



## **Management's Discussion and Analysis of Financial Statements for the year ended August 31, 2022**

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 year ended August 31, 2022 (the "Year" or "Fiscal 2022"). The following information should be read in conjunction with the accompanying audited consolidated financial statements and the related notes thereto. This MDA is prepared as of November 28, 2022.

### **Nature of Business and Overall Performance**

Avalon is a Canadian mineral development company that is listed on the Toronto Stock Exchange in Canada, traded on the OTCQB Venture 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 critical minerals for clean technology and by expanding the markets for its specialty mineral products.

Avalon operates primarily in Canada with a diversified asset base giving the Company exposure to a broad range of these critical minerals including lithium, rare earth elements ("REEs"), cesium, tantalum, tin, indium, gallium, germanium and zirconium.

The Company is in various stages of developing three of its five mineral resource properties with particular emphasis on lithium, cesium, tantalum, tin, indium and rare earths. Avalon continues to evaluate new opportunities with near term development potential such as extracting critical minerals from historic mine wastes using new technologies. This is an opportunity the Company has modelled at its East Kemptville Tin-Indium Project and at another site in northeastern Ontario called Cargill where there is potential to recover rare earths and scandium from tailings at a closed phosphate mine site. The concept is attracting increasing interest from ESG investors and from the Federal government now promoting the "circular economy", particularly for sites with abundant critical minerals in the wastes, but securing access to these sites continues to be challenging.

All three of the Company's advanced projects have significant mineral resources and preliminary economic evaluations for which the next step is identifying markets for the mineral products and/or processing bulk samples to demonstrate appropriate extraction processes and produce product samples for customer evaluation. Advances in technology can suddenly create new demand for certain critical minerals providing opportunities for new producers if one is in a position to react quickly to serve the new demand. A well-known example has been the sudden growth in demand for the "magnet rare earths" neodymium and praseodymium ("Nd-Pr"), coupled with the risk of supply shortages due to China's control of the rare earth supply chain.

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 late 2022, the Company expects to release its eleventh annual comprehensive Sustainability Report (the "2022 Sustainability Report") and in February, 2021 secured a top 5% ESG Risk rating amongst our peer companies from Sustainalytics. The Company was also featured in the Benchmark Minerals' inaugural global lithium ESG rankings, scoring in the top 5% worldwide.

The Company believes that industrial demand for the cleantech materials products it seeks to produce, particularly lithium, cesium, tantalum, rare earths, zirconium and tin, is growing due to their critical importance in an expanding array of applications in new technology, including lithium ion batteries, electric vehicles, electronics, small modular reactors and aerospace.

## Selected Annual Information

The following selected financial data for each of the three most recently completed fiscal years are derived from the audited annual financial statements of the Company, which were prepared in accordance with International Financial Reporting Standards (“IFRS”), as issued by the International Accounting Standards Board (“IASB”).

For the Years Ended August 31,	2022	2021	2020
	\$	\$	\$
Revenue	21,766	11,249	134,138
Net loss	3,945,843	3,755,123	5,367,264
Net loss, per share basic and diluted	0.010	0.011	0.016
Total assets	120,446,917	118,469,108	116,597,484
Total long term liabilities	4,689,179	3,985,441	1,052,001
Cash dividends	-	-	-

The Company has recorded losses in each of its three most recently completed fiscal years and expects to continue to record losses until such time as an economic mineral deposit is developed and brought into profitable commercial operation on one or more of the Company’s properties, or is otherwise disposed of at a profit. Since the Company has no ongoing revenue from operations, annual operating losses typically represent the sum of business expenses, any impairment losses recognized on its mineral properties and adjustments to the fair value for the derivative liabilities and convertible notes payable. The Company may increase or decrease its level of business activity in coming years and if it does, investors can anticipate that the Company’s annual operating losses will also increase or decrease until an economic operation is brought into profitable commercial production, or one or more of the Company’s properties are disposed of at a profit.

## Resource Development Activities

Resource property expenditures for the three months ended August 31, 2022 (the “Quarter”) totalled \$184,990, a 58% decrease from the level of expenditures in the comparative quarter in 2021 (\$441,637). This decrease was primarily driven by the 2021 exploration program at the Lilypad Cesium-Tantalum Project in the comparable quarter in 2021, which did not recur in the Quarter. Of these expenditures, 71% were incurred on the Separation Rapids Lithium Project (“Separation Rapids”), 4% were incurred on the Nechalacho Project (“Nechalacho”) and 25% were incurred on the Lilypad Cesium-Tantalum Project (“Lilypad”).

No properties were abandoned or impairment losses recorded during the Quarter.

Expenditures on resource properties for Fiscal 2022 totalled \$667,937, a 46% decrease from the level of expenditures for the year ended August 31, 2021 (“Fiscal 2021”) which totalled \$1,246,521. Of these expenditures, 81% were incurred on Separation Rapids, 7% were incurred on Nechalacho and 12% were incurred on Lilypad. Expenditures on Separation Rapids decreased to \$541,169 from \$801,297 in Fiscal 2021, primarily due to the 5,000 tonne bulk sampling program completed in Fiscal 2021, which did not recur in the Year. Expenditures on the Nechalacho Project were at a similar level, totaling \$43,543 in Fiscal 2022 compared to \$41,684 in Fiscal 2021. Expenditures on Lilypad decreased to \$83,225 from \$400,490 in Fiscal 2021, primarily due to the fieldwork programs conducted in Fiscal 2021, which did not recur in the Year.

No properties were abandoned or impairment losses recorded during the Year.

## **Separation Rapids Lithium Project**

The Separation Rapids property consists of nineteen mineral claims and one mining lease covering a combined area of approximately 4,414 hectares (10,910 acres) in the Paterson Lake Area, Kenora Mining Division, Ontario, all of which are owned 100% by Avalon. The lease covers an area of approximately 421 hectares over the area of the main lithium pegmatite deposit (the “Big Whopper”) and adjacent lands that may be used for mine development infrastructure. Avalon also owns three aggregate permits along the road to the site, which cover a total area of approximately 16 hectares and are located within the area covered by the claims. The Separation Rapids deposit is also a potential source of the high purity lithium mineral, petalite, for direct use in the glass-ceramics industry as well as lithium minerals for producing lithium battery materials.

During fiscal 2018, the Company completed an updated preliminary economic assessment (“PEA”) on a simplified business model that focuses on initial production of lithium mineral concentrates for the glass-ceramics industry, with potential for future expansion into production of the battery materials lithium carbonate and/or lithium hydroxide. This smaller scale development model reduces capital expenditure requirements substantially from the lithium hydroxide production model completed in September, 2016, while generating attractive returns and reducing overall business and permitting risk. However, with growing interest in establishing new lithium battery materials supply chains in Canada, the Company is now planning to accelerate its plans to produce lithium battery materials and has identified a sizeable industrial site on the waterfront in Thunder Bay that appears well-suited for establishing a regional lithium battery materials refinery.

