**UNITED STATES**
**SECURITIES AND EXCHANGE COMMISSION**
**Washington, D.C. 20549**

# FORM 20-F

☐ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

**OR**

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For fiscal year ended August 31, 2017**

**OR**

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the transition period from _____ to _____**

**OR**

☐ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Date of event requiring this shell company report: _____

**Commission file number: 001-35001**

**Avalon Advanced Materials Inc.**
(Exact name of Registrant as specified in its charter)

**Canada**
(Jurisdiction of incorporation or organization)

**130 Adelaide St. West, Suite 1901, Toronto, Ontario M5H 3P5, Canada**
(Address of principal executive offices)

**R. J. Andersen, Tel: 416-364-4938 Fax: 416-364-5162**
**130 Adelaide St. West, Suite 1901, Toronto, Ontario M5H 3P5, Canada**
(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered pursuant to Section 12(b) of the Act: **None**

Securities registered pursuant to Section 12(g) of the Act: **Common Shares**

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: **None**

Indicate the number of outstanding shares of each of the Registrant's classes of capital or common stock as of the close of the period covered by the annual report: **196,735,521 common shares as at August 31, 2017**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ ☐ No ☒

If this report is an annual or transition report, indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes ☐ ☐ No ☒

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☐ No ☐

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one)

| Large accelerated filer | ☐ | Accelerated filer | ☐ | Non-accelerated filer | ☒ |
|---|---|---|---|---|---|

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

| U.S. GAAP | ☐ | International Financial Reporting Standards as issued by the International Accounting Standards Board | ☒ | Other | ☐ |
|---|---|---|---|---|---|

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow: Item 17 ☐ Item 18 ☐

If this is an annual report, indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

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## Introduction

In this annual report on Form 20-F, which we refer to as the "Annual Report", except as otherwise indicated or as the context otherwise requires, the "Company", "we", "our" or "us" or "Avalon" refers to Avalon Advanced Materials Inc..

## Currency

Unless we otherwise indicate in this Annual Report, all references to "Canadian Dollars", "CDN$" or "$" are to the lawful currency of Canada and all references to "U.S. Dollars" or "US$" are to the lawful currency of the United States.

## Qualified Persons

Except as otherwise noted in this Annual Report, Mr. Donald S. Bubar, P.Geo., President and Chief Executive Officer, Mr. David Marsh, FAusIMM (CP), Senior Vice President, Metallurgy and Technology Development and Dr. William Mercer, P.Geo., Vice President, Exploration are qualified persons for the purposes of National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101"), and have reviewed and approved the technical information included in this Annual Report. See also Item 7. – Major Shareholders and Related Party Transactions – C. Interests of Experts and Counsel.

## Cautionary Note Regarding Forward-Looking Statements

This Annual Report contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 and within the meaning of applicable Canadian securities regulations. There are 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 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;
- rare metal and by-product 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" herein and the following:

- 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 in the Northwest Territories;
- 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 rare 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 mineral 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 Annual Report 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.

**Cautionary Note to United States Investors Concerning Reserve and Resource Estimates**

The reserve and resource estimates in this Annual Report have 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 Annual Report 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 Annual Report 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 the amount of minerals contained 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.

**Explanatory Note Regarding Presentation of Financial Information**

The annual audited consolidated financial statements contained in this Annual Report on Form 20-F are reported in Canadian dollars. For all periods up to and including the years ended August 31, 2017, we prepared our consolidated financial statements in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB"). Financial statements prepared in accordance with IFRS are not comparable in all respects with financial statements that are prepared in accordance with U.S. generally accepted accounting principles.

## Glossary of Mining Terms

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| ***Anomalous*** | A value, or values, in which the amplitude is statistically between that of a low contrast anomaly and a high contrast anomaly in a given data set. |
| ***Anomaly*** | Any concentration of metal noticeably above or below the average background concentration. |
| ***Anorthosite*** | An unusual mafic igneous intrusive rock consisting of greater than 90% plagioclase feldspar |
| ***Assay*** | An analysis to determine the presence, absence or quantity of one or more components. |
| ***Calcined*** | Heated to a high temperature but below the melting or fusing point, causing loss of moisture, reduction or oxidation, and the decomposition of carbonates and other compounds. |
| ***Comminution*** | The reduction to a powder. |
| ***Cubic metres or $m^3$*** | A metric measurement of volume, being a cube one metre in length on each side. |
| ***Decrepitation*** | The shattering of minerals by the application of heat. In this instance it refers to the heating of the petalite to $1{,}050^{O}C$ in order to convert the lithium to a form which can be dissolved by sulphuric acid after roasting |
| ***Diamond drill*** | A rotary type of rock drill that cuts a core of rock that is recovered in long cylindrical sections, two centimetres or more in diameter. |
| ***Electrodialysis*** | The transportation of salt ions from one solution through ion-exchange membranes to another solution under the influence of an applied electric potential difference. In this case it relates to lithium and sulphate ions reacting with hydrogen and hydroxide ions to form lithium hydroxide and sulphuric acid. |
| ***Fault*** | A fracture in a rock where there has been displacement of the two sides. |
| ***Feasibility Study*** | A Feasibility Study is a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of applicable Modifying Factors together with any other relevant operational factors and detailed financial analysis that are necessary to demonstrate, at the time of reporting, that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The confidence level of the study will be higher than that of a Pre-Feasibility Study. |
| ***Feldspar*** | Any of a group of abundant rock-forming minerals occurring principally in igneous, plutonic, and some metamorphic rocks, and consisting of silicates of aluminum with potassium, sodium, calcium, and, rarely, barium. |
| ***Grade*** | The concentration of each ore metal in a rock sample, usually given as weight percent. Where extremely low concentrations are involved, the concentration may |

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| | be given in grams per tonne (g/t or gpt) or ounces per ton (oz/t). The grade of an ore deposit is calculated, often using sophisticated statistical procedures, as an average of the grades of a very large number of samples collected from throughout the deposit. |
| ***Greisen*** | A hydrothermal mineral deposit associated with granites consisting of a stockwork of mineralized veins and replacement zones in altered and mineralized granitic rocks |
| ***Hectare or ha*** | An area totaling 10,000 square metres or 2.47 acres. |
| ***Highly anomalous*** | An anomaly which is 50 to 100 times average background, i.e. it is statistically much greater in amplitude. |
| ***Indicated Mineral Resource*** | An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.<br><br>Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.<br><br>An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.<br><br>**Cautionary Note to U.S. Investors:** Please review the "Cautionary Note to U.S. Investors Regarding Reserve and Resource Estimates" above. |
| ***Inferred Mineral Resource*** | An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply, but not verify, geological and grade or quality continuity.<br><br>An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.<br><br>**Cautionary Note to U.S. Investors:** Please review the "Cautionary Note to U.S. Investors Regarding Reserve and Resource Estimates" above. |
| ***Intrusive*** | A rock mass formed below earth's surface from magna which has intruded into a preexisting rock mass. |
| ***Measured Mineral Resource*** | A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.<br><br>Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. |

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| | A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.<br><br>**Cautionary Note to U.S. Investors:** Please review the "Cautionary Note to U.S. Investors Regarding Reserve and Resource Estimates" above. |
| ***Mineral Reserve*** | A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.<br><br>The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.<br><br>The public disclosure of a Mineral Reserve must be demonstrated by a Pre-Feasibility Study or Feasibility Study.<br><br>**Cautionary Note to U.S. Investors:** Please review the "Cautionary Note to U.S. Investors Regarding Reserve and Resource Estimates" above. |
| ***Mineral Resource*** | A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.<br><br>The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.<br><br>**Cautionary Note to U.S. Investors:** Please review the "Cautionary Note to U.S. Investors Regarding Reserve and Resource Estimates" above. |
| ***Modifying Factors*** | Modifying Factors are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors. |
| ***Pegmatite*** | A coarse-grained granite, sometimes rich in rare elements such as uranium, tungsten, lithium, cesium, beryllium and tantalum. |
| ***Plagioclase*** | Any of a common rock-forming series of triclinic feldspars, consisting of mixtures of sodium and calcium aluminum silicates. |
| ***Possible or inferred ore*** | Term used to describe ore where the mineralization is believed to exist on the basis of some geological information, but the size, shape, grade, and tonnage are a matter of speculation. |
| ***Preliminary Economic*** | A study, other than a pre-feasibility or feasibility study, that includes an economic |

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| ***Assessment or Scoping Study*** | analysis of the potential viability of mineral resources. |
| ***Pre-feasibility study (preliminary feasibility study)*** | A Pre-Feasibility Study is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Pre-Feasibility Study is at a lower confidence level than a Feasibility Study. |
| ***Probable mineral reserve*** | A Probable Mineral Reserve is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proven Mineral Reserve.<br><br>**Cautionary Note to U.S. Investors:** Please review the "Cautionary Note to U.S. Investors Regarding Reserve and Resource Estimates" above. |
| ***Proven mineral reserve*** | A Proven Mineral Reserve is the economically mineable part of a Measured Mineral Resource. A Proven Mineral Reserve implies a high degree of confidence in the Modifying Factors.<br><br>**Cautionary Note to U.S. Investors:** Please review the "Cautionary Note to U.S. Investors Regarding Reserve and Resource Estimates" above. |
| ***Syenite*** | Coarse-grained intrusive igneous rock with a general composition similar to that of granite, but deficient in quartz, which, if present at all, occurs in relatively small concentrations. |
| ***Metric tonne or tonne*** | Metric measurement of weight equivalent to 1,000 kilograms or 2,204.6 pounds. |

## Part I

### Item 1. Identity of Directors, Senior Management and Advisors

Not applicable.

### Item 2. Offer Statistics and Expected Timetable

Not applicable.

### Item 3. Key Information

#### A. Selected Financial Data

The selected historical consolidated financial information set forth below has been derived from our annual audited consolidated financial statements.

For the years ended August 31, 2017, 2016, 2015, 2014 and 2013 we have prepared our consolidated financial statements in accordance with IFRS as issued by the IASB.

The selected historical consolidated financial information presented below is condensed and may not contain all of the information that you should consider. This selected financial data should be read in conjunction with our annual audited consolidated financial statements, the notes thereto and the sections entitled "Item 3. Key Information – D. Risk Factors" and "Item 5 - Operating and Financial Review and Prospects."

The table below sets forth selected consolidated financial data under IFRS as issued by the IASB, which differ in certain respects from the principles the Company would have followed had its consolidated financial statements been prepared in accordance with US GAAP. The information has been derived from our annual audited consolidated financial statements, including as set forth in "Item 18 - Financial Statements."

The tables below set forth selected consolidated financial data under IFRS for the years ended August 31, 2017, 2016, 2015, 2014, and 2013. In this Annual Report all dollars are expressed in Canadian dollars unless otherwise stated.

| | August 31, 2017 | August 31, 2016 | August 31, 2015 | August 31, 2014 | August 31, 2013 |
|---|---|---|---|---|---|
| Operating Revenues | $ - | $ - | $ - | $ - | $ - |
| Loss before other items | (3,357,321) | (3,539,645) | (3,176,374) | (5,730,581) | (11,199,164) |
| Net Loss and Total Comprehensive Loss for the Year | (3,357,321) | (3,539,645) | (3,176,374) | (5,730,581) | (11,199,164) |
| Loss per Share, Basic and Diluted | (0.018) | (0.021) | (0.023) | (0.051) | (0.108) |
| Total Assets | 120,436,379 | 118,515,050 | 119,223,274 | 116,837,367 | 111,845,946 |
| Total Liabilities | 4,125,269 | 1,498,030 | 1,935,054 | 3,742,967 | 2,878,631 |
| Share Capital | 169,593,205 | 167,181,354 | 164,695,991 | 158,553,485 | 149,379,724 |
| Total Equity | 116,311,110 | 117,017,020 | 117,288,220 | 113,094,400 | 108,967,315 |
| Weighted Average Number of Common Shares Outstanding | 187,869,637 | 167,184,272 | 139,893,312 | 112,724,520 | 103,683,356 |
| Dividends declared | Nil | Nil | Nil | Nil | Nil |

**Exchange Rates**

The following table sets forth the average exchange rates for the Canadian Dollar and U.S. Dollar for the five most recent financial years indicated based on the noon buying rate per the Bank of Canada (1 Canadian dollar = US$X), calculated by using the average of the exchange rates on the last day of each month during each financial year.

| Year Ended August 31, | Average | |
|---|---|---|
| 2013 | US$ | 0.9848 |
| 2014 | US$ | 0.9276 |
| 2015 | US$ | 0.8202 |
| 2016 | US$ | 0.7552 |
| 2017 | US$ | 0.7589 |

The following table sets forth the high and low exchange rate for the past six months. As of November 21, 2017, the exchange rate was US$0.7826 for each CDN$1.

| Month | High | | Low | |
|---|---|---|---|---|
| May 2017 | US$ | 0.7437 | US$ | 0.7276 |
| June 2017 | US$ | 0.7706 | US$ | 0.7405 |
| July 2017 | US$ | 0.8034 | US$ | 0.7703 |
| August 2017 | US$ | 0.8012 | US$ | 0.7840 |
| September 2017 | US$ | 0.8245 | US$ | 0.8013 |
| October 2017 | US$ | 0.8018 | US$ | 0.7756 |

**B. Capitalization and Indebtedness**

Not Applicable.

**C. Reasons for the Offer and Use of Proceeds**

Not Applicable.

**D. Risk Factors**

An investment in securities of Avalon is highly speculative and involves significant risks. Exploration activities are based on professional judgments and statistically-based tests and calculations, and often yield few rewarding results. Mineral properties are often non-productive for reasons that cannot be anticipated in advance and operations may be subject to risks including labour disputes, environmental hazards, safety issues, geological issues, weather conditions and changing regulatory requirements as examples. Avalon is subject to competitive risk as its ability to finance its activities and generate profitable operations or proceeds from disposal of assets are subject to world prices for rare metals, rare earth elements ("REE"), lithium and other specialty minerals and the economic forces that influence capital markets. Any one of the following risk factors could materially affect business, financial condition and/or future operating results and prospects and could cause actual events to differ materially from those described in forward-looking statements relating to Avalon. Additional risks and uncertainties not currently identified by Avalon or that Avalon currently believes not to be material also may materially and adversely affect Avalon's business, financial condition, operations or prospects.

***We have no operating revenues and a history of losses.***

The Company has had no operating revenues and a history of losses, and no operating revenues are anticipated until one of the Company's projects comes into production, which may or may not occur. The Company

will continue to experience losses unless and until it can successfully develop and begin profitable commercial production at one of its mining properties. There can be no assurance that the Company will be able to do so.

