plant at this scale could potentially be in operation before the end of 2019. Once the lithium products are fully qualified and commitments on off-take received, the Company would then proceed with scale-up of the operation to expand product output. This might be done in two steps before full-scale production is achieved in order to ensure a successful transition without compromising product quality.

Unless otherwise noted, the technical information on the Separation Rapids Lithium Project has been reviewed and approved by the Company's Senior Vice President, Metallurgy and Technology Development, Mr. David Marsh, FAusIMM (CP), or Dr. William Mercer, PhD, P.Geo. (Ontario), P. Geo. (NS), Vice President, Exploration, who are both Qualified Persons under NI 43-101.

## Nechalacho Rare Earth Elements Project

The Nechalacho Project is located at Thor Lake in the Mackenzie Mining District of the Northwest Territories ("NWT"), about 5 kilometres north of the Hearne Channel of Great Slave Lake and approximately 100 kilometres southeast of the city of Yellowknife. The property is comprised of five contiguous mining leases totalling 10,449 acres (4,249 hectares) and three claims totalling 4,597 acres (1,869 hectares). The leases are subject to one underlying 2.5% Net Smelter Returns ("NSR") royalty agreement. Avalon has the contractual right to buy out this royalty on the basis of a fixed formula, which is currently approximately \$1.49 million and which will increase at a rate equal to the Canadian prime rate until the royalty is bought out.

The property is situated in an area referred to as the Akaitcho Territory, an area which is subject to comprehensive native land claim negotiations between the Government of Canada and the Treaty 8 Tribal Corporation, which consists of the Yellowknives Dene First Nation ("YKDFN"), the Deninu K'ue First Nation ("DKFN") and the Lutsel K'e Dene First Nation ("LKDFN"). The Company has signed an Accommodation Agreement with the DKFN. The Company also recognizes that the Tłįcho First Nation ("TFN") has a settled land claim with the Government of Canada which provides for certain harvesting rights in the area of the Nechalacho site. The general area around the

Nechalacho site is subject to Aboriginal rights asserted by two Métis organizations: the Northwest Territory Métis Nation ("NWTMN") and the North Slave Métis Alliance ("NSMA"). During 2014, Avalon concluded a Participation Agreement with the NWTMN and commenced discussions with the NSMA.

While the Nechalacho Project has been relatively inactive since 2014, the Company continues to monitor REE markets closely and there have been some recent indications of renewed demand. The anticipated increase in demand for electric vehicles (EVs) in the coming years, and the need for rare earth magnets in the electric motors for these vehicles sparked a significant increase in price for neodymium (Nd) and praseodymium (Pr) through three quarters of 2017. In Q4 2017 prices retreated when China released some stockpiled material into the market, however, the rapid transition to electric vehicles we are witnessing bodes well for future growth in demand for Nd and Pr.

Following the completion of the Feasibility Study ("Nechalacho FS") in April, 2013, the Company engaged in metallurgical testwork with the objective of optimizing the process flowsheets to improve recoveries and reduce costs. This involved introducing efficiencies to the Concentrator flowsheet, and designing a new flowsheet for the Hydrometallurgical Plant involving an alkali cracking process for treatment of the rare earth mineral concentrate as an alternative to the sulphuric acid bake process contemplated in the Nechalacho FS. The alkali cracking process enables recovery of 90% of the heavy rare earth elements ("HREE") in the flotation concentrate, compared to 52% recovery contemplated in the Nechalacho FS using the sulphuric acid bake process. In addition, the alkali cracking process allows for the recovery of zirconium in a form for which there is established markets.

Optimization of the alkali cracking process flowsheet is substantially complete except for finalizing certain details around reagent recovery and recycling. Work here has indicated an 80% reduction in hydrochloric acid, 90% reduction in magnesium oxide and almost 100% reduction in calcium carbonate consumption compared to the Nechalacho FS could be achievable along with associated sustainability benefits. The new potential flowsheet also successfully suppresses the precipitation of cerium and separates the lanthanum, both of which dilute the value of the mixed HREE product.

The last metallurgical testwork investigations concluded in 2016 were related to the recovery of zirconium and production of marketable quality zirconium basic sulphate ("ZBS") and zirconium oxychloride ("ZOC") products. Reworking of the process design criteria, plant designs and cost estimates for both the Concentrator and Hydrometallurgical Plant, along with any revisions to the mine plan, are continuing to be developed internally.

A further integrated pilot plant campaign has been planned but will only proceed when funding becomes available. This is designed to fully evaluate process performance particularly with the incorporation of the acid/reagents recovery circuits and associated recycle streams and would include all unit operations from crushing of ore right through to the generation of a mixed rare earth precipitate. The total bulk sample of ore required for this pilot plant is approximately eight tonnes. This material is being stored in Yellowknife until such time as the funding becomes available to proceed with the pilot plant work, presently estimated at approximately \$4.0 million. There is no firm timeline for when this work will be carried out. In the meantime, the Company continues to monitor various academic research initiatives into new and more efficient rare earth extractive technology through its continuing participation in Canadian Rare Earth Elements Network.

While permits for pre-construction work are already in place, the process to obtain a Class A Water License and Land Use Permit authorizing mine construction, operation and closure activities is presently on hold. The process can be accelerated again at any time with the expectation that it would then be completed in approximately 4-6 months. The Company will consider doing this whenever funding is available and circumstances are favourable. Reporting continues as required under the existing permits with the Mackenzie Valley Land and Water Board. The extension of the existing exploration permit was approved during 2016 to maintain existing site facilities in preparation for future activities. Applications are under preparation to renew the exploration license in mid 2018. Avalon continues to monitor and participate in discussions around proposed regulatory

changes in the NWT that could affect the Company's future development plans. Permits for the quarry and airstrip extensions have been allowed to lapse until such time as they are needed, and can easily be re-obtained.

The territorial government continues to look at new infrastructure investments in power and roads. One scenario under consideration is building a transmission line to bring power from the south with one potential route passing close to the Nechalacho site. This could provide opportunities to access lower-cost clean power for future operations and potentially facilitate a road link with Yellowknife that could significantly reduce capital and operating costs and risks. The Company has recently engaged Ile Royale Enterprises to carry out an initial scoping study on this possibility. Avalon continues to engage with the government of the NWT on these and other development and regulatory issues of concern for our Aboriginal partners such as the development of the Caribou Management Plan.