During the Quarter, the Company incurred \$131,456 (2021 - \$132,668) in exploration and development expenditures on the Separation Rapids Lithium Project. Approximately 14% of these expenditures were incurred in preparation for the planned drilling program (pending permit approval) and geological modelling, 39% were spent on permitting for future drilling programs including on the Snowbank petalite pegmatite discovery and environmental studies, and approximately 47% were incurred on metallurgical consultation in preparation for the feasibility study.

During the Year, the Company incurred \$541,169 (2021 - \$801,297) in exploration and development expenditures on the Separation Rapids property. Approximately 32% of these expenditures were incurred primarily on the field exploration program on the NW part of the property in the fall of 2021, the trail clearing program completed in December 2021 and preparation for the planned drilling program (pending permit approval), 33% were spent on permitting for the planned drilling program and baseline environmental studies, and 35% were incurred on metallurgical testwork on lepidolite leaching, on relocating the 5,000 tonne bulk sample that was collected in Fiscal 2021, and on preparation for the feasibility study.

### **Lithium Refinery**

During the Year, the Company signed a letter of intent with RenJoules International Ltd., an Essar Group Company (“Essar”), to become a strategic partner and co-developer in support of Avalon’s plans to establish a regional lithium battery materials supply chain to serve the needs of future electric vehicle and battery manufacturers in Ontario and elsewhere.

This agreement (if it gets finalized) will involve providing initial financial and development support for building a lithium refinery in Thunder Bay, Ontario that will be designed to accept lithium minerals concentrates, not only from Avalon’s Separation Rapids Lithium Project north of Kenora, ON, but also from other aspiring new producers from the many lithium pegmatite resources that occur in northwestern Ontario. It will operate as a separate private business, called Avalon Lithium Inc., a newly established Avalon subsidiary in which Essar would potentially become a co-owner if and when they finalize a formal agreement.

Subsequent to the end of the Quarter, Avalon announced the signing of an MOU with LG Energy Solution (“LGES”) to provide LGES with at least 50% of its planned initial lithium hydroxide production from its Thunder Bay facility, with the potential to increase production as demand grows. LGES is also a potential strategic partner in the refinery along with other electric vehicle manufacturers looking

to take advantage of Canada's abundant critical minerals resources. The key next steps including; finalizing initial commercial terms and completion of final feasibility studies for both the refinery operations and lithium mineral concentrate production at the Separation Rapids site that will provide the initial feed for the refinery until other new producers also get started. This will also include acquisition of the site for the refinery in Thunder Bay and proceeding with initial site preparation work both at Separation Rapids and the Thunder Bay site.

Under the terms of the LGES MOU, Avalon would commit, for five years initially, to provide LGES with at least 50% of its planned initial lithium hydroxide production from its Thunder Bay facility, with the potential to increase production as demand grows. LGES has also indicated they can provide 50% of initial feed for the years 2025-2030, enabling Avalon's Separation Rapids and other lithium assets to get into production and become feedstock into the refinery.

Pursuant to the MOU, the parties continue discussions to enter into a definitive supply agreement and broader strategic partnership agreement, including potentially becoming a co-owner of the refinery with Avalon, which is intended to be finalized soon.

Meanwhile, the Company continues to progress towards acquisition of an industrial site in Thunder Bay that would be the location for establishing the Company's planned regional lithium battery materials refinery. An appropriate site has been identified and an offer was made with the acquisition initially expected to be completed in September. However, some minor title issues surfaced for the vendor to clear up and that work is underway. There remains good communication among parties with the expectation to complete the site purchase by the end of the year, once the debt financing has been completed.

### **Lithium Markets**

Global lithium carbonate prices are now rising consistent with recent lithium market forecasts showing rapid growth in demand driven mainly by the battery market with supply shortages expected within the next 2-3 years for the battery materials markets. The Company is planning to produce lithium hydroxide now which is in growing demand in North America with production initially planned to be over 20,000 tonnes per annum and perhaps as much as 30,000 tpa. Several EV companies that have expressed interest in making an off-take commitment have also expressed interest in being an investing partner in the refinery. Avalon has been approached by, and is in active discussions with, as many as six different parties who are interested in being an investing partner in the refinery and are now doing their due diligence.

With both the Ontario and Federal Governments confirming their interest in establishing new battery materials supply chains in the province, and potentially providing financial support, Avalon continues to work towards establishing its lithium refinery in Thunder Bay, Ontario. Several vacant industrial sites on the waterfront have been evaluated with a decision being made during the fourth quarter of the current fiscal year to focus on one sizeable site that appears ideally situated. The refinery being planned would be adaptable and would also be expandable to increase output and accept concentrates from other aspiring producers of lithium minerals including petalite, lepidolite and spodumene, from the many pegmatite deposits that occur in northwestern Ontario. There is also excellent potential to co-locate a battery recycler on the Thunder Bay property where the lithium refinery will be built, thereby advancing very positive NetZero outcomes.

To serve the rapidly growing interest in the petalite product from the glass-ceramics industry following the news that China has taken control of the traditional petalite supply sources in Zimbabwe, interest in Avalon's petalite product has increased dramatically. With one off-take agreement already signed with a non-Chinese company that wants the petalite product made using dense media separation ("DMS") technology, the Company is planning to purchase a demonstration scale DMS plant that would allow it to start producing bulk samples of the petalite concentrates for customer evaluation. Once more firm off-take commitments are secured, production can be scaled up as needed to meet the demand. The DMS demo plant would probably be installed on the Company's aggregate permit where most of the permitting requirements are advanced or already in place. The Company is also in active discussions with a major European company with experience in petalite markets for

investment to help put into production, the Company's Separation Rapids, Snowbank and Big Whopper lithium assets.

Separation Rapids hosts one of the few significant resources of the rare high purity lithium aluminum silicate mineral, petalite ( $\text{LiAlSi}_4\text{O}_{10}$ ) in the world. Next steps involve processing the 5,000 tonne bulk sample collected from the project site in 2021 to produce trial quantities of the petalite product for the many end-users that have expressed interest. While the Company has been planning to establish a DMS processing facility on the property to begin producing trial quantities of the petalite product, Avalon now has access to an alternative process facility in Finland that will allow the Company to accelerate the process work to create the larger product samples this year that have been requested by the off-taker and the other glass ceramic manufacturers that have expressed interest.

The Ontario government, with input from Avalon, has initiated potential changes to the existing regulatory regime ("cutting the red tape") to facilitate establishing critical minerals supply chains in the Province especially lithium battery materials. This was confirmed when Ontario announced its new Critical Minerals Strategy on March 17, 2022.

Many of these critical minerals, especially those such as the Separation Rapids lithium minerals, represent significantly lower environmental risk when compared to traditional exchange-traded commodities. Risk based regulation would facilitate their more rapid development of lithium resources in Ontario as part of a new industrial strategy to support advanced manufacturing. Projects such as Separation Rapids also present opportunities for economic benefits and participation by Indigenous businesses, thus supporting economic reconciliation with Indigenous peoples which is also a priority with the Ontario and Federal governments.