***We have no history of mineral production.***

Avalon is an exploration and development company and has no history of mining or refining mineral products from its properties. As such, any future revenues and profits are uncertain. There can be no assurance that the Nechalacho Project, the East Kemptville Project, the Separation Rapids Lithium Project or any other project will be successfully placed into production, produce minerals in commercial quantities or otherwise generate operating earnings. Advancing projects from the exploration stage into development and commercial production requires significant capital and time and will be subject to further technical studies, permitting requirements and construction of mines, processing plants, roads and related works and infrastructure. The Company will continue to incur losses until mining-related operations successfully reach commercial production levels and generate sufficient revenue to fund continuing operations. There is no certainty that the Company will generate revenue from any source, operate profitably or provide a return on investment in the future.

***There is material uncertainty regarding our ability to continue as a going concern.***

The business of mining and exploring for minerals involves a high degree of risk and there can be no assurance that current exploration programs will result in profitable mining operations. The recoverability of the carrying value of exploration and evaluation assets and the Company's ability to continue as a going concern is dependent upon the preservation of its interest in the underlying properties, the discovery of economically recoverable reserves, the achievement of profitable operations or the ability of the Company to raise alternative financing.

The Company is currently in the exploration and development stage of its properties. If the Company determines based on its most recent information that it is feasible to begin operations on its properties, the Company will be required to raise additional capital in order to develop and bring the properties into production. Our ability to raise funds will depend on several factors, including, but not limited to, current economic conditions, our properties, our prospects, metal prices, businesses competing for financing and our financial condition. There can be no assurance that we will be able to raise funds, or to raise funds on commercially reasonable terms.

***The development of the Nechalacho Project, the East Kemptville Project and the Separation Rapids Lithium Project involve numerous uncertainties and there are no guarantees that we will be successful.***

Mine development projects typically require long time frames and significant expenditures before production is possible. Bringing any of the Nechalacho Project, the East Kemptville Project and the Separation Rapids Lithium Project into successful operation is dependent on many factors such as:

- the availability of funds to finance construction and other capital expenditures and to provide working capital;
- the timing and availability of permits and other approvals to proceed with construction and to operate the mine and processing facilities;
- the completion of negotiations with First Nations and other Aboriginal groups and stakeholders affected by such project;
- the completion of acquisition of a property or properties for the processing facilities and the availability of infrastructure necessary for construction and operation;
- the negotiation of sales or off-take contracts for the planned production from such project; and
- the completion of negotiations with strategic partners for the provision of additional investment and/or the provision of technical assistance or services.

Other unanticipated problems and delays may arise in the development of the Nechalacho Project, the East Kemptville Project or the Separation Rapids Lithium Project and, accordingly, the Company may not be successful in establishing mining and processing operations.

***Additional financing will be needed for our business operations and there are no guarantees that we will be able to raise sufficient funds.***

The Company does not have sufficient funds to complete permitting, development and construction of the Nechalacho Project, the East Kemptville Project or the Separation Rapids Lithium Project, or to complete exploration or feasibility studies on any of its other properties. The Company believes its existing financial resources, will be adequate to fund general and administrative expenses and planned exploration and development expenses through the end of January 2018, but unanticipated expenses or other developments could cause its existing resources to be depleted prior to that time. Accordingly, the Company will need to raise additional financing, which may be sought through sales of equity or debt securities, asset sales, joint ventures, project financing or other arrangements. The recent climate for financing in the mineral industry in general and for rare earth minerals projects in particular has been difficult, and there can be no assurance that the Company will be able to complete necessary financings on a timely basis or at all. Failure to complete adequate financing on a timely basis could result in delay or indefinite postponement of the development of the Nechalacho Project, the East Kemptville Project or the Separation Rapids Lithium Project, and could require the Company to reduce general and administrative expenses or impair the Company's ability to continue as a going concern. Future financings may result in significant dilution to existing shareholders.

***We may fail to identify joint venture partners or may fail to successfully manage joint ventures.***

As part of the Company's development strategy, the Company is considering a number of alternatives to access development capital for its mineral properties, including joint ventures with strategic partners. However, there can be no assurance that the Company will be able to identify joint venture candidates or that it will succeed at effectively managing the operation of any joint venture. Unprofitable joint ventures may adversely affect the price of the Company's Common Shares and negatively affect the Company's results of operations.

***The Preliminary Economic Assessment of the Separation Rapids Lithium Project is preliminary in nature and there is a risk that this project will not continue to a positive feasibility stage.***

The Preliminary Economic Assessment ("PEA") of the Separation Rapids Lithium Project is preliminary in nature, as the metallurgical processes developed require further work to confirm that a commercially acceptable product can be consistently produced and sold in the marketplace, and there is no certainty that the preliminary economic assessment model will be realized. There is no assurance that the Company will be able to obtain the financing necessary or gathering all the technical information needed to support the completion of a feasibility study. Even if a feasibility study is completed there is no assurance that the economic scenario envisioned therein will be sufficiently positive to warrant execution of the project.

***We will need to enter into off-take agreements and failure to secure and enter into favourable off-take agreements with customers could have a material adverse effect on, and could result in delay or suspension of the development of, the both the Nechalacho and Separation Rapids Projects.***

The Company intends to pursue entering into off-take agreements with industrial consumers of the minerals it intends to produce in order to have assurance of future sales of its products. It is likely that it will be necessary to have some of the off-take agreements in place in order to secure project financing for the Nechalacho and Separation Rapids Projects in order to demonstrate the economic viability of the project to lenders. Failure to secure and enter into favourable off-take agreements with customers could have a material adverse effect on, and could result in delay or suspension of the development of either Project.

***The ore types at both the Nechalacho Project and Separation Rapids Project are unique and there is a risk that the metallurgical process that we anticipate using will not perform at commercial scale as expected.***

The ore types on both projects are unique for which well-established metallurgical processes have not previously been applied. Accordingly, there is a risk that the process designed at the bench and pilot scale will not perform at commercial scale as expected. The failure of such metallurgical process, could materially and adversely affect the Company's expected project development and production schedules.

***Title to some of our mineral properties may be challenged or defective. Aboriginal groups may raise title disputes in relation to land claims and any impairment or defect in title could have a negative impact on our results of operations and financial condition.***

The Company's title to its properties may be subject to disputes or other claims including Aboriginal land title claims. Although the Company has exercised the usual due diligence with respect to determining title to properties in which it has a material interest, there is no guarantee that title to such properties will not be challenged or impugned. There may be valid challenges to the title of the Company's properties, which, if successful, could impair the Company's ability to explore, develop and/or operate its properties or to enforce its rights with respect to its properties. Aboriginal rights and title may be claimed with respect to Crown properties or other types of tenure with respect to which mining rights have been conferred. In addition, other parties may dispute the Company's title to the properties in which it has an interest and such properties may be subject to prior unregistered agreements or transfers or land claims by Aboriginal peoples, and title may be affected by undetected encumbrances or defects or government actions.

An impairment to or defect in the Company's title to its properties could have a material adverse effect on the Company's business, financial condition or results of operations. In addition, such claims, whether or not valid, will involve additional costs and expenses to defend or settle which could adversely affect the Company's profitability.

The Company will need to enter into agreements with applicable Aboriginal groups to complete the development of the Nechalacho Project. The Company has entered into an accommodation agreement with the Deninu K'ue First Nation ("**DKFN**") which provides for business and employment opportunities for the DKFN and contains measures to mitigate the environmental and cultural impacts of the project. The Company is seeking to enter into similar agreements with the Lutsel K'e Dene First Nation (the "**LKDFN**") and Yellowknives Dene First Nation (the "**YKDFN**"), but there is no assurance that these agreements will be completed in a timely manner or at all. Even after the accommodation agreements are entered into, the continuing co-operation of the First Nations will be required to implement the terms of the agreements and proceed with the Nechalacho Project. Any failure of co-operation by these or any other potentially impacted Aboriginal groups could result in delay of work on the Nechalacho Project. The Company also has entered into a Participation Agreement with the Northwest Territory Métis Nation ("**NWTMN**"). This agreement provides for training, employment, and business opportunities for the NWTMN related to the Project and associated facilities in the Northwest Territories. The Participation Agreement also contains measures to mitigate environmental and cultural impacts that may result from the project development.

The Company will need to enter into agreements with applicable Aboriginal groups to complete the development of the Separation Rapids Lithium Project. 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 Project business opportunities. The Company has also initiated dialogue with the Métis Nation of Ontario who hold Aboriginal rights in the area.

***We may need to acquire additional properties for our hydrometallurgical plant and separation plant, which may significantly delay the development of the Nechalacho Project as a whole.***

As part of the Nechalacho Project, in the current Feasibility Study ("FS"), the Company planned for a hydrometallurgical plant to be located at Pine Point, 85 kilometres east of Hay River, Northwest Territories and a rare earth refinery to be located in Geismar, Louisiana. It is presently considering alternative sites for both facilities. Any grants and surface leases, if granted, may be subject to the rights of holders of exploration claims or other subsurface rights, which may be inconsistent with the use of the property for the hydrometallurgical plant. In addition, economic factors such as power cost and infrastructure factors such as the adequacy of road and/or rail access may cause the Company not to proceed with acquiring the Pine Point surface leases.

The Company's purchase option on the land parcel in Geismar, Louisiana expired on December 15, 2014. Several sites in western Canada are under consideration for the location of an updated hydrometallurgical plant.

If the properties in Pine Point, Geismar or a suitable alternative are not acquired, the Company will need to identify and acquire another suitable site or sites for its hydrometallurgical plant and rare earth refinery, which may significantly delay the development of the Nechalacho Project as a whole.

In addition the Company will also need to obtain a parcel of land similar to the previously identified land parcel in Geismar, Louisiana, or elsewhere, to build its own rare earth refinery.

***Our feasibility study relies upon estimates based on assessments of market conditions and available technical information concerning the Nechalacho Project, which are only historical projections and are inherently uncertain.***

The Company's expected production schedules, capital costs, engineering and construction estimates and operating costs which are included in this Annual Report are contained in the Feasibility Study which was completed in 2013. The FS relied upon estimates based on assessments of market conditions at that time and available technical information concerning the Nechalacho Project. Accordingly, the results indicated by the FS are historical projections only and are inherently uncertain. In particular, actual capital costs may significantly exceed those estimated by the FS, and engineering and construction estimates and schedules set forth in the FS may prove materially inaccurate.

Anticipated operating costs and production schedules set forth in the FS are based upon a variety of factors, including:

- anticipated tonnage, grades and metallurgical characteristics of the ore to be mined and processed;
- anticipated recovery rates of REE and other minerals from the ore;
- cash operating costs of comparable facilities, supplies/consumables and equipment;
- anticipated climatic conditions; and
- forecasts for foreign exchange markets, and discount rates.

Capital costs, operating costs, production and economic returns, and other estimates contained in studies or estimates prepared by or for the Company in the future may differ significantly from those anticipated by the Company's current estimates, and there can be no assurance that the Company's actual capital and operating costs will not be higher than currently anticipated. The Company's actual costs and production may vary from estimates for a variety of reasons, including: lack of availability of raw material or equipment; unexpected construction or operating problems; metallurgical performance; unanticipated geologic features; short-term operating factors; delays in delivery of consumables; revisions to mine plans; risks and hazards associated with mining; natural phenomena, such as inclement weather conditions, water availability, floods, and earthquakes; and unexpected labour shortages or strikes. Costs may also be affected by a variety of factors, including: changing waste-to-ore ratios, ore grade metallurgy, labour costs, the cost and consumption rate of commodities, general inflationary pressures and currency exchange rates. Many of these factors are beyond the Company's control. Failure to achieve estimates or material increases in costs could have an adverse impact on the Company's future cash flows, business, results of operations and financial condition.

Furthermore, delays in the construction and commissioning of mining projects or other technical difficulties may result in even further capital expenditures being required. Any delay in the development of a project or cost overruns or operational difficulties once the project is developed may have a material adverse effect on the Company's ability to finance or complete construction of the Nechalacho Project and on the Company's business, results of operations and financial condition.

***Changes in the market price of rare earth minerals, which in the past has fluctuated widely, will affect the profitability of our operations and financial condition.***

The Company's revenues, if any, from the Nechalacho Project and Separation Rapids Project, are expected to be derived in large part from the mining and sale of rare metals and minerals. Demand for and the prices of those commodities has fluctuated widely, particularly in recent years, and is affected by numerous factors beyond the Company's control, including international economic and political conditions (such as the complaint filed with the World Trade Organization and won by the United States, the European Union and Japan against China's REE export restrictions in 2014), expectations of inflation, international currency exchange rates, interest rates, global or regional consumption patterns, speculative activities, levels of supply and demand, increased production of rare metals and minerals due to new mine developments and improved mining and production methods, availability and costs of lithium, REE and other rare mineral substitutes; lithium, REE and other rare mineral and other stock levels maintained by producers and others and inventory carrying costs. The effect of these factors on the price of rare metals and minerals and therefore the Company's ability to finance the construction of the Nechalacho Project, pursue the East Kemptville Project or Separation Rapids Lithium Project and economic viability of the Company's operations cannot be accurately predicted.

REE prices increased significantly during 2010 and most of 2011 and experienced a significant drop in 2012, due in part to a reported reduction in speculative buying of REE products as concerns about continuing price escalation abated. Between 2012 and 2015 prices continued to slowly fall and remained steady from mid-2015 to late 2016. Prices have begun to increase for many of the REEs in 2017, but only marginally. Future price trends for rare earths still depend on decisions made in China. China remains the dominant producer at approximately 90% of supply. Prices could continue to increase as demand increases and if China continues to restrict output from illegal producers and continues to restrict output from producers who do not follow environmental regulations. Prices could be maintained or even fall as demand increases if China decides to release stockpiles of rare earths it has apparently accumulated during the last few years, or if it instructs government approved producers to increase supply.

Demand for REE products may be impacted by demand for products incorporating rare earths, including hybrid and electric vehicles, wind power equipment and other clean technology products, as well as demand in the general automotive and electronic industries. Lack of growth in these markets may adversely affect the demand for REE products, which would have a material adverse effect on the Nechalacho Project and the Company's business. In contrast, extended periods of high commodity prices may create economic dislocations that may be destabilizing to rare earth minerals supply and demand. Strong REE prices, as well as real or perceived disruptions in the supply of REE, also create economic incentives to identify or create alternate technologies that ultimately could depress future long-term demand for REE products, and at the same time may incentivize development of additional mining properties to produce REE. For example, automobile manufacturers have previously announced plans to develop motors for electric and hybrid cars that do not require REE products due to concerns about the available supply of rare earths. If the automobile industry or other industries reduce their reliance on rare earth products, the resulting change in demand could have a material adverse effect on the Company's business. In particular, if prices or demand for rare earths were to decline, this could impair the Company's ability to obtain financing for the Nechalacho Project and its ability to find purchasers for its products at prices acceptable to the Company.