Expenditures during the Quarter totalled \$27,347 (2017 - \$28,263), which were primarily related to mining lease payments and sample storage. The key factors going forward which influence the Nechalacho Project schedule, all of which are somewhat dependent on one another, are: securing one or more strategic or financial partners; securing sufficient binding agreements for offtake to support project financing; the availability of equity and debt financing at a reasonable cost and the receipt of all requisite construction and operating permits.

The Nechalacho property hosts a variety of technology metals resources (including lithium and beryllium in the T-Zone), any one of which could become a development opportunity when there is sufficient market interest. The Company continuously monitors these markets and the growing demand for neodymium and praseodymium for rare earth magnets has created an opportunity to investigate the potential for initial small-scale production of Nd-Pr rich concentrates from two known, readily accessible, near-surface resources on the Nechalacho property. Some preliminary work on this possibility has been initiated.

Unless otherwise noted, the technical information on the Nechalacho Project has been reviewed and approved either by the Company's Senior Vice President Metallurgy and Technology Development, Mr. David Marsh, FAusIMM (CP), or Dr. William Mercer, PhD, P.Geo. (Ontario), P. Geo. (NWT), Vice President, Exploration, who are both Qualified Persons under NI 43-101.

## East Kemptville Tin-Indium Project

The Company incurred \$113,790 (2017 - \$75,451) in expenditures during the Quarter on the East Kemptville Project, for continuing the evaluation of the economics of a small-scale re-development and site rehabilitation scenario using different variants on the model, resource modelling on the stockpile, as well as permitting.

The Company holds mineral rights at East Kemptville through a "Special Licence", a form of mineral tenure granted by the Province of Nova Scotia in circumstances where there is a history of previous industrial land use activity (such as mining) in the area of interest. It does not immediately convey surface land rights and, accordingly, access must be arranged with the permission of surface rights holders.

The Company first acquired its Special Licence at East Kemptville in 2005 and it has been subsequently renewed multiple times while the Company negotiated access to the site. During the quarter ended May 31, 2015, by Order in Council, the Government of Nova Scotia approved an application for a new Special Licence reflecting the entire original mine site. The new Special Licence has a term of three years beginning February 2, 2015 and includes an obligation to incur \$5.25 million in expenditures by January 31, 2018 (of which \$3,324,096 had been incurred by February 28, 2018). The total area covered by the new Special Licence is 2,880 acres. It is renewable for an additional two one-year periods. The Company is in the process of renewing the Special Licence and also has commenced the process toward converting the Special Licence into a mining lease, which it anticipates completing in the first half of 2018.

During the Quarter, project work was again focussed on preparing an internal study on the economic viability of re-developing the site at this small-scale by initially focusing on the readily accessible low-grade stockpile material as part of an innovative overall site rehabilitation strategy. The Company's detailed sampling of the surface of the stockpile has provided more confidence in the average grade estimate reported in the historical records. A drilling program will be carried on the stockpile before production is initiated to map the internal grade distribution in more detail for future process plant scheduling. Prices for tin remained very steady near US\$20,000/t on the London Metal Exchange (LME) in 2017. In the first 3 months of 2018 the price has moved above US\$21,000/t. Supply tightness in the early part of 2018 partly reflects delayed shipments from Indonesia, one of the world's largest producing countries.

This recent work has confirmed that the small-scale re-development scenario has economic potential at current tin prices. The model contemplates processing of almost 6 million tonnes of surface ore stockpiles at the rate of 100 tonnes per hour ("tph") for the recovery of a tin concentrate through a small, modular-designed gravity process plant. The model also includes the eventual processing of higher grade, near surface ore from both the Main and Baby Zone pits, which would extend the operating life in the model to 13 years. This would also serve to generate clean tailings for use as a cover over the large tailings stack to fully remediate this as an ongoing source of acid mine drainage. Testwork on a simple gravity only circuit has demonstrated that a tin recovery of +/-60% is achievable by such a flowsheet. The initial concentrate produced was 44.6% tin but this was increased to 68% by flotation to remove the contained sulphides - a target of 55% tin has been set for the operating plant. This scenario offers the potential for near term production at a relatively low capital expenditure with positive environmental impacts by remediating sources of on-site acid mine drainage and by taking advantage of existing tailings management facilities and the open pits for waste disposal. Processing of the stockpiles would also contribute to the long term environmental remediation of the site. Avalon recently initiated the compilation of an NI 43-101 compliant Preliminary Economic Assessment of the small scale re-development project which it expects to have completed during Q3 of calendar 2018.

Avalon has begun commercial discussions with several parties interested in new sources of supply of tin concentrate or interested in tin development opportunities. Samples of the stockpiled ore have been sent to one interested party and others are waiting for tin concentrate samples. Given the expected quality of the tin concentrate to be produced, off-take contracts are expected to be achieved once financing for the project is in place, or as a part of a debt financing arrangement.

Environmental studies examined the nature of the waste material generated from renewed operations, as well as the conditions required for bringing the existing operation into readiness for future production. A closure strategy has now been identified for the small-scale re-development scenario to significantly reduce the existing site environmental liability through innovative management of future waste rock and tailings and through the processing and elimination of sulphide-bearing material presently stored on surface that is contributing to the need for costly ongoing water treatment. Metallurgical testwork to validate the ability to produce a clean low permeability cover to prevent the release of further acid mine drainage from the existing tailings management area will be initiated in Q2 of calendar 2018.

All future potentially acid generating waste produced will be disposed of sub-aqueously to eliminate oxidation and the need for long term treatment requirements. These are anticipated to significantly reduce or eliminate the need for ongoing site care and maintenance. Additional drilling was completed by the surface rights owner to validate the stability of the coarse tailings pile and eliminate the potential need for future stabilization work during operations. Samples from the drilling will be analysed for tin to evaluate the potential for re-processing the tailings to recover additional tin concentrates. The detailed due diligence review of the historic environmental liability, led by Mark Wiseman, Vice-President, Sustainability, related to the acquisition of the surface rights was completed with no fatal flaws identified.

Unless otherwise noted, the technical information on the East Kemptville Tin-Indium Project has been reviewed and approved either by the Company's Senior Vice President Metallurgy and Technology Development, Mr. David Marsh, FAusIMM (CP), or Dr. William Mercer, PhD, P.Geo. (Ontario), P. Geo. (NS), Vice President, Exploration, who are both Qualified Persons under NI 43-101.