#### **Recent Activities and Future Plans**

The next step to finalize the lithium battery materials production model is to proceed with a pilot plant program on the bulk sample to finalize flowsheet parameters for engineering purposes including reagent recycling and water treatment processes, after which a feasibility study can be completed. The bulk sample collection work program was completed with the extraction of 5,000 tonnes of mineralized rock of the three different ore types that is temporarily being stored at a site near Kenora.

The coarse grained petalite ore will be processed in the new DMS plant to generate large product samples meeting the detailed specifications for glass-ceramic customer qualification and acceptance, and provide concentrate for further laboratory work on the lithium battery materials process flowsheet. Some preliminary process testwork is underway, and with access now to a properly equipped facility in Europe to process the bulk sample, significant quantities of concentrates can be produced in the next fiscal year.

Further exploration work on the northwestern part of the property in the vicinity of the new Snowbank petalite pegmatite discovery and the Glitter pegmatite is planned for 2022-23 to follow-up on encouraging initial results from the program completed in October 2021. The assay results for the mineralized pegmatite samples collected during the program have significantly increased the strike length of the Snowbank pegmatite from the previously announced 30 metres to approximately 230 metres. Lithium analyses ranged from 3.25%  $\text{Li}_2\text{O}$  to 0.63%  $\text{Li}_2\text{O}$  and the petalite mineralization is very coarse grained. A drilling program to begin to define the size potential of the Snowbank pegmatite discovery is now planned for December, 2022 and January, 2023.

Roadwork and site preparation work for the installation and commissioning of the DMS plant have commenced at the Avalon Quarry site along the Avalon Road to the Separation Rapids project site. The Avalon Quarry site is a permitted Aggregate Quarry located approximately 2 km north of the Sand Lake Road and approximately 7 km south of the project site. Aggregate for the road work will be produced at this Quarry as part of an initiative to prepare the road for heavy equipment transport and to prepare the site for the DMS plant installation.

The aggregate production, road repairs, site preparation and bulk sample crushing and hauling is being done by SOW Construction Limited Partnership, a joint venture between Moncrief Construction

Limited, a large Kenora-based construction contractor and Wabaseemoong Independent Nations, in whose traditional territory the Project is located. This work is now underway and is expected to be completed this fall.

The 5,000 tonne bulk sample collected from the project site in 2021 will now be crushed and shipped to Europe for producing trial quantities of the petalite product until the DMS plant can be acquired and set up at the quarry site in 2023. The Company now has access to a used DMS facility which can be purchased at a modest price then set up at the quarry to be operational by Spring, 2023. The plant will also be used to produce potential by-products including rubidium bearing K-feldspars which are also used in certain ceramic applications.

### **Environmental Assessment and Community Engagement**

Avalon is committed to developing the Separation Rapids Lithium Project based on modern CSR principles and reporting on its performance in its annual Sustainability Report. These CSR principles include commitments to minimize environmental impacts, being carbon neutral, 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 now well known in the local community.

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 of Ontario. The Company first signed an MOU with WIN in 1999 which was renewed when the project was reactivated 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 consulted with the Métis Nation of Ontario and engagement is ongoing with other local Indigenous communities, regulators, and local government.

During the Quarter, the Ministry of Northern Development, Mines, Natural Resources and Forestry (“MNDMNR”) continued to respond to questions regarding the Avalon drill program planned in the WIN Stewardship Area from the Grassy Narrows First Nation or “ANA”. The drill program is well outside of ANA’s proposed Indigenous Protected Conservation Area (“IPCA”). Slow responses by the MNDMNR to the questions have delayed receiving the permit for the proposed drill program but the Company is now in active dialogue with officials in the new Ministry of Mines including new Minister Pirie, and expects to have secured the permit in November, 2022. ANA members were among the Indigenous employees hired in November 2021 for the trail clearing program. The WIN leadership continues to be supportive of the project.

Unless otherwise noted, the technical information on the Separation Rapids Lithium Project has been reviewed and approved by the Company’s President & CEO, Donald Bubar, M.Sc., P.Geo who is a Qualified Person under NI 43-101.

### ***Nechalacho Rare Earth Elements and Zirconium Project***

The Nechalacho Rare Earth Elements Project is located at Thor Lake in the Mackenzie Mining District of the Northwest Territories (“NWT”), approximately 100 kilometres southeast of the city of Yellowknife. The property is comprised of eight contiguous mining leases totalling 5,786 hectares (14,297 acres), after three mining claims totalling 332 hectares on the southwest side of the original five leases were converted to mining leases. The original five leases are subject to one independently owned 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 \$1.6 million, and which will increase at a rate equal to the Canadian prime rate until the royalty is bought out.

During Fiscal 2020, Avalon sold the rights to the near-surface dominantly light rare earth mineral resources above a depth of 150 metres (“Upper Zone Resources”) to Cheetah Resources Pty Ltd. (“Cheetah”). Avalon retained a 3.0% NSR royalty (the “3.0% NSR Royalty”) and will continue to have access to the property for development and mining of its 100% owned Basal Zone heavy rare earth

resource. Avalon has also agreed to waive the 3.0% NSR Royalty for the first five years of Cheetah's commercial production and to grant Cheetah the option to pay the Company \$2 million within eight years of the transaction closing to extend the waiver of this royalty in perpetuity. Cheetah also has the option to purchase the Company's option in the 2.5% NSR Royalty, provided that, upon exercising the option, it extinguishes this royalty. The eight mining leases are jointly recorded in the names of Cheetah 50% and the Company 50%, while the beneficial ownership is held in trust by Cheetah and Avalon as to their respective beneficial ownership entitlement in and to the Upper Zone Resources and the Basal Zone Resources, respectively.

Avalon and Cheetah have formed a jointly-owned corporation ("NWT Rare Earths Ltd.") to hold the exploration permits and related authorizations related to Nechalacho and have also entered into a co-ownership agreement governing each party's activities and management at site. On November 30, 2020, a new Land Use Permit MV2020D0013, expiring November 29, 2025 and Water License expiring November 29, 2027 were approved for both the Cheetah Demonstration Project and the previously approved Basal Zone early works construction activities. Cheetah is also now in the process of establishing a process facility in Saskatoon to process the bastnaesite concentrates and produce a mixed rare earth oxide product. Significantly, the Saskatchewan Research Council are in the process of establishing a rare earth separation facility in Saskatoon and a facility for making the magnet metals in order to establish a complete rare earths supply chain in Canada.

Expenditures during the Quarter were \$7,865 (2021 - \$9,214), which were incurred primarily on on-going site holding and sample storage costs.

Expenditures during the Year were \$43,543 (2021 - \$41,684), which were incurred primarily on on-going site holding and sample storage costs.