***Volatility in lithium prices and lithium demand may make it commercially unfeasible for the Company to develop its Separation Rapids Lithium Project.***

The development of the Separation Rapids Lithium Project is dependent on the continued growth of the lithium market, and the continued increased demand for lithium chemicals by emerging producers of electric vehicles

and other users of lithium-ion batteries. These producers and the related technologies are still under development and a continued sustained increase in demand is not certain. To the extent that such demand does not manifest itself, and the lithium market does not continue to grow, or existing producers increase supply to satisfy this demand, then the Company's ability to develop its Separation Rapids Project will be adversely affected. The Company's lithium exploration and development activities may be significantly adversely affected by volatility in the price of lithium. Mineral prices fluctuate widely and are affected by numerous factors beyond its control such as global and regional supply and demand, interest rates, exchange rates, inflation or deflation, fluctuation in the value of the United States dollar and foreign currencies, and the political and economic conditions of mineral-producing countries throughout the world. The exact effect of these factors cannot be accurately predicted, but the combination of these factors may result in the Company's lithium activities not producing an adequate return on invested capital to be profitable or viable.

***We operate in a highly competitive industry and some of our competitors may engage in predatory pricing behaviour or manipulation of the available supply of REE, tin or lithium.***

An increase in the global supply of rare metal and REE products, tin and lithium, dumping and predatory pricing by our competitors may materially adversely affect our ability to raise capital and construct and profitably operate the Nechalacho Project, the Separation Rapids Lithium Project or the East Kemptville Project. The pricing and demand for rare metal and REE products, tin and lithium is affected by a number of factors beyond the Company's control, including growth of economic development and the global supply and demand for rare metal and REE products. Currently China provides the majority of the world's supply of REE. In 2010 China reduced its export quotas and imposed heavier taxes on the production/or export of REE. These steps resulted in REE scarcity and significant increases in the prices of rare earth elements and minerals during 2011, with a peak reached in August 2011 for most elements. These high rare earth prices caused demand to contract and prices to fall during 2012 and early 2013. Prices have started to recover in early 2017 with the increased demand for magnets for motors of hybrid and electric vehicles, but only marginally. Higher rare earth prices in 2017 and beyond could bring about renewed interest in exploration and development of REE projects which, if brought to production, would, in the long term, increase the supply of REE and lead to downward pressure on prices. Further, the prospect of the Nechalacho Project, the East Kemptville Project the Separation Rapids Lithium Project and other development projects achieving production may lead our competitors to engage in predatory pricing behaviour or manipulation of the available supply of REE, tin and/or lithium. Any increase in the amount of rare earth products exported from China or from mines outside China, or produced in Indonesia and China in the case of tin or South America or Australia in the case of lithium, and increased competition may result in price reductions, reduced margins and loss of potential sales, any of which could materially adversely affect the profitability of the Nechalacho Project or our ability to further pursue, the East Kemptville Project or the Separation Rapids Lithium Project. As a result of these factors, the Company may not be able to compete effectively against future competitors.

***Any unexpected costs or delays in the commercialization of rare earth products could have a material adverse effect on our ability to finance construction of and successfully operate the Nechalacho Project.***

The success of the Nechalacho Project will depend, in part, on the establishment of new markets by the Company or third parties for certain rare earth products that may be in low demand, the creation of new markets and the successful commercialization of REE products in existing and emerging markets. Any unexpected costs or delays in the commercialization of any of the foregoing products and applications could have a material adverse effect on our ability to finance construction of and successfully operate the Nechalacho Project.

***Our mineral resource and mineral reserves are only estimates and are subject to significant risks and uncertainties.***

Mineral resource and mineral reserve estimates are based upon estimates made by Company personnel and independent geologists. These estimates are inherently subject to uncertainty and are based on geological interpretations and inferences drawn from drilling results and sampling analyses and may require revisions based on further exploration or development work. There is no certainty that any of the mineral resources or mineral reserves identified on the Nechalacho Project, the East Kemptville Project or Separation Rapids Lithium Project will be realized, that any anticipated level of recovery of minerals will in fact be realized, or that an identified mineral reserve

or mineral resource will ever qualify as a commercially mineable (or viable) deposit which can be legally and economically exploited. Evaluations of drilling results are ongoing, but until a deposit is actually mined and processed, the quantity of mineral resources and mineral reserves and grades must be considered as estimates only.

In addition, the grade of mineralization which may ultimately be mined may differ from that indicated by drilling results and such differences could be material. The quantity and resulting valuation of mineral reserves and mineral resources may also vary depending on, among other things, metal prices (which may render mineral reserves and mineral resources uneconomic), cut-off grades applied and estimates of future operating costs (which may be inaccurate). Production can be affected by such factors as permitting regulations and requirements, weather, environmental factors, unforeseen technical difficulties, unusual or unexpected geological formations and work interruptions. Any material change in quantity of mineral resources, mineral reserves, grade, or stripping ratio may also affect the economic viability of any project undertaken by the Company. In addition, there can be no assurance that metal recoveries in small scale, and/or pilot laboratory tests will be duplicated in a larger scale test under on-site conditions or during production.

The Company's estimated mineral resources and mineral reserves should not be interpreted as assurances of commercial viability or potential or of the profitability of any future operations. Readers should be cautioned not to place undue reliance on these estimates. The Company cannot be certain that its mineral resource and mineral reserve estimates are accurate and cannot guarantee that it will recover the expected quantities of metals. Future production could differ dramatically from such estimates for the following reasons:

- actual mineralization or ore grade could be different from those predicted by drilling, sampling, feasibility studies or technical reports;
- increases in the capital or operating costs of the mine;
- changes in the life-of-mine plan;
- the grade of ore may vary over the life of the mine and the Company cannot give any assurances that any particular mineral reserve estimate will ultimately be recovered; or
- metallurgical performance could differ from forecast.

The occurrence of any of these events may cause the Company to adjust its mineral resource and reserve estimates or change its mining plans, which could negatively affect the Company's financial condition and results of operations. Moreover, short-term factors, such as the need for additional development of the ore body or the processing of new or different grades, may adversely affect the Company.

***Our inability to secure the required mineral tenure licenses at the East Kemptville Project could have a material adverse effect on our ability to conduct further studies and exploration activities on the East Kemptville Project.***

Avalon holds mineral rights at the East Kemptville Project 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, which was done in in the past. Ultimately, with sufficient work and information on the property, a form of mining lease is obtainable from the government to secure the requisite surface land rights. The Company is currently in discussions with the surface rights holders with respect to obtaining full title to the lands covered by the Special Licence, however there can be no assurance that full title to the lands covered by the Special Licence will be obtained. The Company first acquired a Special Licence at the East Kemptville Project in 2005 and it has been subsequently renewed multiple times while the Company negotiated access to the site. The current special licence has a term of three years beginning February 2, 2015 and includes a requirement to incur $5.25 million in expenditures by January 31, 2018 (of which only $3,152,858 had been incurred by August 31, 2017). The Company will need to negotiate with the government to renew or replace the special licence. The Company has commenced the process of applying for a mining lease but there is no assurance that this application will be successful. These factors could have a material adverse effect on the Company's plans for the East Kemptville Project, which may, as a result, not be further explored or ultimately developed.

***We may not be able to obtain all required permits and licenses to place our properties into production.***

The construction and operation of the Nechalacho Project and the other exploration and development operations of the Company, such as on the East Kemptville Project and Separation Rapids Lithium Project, require licenses and permits from various governmental authorities. Obtaining the necessary governmental permits is a complex and time consuming process involving numerous jurisdictions. There can be no assurance that the Company will be able to obtain all necessary licenses and permits that may be required to carry out exploration, development, mining and processing operations at its projects. If the Company proceeds to production on the Nechalacho Project or any other project, licenses and permits may contain specific operating conditions and there can be no assurance that these conditions will not result in material increases in capital or operating costs or reductions in anticipated production, or that the Company will be able to comply with any such conditions. Costs related to applying for and obtaining permits and licenses or complying with the requirements they impose may be prohibitive and could delay planned exploration, development, construction or operation activities. Failure to comply with applicable laws, regulations and permitting requirements or with the conditions contained in licenses or permits may result in enforcement actions, including orders issued by regulatory or judicial authorities, causing operations to cease or be curtailed, and may include corrective measures requiring capital expenditures, installation of additional equipment, or remedial actions.

Parties engaged in exploration, development, mining or processing operations may be required to compensate those suffering loss or damage by reason of those activities and may have civil or criminal fines or penalties imposed for violations of applicable laws or regulations. Amendments to current laws, regulations and permits governing operations and activities of mining companies, or more stringent implementation thereof, could have a material adverse impact on our operations and cause increases in capital expenditures or production costs, reductions in levels of production at producing properties or require abandonment or delays in the development of new mining properties.

***Our activities are subject to environmental laws and regulations that may increase our costs of doing business and restrict our operations.***

All phases of the Company's exploration and development activities are subject to regulation by governmental agencies under various environmental laws in the various jurisdictions in which it operates. These laws and the regulations adopted thereunder address emissions into the air, discharges into water, management of waste, management of hazardous substances, the transportation of hazardous and/or radioactive substances, protection of natural resources, antiquities and endangered species, and reclamation of lands disturbed by mining operations. Environmental legislation and regulation is evolving in a manner which will require stricter standards and enforcement, increased fines and penalties for non-compliance, more stringent environmental assessments of proposed projects, and a heightened degree of responsibility for companies and their officers, directors and employees. Compliance with environmental laws and regulations may require significant capital outlays on behalf of the Company and may cause material changes or delays in the Company's intended activities. There is no assurance that future changes in environmental regulation, if any, will not adversely affect the Company's operations or result in substantial costs and liabilities to the Company in the future. Furthermore, environmental hazards which are unknown to the Company at present and which have been caused by previous or existing owners or operators may exist on the Company's properties.

***We do not maintain insurance with respect to certain high-risk activities, which exposes us to significant risk of loss.***

In the course of exploration and development of, and production from, mineral properties, certain risks, and in particular, unexpected or unusual geological operating conditions including rock bursts, cave-ins, fire, flooding and earthquakes may occur. It is not always possible to fully insure against such risks as a result of high premiums or other reasons. Should such events arise, they could reduce or eliminate any future profitability and result in increasing costs and a decline in the value of the Company's securities.

***Competition for recruitment and retention of qualified personnel, for which we compete with other exploration companies, many of which have greater financial resources than us, and a shortage of equipment and supplies could adversely affect our ability to operate our business.***

The Company will be dependent on various supplies, equipment, parts and labour and the services of contractors to carry out construction of the Nechalacho Project and to carry out its other exploration and development projects such as the East Kemptville Project and the Separation Rapids Lithium Project. The availability and cost of such supplies, equipment, parts or labour or the services of contractors could have a material adverse effect on the Company's ability to successfully construct and operate the Nechalacho Project and carry out its other exploration and development activities on the East Kemptville Project and the Separation Rapids Lithium Project.

***The loss of key management personnel may adversely affect our business and results of operations.***

The Company is dependent on the services of key executives including the Company's President and Chief Executive Officer and other highly skilled and experienced executives and personnel focused on managing the Company's interests and the advancement of the Nechalacho Project and other projects such as the East Kemptville Project and the Separation Rapids Lithium Project, as well as the identification of new opportunities for growth and funding. Due to the Company's relatively small size, the loss of these persons or the Company's inability to attract and retain additional highly skilled employees required for the development of the Company's activities may have a material adverse effect on the Company's business or future operations.

***The mineral industry is highly speculative and involves substantial risks.***

Mineral exploration and development is highly speculative, and certain inherent exploration risks could have a negative effect on the Company. Most exploration projects do not result in the discovery of commercially mineable ore deposits and no assurance can be given that any particular level of recovery of ore reserves will be realized or that any identified mineral deposit will ever qualify as a commercially mineable (or viable) ore body which can be legally and economically exploited. Estimates of reserves, mineral deposits and production costs can also be affected by such factors as environmental permitting regulations and requirements, weather, environmental factors, unforeseen technical difficulties, unusual or unexpected geological formations and work interruptions. Material changes in ore reserves, grades, stripping ratios or recovery rates may affect the economic viability of any project.

The Company's future growth and productivity will depend, in part, on its ability to identify and acquire additional mineral rights, and on the costs and results of continued exploration and development programs. Mineral exploration is highly speculative in nature and is frequently non-productive. Substantial expenditures are required to:

- establish ore reserves through drilling and metallurgical and other testing techniques;
- determine metal content and metallurgical recovery processes to extract metal from the ore;
- conduct environmental, social, economic and technical studies; and
- construct, renovate or expand mining and processing facilities.

In addition, if the Company discovers a mineral deposit, it would take several years from the initial phases of exploration until production is possible. During this time, the economic feasibility of production may change. As a result of these uncertainties, there can be no assurance that the Company will successfully acquire additional mineral rights.

***We operate in a highly competitive industry.***

The mineral exploration and development industry is intensely competitive. Significant competition exists for the marketing of the minerals that the Company intends to produce as well as the acquisition of mineral concessions, claims, leases and other mineral interests. The Company may be at a competitive disadvantage in arranging for the sale of products intended to be produced at the Nechalacho Project or other properties, such as the East Kemptville

Project and Separation Rapids Lithium Project, or in acquiring additional mining properties because it must compete with other individuals and companies, many of which have greater financial resources, operational experience and technical capabilities than the Company. The Company may also encounter increasing competition from other mining companies in its efforts to hire experienced mining professionals. Competition for exploration resources at all levels is currently very intense, particularly affecting the availability of manpower, drill rigs and helicopters. Increased competition could adversely affect the Company's ability to attract necessary capital funding or acquire suitable producing properties or prospects for mineral exploration in the future.

***Our exploration activities are subject to various federal, provincial, state and local laws and regulations.***

The Company's operations and exploration and development activities in Canada and the United States are subject to extensive federal, state, provincial, territorial and local laws and regulations governing various matters, including:

- environmental protection;
- management, transportation and use of toxic, hazardous and/or radioactive substances and explosives;
- management of tailings and other wastes generated by the Company's operations;
- management of natural resources;
- exploration and development of mines, production and post-closure reclamation;
- exports;
- price controls;
- taxation;
- regulations concerning business dealings with native groups;
- labour standards and occupational health and safety, including mine safety; and
- historic and cultural preservation.

Failure to comply with applicable laws and regulations may result in civil or criminal fines or penalties or enforcement actions, including orders issued by regulatory or judicial authorities enjoining or curtailing operations or requiring corrective measures, installation of additional equipment or remedial actions, any of which could result in the Company incurring significant expenditures. The Company may also be required to compensate private parties suffering loss or damage by reason of a breach of such laws, regulations or permitting requirements. It is also possible that future laws and regulations, or changes to or a more stringent enforcement of current laws and regulations by governmental authorities, could cause additional expense, capital expenditures, restrictions on or suspensions of the Company's operations and delays in the development of the Company's properties.