## **Other Projects**

The Company did not complete any work on any of its other projects during the Quarter.

# Corporate Social Responsibility

In November 2017, the Company released its 2017 Sustainability Report, which is available for download on the Company's website at: <u>http://www.avalonAM.com</u>

The 2017 Sustainability Report was prepared in accordance with the streamlined October 2016 Global Reporting Standards. The 2017 Sustainability Report incorporates a self-assessment of Fiscal 2017 performance and sets targets for 2018 against the applicable Mining Association of Canada "Toward Sustainable Mining" indicators.

In addition to the Company's safety performance, the report includes many other accomplishments such as energy efficiency initiatives, community outreach, and metallurgical process improvements that contribute to improved environmental performance. Avalon is committed to working closely with its Aboriginal partners to create lasting economic and social benefits in the communities. In addition to its partners in the NWT, dialogue has been initiated with the Acadia First Nation in Nova Scotia as it relates to the East Kemptville Project and with Wabaseemoong Independent Nations ("WIN") and Métis Nation of Ontario with respect to the Separation Rapids Lithium Project.

To provide independent advice as to the efficacy of the Company's CSR work, the Company maintains an independent Sustainability Advisory Committee ("SAC") that meets intermittently to review all of the Company's sustainability-oriented work at all its projects. No meetings were held in the Quarter due to the low level of current development activity. In recognition of its sustainability efforts, Avalon was recognized for two straight years (2015 and 2016) by *Corporate Knights*' Future 40 Responsible Corporate Leaders in Canada.

## Administration and Other

Corporate and Administrative expenses totalled \$625,265 during the Quarter, a 6% decrease over the amount incurred during the comparative quarter in fiscal 2017 (\$665,406). This decrease reflects the Company's continuing effort to reduce its overhead costs. The main areas of decreased operating expenses for the Quarter were expenses on public and investor relations. Expenses on other functional areas were at about the same level as for the comparative quarter in fiscal 2017.

Salaries and benefits for the Quarter decreased by 4% to \$299,733 compared to \$311,756 for the same quarter in fiscal 2017. This decrease is primarily related to reduced staffing levels.

Expenses on public and investor relations decreased by \$66,538 (28%) to \$92,134 compared to the same quarter in fiscal 2017. The decrease is primarily related to the reduced amount of work provided by consultants with respect to investor relations activities in the US and in Europe as the Company refocused its investor relations activities in Canada in the Quarter. The Company also participated in fewer capital and investment conferences during the Quarter compared to the same quarter in Fiscal 2017. Investor relations activities during the Quarter included marketing to Canadian investors in Montreal, Halifax, and Calgary and participation in the PDAC convention and RAISE conference in Toronto, as well as the AME Round-Up in Vancouver.

Share based compensation earned during the Quarter totalled \$39,670 compared to a net recovery of \$41,051 for the same quarter in fiscal 2017. This increase is primarily related to the reversal of the share based compensation in 2017 of \$117,960 previously recognized on unvested stock options that were cancelled and expired.

The Company recognized a financing transaction cost expense of \$467,565 during the Quarter relating to the issuance of 300 B1 Preferred Shares at a price of \$5,000 per share for gross proceeds of \$1,500,000 in January 2018 as described below under "Liquidity and Capital

Resources". The amount consists of cash issuance costs of \$109,040 plus the \$358,525 excess of total estimated fair values of the B1 Preferred Shares and the B1 Warrants (\$1,858,525) over the gross proceeds of \$1,500,000.

For the Six Month Period, corporate and administrative expenses totalled \$1,343,497 compared to \$1,440,489 for the same period in fiscal 2017. Similar to the Quarter, the main areas of decreased operating expenses for the Six Month Period were expenses on public and investor relations. Expenses on other functional areas were at about the same level as for the comparative period in fiscal 2017.

Consistent with the Quarter and for similar reasons, expenses on public and investor relations for the Six Month Period decreased by \$111,161 (45%) to \$134,368 compared to the same period in fiscal 2017.

Salaries and benefits for the Six Month Period increased by approximately 2% to \$680,694, compared to the same period in fiscal 2017.

Marketing and sales related expenses increased by \$13,219 (61%) to \$34,757 during the Six Month Period compared to the same period in fiscal 2017, which primarily related to increase in travel for meetings with potential customers.

Stock-based compensation decreased to \$78,448 from \$87,849 during the Six Month Period compared to the same period in fiscal 2017. This decrease is primarily related to the reversal of the share based compensation of \$106,034 previously recognized on unvested stock options that were cancelled and expired in the prior period, net of the decrease in the estimated fair values of the options earned during the Six Month Period compared to the same period in fiscal 2017.

On February 28, 2018, the fair values of the Company's outstanding derivative liabilities (which included the warrants denominated in US\$ warrants, the A1 Warrants and the B1 warrants) were remeasured using the Black-Scholes pricing model, which resulted in a gain of \$252,846 for the Six Month Period (being the decrease in the estimated value of these warrants between August 31, 2017 and February 28, 2018) and a gain of \$24,497 for the Quarter (being the decrease in the estimated value of these warrants between November 30, 2017 and February 28, 2018). The changes in the estimated value of these warrants are mainly caused by the fluctuation in the trading price of the Company's common shares on February 28, 2018 compared to August 31, 2017 and November 30, 2017, as well as the issuance of 6,250,000 B1 warrants on January 15, 2018.

The fair values of the Company's outstanding convertible redeemable preferred shares (issued in March 2017 and January 2018) were also re-measured, which resulted in losses of \$232,313 and \$106,313 for the Six Month Period and the Quarter, respectively.

## **Summary of Quarterly Results**

Fiscal Year	2018			2017		2016			
For the Quarters Ended	Feb. 28	Nov. 30	Aug. 31	May 31	Feb. 28	Nov. 30	Aug. 31	May 31	
	\$	\$	\$	\$	\$	\$	\$	\$	
Revenue (Interest)	12,484	14,749	16,080	7,088	2,544	2,499	5,882	7,700	
Net Loss before discontinued operations	1,142,848	628,038	835,616	1,312,870	568,543	640,292	704,446	1,234,913	
Net Loss	1,142,848	628,038	835,616	1,312,870	568,543	640,292	704,446	1,234,913	
Net Loss, per share, basic and diluted	0.005	0.003	0.004	0.007	0.003	0.004	0.004	0.007	

The following selected financial data is derived from the unaudited condensed consolidated interim financial statements of the Company.