During the Year, the Company received an expression of interest in its zirconium product. The Basal Zone HREE resource also contains abundant zirconium mineralization averaging over 3% ZrO<sub>2</sub>. Zirconium is now in very short supply in North America and has significant growth potential as a critical material needed in small modular nuclear reactors ("SMR"). Demand is growing now for SMRs as a clean energy alternative that can be used to serve the electricity needs of small remote communities to replace diesel generators.

### ***Lilypad Cesium-Tantalum Project***

The Lilypad Cesium-Tantalum Project consists of 14 claims, comprising 166 new claim units or cells, totaling approximately 3,300 hectares (8,152 acres), covering a field of lithium, cesium, tantalum ("LCT") mineralized pegmatites, and located 150 kilometres northeast of Pickle Lake, Ontario.

The claims were originally staked between January, 1999 and October, 2000 and are 100% owned by the Company with no underlying royalties. Previous owners of the property drilled some 50 shallow drill holes, and Avalon completed 32 drill holes totaling 4,781 metres in 2000 and 2001 in a program focused primarily on the tantalum potential. These produced encouraging initial results including the discovery of significant cesium mineralization as well as tantalum and lithium in a number of LCT pegmatites of which the two most promising are known as the Pollucite and Rubellite Dykes where the cesium occurs in the rare ore mineral pollucite ((Cs,Na)<sub>2</sub>Al<sub>2</sub>Si<sub>4</sub>O<sub>12</sub>·2H<sub>2</sub>O). Mapping and sampling work conducted in the summer of 2021 discovered a significant extension to the Pollucite Dyke and several new mineralized LCT pegmatites. Cesium continues to be in very short supply and high demand in international markets.

During the Year, the analytical results from a biogeochemical survey conducted during the 2021 summer field program were received. A review of the data indicates encouraging results with strong cesium and lithium anomalies associated with known mineralization at the Pollucite and Rubellite Dykes and similar anomalies in overburden covered areas indicating potential for new mineralized pegmatite discoveries. The completion of the analytical work on the samples collected will lead to the definition of new drill targets for LCT pegmatites.

A follow-up drilling program is tentatively planned in 2023 to test some of the new targets identified through the 2021 geochemical survey work and do additional drilling on the Pollucite Dyke. Preliminary environmental studies were also initiated. Future development of the project would be positively impacted by new infrastructure development, including road access, to the Ring of Fire mineral projects located further to the north, which the Ontario Government is now planning to go ahead with.

The project is located in the traditional territory of the Eabametoong First Nation ("EFN"), approximately 25 km west of the community of Fort Hope. The Company has been in communication with EFN community leadership who are supportive of the Project. Some community members from local First Nations assisted with camp construction, line-cutting and geochemical work in the 2021 mapping and sampling program. During the Year, former EFN Chief Harvey Yesno joined the Avalon Board of Directors and will be an invaluable resource for the ongoing development of Avalon's relationship with the EFN as well as with other Indigenous communities in northwestern Ontario.

The Company incurred \$45,669 (2021 - \$299,755) in expenditures during the Quarter on the Lilypad Cesium-Tantalum Project, which were mainly spent on biogeochemical analyses on samples collected during the 2021 summer work program and preparation and filing of the assessment work report with the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry ("MNDMNF").

The Company incurred \$83,225 (2021 - \$400,490) in expenditures during the Year on the Lilypad Cesium-Tantalum Project, which were mainly spent on biogeochemical analyses on samples collected during the 2021 summer work program and preparation and filing of the assessment work report with the MNDMNF.

### ***East Kemptville Tin-Indium Project***

The 100% owned East Kemptville Tin-Indium Project is located 55 km northeast of Yarmouth, Nova Scotia, Canada. The property consists of an exploration licence covering 1,165 hectares (2,880 acres). East Kemptville was an operating tin mine from 1985-1992 and was North America's only large primary tin producer, before closing prematurely in 1992 due to a collapse in tin prices. Increasing global demand for tin and tightening supplies has resulted in significantly improved tin prices of over US\$20,000/tonne, creating an opportunity for Avalon to re-activate the site initially by processing a large historical stockpile of tin ore using low-impact sensor-based ore-sorting technology.

The Company completed a preliminary economic assessment during fiscal 2018 with a development model of utilizing the existing tailings management area ("TMA") and had been in negotiation with the surface rights owner to secure full tenure to the project site. Agreement in principle was reached in Fiscal 2019, however, the surface rights owner subsequently refused to sign the agreement and denied Avalon access to the site after putting a hold on any new work on all of its closed mine sites.

The Company did not incur any significant expenditures during the Quarter or Year on the East Kemptville Tin-Indium Project. The Company continues to retain the mineral rights through its exploration licence, and management remains optimistic that the Company will eventually be able to secure access to the site again to resume its site re-activation plans. Discussions continue with Nova Scotia Ministry of Energy and Mines officials during the Quarter, who are supportive of Avalon's re-development model involving extracting critical minerals from the historic mine wastes including lithium and indium as well as tin. Federal Government officials with Natural Resources Canada are also very supportive of the Company's model and have expressed interest in supporting more research work on efficient extraction processes that can be applied to recover all the critical minerals in the wastes there.



## **Other Projects**

### **Clean Technology Business Opportunities**

Avalon is also continuing to evaluate the opportunity to apply innovative new extraction technologies to recover rare earths and other critical minerals from historic mine wastes. There are many such sites in North America where the waste may contain critical minerals that had no value when the mine was in operation but do today.

Management sees enormous growth potential in this emerging sector and good opportunities for accessing capital from the many government programs oriented towards cleantech development and from the growing international Impact/ESG investment community. This is also consistent with the increasing interest in establishing the “Circular Economy” in the mining industry through innovative recycling of waste materials.

Government is increasingly committed to supporting the establishment of new critical minerals supply chains in Canada. During the Year, the Government of Ontario announced its new Industrial Strategy to support establishing electric vehicle and battery manufacturing capacity and during the Quarter, the Province announced its first-ever critical minerals strategy to support establishing these new supply chains in the Province. Avalon is continuing to support the efforts of policymakers to implement needed regulatory changes to recognize many critical minerals as a unique low risk sub-sector of the mineral industry. Central to this need is recognizing the importance of bulk sampling at the early stages of exploration to determine if the mineralization of economic interest can be efficiently processed to make a product that will be accepted in the market.

In February, 2021, the Company entered into a binding letter of intent (the “LOI”) to purchase ownership of 2333382 Ontario Inc. (“2333382”), a private Ontario corporation which owns four industrial minerals properties and a demonstration-scale processing plant located at Matheson, Ontario. The asset owned by 2333382 of most interest to Avalon is an asset transfer agreement giving 2333382 the right to acquire full title to the mining leases of the former phosphate mine on the Cargill Carbonatite Complex near Kapuskasing, Ontario. This carbonatite complex hosts significant concentrations of a number of critical minerals including rare earths and scandium, contained both in the bedrock and in the mine tailings.