***Exploration activities depend on adequate infrastructure and we cannot be assured that our properties will maintain adequate infrastructure.***

Mining, processing, development and exploration activities depend on adequate infrastructure. Reliable roads, bridges, power sources and water supply are important determinants, which affect capital and operating costs. Unusual or infrequent weather phenomena, sabotage, government or other interference in the maintenance or provision of such infrastructure could adversely affect the Company's operations, financial condition and results of operations.

***Mining and resource exploration is inherently hazardous and subject to conditions or events beyond our control, which could have a material adverse effect on our business and plans.***

Mineral exploration, the development and construction and operation of mines and mining involves many risks, which even a combination of experience, knowledge and careful evaluation may not be able to overcome. The work which the Company is undertaking and proposes to undertake will be subject to all the hazards and risks normally incidental to exploration, development and production of resources, any of which could result in work stoppages and damage to persons or property or the environment and possible legal liability for any and all damage.

Fires, power outages, labour disruptions, flooding, explosions and cave-ins, are risks involved in the operation of mines and the conduct of exploration programs. Although the Company has secured liability insurance and will, when appropriate, secure property insurance in an amount which it considers adequate, the nature of these risks is such that liabilities might exceed policy limits, the liabilities and hazards might not be insurable, or the Company might elect not to insure itself against such liabilities due to high premium costs or other reasons, in which event the Company could incur significant costs or uninsured losses that could have a material adverse effect upon its financial condition.

***Changes in critical accounting estimates could adversely affect financial results.***

Avalon's most significant accounting estimates relate to the carrying value of the Company's metal and mineral property assets. The accounting policies in relation to metal and mineral properties are set out in full in the Company's annual financial statements. Management regularly reviews the net carrying value of each metal and mineral property. Where impairment indicators exist, management assesses if carrying value can be recovered. Management's estimates of metal and mineral prices, mineral resources and operating, capital and reclamation costs are subject to certain risks and uncertainties which may affect the recoverability of metal and mineral property costs. Although management has made its best estimate of these factors, it is possible that changes could occur in the near term, which could adversely affect the future net cash flows to be generated from the properties. Other significant estimates relate to accounting for stock based compensation and warrant valuation. Option and warrant pricing models require the input of highly subjective assumptions including the expected price volatility. Changes in the subjective input assumptions can materially affect the fair value estimate, and therefore the existing models do not necessarily provide a reliable single measure of the fair value of the Company's stock options granted/vested during the year, or of the value of the Company's derivative financial instruments.

***Certain officers and directors may be in a position of conflicts of interest.***

Certain of the Company's directors and officers also serve as directors and/or officers of other companies or other managerial positions involved or related to natural resource exploration and development and consequently there exists the possibility for such directors and officers to be in a position of conflict. Any decision made by any of such directors and officers involving the Company will be made in accordance with their duties and obligations to deal fairly and in good faith with a view to the best interests of the Company and its shareholders. In addition, each of the Company's directors is required to declare any interest in any matter in which such directors may have a conflict of interest in accordance with the procedures set forth in the *Canada Business Corporations Act* ("CBCA") and other applicable laws.

***We believe that we may be a "passive foreign investment company" for the current taxable year which may result in materially adverse United States federal income tax consequences for United States investors.***

U.S. investors in the Company's common shares and warrants should be aware that the Company believes it was classified as a "passive foreign investment company" (a "PFIC") under the meaning of Section 1297 of the United States Internal Revenue Code of 1986, as amended during its tax year ended August 31, 2017, and based on current business plans and financial expectations, the Company believes that it may be a PFIC for the current and future taxable years. If the Company is a PFIC for any taxable year during which a United States person holds its common shares or warrants it may result in materially adverse United States federal income tax consequences for such United States person. The potential consequences include, but are not limited to, re-characterization of gain from the sale of the common shares, warrants, and those common shares received upon exercise of warrants as ordinary income and the imposition of an interest charge on such gain and on certain distributions received on the common shares or common shares received upon exercise of warrants. Certain elections may be available under U.S. tax rules to mitigate some of the adverse consequences of holding shares in a PFIC.

A U.S. taxpayer that makes a "qualified electing fund" (a "QEF") election with respect to the Company generally will be subject to U.S. federal income tax on such U.S. taxpayer's pro rata share of the Company's "net capital gain" and "ordinary earnings" (as specifically defined and calculated under U.S. federal income tax rules), regardless of whether such amounts are actually distributed by the Company. U.S. taxpayers should be aware,

however, that there can be no assurance that the Company will satisfy record keeping requirements under the QEF rules or that the Company will supply U.S. taxpayers with required information under the QEF rules, if the Company is a PFIC and a U.S. taxpayer wishes to make a QEF Election. Alternatively, a U.S. taxpayer may make a "mark-to-market election" (a "Mark-to-Market Election") if the Company is a PFIC and the common shares are "marketable stock" (as specifically defined). A U.S. taxpayer that makes a Mark-to-Market Election generally will include in gross income, for each taxable year in which the Company is a PFIC, an amount equal to the excess, if any, of (a) the fair market value of the common shares as of the close of such taxable year over (b) such U.S. taxpayer's adjusted tax basis in the common shares.

This risk factor is qualified in its entirety by the discussion herein under the heading "Certain United States Federal Income Tax Consequences."

Investors should consult their own tax advisor regarding the PFIC rules and other U.S. federal income tax consequences of the acquisition, ownership, and disposition of common shares and warrants.

***We are subject to foreign currency fluctuations.***

It is expected that a significant portion of the Company's revenue from the sale of its products from the Nechalacho Project will likely be priced in U.S. dollars, whereas most of its operating costs will likely be incurred in Canadian dollars and other international currencies. In addition, a significant portion of the capital costs for the construction of the mining plant at the Nechalacho Project will also likely be priced in U.S. dollars. The fluctuation in the exchange rate between the U.S. dollar and the Canadian dollar and other international currencies may have a significant impact on the future profitability of the Company and it may also significantly increase or decrease the capital costs for the Nechalacho Project.

***Our Common Shares have experienced volatility in share price and there can be no assurance that an active market for the Company's securities will be sustained.***

In recent years, the securities markets in Canada have experienced a high level of price and volume volatility and the market price of securities of many companies, particularly those considered development stage companies, have experienced wide fluctuations in price which would not have necessarily been related to the operating performance, underlying asset values or prospects of such companies.

The market price of the Company's securities may fluctuate significantly based on a number of factors, some of which are unrelated to the financial performance or prospects of the Company. These factors include macroeconomic developments in North America and globally, market perceptions of the attractiveness of particular industries, short-term changes in commodity prices, other precious metal prices, the attractiveness of alternative investments, currency exchange fluctuation, the political environment and the Company's financial condition or results of operations as reflected in its financial statements. Other factors unrelated to the performance of the Company that may have an effect on the price of the securities of the Company include the following: the extent of analytical coverage available to investors concerning the business of the Company may be limited if investment banks with research capabilities do not follow the Company's securities; lessening in trading volume and general market interest in the Company's securities may affect an investor's ability to trade significant numbers of securities of the Company; the size of the Company's public float may limit the ability of some institutions to invest in the Company's securities; the Company's operating performance and the performance of competitors and other similar companies; the public's reaction to the Company's press releases, other public announcements and the Company's filings with the various securities regulatory authorities; changes in estimates or recommendations by research analysts who track the Company's securities or the shares of other companies in the resource sector; the arrival or departure of key personnel; acquisitions, strategic alliances or joint ventures involving the Company or its competitors; the factors listed in this Form 20-F under the heading "Cautionary Statement Regarding Forward-Looking Statements"; and a substantial decline in the price of the securities of the Company that persists for a significant period of time could cause the Company's securities to be delisted from any exchange on which they are listed at that time, further reducing market liquidity. Furthermore, the voluntary delisting of the Company's common shares from the NYSE MKT in 2015 could

result in a less active market for the Company's common shares. If there is no active market for the securities of the Company, the liquidity of an investor's investment may be limited and the price of the securities of the Company may decline. If such a market does not develop, investors may lose their entire investment in the Company's securities.

***Additional financing may be needed for our business operations which may lead to dilution of our current shareholders.***

The Company will require additional funds to fund further exploration and/or development activities or to fulfill its obligations under any applicable agreements. If the Company raises additional funding by issuing additional equity securities, such financing will dilute the holdings of the Company's shareholders. Future sales of common shares or warrants of the Company in public or private markets could adversely affect the trading price of the Company's common shares and its ability to continue to raise funds by new offerings of common shares or warrants.

***We do not currently intend to pay cash dividends.***

The Company has not paid any dividends on its Common Shares. Any decision to pay dividends on its Common Shares in the future will be dependent upon the financial requirements of the Company to finance future growth, the financial condition of the Company and other factors which the Company's Board of Directors may consider appropriate in the circumstances.

***We are a foreign corporation and most of our directors and officers are outside of the United States, which may make enforcement of civil liabilities difficult.***

The Company is a Canadian corporation and U.S. investors may have difficulty bringing actions and enforcing judgments under U.S. securities laws. Investors in the United States or in other jurisdictions outside of Canada may have difficulty bringing actions and enforcing judgments against the Company, its directors, its executive officers and some of the experts named in this Annual Report based on civil liabilities provisions of the federal securities laws or other laws of the United States or any state thereof or the equivalent laws of other jurisdictions of residence outside of Canada.

***There is no market for our warrants.***

There is no existing trading market for warrants to purchase the common shares of the Company. As a result, there can be no assurance that a liquid market will develop or be maintained for those securities, or that an investor will be able to sell any of those securities at a particular time (if at all). The Company may not list any of its warrants on any Canadian or U.S. securities exchange, and the Common Shares could be delisted or suspended. The liquidity of the trading market in those securities, and the market price quoted for those securities, may be adversely affected by, among other things:

- changes in the overall market for those securities;
- changes in the Company's financial performance or prospects;
- changes or perceived changes in the Company's creditworthiness;
- the prospects for companies in the Company's industry generally;
- the number of holders of those securities;
- the interest of securities dealers in making a market for those securities; and
- prevailing interest rates.

**Item 4. Information on the Company**

**A. History and Development of the Company**

The Company was amalgamated on July 24, 1991 under the British Columbia Company Act (now the British Columbia Business Corporations Act ("BCA") under the name Keith Resources Ltd. pursuant to the amalgamation of Rockridge Mining Company and Meadfield Mining Corp..

On September 29, 1994, the Company consolidated its share capital on a five-for-one basis and changed its name to Avalon Ventures Ltd..

On July 18, 2005, the Company carried out a transition under the BCA by filing Notice of Articles and at the same time adopted new Articles to bring them in line with the requirements and alternatives available under the BCA, including increasing its authorized share structure to an unlimited number of common shares without par value and 25,000,000 preferred shares without par value. The new Articles also reduced the percentage of votes required from 75% to 66 2/3% to pass special and separate resolutions and gave authority to the Board of Directors to make capital alterations and changes to the Company's name as permitted under the BCA.

On February 17, 2009, the Company changed its name to Avalon Rare Metals Inc..

On February 9, 2011, the Company continued under the CBCA.

On February 24, 2016, the Company changed its name to Avalon Advanced Materials Inc..

The Company's head and registered office is located at Suite 1901, 130 Adelaide Street West, Toronto, Ontario, M5H 3P5, (416) 364-4938.

The Company is a reporting issuer in all of the provinces (except for the Province of Quebec) and territories of Canada. The Company's shares are listed and posted for trading on the Toronto Stock Exchange in Canada (the "TSX" or the "Exchange") under the symbol "AVL", trade on the OTCQX® Best Market (the "OTCQX") in the United States under the symbol "AVLNF" and are also traded on the Frankfurt Stock Exchange in Germany under the symbol "OU5".

The Company operates principally in Canada and is currently extra-provincially registered to carry on business in Ontario, British Columbia, Northwest Territories, Nova Scotia and New Brunswick.

Avalon is a mineral exploration and development company with a primary focus on rare metals and minerals with high technology and environmentally beneficial applications. Avalon operates primarily in Canada with a focus on rare metals and minerals, including lithium, tantalum, niobium, cesium, indium, gallium, germanium, rare earth elements ("REE"), yttrium, zirconium as well as tin.

The Company is in the process of exploring or developing three of its five mineral resource projects. For at least the last three fiscal years the Company has expended substantially all of its efforts on the development of its Nechalacho Rare Earth Elements Project ("Nechalacho" or the "Nechalacho Project"), the East Kemptville Tin-Indium Project and Separation Rapids Lithium Project. The Company's principal capital investments have been in its resource properties, with expenditures totalling $2,670,248, $4,085,283, and $3,485,658 in Fiscal 2017, 2016, and 2015 respectively.

*Nechalacho Project*

The Company completed its feasibility study ("FS") on the Nechalacho Project in April 2013, 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 project. A preliminary site preparation water license and land use permit has been issued which provides approval for first year

site preparation work at the Nechalacho site. Full construction and operational license and permit for the Nechalacho site will take approximately 4-6 months to obtain once the Company commences the final application process.

Since the completion of the FS, Avalon has been focused on optimization work on the project development model, including metallurgical process optimization work and mine plan optimization. This has included work on recovery of other mineral products, notably zirconium. Although preliminary estimates of the capital and operating costs associated with these new processes may be higher than those contained in the FS, it is anticipated that the increased revenues from the additional "heavy" rare earths, europium through lutetium ("HREE") production may yield an overall improvement in project economics. Demand for some of the other rare metals present in the Nechalacho resource such as zirconium, may see demand increases to justify further work on product development. Markets for rare earth elements, however, have remained quiet since the FS was issued and it is only since the start of 2017 that prices for certain REE (Nd, Pr, Dy) have begun to increase due to increased demand for magnets for motors of hybrid and electric vehicles. The quiet market since 2013 which led to the bankruptcy of at least two potential new producers outside China and a dramatic decline in investor interest has significantly reduced the amount of capital available for new rare earths development projects like Nechalacho. Consequently, expenditures on Avalon's Nechalacho Project have remained minimal in 2016 and 2017.

In fiscal 2016 Avalon conducted metallurgical testwork investigations related to the potential recovery of zirconium and production of marketable quality zirconium basic sulphate ("ZBS") and zirconium oxychloride ("ZOC") products. During fiscal 2017 a brief site visit was conducted to do the camp maintenance work and do some sampling on known lithium occurrences on the northern part of the property. Other activities centered around assisting regulators with regulatory development and caribou management planning that is important to the communities of interest. 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

*Separation Rapids Lithium Project*

Growing demand for rechargeable batteries in electric vehicles and home energy storage is expected to result in continued growth in consumption of lithium. There is general consensus among industry analysts that demand for lithium will at least double over the next 10 years and that a supply deficit will emerge in the market as existing producers struggle to meet the rapidly growing demand. Several companies in the lithium business have already expressed interest in participating in the future development of the Separation Rapids Project. The potential exists for the Company to serve both the glass-ceramics and the battery materials markets going forward as the petalite mineral concentrate (which represents the final product for the glass-ceramics industry) is the intermediate product for making a battery material.