The fluctuation on quarterly net loss is primarily due to share-based compensation expenses recognized as stock options granted to directors, officers, employees and consultants of the

Company are earned, the impairment losses recognized on resource properties, changes in the fair value of derivative liabilities and convertible redeemable preference shares, and expensed financing transaction costs. The costs of resource properties are written down at the time the properties are abandoned or considered to be impaired in value.

# Liquidity and Capital Resources

In management's view, given the nature of the Company's operations, which consist of the exploration and development of mineral properties, the most relevant financial information relates primarily to current liquidity, solvency, and planned property expenditures. The Company's financial success will be dependent on the economic viability of its resource properties and the extent to which it can discover and develop new mineral deposits. Such development may take several years to complete and the amount of resulting income, if any, is difficult to determine. The sales value of any mineralization discovered by the Company is largely dependent on factors beyond the Company's control, including the market value of the metals and minerals to be produced.

The Company manages its capital structure and makes adjustments to it based on the funds available to the Company in light of changes in general economic conditions, the Company's short term working capital requirements, and its planned exploration and development program expenditure requirements.

As the Company is in the development stage, its principal source of capital is from the issuance of common shares. In order to achieve its objectives, the Company expects to spend its existing working capital and raise additional funds as required.

As at February 28, 2018, the Company has current assets of \$1,829,196 and current liabilities of \$914,647. The holder of the Company's convertible redeemable preferred shares is entitled to demand repayment of the applicable redemption value per share in cash (which totalled \$3,541,250 as at February 28, 2018) upon the occurrence of certain Redemption Events. Excluding the deferred flow-through share premium of \$97,458, the Company's adjusted working capital was \$1,012,007 (calculated by adding back the deferred flow-through share premium of \$97,458 to the working capital of \$914,549). As the de-recognition of the balance of the deferred flow-through share premium will not require the future outflow of resources by the Company, it is management's belief that the adjusted working capital figure provides useful information in assessing the Company's liquidity risk. As at August 31, 2017, the Company had adjusted working capital of \$556,112 and cash and cash equivalents on hand of \$1,073,574.

The Company's current operating expenditures, excluding expenditures on resource property work programs, are approximately \$300,000 per month. The Company's current anticipated resource property expenditures planned to be incurred during the year ending August 31, 2018 are budgeted at approximately \$2,300,000 (excluding capitalized salaries and benefits), of which approximately \$850,000 had been incurred by February 28, 2018, with approximately \$1,500,000 of these expenditures being allocated to the Separation Rapids Lithium Project, of which approximately \$764,000 had been incurred by February 28, 2018.

During the Quarter, the Company completed a private placement and issued 3,737,400 flow-through common shares at a price of \$0.145 per share for gross proceeds of \$541,923.

Also during the Quarter, the Company issued 300 B1 Preferred Shares (the "B1 Preferred Shares") at a price of \$5,000 per share with an entity managed by the Lind Partners ("Lind") for gross proceeds of \$1,500,000.

The B1 Preferred Shares do not carry a dividend and have a redemption value that starts at \$5,000 per share and increases by \$250 per share each quarter until January 15, 2020, to a cap of \$6,750 per share. After the four month Hold Period (defined below), the B1 Preferred Shares can be converted by Lind into common shares of the Company at a price per common share equal to 85% of the five-day volume weighted average price of the common shares on the TSX immediately prior to the date that notice of conversion is given.

In conjunction with the closing, Lind will receive a commitment fee of \$75,000 and 6,250,000 common share purchase warrants. Each warrant entitles the holder to purchase one common share of the Company at a price of \$0.15 per common share until 60 months after closing.

Pursuant to Canadian securities laws, the securities issuable under this private placement will be subject to a hold period (the "Hold Period"), which expires on May 16, 2018. After the Hold Period, Lind has the basic right to convert 15 B1 Preferred Shares into common shares of the Company on a monthly basis, subject to certain conversion limits set out in the Agreement, however Lind is permitted to convert up to 60 B1 Preferred Shares on a monthly basis in the event such amount does not exceed 20% of the Company's 20-day traded volume of common shares on the TSX immediately prior to the date of delivery of a conversion notice.

Lind will also be entitled to accelerate its conversion right to the full amount of the redemption value applicable at such time, or demand repayment of the applicable redemption value per share in cash, upon the occurrence of certain events as set out in the Agreement. The Company has the right to redeem the B1 Preferred Shares at any time after the Hold Period at a small premium to the redemption value. The Company has floor price protection such that if any conversion results in an effective conversion price of less than \$0.10 per common share, then the Company has the right to deny the conversion and instead redeem the B1 Preferred Shares that were subject to that conversion for the redemption amount in cash plus a 5% premium.

At any time while any B1 Preferred Shares are outstanding, Lind has the option of subscribing for up to an additional 100 Series B2 Preferred Shares at a price of \$5,000 per share and under the same terms and conditions as the initial financing, subject to certain triggering events and subject to the prior approval of the TSX.

The Company believes its present cash resources are sufficient to meet all of its current contractual obligations, administrative and overhead expenditures, and planned exploration programs until the end of May, 2018. Initiatives to raise additional capital are in progress although there can be no assurances that the Company will be able to raise additional funds required for all planned expenditures. As a result, certain expenditures may have to be delayed until sufficient funding has been raised. Given the continuation of weak investor sentiment and capital market conditions in the junior resource sector, there exists an uncertainty as to the Company's ability to raise sufficient additional funds on favourable terms. This condition indicates the existence of a material uncertainty that raises substantial doubt about the Company's ability to continue as a going concern. The Company's expenditures on other discretionary exploration and development activities have some scope for flexibility in terms of amount and timing, which can be adjusted accordingly.

The Company does not have any externally imposed capital requirements other than those certain Redemption Events contained in the preferred share terms. The Company continues to work on attracting more substantial project financing through the participation of one or more strategic partners, a long term construction debt financing facility, and/or through the equity markets. If the Company is not able to secure financing on satisfactory terms, expenditures on the development of its projects will need to be delayed.