Work done by 2333382 has demonstrated that the estimated 12.5 million tonnes of tailings contain phosphate levels ranging from 15-20% P<sub>2</sub>O<sub>5</sub> and can be sold “as is” for use in various agricultural fertilizer products. Analytical work done by 2333382 and Avalon on the tailings to date indicates the presence of significant concentrations of rare earths, scandium and zirconium, which preliminary testwork indicates will be recoverable through additional processing of the tailings. This provides significant potential for future revenue growth.

The total purchase price agreed to by the Company will be \$16 million, payable in a combination of cash and common shares of Avalon over a period of two years assuming the Cargill site title can be secured. The initial payment of \$200,000 in cash and the issuance of 1,000,000 common shares were made in February, 2021. The agreement called for the balance of the purchase price to be made in four instalments over two years (assuming the Letter of Credit (“LoC”) needed to secure title to the Cargill Mining Leases is successfully secured).

As of the date of this MDA the required LoC had still not been secured and the Company has delayed all further interim purchase payments until 2333382 has secured the LoC and completed the asset transfer with the current owner of the mining leases. The Company has put on hold any further work on the Project until the asset transfer issue is resolved and is now talking to a number of potential investing partners that can finance the acquisition and the LoC.

### **Warren Township Anorthosite Project**

Avalon has been considering reactivating its wholly-owned Warren Township Anorthosite Project in view of growing demand for the calcium feldspar product, which is being driven by innovation in glass

technology and space exploration technology. The property is covered by a lease of 688 hectares (1,699 acres) that includes an aggregate permit over the historical quarry site. The high-quality calcium feldspar product is used in the manufacture of reinforcing glass fibre and other industrial products, such as mineral fillers. The market has continued to grow with new emerging cleantech applications, such as composites for wind turbine blades. There has also been demand for small quantities of the crushed anorthosite rock for use as a “lunar simulant” due to its mineralogical similarity with dust on the surface of the moon.

No significant expenditures were incurred on the property during the Quarter or the Year.

## Corporate Social Responsibility

In late 2022, the Company expects to release its 2022 Sustainability Report, which will be available for download at: <https://www.avalonadvancedmaterials.com>. In February, 2021 the Company announced receiving its Environmental, Social and Corporate Governance ("ESG") Risk Rating following an independent audit of the Company's business practices and policies performed by Sustainalytics, a Morningstar company. Avalon received an ESG Risk Rating of 28.9 in its industry, Diversified Metals, and ranked among the top 5% of 150 industry companies analyzed globally. The benefits of obtaining an ESG Risk Rating include the ability to provide better access to ESG investment capital, and the ability to gain commercial benefit from the rating externally with creditors, suppliers and other stakeholders.

Avalon's annual Sustainability Reports are prepared in accordance with the Global Reporting Initiative's Global Reporting Standards. They incorporate a self-assessment of Fiscal year performance and also sets targets for the next fiscal year against the applicable and updated Mining Association of Canada “Toward Sustainable Mining” indicators. Avalon has also initiated reporting against the applicable material UN Sustainable Development Goals. A review and update of the Sustainability Policy has been initiated to formally document the significant progress the Company had made in sustainability and to ensure its industry leadership is maintained.

A risk assessment was completed related to the COVID 19 pandemic and detailed office re-opening procedures were developed and training completed for all employees. Most employees are still mainly working from home and coming to the office when there are meetings to attend. Plans to re-open the office have been initiated.

Avalon is committed to working closely with its Indigenous partners to create lasting economic and social benefits in the communities.

Avalon's leadership in applying the principles of sustainability in all of the Company's work are also benefitting the mineral exploration industry generally. Avalon is supporting the PDAC, the Ontario Mining Association and the Mining Association of Canada in their efforts to educate regulators and policymakers regarding the need to update regulations in order to encourage more and sustainable development of critical minerals resources in Canada that are vital for establishing the new clean economy in Canada and to ensure access to land for exploration purposes.

The Company's main focus is on materials that enable clean technology, including electric vehicles, power storage, solar and wind power. In order to do this sustainably, Avalon designs its operations to minimize environmental impacts and greenhouse gas emissions, while planning for rehabilitation and productive use of the land post closure. The Company also now incorporates a staged-development approach to its cleantech materials projects, which involves starting production at a modest scale, to minimize project footprint and potential risks to environment, while also reducing investment risk and creating opportunities for its Indigenous business partners. Further, Avalon is a leader in promoting the Circular Economy by looking at closed mine sites as opportunities to remediate long term environmental liabilities through economic extraction of valuable minerals from waste materials using new technologies.

In response to the increasing concern expressed by regulators, insurers, investors, customers and other communities of interest, and building on its historic success in reducing greenhouse gas

emissions, Avalon has continued to evaluate the potential to become carbon neutral by 2050. In conjunction with climate change risk assessment, Avalon is investigating a range of opportunities and potential barriers to cost effectively achieving this, and is optimistic that a serious and realistic commitment to achieving this goal can be made. A University of Toronto Capstone Master's study to assess this potential at Separation Rapids successfully identified an economic path forward to achieve this goal at the mine and concentrator site, and will initiate studies for the refinery once more detail is available. Avalon believes this will give the project a competitive advantage in the ongoing efforts to obtain ESG investors and government research funding. It should also aid in getting government permits, anticipated to take less than a year.

Being a recognized sustainability leader reduces costs and facilitates good relationships with Indigenous communities, which can help reduce risk of experiencing lengthy delays in receiving operating permits and approvals. This also helps facilitate the acquisition of our social license to operate. Avalon believes that responsible users of our cleantech materials will require increasingly sustainable sources for their materials which we believe will provide Avalon with a competitive advantage in securing market access for its products.

## **Administration and Other**

Interest income for the Quarter totalled \$15,546 compared to \$1,722 in the same quarter in Fiscal 2021, due to higher cash balances and interest rates.

No management fees were earned in the Quarter (2021 - \$244) related to the management of Cheetah's work programs at Nechalacho, which had substantially wound up towards the end of Fiscal 2021.

Corporate and Administrative expenses totalled \$692,348 during the Quarter, a 63% increase from the amount incurred during the comparative quarter in Fiscal 2021 (2021 - \$420,526). The main areas of increased expenses for the Quarter were expenses on salaries and benefits, public and investor relations expenses, and audit fees, which were partly offset by a decrease in marketing, sales and government relations expenses.

Salaries and benefits increased by \$17,223 (7%) to \$264,399 during the Quarter compared to \$247,176 for the same quarter in Fiscal 2021. Salaries and benefits were lower in the same quarter in 2021 due to the offset by the Canada Emergency Wage Subsidy received by the Company in 2021.

Expenses on public and investor relations increased by \$230,285 (269%) to \$315,989 compared to the same quarter in Fiscal 2021. The increase is primarily related to the Company's increased activities on the Innovation News Network website with the publication of several information pieces on lithium, and rare earths including an e-book on battery supply chains in Canada, and another piece on other future lithium applications.