The potential for production of high purity lithium hydroxide was demonstrated in the 2015 work program and a scaled-up test to further evaluate this process and generate cost information for a PEA focused on the battery materials market opportunity was completed. During 2016 the Company designed an innovative hydrometallurgical process to produce a lithium product from the petalite concentrate.

In addition to the extensive environmental baseline work previously completed for the 2007 Project Description and Environmental Baseline Report, baseline studies were completed in 2017 to validate the historical work. Initial tailings and waste rock analysis test work was completed in 2016 and 2017 and is ongoing. A low risk zero discharge tailing management facility was designed. A water treatment system was designed for the updated process flowsheet. Work was advanced related to open pit mine design that allowed a waste rock management strategy to be developed. Any mitigation required for potential impacts to aquatic habitat near the site will be prepared for project permitting if required. No Species at Risk Act concerns were identified at the site, though additional baseline work may be required for the access road and potential power transmission line. The Company is also investigating alternatives for delivery of clean energy to the project site, utilizing local hydro-electric power generation capacity and/or power from waste wood products. Engagement with local indigenous peoples continued, including a valued components workshop and project updates, discussion of closure opportunities as well as preliminary discussions related to the potential development of a new "run-of-river" hydro power generation facility

on the English River near the Project site. Further engagement on energy options is planned. A multi-ministry meeting was held to review the project with all applicable regulators, identify concerns and gaps and to ensure the appropriate permits and approvals are requested.

During the year ended August 31, 2017, the Company completed a positive Preliminary Economic Assessment on the Separation Rapids Lithium Project, on which it had spent most of its efforts in fiscal 2016. Subsequent to the PEA the Company completed a small drill program and completed an updated mineral resource estimate subsequent to the end of fiscal 2017. The Company has also been proceeding with a series of metallurgical testwork to optimize its flowsheet design. 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 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. Contemporaneously with this filing, the Company is releasing 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.

**B. Business Overview**

**Operations and Principal Activities**

The Company is a mineral exploration and development company with a primary focus on rare metals and minerals. Avalon presently owns six rare metals and mineral projects in Canada, three of which are under active development, but none of which are in production. It also owns royalty interests in two exploration projects which are not in production. For at least the last three years the Company has expended substantially all of its efforts on the development of Nechalacho Rare Earth Elements Project, its East Kemptville Tin-Indium Project and Separation Rapids Lithium Project.

*Nechalacho Project*

The Nechalacho Project is located at Thor Lake in the Mackenzie Mining District of the Northwest Territories ("NWT"), about five 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 $1.5 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 Tłı̨cho 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.

Avalon's next steps are primarily focused on continuing its process optimization work and new product development, with a view to producing an updated technical report incorporating the results of such work. Other goals include completing the acquisition of the land use permit and water license, carrying out an additional pilot plant trial of the new hydrometallurgical plant flowsheet (to confirm reagent recycle performance), finalize detailed plant designs and engineering, securing commitments on off-take and arranging project financing.

The key factors going forward influencing the timely execution of the Nechalacho Project are securing one or more strategic or financial partners, securing sufficient binding agreements for off-take to support project financing, the availability of equity and debt financing at a reasonable cost and receipt of all requisite construction permits.

*Separation Rapids Lithium Project*

The Separation Rapids property consists of fifteen mineral claims and one mining lease covering a combined area of approximately 2,869 hectares (7,091 acres) in the Paterson Lake Area, Kenora Mining Division, Ontario, all of which are owned 100% by Avalon. The lease covers an area of 421.44 hectares over the area of the lithium pegmatite deposit and adjacent lands that may be used for mine development infrastructure. The original vendors retained a 2.0% "NSR" interest in the property, which was acquired in 2012 by a wholly-owned subsidiary of the Company for $220,000. The deposit is a potential source of lithium minerals for use in the glass and ceramics industry and specialty composite materials as well as lithium chemicals for the battery industry.

Growing demand for rechargeable batteries in electric vehicles and home energy storage is expected to result in continued growth in consumption of lithium. There is general consensus among industry analysts that demand for lithium will at least double over the next 10 years and that a supply deficit will emerge in the market as existing producers struggle to meet the rapidly growing demand. Several companies in the lithium business have already expressed interest in participating in the future development of the Separation Rapids Project. The potential exists for the Company to serve both the glass-ceramics and the battery materials markets going forward as the petalite mineral concentrate (which represents the final product for the glass-ceramics industry) is the intermediate product for making a battery material.

The potential for production of high purity lithium hydroxide was demonstrated in the 2015 work program and a scaled-up test to further evaluate this process and generate cost information for a PEA focused on the battery materials market opportunity was completed. During 2016 the Company designed an innovative hydrometallurgical process to produce a lithium product from the petalite concentrate.

During the year ended August 31, 2017, the Company completed a positive Preliminary Economic Assessment on the Separation Rapids Lithium Project, on which it had spent most of its efforts in fiscal 2016. The Company completed a small drill program in the spring of 2017 and updated its mineral resource estimate subsequent to the end of fiscal 2017. It also continues to optimize its metallurgical processes through a series of ongoing testing, with the intention of proceeding with a Phase 1 plant possibly as early as 2018. The key factors going forward influencing the timely execution of the Project are: securing sufficient product offtake commitments to support Project financing; the availability of sufficient equity and/or debt financing and receipt of all requisite operating permits and approvals.

The Company currently relies on equity markets to raise capital to finance its exploration and development programs. The Company has no debt and no sources of revenue at the present time to finance its development programs other than investment income on its cash balances. As at August 31, 2017, the Company had adjusted working capital of $556,112 (which is calculated by adding back the deferred flow-through share premium of $49,467). As the de-recognition of the balance of the deferred flow-through share premium will not require the future out flow 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. The Company also may potentially finance exploration and/or development of its properties through joint ventures or other arrangements with third parties.

**Significant Acquisitions and Significant Dispositions**

The Company has not made any significant acquisitions or dispositions since the end of its 2015 fiscal year.

**Competition**

The mineral industry in which we are engaged is highly competitive. Competitors include well capitalized mining companies, exploration companies and other companies having financial and other resources far greater than those of the Company's. The Company competes with other mineral development companies in connection with the acquisition of rare metals and mineral properties. In general, those properties with defined process flowsheets to produce a commercially acceptable product at a competitive cost have a competitive advantage for market access and access to development capital. . Thus, a degree of competition exists between companies looking to acquire properties with such potential.

**Dependence on Customers and Suppliers**

The Company is not dependent upon a single or few customers or suppliers for revenues or its operations.

**Seasonality**

Certain of the Company's operations are conducted in the NWT and northern Ontario. The weather during the spring and fall seasons can cause interruptions or delays in the Company's operations. As a result, the preferable time for activities in these regions is the winter and summer when costs are more reasonable and access to the properties is easier. In the summer months, however, if the weather has been unusually hot and dry, access to the Company's properties may be limited as a result of access restrictions being imposed to mitigate the risks of forest fires. Seasonality concerns can and will be designed into potential future operations to minimize impact on long term production.

**Government and Environmental Regulation**

The current and anticipated future operations of the Company, including development activities and commencement of production on its properties, require permits from various federal, territorial or provincial and local governmental authorities and such operations are and will be governed by laws and regulations governing prospecting, development, mining, production, exports, taxes, labor standards, occupational health, waste disposal, toxic substances, land use, environmental protection, mine safety and other matters. Companies engaged in the development and operation of mines and related facilities generally experience increased costs and delays in production and other schedules as a result of the need to comply with applicable laws, regulations and permits. Such operations and exploration activities are also subject to substantial regulation under these laws by governmental agencies and may require that the Company obtain permits from various governmental agencies. The Company believes it is in substantial compliance with all material laws and regulations which currently apply to its activities. There can be no assurance, however, that all permits which the Company may require for construction of mining facilities and conduct of mining operations will be obtainable on reasonable terms or that such laws and regulations, or that new legislation or modifications to existing legislation, would not have an adverse effect on any exploration or mining project which the Company might undertake.

See also Item 3. Key Information – D. Risk Factors – Regulations and Mining Law, Governmental Regulation.

**Corporate Social Responsibility ("CSR")**

Contemporaneously with the filing of this annual report, the Company released its sixth comprehensive Sustainability Report. The 2017 Sustainability Report is available for view or download on the Company's website at: http://www.avalonadvancedmaterials.com. The 2017 Sustainability Report does not form part of this annual report.

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

**C. Organizational Structure**

The Company has three directly wholly-owned subsidiaries - Nolava Minerals Inc. ("Nolava") (a Delaware company), Avalon Rare Metals Ltd. (a Delaware company), and 8110131 Canada Inc. ("8110131") (a Canada company). None of these subsidiaries has carried on any operations since their incorporation except for the staking and exploration of certain mining claims in Utah, USA by Nolava and the acquisition of certain royalties by 8110131.

**D. Property, Plants and Equipment**

The Nechalacho Project and the Separation Rapids Lithium Project are the Company's material properties.

**Nechalacho Project**

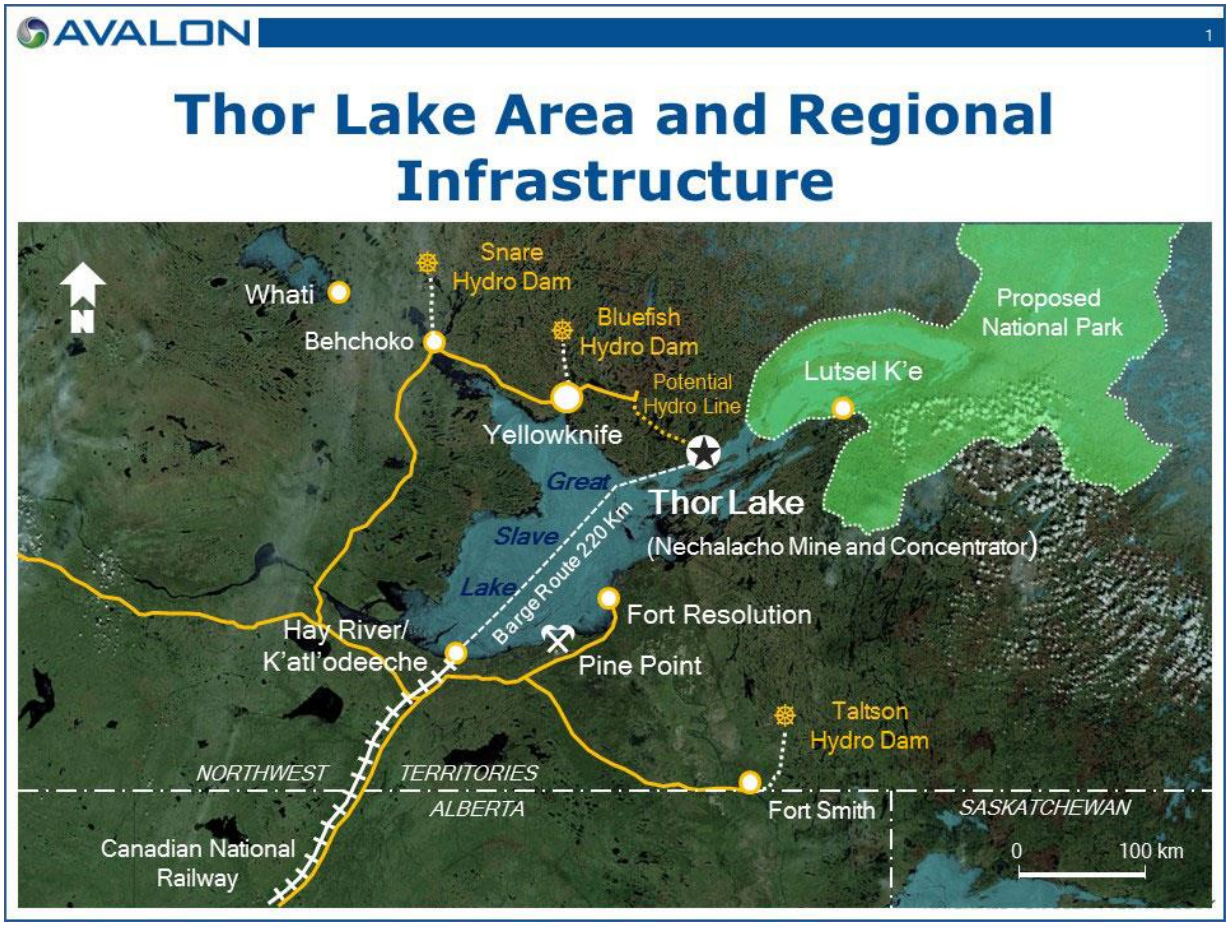
**(A) Summary of Technical Report**

*1. Current Technical Report*

The most recent technical report on the property is entitled "Technical Report Disclosing the Results of the Feasibility Study on the Nechalacho Rare Earth Elements Project" dated May 31, 2013, effective April 17, 2013, and prepared by Tudorel Ciuculescu, M.Sc., P.Geo. of RPA, Kevin Hawton, P.Eng. of Knight Piesold Limited, and Bernard Foo, P.Eng., Richard Gowans, P.Eng., Christopher Jacobs, C.Eng., MIMMM, and Jane Spooner, P.Geo., all of Micon, each of whom is a qualified person pursuant to NI 43-101.

*2. Property Description and Location*

The Nechalacho Deposit is situated on the Company's Thor Lake property, located in Canada's Northwest Territories ("NWT"), 100 kilometres southeast of the capital city of Yellowknife and five kilometres north of the Hearne Channel on the East Arm of Great Slave Lake. The property is within the Mackenzie Mining District of the NWT and Thor Lake is shown on National Topographic System ("NTS") map sheet 85I/02 at approximately 62°06'30"N and 112°35'30"W (Zone 12, 6,886,500N, 417,000E - NAD83).




The Thor Lake property consists of five contiguous mineral leases (totalling 4,249 hectares or 10,449 acres) and three claims (totalling 1,869 hectares, or 4,597 acres). The claims were staked in 2009 to cover favourable geology to the west of the mining leases.

The mining leases have a 21-year life and each lease is renewable in 21-year increments. Annual payments of $4.94 per hectare ($2.00 per acre) are required to keep the leases in good standing. Avalon owns the leases subject to various legal agreements described below. The mineral claims are in good standing with the next renewal date being October 24, 2015. As the required work is $5 per hectare, the total required annually on the claims is $9,301.31 and the fee due is $465.07.

Two underlying royalty agreements were inherited with the title to the Thor Lake property: the Murphy Royalty Agreement and the Calabras/Lutoda Royalty Agreement. The Murphy Royalty Agreement is a 2.5% NSR royalty and has a provision for Avalon to buy out the royalty at the principal amount of $150,000 compounded annually at the average Canadian prime rate from May 2, 1982 to the buyback date (as at August 31, 2015 this amounted to approximately $1.4 million). The Calabras/Lutoda Royalty Agreement totals 3% NSR. In June, 2012, 8110131 Canada Inc., a wholly owned subsidiary of the Company, acquired the NSR under the Calabras/Lutoda Royalty Agreement for $2.0 million.