All of the Company's resource properties, are owned, leased or licenced with minimal holding costs. The most significant holding costs being annual lease rental fees on Nechalacho of \$20,998 and the annual expenditures related to the mining leases at Separation Rapids and Warren Township totalling \$3,327. The Company is required to incur certain exploration expenditures on the East Kemptville Project in order to keep the new Special Licence in good standing (as described earlier under "Exploration and Development Activities"). As at February 28, 2018, the Company is required to incur additional Canadian Exploration Expenditures ("CEE") of \$471,049 by December 31, 2018. This amount represents the remaining balance of the required expenditures resulting from the private placement completed in December 2017.

A joint venture with an industry partner or end-user may represent an attractive alternative for financing the further stages in the development of the Project as well as the projects at Separation Rapids, East Kemptville, or Warren Township, once the capital requirements become relatively large.

The Company has an operating lease for its premises. As at the date of this MDA, the minimum lease commitments under these leases are as follows:

Fiscal year ended August 31, 2018	\$	106,131
2019	\$	318,395
2020	\$	106,131
2021 a	and thereafter \$	-

## **Off Balance Sheet Arrangements**

As at February 28, 2018, the Company had no material off balance sheet arrangements such as guaranteed contracts, contingent interests in assets transferred to an entity, derivative instrument obligations or any instruments that could trigger financing, market or credit risk to the Company.

## Transactions with Related Parties

Balances and transactions between the Company and its subsidiaries have been eliminated on consolidation and are not disclosed here. Details of the transactions between the Company and other related parties are disclosed below:

a) Trading transactions

There have been no material trading transactions with related parties during each of the three and six month periods ended February 28, 2018 and 2017, other than the participation by certain related parties in the November 2017 Private Placement, whereby Donald Bubar, Director, President and CEO, Mark Wiseman, Vice President Sustainability, Patricia Mohr, Director subscribed for 200,000, 55,000 and 50,000 flow-through shares at \$0.145 per share, respectively.

b) Compensation of key management

The remuneration of directors and other members of the Company's senior management team during each of the three and six months ended February 28, 2018 and 2017 are as follows:

	Three Months Ended			Six Months Ended				
	Fe	bruary 28, 2018	Fe	bruary 28, 2017	Fe	bruary 28, 2018	Fe	ebruary 28, 2017
Salaries, benefits and directors' fees <sup>(1)</sup> Share based compensation <sup>(2)</sup>	\$	382,066 32,606	\$	396,411 54,778	\$	811,633 66,533	\$	843,162 205,448
-	\$	414,672	\$	451,189	\$	878,166	\$	1,048,610

<sup>(1)</sup> Salaries and benefits of key management personnel capitalized to exploration and evaluation assets and PPE for the quarter ended February 28, 2018 and for the Six Month Period totalled \$142,600 (2017 - \$141,319) and \$268,133 (2017 - \$289,743), respectively.

(2) Fair value of stock options earned and recognized as share based compensation during the respective reporting period.

## **Subsequent Events**

Subsequent to the Period, the Company:

 a) granted an aggregate of 640,000 stock options with a weighted average exercise price of \$0.14 per share to certain employees and consultants of the Company. The weighted average contract life of these options at issuance was 3.6 years;

- b) issued 2,612,993 common shares pursuant to the conversion of 50 A1 Preferred Shares;
- c) had 6,950,000 warrants with a weighted average exercise price of \$0.16 per share expire; and
- d) had 180,000 broker's compensation warrants with an exercise price of \$0.175 per share expire.

## Financial Instruments

The Company's financial instruments consist of cash and cash equivalents, receivables, accounts payable and accrued liabilities, warrants denominated in foreign currency, convertible redeemable preferred shares, the A1 Warrants and the B1 warrants.

Management does not believe these financial instruments expose the Company to any significant interest, currency or credit risks arising from these financial instruments. The fair market values of cash and cash equivalents, receivables, and accounts payable and accrued liabilities approximate their carrying values.

The Company has 6,466,513 warrants outstanding as at February 28, 2018, with an original exercise price of US\$0.56 per share ("US\$ Warrants"). These warrants are subject to certain antidilution provisions, which may reduce the exercise price, with a floor of US\$0.5095 per share. The adjusted exercise price as calculated by the anti-dilution provisions as at August 31, 2017 and as at the date of this MDA is US\$0.5223. These warrants are exercisable until June 13, 2021. These warrants were recorded at fair value at the time of issuance, and are re-measured at fair value using the Black-Scholes pricing model at each financial statement reporting date, with the resulting change in fair value being recorded in the statement of comprehensive loss.

As the Company has the Call Option to redeem all of the outstanding A1 and B1 Preferred Shares at any time at a 5% premium to the redemption value, the total fair value of the 355 A1 Preferred Shares and the 300 B1 Preferred Shares as at February 28, 2018 is \$2,143,313 and \$1,575,000, respectively. The number of common shares to be issued would be 30,860,566 if all of the outstanding A1 and B1 Preferred Shares had been converted into common shares based on the closing price of the Company's common shares on the TSX of \$0.135 on February 28, 2018.

Interest income from cash and cash equivalents are recorded in the statement of comprehensive loss.

## Outstanding Share Data

#### a) Common and Preferred Shares

The Company is presently authorized to issue an unlimited number of common shares without par value. The Company is also authorized to issue up to 25,000,000 preferred shares without par value, of which 800 have been issued and 655 are outstanding as at February 28, 2018.

As at February 28, 2018, the Company had 215,206,302 common shares, 355 Series A1 Preferred Shares and 300 Series B1 Preferred Shares issued and outstanding. Subsequent to the end of the Quarter, and as described earlier under "Subsequent Events", 2,612,993 common shares were issued pursuant to the conversion of 50 A1 Preferred Shares. As at the date of this MDA, the Company has 217,819,295 common shares, 305 Series A1 Preferred Shares and 300 Series B1 Preferred Shares outstanding.

#### b) Options

As at February 28, 2018, the Company had an aggregate of 10,410,000 incentive stock options outstanding with a weighted average exercise price of \$0.32 (of which 7,313,750 were vested and 3,096,250 were unvested). Subsequent to the end of the Quarter, 640,000 options were granted (as described earlier under "Subsequent Events"). As at the date of this MDA, the Company has 11,050,000 incentive stock options with a weighted average exercise price of \$0.31 outstanding.