<https://www.innovationnewsnetwork.com/ebook/developing-stable-domestic-battery-supply-chain-canada/>

<https://www.innovationnewsnetwork.com/exploring-applications-lithium-future-innovation-potential/22657/>.

The level of IR activities conducted by external consultants including Stockhouse also increased during the Quarter compared to the same quarter in 2021. The Company also participated in more in-person and virtual investor and industry conferences in the Quarter compared to the same quarter in 2021. The Company engaged several new IR services during the Quarter including Investing News Network and Agoracom and delivered several on-line presentations all designed to increase investor awareness of the Company's advanced lithium project. This included two Emerging Growth Conference virtual presentations both attended by more than 1,000 viewers and two more were done in September and October after fiscal year end, along with a couple hosted by OTC Markets.

During the Quarter, the Company also re-engaged O&M Partners to take advantage of their new 6 minute CEO interviews which they use to communicate the Company's story to their extensive small-cap investor network in the US. Subsequent to fiscal year-end the Company terminated its Director of Communications and retained a new IR firm; TargetIR, run by an experienced IR consultant named Salisha Ilyas.

Audit fees for the Quarter increased to \$40,250 from \$21,000 for the same quarter in Fiscal 2021. The increase is primarily related to the increase in fees for the audit of the Company's financial statements for the Year.

Expenses on marketing, sales and government relations decreased by \$14,157 (69%) to \$6,342 during the Quarter compared to the same quarter in Fiscal 2021 primarily due to marketing, sales and government relations activities are now being conducted inhouse.

Depreciation expense was \$57,369 during the Quarter compared to \$20,769 for the same quarter in Fiscal 2021. Depreciation expense is primarily related to the Company's leased office premise, and was offset by amounts recognized under Federal rent subsidy programs of \$nil in the Quarter (2021 - \$38,099).

Share based compensation remained roughly constant at \$145,768 for the Quarter compared to \$143,980 for the same quarter in Fiscal 2021.

At each reporting period date, the fair values of the Company's outstanding derivative liabilities (which included the warrants with exercise prices that are subject to adjustment from time to time in the event of certain common share rights offerings) were re-measured using the Black-Scholes pricing model, which resulted in a loss of \$136,922 for the Quarter and a loss of \$100,920 for the Year, respectively, compared to a gain of \$954,846 and a loss of \$233,980 in the comparable quarter and year in Fiscal 2021, respectively. 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 between the beginning and end of the reporting periods.

The Company recognized an expense of \$917,200 during the Year relating to the issuance of the convertible note payable issued in May 2022 (the "2022 Note"), which consisted of the excess of the estimated fair values of the 2022 Note and the warrants (\$3,801,893) over the net cash proceeds of \$2,884,693. This amount had been included in the increase in fair values of convertible notes payable and derivative liabilities in the Statement of Comprehensive Loss.

The Company recognized an expense of \$1,274,563 during Fiscal 2021 relating to the issuance of the convertible note payable issued in January 2021 (the "2021 Note"), which consisted of the excess of the estimated fair values of the 2021 Note and the warrants (\$4,156,997) over the net cash proceeds of \$2,882,434. This amount had been included in the increase in fair values of convertible notes payable and derivative liabilities in the Statement of Comprehensive Loss.

Interest income for the Year totalled \$21,766 compared to \$6,127 for Fiscal 2021.

No management fees were earned in the Year (2021 - \$5,122) as the management of Cheetah's work programs at Nechalacho had substantially wound up towards the end of the Fiscal 2021.

For the Year, corporate and administrative expenses totalled \$2,260,303 compared to \$1,878,621 for Fiscal 2021. The main areas of increased expenses for the Year were public and investor relations expenses, and salaries and benefits, which were slightly offset by a decrease in corporate filing and legal fees, and marketing, sales and government relations expenses.

Expenses on public and investor relations increased by \$472,015 (196%) during the Year to \$712,962 compared to \$240,948 for Fiscal 2021. The increase is primarily related to the increased amount of work provided by the Company's investor relations consultants, the increase in TV and internet base advertising and marketing campaigns, and the increased number of investor and industry conferences participated by the Company.

Salaries and benefits for the Year increased by \$40,393 to \$1,086,323, compared to Fiscal 2021.

Corporate filing and legal fees decreased by \$92,962 (40%) to \$138,983 during the Year compared to Fiscal 2021. Higher corporate filing and legal fees were incurred in Fiscal 2021 relating to the Company's share capital amendment and the Company's DSU and RSU Plans.

Consistent with the Quarter and for similar reasons, expenses on marketing, sales and government relations decreased by \$69,322 (74%) to \$25,045 during the Year compared to Fiscal 2021.

Share based compensation increased to \$565,163 from \$368,650 during the Year compared to Fiscal 2021. This increase is primarily related to the increase in the number of options and the estimated fair value of the options earned, and the fair value of RSUs earned and recognized during the Year compared to Fiscal 2021.

## Summary of Quarterly Results

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

Fiscal Year For the Quarters Ended	2022				2021			
	Aug. 31	May 31	Feb. 28	Nov. 30	Aug. 31	May 31	Feb. 28	Nov. 30
	\$	\$	\$	\$	\$	\$	\$	\$
Revenue	15,546	3,918	1,237	1,065	1,966	3,866	2,331	3,086
Net Income (Loss)	(991,515)	(1,706,906)	(567,035)	(680,387)	407,783	540,924	(3,945,714)	(758,116)
Income (Loss), per share, basic	(0.002)	(0.004)	(0.001)	(0.002)	0.001	0.002	(0.011)	(0.002)
Income (Loss), per share, diluted	(0.002)	(0.004)	(0.001)	(0.002)	0.001	(0.001)	(0.011)	(0.002)

The fluctuation in quarterly net loss is primarily due to share-based compensation expenses recognized as stock options, DSUs and RSUs granted to directors, officers, employees and consultants of the Company are earned, the gain on sale of property, plant and equipment, the impairment losses recognized on resource properties, changes in the fair value of derivative liabilities, 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 mainly of the exploration and development of mineral properties, the most relevant financial information relates primarily to current liquidity, solvency, and planned project expenditures. The Company's financial success will be dependent on the economic viability of its resource projects and the extent to which it can develop its mineral resources. Such development may take several years to complete and the amount of resulting income, if any, is difficult to determine until firm offtake commitments have been secured. The sales value of any mineralization discovered by the Company is largely dependent on factors beyond the Company's control, including the negotiated value of the critical minerals products 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 equity securities although it is now trying to access debt financing to fund the refinery site acquisition and reduce share dilution. With the likelihood of securing investing partners in the refinery and with access to government grant funding, the debt incurred to acquire the property can probably be paid back in the first year. In order to achieve its objectives, the Company expects to spend its existing working capital and raise additional funds as required including flow-through equity financing to fund exploration drilling work and some debt financing.