*3. Exploration History*

The Thor Lake area was first mapped by J. F. Henderson and A. W. Joliffe of the Geological Survey of Canada ("GSC") in 1937 and 1938. According to National Mineral Inventory records of the Mineral Policy Sector, Department of Energy, Mines and Resources, the first staking activity at Thor Lake dates from July 1970 when Odin 1-4 claims were staked by K. D. Hannigan for uranium.

In 1971, the GSC commissioned an airborne radiometric survey over the Yellowknife region that outlined a radioactive anomaly over the Thor Lake area (GSC Open File Report 124). Simultaneously, A. Davidson of the GSC initiated mapping of the Blatchford Lake Intrusive Complex. It has subsequently become clear that this radiometric anomaly is largely due to elevated thorium levels in the T Zone.

In 1976, Highwood Resources Ltd., ("Highwood") in the course of a regional uranium exploration program, discovered niobium and tantalum on the Thor Lake property and the property was staked in 1976 and 1977. From 1976 to 1979, exploration programs included geological mapping, sampling and trenching on the Lake, Fluorite, R, S and T Zones. Twenty-two drill holes were also completed, seven of these on the Nechalacho Deposit (referred to as the "Lake Zone" in the historic reports). This work resulted in the discovery of significant concentrations of niobium, tantalum, yttrium and REE.

Recognizing a large potential resource at Thor Lake, Placer Development Ltd. ("Placer") optioned the property from Highwood in March 1980 to further investigate the tantalum and related mineralization. Placer conducted geophysical surveys on the Nechalacho Deposit. Eighteen holes were drilled in 1980 and 1981. Preliminary metallurgical scoping work was also conducted, but when the mineralization did not prove amenable to conventional metallurgical extractions of tantalum, Placer relinquished its option in April 1982.

From 1983 to 1985, work on the property was concentrated on the T Zone and included geochemical surveys, surface mapping, significant drilling, surface and underground bulk sampling, metallurgical testing and a detailed evaluation of the property by Unocal Canada. Five holes were also drilled in the Nechalacho Deposit to test for high grade tantalum-niobium mineralization and to determine zoning and geological continuity. Two additional holes were completed at the northeast end of Long Lake to evaluate high yttrium and REE values obtained from nearby trenches.

In August 1986, the property was joint ventured with Hecla Mining Company of Canada Ltd. ("Hecla"). In 1988, earlier holes were re-assayed and 19 more holes were drilled into the Nechalacho Deposit, primarily in the southeast corner, to further test for yttrium and REE. However, in 1990, after completing this and considerable work on the T Zone, including some limited in-fill drilling, extensive metallurgical testing and conducting a marketing study on beryllium, Hecla withdrew from the project. In 1990, control of Highwood passed to Conwest Exploration Company Ltd. ("Conwest") until 1996, at which time Conwest divested itself of its mineral holdings. Mountain Minerals Company Ltd. ("Mountain"), a private company controlled by Royal Oak Mines Ltd. ("Royal Oak"), acquired the 34% controlling interest of Highwood.

In late 1999, the application was withdrawn. Royal Oak's subsequent bankruptcy in 1999 resulted in the acquisition of the control block of Highwood shares by Dynatec Company ("Dynatec"). In 2000, Highwood initiated metallurgical, marketing and environmental reviews by Dynatec.

In 2001, Navigator Exploration Corp. ("Navigator") entered into an option agreement with Highwood. Navigator's efforts were focused on conducting additional metallurgical research at a third party geotechnical consultant firm in order to define a process for producing a marketable tantalum concentrate from the Nechalacho Deposit. These efforts produced a metallurgical grade tantalum (Ta)/zirconium (Zr)/niobium (Nb)/yttrium (Y) /REE bulk concentrate. The option was dropped in 2004, however, in view of falling tantalum prices and low tantalum contents in the bulk concentrate.

Beta Minerals Inc. ("Beta") acquired Highwood's interest in the Thor Lake property in November 2002 under a plan of arrangement with Dynatec. No work was conducted at Thor Lake by Beta and in May of 2005 Avalon purchased from Beta a 100% interest and full title, (subject to royalty interests), to the Thor Lake property.

*4. Geology and Mineralization*

The Nechalacho rare metals deposit is hosted by the peralkaline Blachford Lake intrusion, an Aphebian-age ring complex emplaced in Archean-age supracrustal rocks of the Yellowknife Supergroup. The principal rock types in the intrusion are syenites, granites and gabbros and associated pegmatitic phases hosting rare metal mineralization. The key rock units in the vicinity of the mineralization are the Grace Lake Granite, the Thor Lake Syenite and nepheline-sodalite syenite referred to by Avalon as the "Nechalacho Nepheline Syenite". The Grace Lake Granite surrounds the Thor Lake Syenite with the two separated by the enigmatic "Rim Syenite". The host of the Nechalacho

Deposit mineralization, the Nechalacho nepheline syenite, is within and below the Thor Lake Syenite, and exposed locally in the northwest part of the Thor Lake Syenite.

Five distinct zones or deposits of rare metal mineralization have been identified as being of potential economic interest: the Nechalacho Deposit and smaller North T, South T, S and R Zones. The Nechalacho Deposit is the largest, containing significant yttrium, tantalum, niobium, gallium and zirconium mineralization. The Nechalacho Deposit is particularly notable for its enrichment in the more valuable HREEs such as europium, terbium and dysprosium, relative to light rare earth elements ("LREEs") such as lanthanum and cerium.

The Nechalacho nepheline syenite that hosts the Nechalacho Deposit has the following key distinctive features which contrast it to the Thor Lake Syenite and Grace Lake Granite:

- It has a distinct chemical composition showing undersaturation in quartz, with nepheline and sodalite variously as rock-forming minerals.
- It has cumulate layering.
- It contains zircono-silicates including eudialyte.
- It is the host to the Nechalacho zirconium-niobium-tantalum-rare earth mineralization.

This syenite is only exposed at surface in a window through the Thor Lake Syenite in the area encompassing Long Lake to Thor Lake. It is believed to dip underneath the Thor Lake Syenite in all directions. This is supported by drilling north of Thor Lake, within and close to Cressy Lake. Also, the Nechalacho Deposit mineralization, which occurs in the top, or apex, of the syenite, is also present in throughout this window through the Thor Lake Syenite. This unnamed syenite is referred to in the AIF as the "Ore (Nechalacho) Nepheline Sodalite Syenite".

The Nechalacho Deposit is a tabular hydrothermal alteration zone extending typically from surface to depths of approximately 200, characterized by alternating sub-horizontal layers of relatively high and lower grade REE mineralization. HREEs are present in the Nechalacho Deposit in fergusonite ((Y, HREE) NbO4) and zircon ($ZrSiO_4$), whereas the LREEs are present in bastnaesite, synchysite, allanite and monazite. Niobium and tantalum are hosted in columbite as well as fergusonite.

There is a gradual increase in HREE from surface to depth within the Nechalacho Deposit with the lowermost sub-horizontal layer, which is also the most laterally continuous, being referred to as the Basal Zone. Accordingly typical proportions of heavy rare earth oxides ("HREO") relative to total rare earth oxides ("TREO") in Upper Zone can be 6% to 10%, but in the Basal Zone averaging over 20% and reaching as high as 50% in individual samples. There is also a tendency for the Basal Zone, which undulates to some extent, to increase in HREO with depth.

The Nechalacho Nepheline Syenite consists of a layered series of increasingly peralkaline rocks with depth. A consistent downward progression is observed from hanging wall sodalite cumulates, through coarse grained to pegmatitic nepheline aegirine syenites which are locally enriched in zirconosilicates, to foayaitic syenite with a broad zone of altered "pseudomorphs-after-eudialyte" cumulates (referred to above as the Basal Zone). This upper sequence is strongly to intensely hydrothermally altered by various sodic and iron-rich fluids. Pre-existing zircon-silicates (eudialyte) are completely replaced by zircon, allanite, bastnaesite, fergusonite and other minerals. Below the Basal Zone cumulates, mineralization decreases rapidly, but alteration decreases more gradually, with relict primary mineralogy and textures increasingly preserved. Aegirine and nepheline-bearing syenites and foyaitic syenites progress downward to sodalite foyaites and naujaite. Drilling has not extended beyond this sodalite lithology to date. Minerals related to agpaitic magmatism identified from this lower unaltered sequence include eudialyte, catapleite, analcime, and possibly mosandrite.

The part of the Nechalacho Deposit alteration system that is enriched in REEs varies between 80 metres and 190 metres in vertical thickness, with the alteration usually starting from the surface. The whole alteration system is enriched to varying degrees in rare earth elements, zirconium ("Zr"), niobium ("Nb") and tantalum ("Ta"), relative to unaltered syenite, with average values over the whole approximately 200 metres thick alteration package of approximately 0.75% to 1.0% total rare earth oxides.

Within this alteration envelope, there are sub-horizontal zones of increased alteration accompanied by increased REE enrichment alternating with less enriched REE zones. Within the more intensely altered zones, the effect is that the original textures and mineralogy of the host rock are no longer apparent.

These zones of increased alteration, which can vary in thickness from a few metres to tens of metres, can frequently contain TREO grades in the range of 2% and higher. The lowermost band, referred to as the Basal Zone, contains the highest proportion of HREO. Overall, the HREO proportion of the TREO within the 80 metres to 190 metres thick alteration system is typically between 7% and 15%. However, within the Basal Zone, this proportion is typically greater than 20% and can locally exceed 30% over the full width.

*5. Exploration*

In 2005, Avalon conducted extensive re-sampling of archived Nechalacho Deposit drill core to further assess the yttrium and heavy REE resources on the property. In 2006, TetraTech-WEI (formerly Wardrop Engineering Inc.) ("TetraTech") was retained to conduct a Preliminary Economic Assessment of the Nechalacho Deposit (Preliminary Economic Assessment on the Thor Lake Rare Metals Project, NT Wardrop Document No. 0551530201-REP-R0001-03). In 2007, Avalon commenced further drilling of the Nechalacho Deposit. Apart from support of geoscience graduate theses which included mapping of the property, Avalon's exploration activities at the site were confined to drilling.

*6. Drilling*

Avalon has carried out the following drilling on the Nechalacho Deposit, summarized to August 31, 2015:

| Year | Diameter | Drill holes | Metres |
|---|---|---|---|
| 2007 | BTW | 13 | 2,440.47 |
| | **TOTAL** | **13** | **2,440.47** |
| 2008 | NQ2 | 70 | 14,033.65 |
| | **TOTAL** | **70** | **14,033.65** |
| 2009 | HQ | 43 | 8,794.32 |
| 2009 | NQ | 26 | 5,476.78 |
| | **TOTAL** | **69** | **14,271.10** |
| 2010 | HQ | 86 | 23,840.43 |
| 2010 | PQ | 20 | 3,754.00 |
| | **TOTAL** | **106** | **27,594.43** |
| 2011 | HQ | 43 | 10,967.22 |
| 2011 | NQ | 21 | 3,923.96 |
| 2011 | PQ | 46 | 10,864.60 |
| | **TOTAL** | **110** | **25,755.78** |
| 2012 | HQ | 73 | 18,100.90 |
| 2012 | PQ | 13 | 3,160.45 |
| | **TOTAL** | **86** | **21,261.35** |
| 2013 | HQ | 16 | 2,977.30 |
| | **TOTAL** | **16** | **2,977.30** |
| 2014 | HQ | 15 | 3,135.00 |
| 2014 | PQ | 7 | 1,773.00 |
| | **TOTAL** | **22** | **4,908.00** |
| **Total to August 31, 2015** | | **492** | **113,242.08** |

Minor differences to previous tables disclosing historic drilling statistics are due to previous errors and decisions by the data compilers as whether to exclude or include abandoned holes with no assays.

Resource estimates with the effective date of May 3, 2013 included drill results up to August 27, 2012 and the updated resource estimates, completed after the FS, included drill results up to March 2, 2013. See "Nechalacho Project - Mineral Resource Update". There was no drilling done in 2015.

*7. Sampling, Analysis and Security of Samples*

A comprehensive core logging and sampling protocol was established for the July 2007 drilling program. This protocol has been strictly applied for all of the drilling programs since 2007. In addition, a comprehensive geotechnical logging protocol was introduced at the start of the summer 2009 drill program. The Company's Vice President, Exploration, William Mercer, Ph.D., P.Geo. (Ontario), P. Geo (NWT), provided overall direction on the project and is responsible for monitoring the QA/QC protocol for the laboratory analyses and provided overall direction on the project.

Core sizes range from BTW diameter for the initial 2007 drill program to NQ2 in the winter/summer 2008 program and NQ2 or HQ in 2009 and 2010. Since 2011, a second rig recovering very large PQ sized core was mobilized to site to maximize the amount of material available for the bulk sample while the first rig continued with HQ equipment.

Core is placed in standard wooden core boxes at the drill by the driller helper, with a wooden marker placed at the end of each core run marking the metreage from the surface. Throughout the BTW-NQ programs drill rods were imperial lengths of 10 feet, and core markers were written in feet on one side of the wooden block, and using a metric conversion chart, written in metres on the opposite side of the block. The HQ drilling initially used both imperial and metric rods, so markers were in both feet and metres to ensure proper measurement.

In general, in the mineralized zones, core recovery is very high, effectively 100%. As a result, core handling is not expected to materially affect the results in terms of accuracy or reliability. In addition, as the mineralization is disseminated, there is not expected to be a significant sampling effect on accuracy or reliability.

After inspection by the geologist at the drill, the boxes are closed with wooden lids and taken to the core logging facility at the camp by snowmobile in the winter and by boat and ATV in the summer. At camp, the boxes are opened by the geologist on outdoor racks. In good weather, logging and other geotechnical measurements are done outside; in poor weather and in winter, core is processed in a heated core shack. Core is initially measured to determine recoveries, and marked incrementally every metre. This marking serves as a guide for magnetic susceptibility, rock quality determinations ("RQD"), and density measurements. Magnetic susceptibility is measured every metre with a hand-held 'KT- 10 magnetic susceptibility meter'. Density is measured every five metres by weighing a section of drill core in air and then weighing by submersing the sample in water and comparing the difference between dry and submersed weight. A typical core sample for density measurement averages 10 centimetres in length. Geotechnical logging, comprising RQD, are performed for each run.