#### c) Warrants

As at February 28, 2018 the Company has the following common share purchase warrants outstanding:

- i. 6,466,513 US\$ Warrants, with an original exercise price of US\$0.56 per share and are exercisable until June 13, 2021. These warrants are also subject to certain anti-dilution provisions, which may reduce the exercise price, with a floor of US\$0.5095 per share. The adjusted exercise price as calculated by the anti-dilution provisions as at February 28, 2018 and as at the date of this MDA is US\$0.5223;
- 40,000 warrants, issued pursuant to the Accommodation Agreement, with an average exercise price of \$0.42 per share and will expire as follows: 10,000 warrants on July 31, 2018, 10,000 warrants on July 31, 2019, 10,000 warrants on July 31, 2020 and 10,000 warrants on August 2, 2021;
- iii. 4,450,000 warrants with an exercise price of \$0.15 per share and exercisable until the earlier of March 11, 2018, or the Accelerated Expiry Date;
- iv. 1,500,000 warrants with an exercise price of \$0.20 per share and exercisable until March 29, 2018, or if at any time following September 29, 2016, the closing price of the common shares on the TSX is \$0.25 or higher for a period of twenty consecutive trading days, the Company may, by notice to the holder reduce the expiry date of the warrants to not less than 30 days from the date of such notice;
- v. 1,000,000 warrants with an exercise price of \$0.175 per share and exercisable until March 29, 2018, or if at any time following September 29, 2016, the closing price of the common shares on the TSX is \$0.25 or higher for a period of twenty consecutive trading days, the Company may, by notice to the holder reduce the expiry date of the warrants to not less than 30 days from the date of such notice;
- vi. 2,400,000 warrants with an exercise price of \$0.16 per share and exercisable until November 3, 2019;
- vii. 6,900,000 A1 Warrants with an exercise price of \$0.23 per common share which are exercisable until March 10, 2022; and
- viii. 6,250,000 B1 Warrants with an exercise price of \$0.15 per common share which are exercisable until January 15, 2023.

The Company is also committed to issue 20,000 warrants to the NWTMN in two equal installments of 10,000 warrants upon the Nechalacho Project meeting certain milestones. These warrants will have a contractual term of five years and will have an exercise price based on the then current market price of the Company's common shares at the date of issue of the warrants.

Subsequent to the end of the Quarter, 6,950,000 warrants with a weighted average exercise price of \$0.16 per share expired.

### d) Brokers' Compensation Warrants

As at February 28, 2018, the Company had the following compensation warrants outstanding:

- i. 180,000 compensation warrants with an exercise price of \$0.175 per common share, which are exercisable until March 29, 2018;
- ii. 272,727 compensation warrants with an exercise price of \$0.25 per common share, which are exercisable until November 7, 2018;
- iii. 150,000 compensation warrants with an exercise price of \$0.15 per common share, which are exercisable until December 23, 2018;
- iv. 204,000 compensation warrants with an exercise price of \$0.15 per common share, which are exercisable until June 12, 2019;
- v. 186,000 compensation warrants with an exercise price of \$0.145 per common share, which are exercisable until August 16, 2019;
- vi. 288,000 compensation warrants with an exercise price of \$0.15 per common share, which are exercisable until November 3, 2019; and
- vii. 132,000 compensation warrants with an exercise price of \$0.15 per common share, which are exercisable until December 22, 2019.

Subsequent to the end of the Quarter, 180,000 compensation warrants with an exercise price of \$0.175 per common share had expired.

## **Disclosure Controls and Procedures**

Disclosure controls and procedures are designed to provide reasonable assurance that material information is gathered and reported to senior management, including the Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), as appropriate, to permit timely decisions regarding public disclosure.

Management, including the CEO and CFO, has designed or caused to be designed under their supervision, disclosure controls to provide reasonable assurance that the information required to be disclosed in annual filings, interim filings, or other reports filed or submitted under Canadian securities legislation, or reports filed or submitted under the U.S. Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the time period specified in those rules.

## **Design of Internal Control over Financial Reporting**

The CEO and CFO are also responsible for the design of the Company's internal controls over financial reporting ("ICFR") to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. Because of its inherent limitation, internal control over financial reporting may not prevent or detect misstatements.

There have been no changes to the Company's design of internal controls over financial reporting that occurred during the Quarter that materially affected, or are reasonably likely to affect, the Company's ICFR.

# **Critical Accounting Judgments and Estimation Uncertainties**

The preparation of the consolidated financial statements in conformity with IFRS requires that the Company's management make critical judgments, estimates and assumptions about future events that affect the amounts reported in the consolidated financial statements and the related notes thereto. Actual results may differ from those estimates. Estimates and assumptions are reviewed on an on-going basis based on historical experience and other factors that are considered to be relevant under the circumstances. Revisions to estimates are accounted for prospectively.

The Company has identified the following significant areas where critical accounting judgments, estimates and assumptions are made and where actual results may differ from these estimates under different assumptions and conditions and may materially affect financial results or the financial position reported in future periods.

Further details of the nature of these assumptions and conditions may be found in the relevant notes to the consolidated financial statements.

#### Key Sources of Estimation Uncertainty

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment are included in the following notes:

# Recoverability of Exploration and Evaluation Assets, Development Assets and Property, Plant and Equipment

The Company assesses its long-lived assets, specifically all exploration and evaluation assets, development assets and PPE at each reporting date to determine whether any indication of impairment exists. Where an indicator of impairment exists, a formal estimate of the recoverable amount is made, which is the higher of the fair value less costs of disposal and value in use. These assessments require the use of estimates and assumptions such as long-term commodity prices, discount rates, foreign exchange rates, future capital requirements, exploration potential and operating performance.

#### Determination of Reserve and Resource Estimates

Mineral reserves and resources are estimates of the amount of ore that can be economically and legally extracted from the Company's exploration and development properties. The estimation of recoverable reserves is based upon factors such as estimates of commodity prices, production costs, production techniques, future capital requirements and foreign exchange rates, along with geological assumptions and judgments made in estimating the size and grade of the ore body. Changes in the reserve or resource estimates may impact the carrying value of exploration and evaluation assets, development assets, PPE, site closure and reclamation provision and amortization expense.