On May 9, 2022, the Company issued a convertible note payable in the amount of \$3,000,000 to an entity managed by the Lind Partners ("Lind") (the "2022 Note"). The 2022 Note has a term of two years with a maturity date of May 9, 2024 and accrued an interest amount of \$600,000 on the date of issuance, resulting in the 2022 Note to bear a face value of \$3,600,000 at issuance. Lind is entitled to convert any outstanding amount of the face value of the Note into common shares commencing on September 10, 2022 at a conversion price equal to 85% of the five day trailing value weighted average price ("VWAP") of the common shares prior to the date of conversion. The Company has the right to repurchase the 2022 Note at the outstanding face value at any time after September 10, 2022, subject to the holder's option to convert up to one third of the original value into common shares prior to the Company's repurchase. The balance on the 2022 Note at August 31, 2022 was \$3,600,000.

On January 29, 2021, the Company issued a convertible note payable in the amount of \$3,000,000 to an entity managed by Lind (the "2021 Note"). The 2021 Note has a term of two years with a maturity date of January 29, 2023 and accrued an interest amount of \$600,000 on the date of issuance, resulting in the 2021 Note to bear a face value of \$3,600,000 at issuance. Lind is entitled to convert any outstanding amount of the face value of the 2021 Note into common shares commencing on May 30, 2021 at a conversion price equal to 85% of the five day trailing VWAP of the common shares prior to the date of conversion. The Company has the right to repurchase the 2021 Note at the outstanding face value at any time, subject to the holder's option to convert up to one third of the original value into common shares prior to the Company's repurchase. The balance on the 2021 Note at August 31, 2022 was \$460,000.

The number of common shares to be issued would be 35,582,822 if the full amount of notes payable had been converted into common shares based on the five day VWAP of the Company's common shares on the TSX of \$0.1342 on August 31, 2022.

As at August 31, 2022, the Company has current assets of \$4,058,250 and current liabilities of \$1,445,827. The Company's working capital as at August 31, 2022 was \$2,612,423 (August 31, 2021 - \$1,676,269).

The Company's monthly operating expenditures, excluding expenditures on resource property work programs, average approximately \$375,000 during periods of moderate project activity. The Company's contemplated capital and resource property expenditures for Fiscal 2023, assuming the requisite financing is in place, are budgeted at approximately \$11,200,000 (excluding capitalized salaries and benefits).

The Company will need to raise additional capital to fund significant new work programs on the Separation Rapids Lithium and Lilypad Cesium-Tantalum Projects. Initiatives to raise additional capital are ongoing and include financing from an investing partner for developing Separation Rapids, as well as flow-through equity financing for planned exploration work programs. There continues to be increasing investor interest in critical minerals for clean technology creating many new opportunities to access capital including from the growing ESG investment community. Having the new ESG risk rating will improve access to ESG oriented risk capital including Green Bonds. Discussions with potential joint venture partners to provide project financing are also ongoing and the Company is continuing to prioritize financing opportunities that will minimize the potential for excessive shareholder dilution. The Company's expenditures on 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 Default Events contained in the note payable 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 \$24,841 (which are shared 50/50 with Cheetah) and the annual expenditures related to the mining leases at Separation Rapids and Warren Township totalling \$3,327. As at August 31, 2022, the Company is required to incur additional Canadian exploration expenses ("CEE") of \$814,581 by December 31, 2022. The Company also has additional payment requirements pursuant to the 2333382 LOI as outlined earlier under "Other Projects".

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

Fiscal year ended August 31,	2023	\$	173,371
	2024	\$	233,563
	2025	\$	63,280

## Off Balance Sheet Arrangements

As at August 31, 2022, 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 years ended August 31, 2022 and 2021, other than the participation by certain related parties in the December 2021 private placement whereby Donald Bubar, President and CEO, and Mr. Alan Ferry, Chair of the Board of Directors subscribed for 250,000 and 300,000 FT Units at \$0.12 per unit, respectively.

### b) Compensation of key management personnel

The remuneration of directors and other key members of the Company's senior management team during the years ended August 31, 2022 and August 31, 2021 are as follows:

	<b>August 31, 2022</b>	<b>August 31, 2021</b>
Salaries, benefits and directors' fees <sup>(1)</sup>	\$ 1,053,829	\$ 1,159,580
Share based compensation <sup>(2)</sup>	422,101	285,468
	<u>\$ 1,475,930</u>	<u>\$ 1,445,048</u>

- (1) Salaries and benefits of key management personnel capitalized to exploration and evaluation assets and PPE totaled \$102,109 (2021 - \$174,794).
- (2) Fair value of stock options, DSUs & RSUs earned and recognized as share based compensation during the respective reporting period.

## Subsequent Events

Subsequent to the end of the Year, the Company:

- a) issued 8,625,108 common shares pursuant to the conversion of \$1,020,000 of the convertible notes payable;
- b) issued 1,900,000 common shares pursuant to the exercise of warrants with a weighted average exercise price of \$0.12 per share;
- c) granted 80,000 stock options with a weighted average exercise price of \$0.15 per share to an employee of the Company. The contract life of these options at issuance was 5 years;
- d) granted 200,000 stock options with a weighted average exercise price of \$0.12 per share to a consultant of the Company. The contract life of these options at issuance was 2 years;
- e) cancelled 200,000 stock options with a weighted average exercise price of \$0.20 per share; and
- f) had 250,000 warrants with a weighted average exercise price of \$0.12 per share expire.

## Financial Instruments

The Company's financial instruments consist of cash and cash equivalents, receivables, accounts payable and accrued liabilities, convertible note payable and warrants with exercise prices that are subject to adjustment from time to time.

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, accounts payable and accrued liabilities and convertible notes payable approximate their carrying values.

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 950 have been issued and none is outstanding as at August 31, 2022.

As at August 31, 2022, the Company had 406,948,106 common shares issued and outstanding. Subsequent to the end of the Year, and as described earlier under "Subsequent Events", a total of 10,525,108 shares were issued. As of the date of this MDA, the Company has 417,473,214 common shares outstanding.

### **b) Options**

As at August 31, 2022, the Company had an aggregate of 17,605,000 incentive stock options outstanding with a weighted average exercise price of \$0.14 (of which 7,220,000 were vested



and 10,385,000 were unvested). Subsequent to the end of the Year, 280,000 stock options were granted and 200,000 options were cancelled (as described earlier under “Subsequent Events”). As at the date of this MDA, the Company has 17,685,000 incentive stock options with a weighted average exercise price of \$0.14 outstanding.

**c) *Deferred and Restricted Share Units***

As at August 31, 2022, and the date of this MDA, the Company has 475,000 fully vested DSUs and 1,016,666 RSUs (of which 300,001 were vested) outstanding.