Core is generally very clean when brought to camp, and requires no washing except for occasional sprays of water when mud is present. The geologist marks out major rock units and completes a written description for the entire core sequence. Frequent readings using a handheld Thermo-Scientific Niton® XLP-522K hand held analyzer act as a guide to areas of mineralization and general chemistry of a specific interval. The final task is to mark out with a china marker specific sample intervals for the length of the entire drill hole. On average, assay samples are two metres long except where, in the geologist's opinion, it is advisable to follow lithological boundaries. Due to the long widths of mineralization with the Basal Zone averaging over 20 m thick, even spaced sampling is not considered a significant factor in resource estimation. Consequently, individual samples can vary in length when encountering lithological changes, as efforts are made not to split across well-defined lithological boundaries. A list is made of all sample intervals as a record and also a guide to the core splitting technicians. All geological, geophysical and geotechnical data was originally entered into a custom designed database, provided and maintained by an external consulting firm.

Subsequently, starting in 2012, Avalon started using Maxwell Geoservices software (LogChief and DataShed) to enter and control data into the Datashed database.

At the first step of data entry, the data is checked for corrected and completed required fields which are necessary to import into LogChief. Adjusted procedures for different fields in LogChief can be considered control manager on data entry and possible available errors. Those parts of the data which includes errors are rejected and sent back to field geologists for correction. The data is then synchronized from LogChief to DataShed. An exception to the sampling process described above is that for PQ core. Due to the weight of the core, about 18 kgs per metre, and for safety reasons related to lifting heavy samples, samples were restricted to 1 metre core lengths.

Due to the strong hydrothermal alteration of all lithologies, identifying specific precursor lithologies has proven quite difficult, particularly in the early drill programs. Early lithological coding tended to incorporate hydrothermal alteration, commonly making it difficult to correlate units between drill holes. As more information became available from deeper drilling and specific textures and lithologies were compared to other unaltered, alkaline deposits elsewhere, such as Illimausaq in Greenland, a new lithological code was produced using, as a basis, the recognizable precursor lithologies. This has greatly advanced the understanding of the lithology, mineralogy, and to a lesser degree the petro-genesis of the deposit.

After all tests and core observations are completed, and prior to splitting, the core is photographed outdoors using a hand-held digital camera. Down-hole distance and hole number are marked so as to be visible in all photos. Core is generally photographed in groups of six boxes. Starting in the 2009 summer drill program, drill core was also logged for geotechnical characteristics. This was initiated with the guidance of external geotechnical consultants. Some of the holes were logged from top to bottom, while others were logged above, below, and within the Basal Zone, to determine rock quality characteristics of both the mineralized zones and country rocks. Efforts were made to select holes with varying orientations to provide comprehensive orientation characteristics of planar structural features. The geotechnical logging was done on core logging sheets and entered electronically in to a custom-designed Excel spreadsheet provided by the geotechnical consultants. A total of 385 holes were logged in whole or in part. Holes which were partially logged included the Basal Zone and a minimum 10 metre interval above and below. When the core has been logged and photographed, it is stored in core racks outside the core splitting tent, from which they are then brought in to the core shack to be split and sampled. Core photos are stored on the camp computer in addition to an external hard drive.

For all core except PQ, the core splitter would break the core into smaller lengths to fit into the mechanical core splitter, split the core in half, and placed one half in a plastic sample bag with the other half placed back into the core box in sequence to serve as a permanent record. In programs after 2009, for mineralized intervals, the core was split initially into halves and then one half into quarters. One quarter was utilized as an assay sample, a second quarter retained as a library sample, and the full half core bagged in intervals identical to the sample interval, as a metallurgical sample. The sample interval is marked on a sample tag in a three-part sample book and a tag with the corresponding sample number is placed in the sample bag. The sample bag is also marked with the corresponding sample number using a felt marker. The bag is then either stapled or zip-tied closed, and placed in a rice bag with two other samples. Most rice bags contain three samples to keep weight to a manageable level. The rice bag is then marked on the outside with corresponding sample numbers contained within, and a second number identifying the rice bag itself. A sample shipment form is then completed, generally in increments of 50 rice bags, which constitutes a single shipment. The sample form is enclosed in an appropriately marked rice bag, with a duplicate paper copy kept in camp, and also kept on electronic file.

Starting in winter 2010, a second drill was added, also using HQ core. This core was sampled as above. From July 2010 on, this rig was converted to PQ diameter core in order to obtain more metallurgical sample. This core, weighing about 18 kg per metre, was initially sawn in order to acquire an assay sample of about 1.5 kgs, with a second cut for a library sample of about 1.5 kg, leaving about 14 kg for metallurgical purposes. However, due to the hardness of the rock, it was deemed that sawing the core was impractical due to low productivity. Consequently a test was completed of coarse crushing the whole core to 3.3 mm in 1 metre samples. Then an assay sample and a library sample were split out and the remaining 3.3 mm material retained for metallurgical purposes. The results of the test that studied the particle size distribution and the homogeneity of the sample indicated that this was a satisfactory procedure for both assaying and metallurgy, and for mineralized intervals this PQ core procedure continued to be followed. For unmineralized core, a section was sawn off weighing about 3-5 kg per sample to avoid the cost of crushing whole core and the remaining core stored at site.

Standards are inserted routinely every 15th sample with the primary laboratory and every 35th sample with the secondary laboratory. Blanks, composed of split drill core of unaltered and un-veined diabase dyke intersected in drilling beneath Thor Lake, are inserted every 40th sample. Samples are shipped by air from Thor Lake to Yellowknife. The standard shipment is 50 rice bags, or a total of 150 samples per shipment. The rice bags are zip-tied for security, and are met and unloaded in Yellowknife by a representative of a third-party expediter. The expediter takes the samples to its warehouse and inventories all samples and produces a manifest which is sent electronically to Thor Lake camp, and accompanies the shipment. The samples are then taken by the expediter to the core processing lab facilities. At this point, the laboratories take custody of the samples. Core is sent to the preparation laboratory with specification that all core should be crushed to 90% passing 10 mesh with a supplementary charge if necessary. For samples from drill holes completed in 2007, every sample pulp was duplicated and sent to the secondary laboratory for check analyses. Subsequent to this (2008 to 2009), approximately every tenth pulp was sent for duplicate analysis in the secondary laboratory. Standards are inserted in the duplicate sample stream by Avalon employees prior to shipping to the secondary laboratory.

All remaining drill core is stored on site at Thor Lake. Core is temporarily racked at the exploration camp while being logged. In summer 2012, a large core storage facility was constructed at the T Zone Mine site that was sufficiently large to store all drill core from the project. In addition, sample rejects were brought from Yellowknife in wooden bins, each of about one tonne. Pulp samples and further sample rejects are stored in a locked secure facility within Yellowknife airport. Historic core, particularly T-Zone core, is stored at the mine site, while Nechalacho Deposit core is stored at the camp storage.

Any assay results obtained prior to 2007 (holes 1 to 51) are referred to as the "older holes". These did not have internal Quality Assurance/Quality Control ("QA/QC") and were analyzed for a limited set of elements; however, six of the old holes were reassayed in 2008 for the complete suite of elements. Avalon has changed the laboratories used for analysis over time. For the first year of drilling by Avalon (2007), the primary laboratory was an independent laboratory located in Ancaster, Ontario ("Lab 1"), and the secondary laboratory was in Vancouver, British Columbia ("Lab 2"). Samples were shipped to the Lab 1 facility in Ancaster, Ontario for preparation, and a duplicate pulp was submitted to Lab 2 in Vancouver for complete check analysis.

For the 2008 winter and summer programs, the preparation laboratory was a different laboratory in Yellowknife, Northwest Territories ("Lab 3") and the primary analytical laboratory was Lab 2 in Vancouver, British Columbia. A split of every tenth sample reject was sent to a different independent laboratory in Vancouver, British Columbia ("Lab 4") for check analyses. All core was analyzed by Lab 2 using two analytical packages: Group 4A and Group 4B. Lab 4 analyzed the samples with the MS81 method. Lab 2's Group 4A is a whole rock characterization package comprising four separate analytical tests. Lab 2's Group 4B is a Total Trace Elements by Inductively Coupled Plasma-Mass Spectrometry ("ICP-MS"). This package comprises two separate analyses. For 2008, secondary samples, comprising roughly every tenth reject sample supplied by Lab 2, were shipped to Lab 4, where the samples were analyzed by the package MS81. This is a combination of lithium metaborate/ICP atomic emission spectrometry ("ICP-AES") for whole rock values, lithium borate/ICP-MS for refractory mineral values and other elements, and aqua regia/ICP-MS for volatile elements.

Starting with the winter 2009 drilling campaign, all samples were prepared at the a different preparation facility in Yellowknife, Northwest Territories ("Lab 5"), and a subsample shipped and analyzed at Lab 4 in Vancouver, British Columbia by lithium metaborate/tetraborate fusion and dilute nitric acid digestion, followed by whole rock and 45 element multi-element ICP analysis (Lab 4 sample method ME-MS81). All samples contained within intercepts above the 1.6% cutoff criteria and any additional samples exceeding analytical limits or of geological significance are re-run using similar Lab 4 method ME-MS81H for higher concentration levels. ME-MS81H is a similar method but with greater dilution in the analytical procedure. Every tenth sample has a duplicate pulp prepared from the sample reject which, with inserted standards and blanks, was sent to Lab 2 in Vancouver, British Columbia for check analyses. Results were monitored for key elements, and in cases of QA/QC issues, re-analysis was requested. Values were reported by the laboratories in parts per million ("ppm") and converted to rare earth and rare metal oxides by Avalon geologists.

Since 2007, Avalon has commissioned a specialist laboratory from British Columbia to generate standards called AVL-H, AVL-M or AVL-L (2007), S0409 (2010) (sometimes referred to as H2) and S229 and S236 (2010).

For the 2007 standards and S0409, Avalon then commissioned an independent consultant to review the round robin and assess the quality of the data and for S339 and S336 another independent consultant was similarly commissioned.

Statistics on QA/QC samples submitted during the period January 2011 to August 2012 are presented below.

| QA/QC Samples Submitted From January, 2011 to August, 2012 | | | |
|---|---|---|---|
| **QC Category** | **DH Sample Count** | **QC Sample Count** | **Ratio of QC Samples to DH Samples** |
| Company Standards | 16,914 | 1,117 | 1:15 |
| Company Blanks | 16,914 | 453 | 1:37 |
| Laboratory Duplicates | 16,914 | 2,019 | 1:8 |
| Field Duplicates | 16,914 | 88 | 1:192 |

The following table shows the interlab comparison for the period June 2010 and December 2011.

| Laboratory Comparison Results for All Elements | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Element** | **No. of Samples** | **Mean 1 (Lab 4)** | **Mean 2 (Lab 2)** | **SD 1 (Lab 4)** | **SD 2 (Lab 2)** | **CV 1 (Lab 4)** | **CV 2 (Lab 2)** | **RPHD%[(1)]** |
| **La** | 453 | 1996.72 | 1882.70 | 1153.64 | 1076.56 | 0.58 | 0.57 | 2.69 |
| **Ce** | 451 | 4398.52 | 4184.67 | 2535.14 | 2392.85 | 0.58 | 0.57 | 2.24 |
| **Pr** | 453 | 558.23 | 518.04 | 331.16 | 300.76 | 0.59 | 0.58 | 3.21 |
| **Nd** | 453 | 2166.97 | 2069.39 | 1297.18 | 1223.40 | 0.60 | 0.59 | 1.97 |
| **Sm** | 453 | 456.80 | 422.45 | 290.66 | 265.58 | 0.64 | 0.63 | 3.56 |
| **Eu** | 453 | 52.32 | 49.91 | 34.33 | 32.65 | 0.66 | 0.65 | 2.07 |
| **Gd** | 453 | 357.29 | 359.70 | 257.90 | 256.03 | 0.72 | 0.71 | -0.80 |
| **Tb** | 453 | 48.63 | 48.37 | 44.61 | 43.68 | 0.92 | 0.90 | 0.01 |
| **Dy** | 452 | 240.93 | 235.89 | 258.54 | 252.82 | 1.07 | 1.07 | 1.05 |
| **Ho** | 453 | 41.09 | 38.98 | 50.96 | 50.06 | 1.24 | 1.28 | 5.24 |
| **Er** | 453 | 101.74 | 96.24 | 137.84 | 132.60 | 1.35 | 1.38 | 4.59 |
| **Tm** | 453 | 13.25 | 13.25 | 18.48 | 18.48 | 1.39 | 1.39 | -0.44 |
| **Yb** | 453 | 80.59 | 81.97 | 112.45 | 112.15 | 1.40 | 1.37 | -3.44 |
| **Lu** | 453 | 11.37 | 11.08 | 15.76 | 15.32 | 1.39 | 1.38 | -0.39 |
| **Y** | 453 | 964.62 | 914.19 | 1144.75 | 1072.82 | 1.19 | 1.17 | 2.22 |
| **Zr-ICPMSh** | 451 | 16794.83 | 16441.79 | 11635.23 | 11661.55 | 0.69 | 0.71 | 1.51 |
| **Zr-XRF** | 497 | 22748.89 | 20472.55 | 11023.60 | 9747.00 | 0.48 | 0.48 | 5.16 |
| **Nb-ICPMSh** | 452 | 2045.91 | 1937.76 | 1173.36 | 1158.36 | 0.57 | 0.60 | 2.82 |
| **Nb-XRF** | 228 | 3645.18 | 3169.35 | 1189.18 | 994.35 | 0.33 | 0.31 | 7.00 |
| **Ta** | 453 | 217.29 | 207.36 | 169.17 | 157.83 | 0.78 | 0.76 | 1.45 |
| **Hf** | 453 | 380.31 | 369.85 | 274.54 | 268.91 | 0.72 | 0.73 | 1.47 |

**NOTES:**
(1) RPHD: Relative Percent Half Difference

Avalon monitors the results of its internal standards during routine analysis of drill core. Due to the large number of elements involved, it would be impractical to apply a normal logic table of failures where an analysis batch is failed on the basis of issues with one element. Avalon followed the following procedure for assessing analytical data:

Batches were not failed if the samples analysed were clearly far below any economic levels (not mineralized), unless the standards results were very grossly out.

The results of the standards were reviewed to see how many elements were out of acceptable range as recommended in the standard certification, and if four elements were out of range (greater than three standard deviations), but two high and two low, and the remaining 14 elements were in range, the batch was accepted.

If five elements or more elements were out of acceptable range (greater than three standard deviations), and all in the same direction, either biased all high or all low, then the batch was re-analysed.

More recently, subsequent to the May 3, 2013 resource estimate, Avalon added an additional criterion as follows:

If the overall Net Metal Return ("NMR") of the standard is outside the range of +/-10% of the recommended value, then the batch is considered for reanalysis.

*8. Mineral Processing and Metallurgical Testing*

Extensive metallurgical testwork has been completed at a number of different laboratories and a large number of testwork reports have been issued to summarize this work. Much of the pertinent metallurgical and mineralogical development studies have been undertaken using bulk composite samples that represent the Nechalacho deposit mineralization spatially and in terms of lithology. These selected composite samples tended to be selected to represent mineralization at different depths in the deposit in terms of elevation. The composites designated UZ were from Upper Zone mineralization and BZ were from Basal Zone mineralization.