#### Fair Value of Share Based Payments and Warrants

The Company follows IFRS 2, Share-based Payment, in determining the fair value of share based payments. This calculated amount is not based on historical cost, but is derived based on assumptions (such as the expected volatility of the price of the underlying security, expected hold period before exercise, dividend yield and the risk-free rate of return) input into a pricing model. The model requires that management make forecasts as to future events, including estimates of: the average future hold period of issued stock options and compensation warrants before exercise, expiry or cancellation; future volatility of the Company's share price in the expected hold period; dividend yield; and the appropriate risk-free rate of interest. The resulting value calculated is not necessarily the value that the holder of the option or warrant could receive in an arm's length transaction, given that there is no market for the options or compensation warrants and they are not transferable. Similar calculations are made in estimating the fair value of the warrant component of

an equity unit. The assumptions used in these calculations are inherently uncertain. Changes in these assumptions could materially affect the related fair value estimates.

#### Site Closure and Reclamation Provision

The Company's accounting policy for the recognition of a site closure and reclamation obligation requires significant estimates and assumptions such as: requirements of the relevant legal and regulatory framework, the magnitude of possible disturbance and the timing thereof, extent and costs of required closure and rehabilitation activity, and discount rate. These uncertainties may result in future actual expenditures differing from the amounts currently provided.

Site closure and reclamation provision recognized is periodically reviewed and updated based on the facts and circumstances available at the time.

#### Property, Plant and Equipment - Estimated Useful Lives

Management estimates the useful lives of PPE based on the period during which the assets are expected to be available for use. The amounts and timing of recorded expenses for depreciation of PPE for any period are affected by these estimated useful lives. The estimates are reviewed at least annually and are updated if expectations change as a result of physical wear and tear, technical or commercial obsolescence and legal or other limits to use. It is possible that changes in these factors may cause significant changes in the estimated useful lives of the Company's PPE in the future.

#### Critical Judgments

Information about critical judgments in applying accounting policies that have most significant effect on the consolidated financial statements are as follows:

#### Capitalization of Exploration and Evaluation Costs

Exploration and evaluation costs incurred during the year are recorded at cost. Capitalized costs include costs directly attributable to exploration and evaluation activities, including salaries and benefits of employees who are directly engaged in the exploration and evaluation activities. Administrative and other overhead costs are expensed. Exploration and evaluation costs incurred that have been determined to have future economic benefits and can be economically recoverable are capitalized. In making this judgment, management assesses various sources of information including but not limited to the geologic and metallurgic information, history of conversion of mineral deposits to proven and probable mineral reserves, scoping and feasibility studies, proximity of operating facilities, operating management expertise and existing permits.

## Changes in Accounting Policies Including Initial Adoption

The Company did not adopt any new accounting standards during the Quarter.

## **Recent Accounting Pronouncements**

The following pronouncements are issued but not yet effective:

#### IFRS 9, Financial Instruments

IFRS 9, *Financial instruments* ("IFRS 9") was issued by the IASB in July 2014 and will replace IAS 39. IFRS 9 utilizes a single approach to determine whether a financial asset is measured at amortized cost or fair value and a new mixed measurement model for debt instruments having only two categories: amortized cost and fair value. The approach in IFRS 9 is based on how an entity manages its financial instruments in the context of its business model and the contractual cash flow characteristics of the financial assets. Final amendments released in July 2014 also introduce a new expected loss impairment model and limited changes to the classification and measurement

requirements for financial assets. IFRS 9 is effective for annual periods beginning on or after January 1, 2018. The Company is currently evaluating the impact of this standard and amendments on its consolidated financial statements. However it is expected that the adoption of IFRS 9 will not have any significant impact on the Company's consolidated financial statements given its current business model and the amount of its financial assets.

#### IFRS 15, Revenue from Contracts and Customers

IFRS 15, *Revenue from Contracts and Customers* ("IFRS 15") was issued by the IASB in May 2014, and will replace IAS 18, *Revenue*, IAS 11, *Construction Contracts*, and related interpretations on revenue. IFRS 15 sets out the requirements for recognizing revenue that apply to all contracts with customers, except for contracts that are within the scope of the standards on leases, insurance contracts and financial instruments. IFRS 15 uses a control based approach to recognize revenue which is a change from the risk and reward approach under the current standard. Companies can elect to use either a full or modified retrospective approach when adopting this standard and it is effective for annual periods beginning on or after January 1, 2018. The Company is currently evaluating the impact of IFRS 15 on its consolidated financial statements. However it is expected that the adoption of IFRS 15 will not have any significant impact on the Company's consolidated financial statements as the Company is not currently generating any significant revenue.

#### IFRS 16, Leases

IFRS 16, *Leases* ("IFRS 16") was issued by the IASB in January 2016, and will replace IAS 17 *Leases*. IFRS 16 specifies the methodology to recognize, measure, present and disclose leases. The standard provides a single lessee accounting model, requiring lessees to recognize assets and liabilities for all leases except for short-term leases and leases with low value assets. IFRS 16 substantially carries forward the lessor accounting requirements in IAS 17. IFRS 16 is effective for annual periods beginning on or after January 1, 2019, with early adoption permitted if IFRS 15 has also been adopted. A lessee will apply IFRS 16 to its leases either retrospectively to each prior reporting period presented; or retrospectively with the cumulative effect of initially applying IFRS 16 being recognized at the date of initial application. The Company is currently evaluating the impact of IFRS 16 on its consolidated financial statements.

## Forward-Looking Statements, Risk Factors and Qualified Persons

Certain of the statements that are not historical facts contained in this MDA are forward-looking statements that involve risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in the forward-looking statements. Such forward-looking statements reflect the Company's current views with respect to future events and include, among other things, statements regarding targets, estimates and/or assumptions in respect of reserves and/or resources, and are based on estimates and/or assumptions related to future economic, market and other conditions that, while considered reasonable by management, are inherently subject to risks and uncertainties, including significant business, economic, competitive, political and social uncertainties and contingencies. These estimates and/or assumptions include, but are not limited to:

- grade of ore;
- mineral product and commodity prices;
- metallurgical recoveries;
- operating costs;
- achievement of current timetables for development;
- strength of the global economy;
- availability of additional capital; and
- availability of supplies, equipment and labour.