**d) *Warrants***

As at August 31, 2022 the Company has the following common share purchase warrants outstanding:

- i. 1,900,000 warrants with an exercise price of \$0.12 per share and expiring on November 1, 2022, or if the closing price of the common shares on the TSX is \$0.16 or higher for a period of twenty consecutive trading days after November 1, 2018, 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. Subsequent to the end of the Year, these warrants were exercised;
- ii. 250,000 warrants with an exercise price of \$0.12 per share and expiring on November 23, 2022, or if the closing price of the common shares on the TSX is \$0.16 or higher for a period of twenty consecutive trading days after November 23, 2018, 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. Subsequent to the end of the Year, these warrants expired;
- iii. 6,250,000 B1 Warrants with an exercise price of \$0.15 per common share which are exercisable until January 15, 2023;
- iv. 1,875,000 C1 Warrants with an exercise price of \$0.125 per common share which are exercisable until June 29, 2023;
- v. 9,800,000 warrants with an exercise price of \$0.18 per common share which are exercisable until January 29, 2025;
- vi. 4,425,000 warrants with an exercise price of \$0.18 per common share which are exercisable until December 21, 2023;
- vii. 1,460,000 warrants with an exercise price of \$0.15 per common share which are exercisable until December 21, 2023; and
- viii. 9,000,000 warrants with an exercise price of \$0.26 per common share and are exercisable until May 9, 2026.

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.

**e) *Brokers’ Compensation Warrants***

As at August 31, 2022 the Company has the following compensation warrants outstanding:

- i. 150,000 warrants with an exercise price of \$0.20 per common share, which are exercisable until May 14, 2023; and
- ii. 788,900 warrants with an exercise price of \$0.18 per common share, which are exercisable until December 21, 2023.

## **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 evaluated the effectiveness of the design and operation of the Company’s disclosure controls and procedures as of August 31, 2022. Based on this evaluation, the CEO and CFO have concluded that the Company’s disclosure controls and procedures are designed effectively 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, processed, summarized and reported within the time period specified in those rules.

During the process of review and evaluation, it was determined that the Company’s disclosure controls and procedures are operating effectively as at August 31, 2022.

## **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.

Under the supervision, and with the participation, of the CEO and CFO, management conducted an evaluation of the effectiveness of the Company’s ICFR based on the framework Internal Control - Integrated Framework (COSO 2013 framework) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on that evaluation, the CEO and CFO have concluded that the design and operation of the Company’s ICFR were effective as at August 31, 2022. No material weaknesses were identified by management during this evaluation.

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 ongoing 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 to the financial results or the financial positions reported in future periods are included in the following notes:

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

The Company assesses its long-lived assets, specifically all exploration and evaluation assets and property, plant and equipment ("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, years to commencement of production, 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. Changes to the estimated future costs are recognized in the statement of financial position by adjusting both the site closure and reclamation asset and provision.

### *Property, Plant and Equipment (“PPE”) - 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 Year.

### **Recent Accounting Pronouncements**

The following pronouncements are issued but not yet effective:

#### *a) Amendments to IAS 16 - Property, Plant and Equipment - Proceeds before Intended Use*

In May 2020, the IASB issued amendments to IAS 16, Property, Plant and Equipment (“IAS 16”). The amendments prohibit a company from deducting from the cost of property, plant and equipment amounts received from selling items produced while the company is preparing the asset for its intended use. A company will be required to recognize these sales proceeds and related costs in earnings. These amendments become effective for annual reporting periods beginning on or after January 1, 2022 (which will become effective on September 1, 2022 for the Company), and will apply retrospectively to items of property, plant and equipment that are available for use after the beginning of the earliest period presented in the financial statements in which the entity first applies the amendments. The Company does not expect a significant impact on its consolidated financial statements.

#### *b) Amendments to IAS 1 - Presentation of Financial Statements - Classification of Liabilities as Current or Non-current*

In January 2020, the IASB issued amendments to IAS 1, Presentation of Financial Statements to clarify the requirements for classifying liabilities as current or non-current.

The amendments specify that the conditions which exist at the end of the reporting period are those which will be used to determine if a right to defer settlement of a liability exists and clarify the situations that are considered settlement of a liability, which include settlement by transferring a company’s own equity instruments to the counterparty. The amendments further clarify how an entity classifies a liability that includes a counterparty conversion option, and that when classifying

liabilities as current or non-current - an entity can ignore only those conversion options that are recognized as equity.

The amendments will become effective for annual reporting periods beginning on or after January 1, 2023 (which will become effective on September 1, 2023 for the Company), and will apply retrospectively. The application of these amendments will impact the current/non-current classification of the Company's convertible note payable and certain derivative liabilities.

## **Forward-Looking Information, Risk Factors and Qualified Persons**

Certain of the statements that are not historical facts contained in this MDA are forward-looking information and 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;
- availability of supplies, equipment and labour; and
- market and sector trends.

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, 2022, 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 impact of the novel coronavirus ("COVID-19") pandemic, or other global pandemics;
- risks related to either Avalon's or Cheetah's development plans of the Nechalacho Project negatively impacting the other's development plans;
- 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 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 Indigenous land title claims and Indigenous rights;
- risks related to the possible existence of rights and interests of Indigenous 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 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 related to cybersecurity;
- 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; 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. Mr. Bubar is a qualified person under National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101").

## **Cautionary Note to U.S. Investors Regarding Mineral Resources**

NI 43-101 is a rule of the Canadian Securities Administrators, which establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects. Unless otherwise indicated, all mineral reserve and mineral resource estimates contained in or incorporated by reference in this MDA have been prepared in accordance with NI 43-101 and the Canadian Institute of Mining, Metallurgy and Petroleum classification system. These standards differ significantly from the mineral property disclosure requirements of the Securities and Exchange Commission's Industry Guide 7 ("Guide 7"), which, until recently, applied to most SEC registrants, and so the mineral reserve and mineral resource information contained in the MDA and incorporated herein by reference is not comparable to similar information disclosed by U.S. companies pursuant to Guide 7. However, on October 31, 2018, the SEC adopted changes to its disclosure rules to modernize the mineral property disclosure requirements applicable to most SEC registrants. New subpart 1300 of Regulation S-K (the "SEC Modernization Rules") became effective on February 25, 2019 and, for fiscal years beginning on or after January 1, 2021, replaces Guide 7's disclosure requirements. Under the SEC Modernization Rules, consistent with global standards as embodied by the Committee for Reserves International Reporting Standards ("CRIRSCO"), most SEC registrants will be required to disclose specified information concerning mineral resources that have been identified on their mineral properties. Consistent with CRIRSCO standards, the SEC Modernization Rules have also added definitions to recognize measured mineral resources, indicated mineral resources and inferred mineral resources. Thus, although the SEC Modernization Rules are not identical to Canada's NI 43-101 standards, they are intended to be more consistent with those standards.

## **Other Information**

Additional information on the Company is available on SEDAR at [www.sedar.com](http://www.sedar.com) and on the Company's website at [www.avalonadvancedmaterials.com](http://www.avalonadvancedmaterials.com).