Factors that could cause the Company's actual results, performance, achievements, developments or events to differ materially from those expressed or implied by forward-looking statements include,

among others, the factors described or referred to under "Description of the Business - Risk Factors" in the Company's Annual Information Form for the year ended August 31, 2017, and:

- risks related to the Company's history of losses, lack of operating history, ability to generate material revenues and continue as a going concern;
- risks related to establishing new mining operations in the event that the Company elects to proceed with the development of one of its mineral projects;
- risks related to the Company's need for additional financing;
- risks related to any joint venture or strategic alliances that may be entered into by the Company;
- risks related to the progression of the Separation Rapids Lithium Project to a positive feasibility stage;
- risks related to securing product off-take agreements on a timely basis;
- risks related to the unique ore type at the Nechalacho Rare Earth Elements Project ("Nechalacho" or the "Nechalacho Project") and the Separation Rapids Lithium Project for which known metallurgical processes have not previously been applied;
- uncertainty related to title to the Company's properties as well as the risk of delays in obtaining licenses and permits as a result of local opposition, including uncertainty related to any challenges in connection with Aboriginal land title claims and Aboriginal rights
- risks related to the possible existence of rights and interests of Aboriginal groups, which may limit the Company's ability to develop its properties;
- risks related to the need to acquire properties for the hydrometallurgical plant and potentially a rare earth refinery for the Nechalacho Project;
- risks that actual capital costs, production schedules and economic returns for the Nechalacho Project may differ significantly from those anticipated by the Company;
- risks related to the demand for technology metals and minerals and fluctuations in their pricing;
- risks related to the demand for lithium and fluctuations in its pricing;
- risks related to competition and the actions of competitors;
- risks related to costs or delays in the commercialization of rare earth products;
- uncertainties related to the fact that the Company's mineral resources and mineral reserves are only estimates;
- risks related to the Company's ability to secure the required mineral tenure licenses at the East Kemptville Tin-Indium Project ("East Kemptville Project") which could adversely affect the Company's ability to conduct further studies and exploration activities;
- risks related to obtaining, maintaining and renewing licenses and permits, and the material costs, liabilities and obligations in connection therewith;
- risks that the Company will be subject to material costs, liabilities and obligations in connection with environmental laws, regulations and approvals and that approvals will not be available;
- uncertainties involving uninsured risks;
- risks related to possible shortages of supplies, equipment and labour;
- risks related to the Company's ability to attract and retain qualified management and technical personnel;
- uncertainty whether the Company will acquire commercially mineable ore deposits or whether the current mineral deposits identified by the Company can be developed as commercially viable ore bodies;
- risks inherent to the competitive nature of the mineral industry;
- risks related to the extensive federal, state, provincial, territorial and local laws and regulations to which the Company's activities are subject;
- risks related to the availability and reliability of adequate infrastructure;
- risks and hazards inherent to the mining industry;
- risks related to any changes in critical accounting estimates that adversely affect the Company's financial results;
- risks related to potential conflicts of interest of the Company's directors and officers who may have involvement with other resource companies;
- risks due to being a "passive foreign investment company" for U.S. purposes;
- risks related to fluctuations of currency exchange rates;

- risks related to share price volatility;
- risks related to dilution of existing shareholders;
- risks related to not paying cash dividends;
- risks related to being a non-US corporation; and
- risks related to there being no market for the Company's warrants.

Most of the foregoing factors are beyond the Company's ability to control or predict. Although the Company has attempted to identify important factors that could cause actual results, performance, achievements, developments or events to differ materially from those described in forward-looking statements, there may be other factors that cause actual results, performance, achievements, developments or events not to be as anticipated, estimated or intended. There can be no assurance that the estimates and/or assumptions upon which these forward-looking statements are based will occur.

Readers can identify many of these statements by looking for words such as "believe", "expects", "will", "intends", "projects", "anticipates", "estimates", "continues" or similar words or the negative thereof. 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 made as of the date of this MDA and are expressly 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 Company undertakes no obligation to publicly revise these forward-looking statements to reflect subsequent events or circumstances, except as required by applicable law.

The technical information included in this MDA, unless otherwise stated, has been reviewed and approved by Donald S. Bubar, P. Geo., President and Chief Executive Officer of the Company and Dr. William Mercer, P. Geo., Vice-President, Exploration of the Company. Mr. Bubar and Dr. Mercer are both Qualified Persons under National Instrument 43-101 ("NI 43-101").

# Notice Regarding Presentation of our Mineral Reserve and Resource Estimates

This MDA has been prepared in accordance with the requirements of Canadian securities laws, which differ from the requirements of United States securities laws. Unless otherwise indicated, all reserve and resource estimates included in this MDA have been prepared in accordance with NI 43-101. NI 43-101 is a rule developed by the Canadian Securities Administrators which establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects.

Canadian standards, including NI 43-101, differ significantly from the requirements of the United States Securities and Exchange Commission (the "SEC"), and reserve and resource information contained in this MDA may not be comparable to similar information disclosed by United States companies. In particular, and without limiting the generality of the foregoing, the term "resource" does not equate to the term "reserve". Under United States standards, mineralization may not be classified as a "reserve" unless the determination has been made that the mineralization could be economically and legally produced or extracted at the time the reserve determination is made. The SEC's disclosure standards normally do not permit the inclusion of information concerning "measured mineral resources", "indicated mineral resources" or "inferred mineral resources" or other descriptions of the amount of mineralization in mineral deposits that do not constitute "reserves" by United States standards in documents filed with the SEC. United States investors should also understand that "inferred mineral resources" have a great amount of uncertainty as to their existence and as to their economic and legal feasibility. It cannot be assumed that all or any part of an "inferred mineral resource" exists, is economically or legally mineable, or will ever be upgraded to a higher category. Under Canadian rules, estimated "inferred mineral resources" may not form the basis of feasibility or pre-feasibility studies except in rare cases. Disclosure of "contained ounces" in a resource estimate is permitted disclosure under Canadian regulations; however, the

SEC normally only permits issuers to report mineralization that does not constitute "reserves" by SEC standards as in-place tonnage and grade without reference to unit measures. The requirements of NI 43-101 for identification of "reserves" are also not the same as those of the SEC, and reserves reported by Avalon in compliance with NI 43-101 may not qualify as "reserves" under SEC standards. Accordingly, information concerning mineral deposits set forth herein may not be comparable with information made public by companies that report in accordance with United States standards.

# Other Information

Additional information on the Company is available on SEDAR at <u>www.sedar.com</u> and on the Company's website at <u>www.avalonadvancedmaterials.com</u>.