Since 2010, Avalon has completed four flotation pilot plant tests at two different labs. All of these pilot plants were conducted using bulk samples sourced from drill core.

Mineralogy

The mineralogy of the Nechalacho deposit has been studied using QEMSCAN®, a scanning electron microscope (SEM) and an electron microprobe (EMP). Nechalacho mineralization is hosted in nepheline syenite that has been extensively hydrothermally altered in areas of mineralization. The payable elements of the Nechalacho deposit are typically hosted in a number of minerals, summarized as follows:

- LREEs dominantly occur in bastnaesite, synchisite, monazite and allanite.
- HREEs dominantly occur in zircon, fergusonite and rare xenotime.
- Zirconium (Zr), along with HREE, niobium and tantalum occurs in zircon and other zircono-silicates (eudialyte).
- Niobium and tantalum occur in columbite and ferrocolumbite, fergusonite and zircon.

The mineralogy of the Nechalacho ore is complex and guides metallurgical development and performance.

Hydrometallurgical Testwork

Six hydrometallurgical pilot plant campaigns were conducted between June and October, 2012. The main objectives of these campaigns were to:

- Test a continuous version of the hydrometallurgical flow-sheet.
- Optimize REE extraction in the pregnant solution.
- Remove target contaminants (iron, uranium and thorium).
- Ensure the final mixed rare earth precipitate product had an acceptable grade of REE while reducing the uranium and thorium contents below 500 ppm.
- Ensure the concentrations of species in the filtrate from the tailings circuit met target environmental levels.

The final pilot plant campaign, which operated between September 24 and October 5, 2012, demonstrated the technical viability of the process and provided crucial input for the final hydrometallurgical flowsheet, process design criteria and process engineering adopted for the FS.

Refinery

The refinery comprises two plants, the leaching and the separation plants. The leaching plant removes impurities from the hydrometallurgical precipitate in order to attain a purified feed to the separation plant where the individual rare earth products will be produced.

A large number of testwork reports have been issued to summarize the testwork that has been undertaken at a number of different laboratories. All relevant testwork has been completed using the rare earth precipitate produced during the hydrometallurgical pilot plant testwork program.

*9. Mineral Resource and Mineral Reserve Estimates*

Resource Estimate in the Feasibility Study

The mineral resource estimate for the Nechalacho Project presented in the FS based on the block model prepared by Avalon was audited originally by Roscoe Postle Associates Inc. ("RPA") on November 21, 2012. Subsequent to this, Avalon updated the database and re-estimated the resource as of May 3, 2013. The update included correction of some minor assay data entry errors and drill hole locations. The net effect of these changes is considered immaterial as the resource change was less than 1% in most individual parameters. The largest changes were for $ZrO_2$ grade, and the effect was an increase in grade in Measured and Indicated resources of between 0.1% and 3.2% of the overall grade in the various categories.

The resource estimated by Avalon and accepted by RPA that was the basis for the mineral reserves estimate given below (See "Nechalacho Project – Mineral Reserve Estimate") for the Nechalacho deposit is summarized in the table below. The mineral resource is reported at a cut-off value of US$320/t. The effective date of the mineral resource estimate is May 3, 2013. This resource has been subsequently updated as of August 15, 2013 (See "Nechalacho Project – Mineral Reserve Estimate"). The tables of the May 3, 2013 mineral resource have been provided for completeness purposes.

| **Nechalacho Deposit Mineral Resource Estimate as at May 3, 2013** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Category** | **Zone** | **Tonnes (million)** | **TREO (%)** | **HREO (%)** | **$ZrO_2$ (%)** | **$Nb_2O_5$ (%)** | **$Ta_2O_5$ (%)** |
| Measured | Basal | 10.86 | 1.67 | 0.38 | 3.23 | 0.40 | 0.04 |
| | Upper | - | - | - | - | - | - |
| **Total Measured** | | **10.86** | **1.67** | **0.38** | **3.23** | **0.40** | **0.04** |
| Indicated | Basal | 55.81 | 1.55 | 0.33 | 3.01 | 0.40 | 0.04 |
| | Upper | 54.59 | 1.42 | 0.14 | 1.96 | 0.28 | 0.02 |
| **Total Indicated** | | **110.40** | **1.49** | **0.24** | **2.49** | **0.34** | **0.03** |
| Measured and Indicated | Basal | 66.67 | 1.57 | 0.34 | 3.05 | 0.40 | 0.04 |
| | Upper | 54.59 | 1.42 | 0.14 | 1.96 | 0.28 | 0.02 |
| **Total Measured and Indicated** | | **121.26** | **1.50** | **0.25** | **2.56** | **0.34** | **0.03** |
| Inferred | Basal | 61.09 | 1.29 | 0.25 | 2.69 | 0.36 | 0.03 |
| | Upper | 122.28 | 1.26 | 0.12 | 2.21 | 0.32 | 0.02 |
| **Total Inferred** | | **183.37** | **1.27** | **0.17** | **2.37** | **0.33** | **0.02** |

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated at a NMR cut-off value of US$320/t. NMR is defined as "Net Metal Return" or the in situ value of all payable metals, net of estimated metallurgical recoveries and off-site processing costs.
3. An exchange rate of US$1=CAD1.05 was used.
4. Heavy rare earth oxides ("HREO") is the total concentration of: $Y_2O_3$, $Eu_2O_3$, $Gd_2O_3$, $Tb_2O_3$, $Dy_2O_3$, $Ho_2O_3$, $Er_2O_3$, $Tm_2O_3$, $Yb_2O_3$ and $Lu_2O_3$.

5. Total rare earth oxides ("TREO") is HREO plus light rare earth oxides ("LREO"): $La_2O_3$, $Ce_2O_3$, $Pr_2O_3$, $Nd_2O_3$ and $Sm_2O_3$.
6. Rare earths were valued at an average net price of US$62.91/kg, $ZrO_2$ at US$3.77/kg, $Nb_2O_5$ at US$56/kg, and $Ta_2O_5$ at US$256/kg. Average REO price is net of metallurgical recovery and payable assumptions for contained rare earths, and will vary according to the proportions of individual rare earth elements present. In this case, the proportions of REO as final products were used to calculate the average price.
7. $ZrO_2$ refers to zirconium oxide, $Nb_2O_5$ refers to niobium oxide and $Ta_2O_5$ refers to tantalum oxide.

| **Mineral Resource Estimate Grades of Individual Rare Earth Oxides and Specific Gravity** | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Category** | **Zone** | **Tonnes (million)** | **$La_2O_3$ (ppm)** | **$Ce_2O_3$ (ppm)** | **$Pr_2O_3$ (ppm)** | **$Nd_2O_3$ (ppm)** | **$Sm_2O_3$ (ppm)** | **$Eu_2O_3$ (ppm)** | **$Gd_2O_3$ (ppm)** | **$Tb_2O_3$ (ppm)** |
| Measured | Basal | 10.86 | 2,629 | 5,878 | 745 | 2,928 | 652 | 82 | 594 | 91 |
| | Upper | - | - | - | - | - | - | - | - | - |
| **Total Measured** | | **10.86** | **2,629** | **5,878** | **745** | **2,928** | **652** | **82** | **594** | **91** |
| | | | | | | | | | | |
| Indicated | Basal | 55.81 | 2,522 | 5,605 | 701 | 2,761 | 596 | 73 | 529 | 80 |
| | Upper | 54.59 | 2,686 | 5,970 | 740 | 2,853 | 539 | 58 | 387 | 42 |
| **Total Indicated** | | **110.40** | **2,603** | **5,786** | **720** | **2,806** | **568** | **66** | **459** | **61** |
| | | | | | | | | | | |
| Measured and Indicated | Basal | 66.67 | 2,539 | 5,649 | 708 | 2,788 | 605 | 75 | 539 | 82 |
| | Upper | 54.59 | 2,686 | 5,970 | 740 | 2,853 | 539 | 58 | 387 | 42 |
| **Total Measured and Indicated** | | **121.26** | **2,605** | **5,794** | **723** | **2,817** | **575** | **67** | **471** | **64** |
| | | | | | | | | | | |
| Inferred | Basal | 61.09 | 2,110 | 4,760 | 608 | 2,390 | 487 | 60 | 439 | 63 |
| | Upper | 122.28 | 2,312 | 5,367 | 661 | 2,576 | 465 | 51 | 340 | 35 |
| **Total Inferred** | | **183.37** | **2,245** | **5,165** | **643** | **2,514** | **473** | **54** | **373** | **44** |
| | | | | | | | | | | |
| **Category** | **Zone** | **Tonnes (million)** | **$Dy_2O_3$ (ppm)** | **$Ho_2O_3$ (ppm)** | **$Er_2O_3$ (ppm)** | **$Tm_2O_3$ (ppm)** | **$Yb_2O_3$ (ppm)** | **$Lu_2O_3$ (ppm)** | **$Y_2O_3$ (ppm)** | **SG** |
| Measured | Basal | 10.86 | 471 | 84 | 221 | 29 | 174 | 24 | 2,061 | 2.85 |
| | Upper | - | - | - | - | - | - | - | - | - |
| **Total Measured** | | **10.86** | **471** | **84** | **221** | **29** | **174** | **24** | **2,061** | **2.85** |
| | | | | | | | | | | |
| Indicated | Basal | 55.81 | 413 | 72 | 182 | 24 | 141 | 20 | 1,813 | 2.88 |
| | Upper | 54.59 | 160 | 23 | 54 | 6 | 39 | 5 | 649 | 2.80 |
| **Total Indicated** | | **110.40** | **288** | **48** | **119** | **15** | **91** | **13** | **1,237** | **2.84** |
| | | | | | | | | | | |
| Measured and Indicated | Basal | 66.67 | 422 | 74 | 189 | 25 | 147 | 20 | 1,853 | 2.88 |
| | Upper | 54.59 | 160 | 23 | 54 | 6 | 39 | 5 | 649 | 2.80 |
| **Total Measured and Indicated** | | **121.26** | **304** | **51** | **128** | **16** | **98** | **14** | **1,311** | **2.84** |
| | | | | | | | | | | |
| Inferred | Basal | 61.09 | 315 | 55 | 132 | 18 | 106 | 15 | 1,327 | 2.83 |
| | Upper | 122.28 | 137 | 20 | 46 | 6 | 40 | 6 | 560 | 2.81 |
| **Total Inferred** | | **183.37** | **196** | **32** | **75** | **10** | **62** | **9** | **816** | **2.82** |

1 CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated at a NMR cut-off value of US$320/t. NMR is defined as "Net Metal Return" or the in situ value of all payable metals, net of estimated metallurgical recoveries and off-site processing costs.
3. An exchange rate of US$1=CAD1.05 was used.
4. Heavy rare earth oxides ("HREO") is the total concentration of: $Y_2O_3$, $Eu_2O_3$, $Gd_2O_3$, $Tb_2O_3$, $Dy_2O_3$, $Ho_2O_3$, $Er_2O_3$, $Tm_2O_3$, $Yb_2O_3$ and $Lu_2O_3$.
5. Total rare earth oxides ("TREO") is HREO plus light rare earth oxides ("LREO"): $La_2O_3$, $Ce_2O_3$, $Pr_2O_3$, $Nd_2O_3$ and $Sm_2O_3$.

6. Rare earths were valued at an average net price of US$62.91/kg, $ZrO_2$ at US$3.77/kg, $Nb_2O_5$ at US$56/kg, and $Ta_2O_5$ at US$256/kg. Average REO price is net of metallurgical recovery and payable assumptions for contained rare earths, and will vary according to the proportions of individual rare earth elements present. The proportions are based on the actual planned production from the Nechalacho project.
7. $ZrO_2$ refers to zirconium oxide, $Nb_2O_5$ refers to niobium oxide, and $Ta_2O_5$ refers to tantalum oxide.

The cutoff grade was determined using both rare metals and rare earths as they all contribute to the total revenue of the Nechalacho deposit. An economic model was created, using metal prices that were updated from those used in the pre-feasibility study, flotation and hydrometallurgical recoveries, the effects of payable percentages, and any payable Net Smelter Return ("NSR") royalties. The payable percentages of elements (Zr, Nb, Ta) contained within the Enriched Zirconium Concentrate ("EZC") were also included. The net revenue generated by this model is termed the NMR. The mineral resource estimate is based on the minimum NMR value being equal to an operating cost of US$320/t, a break-even cut-off value.

Resource Database

The database for the November 21, 2012 mineral resource estimate for the Nechalacho deposit contained 490 drill holes totalling 104,918.7 m. The database included 51 historic drill holes amounting to 5,588 m and 439 recent drill holes with a total length of 99,330.6 m. The estimate was based on 33,236 samples assayed for rare metals, rare earths, and other elements, from 450 drill holes, 48 historical and 402 recent. Samples from 41 historical drill holes have incomplete or no REE assays results. Only 21 of the historical drill holes sampled the Basal Zone, as it was not a target at that time.

The up-dated database and re-estimated resource for the Nechalacho Deposit made by the Company as of May 3, 2013 are based upon detailed core logging, assays and geological interpretation by Avalon geologists and independently audited by RPA. The only change from the November 2012 Update is correction of some minor errors in the database that had no material effect, except to change some numbers in the second decimal place as noted above. The drill holes and their related assays form the basis for the creation of two domains of REE mineralization: an upper LREE-enriched domain ("Upper Zone") and a lower HREE enriched domain ("Basal Zone").

Resource Classification

For all domains, blocks populated using a 240m X 240m X 120m search ellipse and up to 120 m away from a drill hole were classified as inferred.

Within the Upper Zone, blocks populated using a 60m X 60m X 30m search ellipse and a minimum of 2 drill holes were classified as Indicated. A manually digitized contour was used to reclassify isolated blocks or patches of Indicated material into the Inferred category. No Upper Zone material was classified as Measured.

Within the Basal Zone, blocks populated using a 60m X 60m X 30m search ellipse and up to 60 m away from a drill hole were classified as Indicated. A manually digitized contour was used to select and reclassify isolated blocks or patches of Indicated material to the Inferred category. In the Basal Zone, two separate areas supported by diamond drilling spaced at 25 m were manually digitized to define the Measured blocks.

The classification details are outlined in the table below.

| Zone | Classification | Distance to Nearest Drill hole | Minimum Number of Drill holes |
|---|---|---|---|
| Basal | Measured | ≤30m (by manually digitized contour) | 1 |
| | Indicated | ≤60m | 1 |
| | Inferred | ≤120m | 1 |
| Upper | Measured | N/A | N/A |
| | Indicated | ≤60m | 2 |
| | Inferred | ≤120m | 1 |

Mineral Reserve Estimate

The mineral reserve estimate for the Nechalacho Project presented in the feasibility study was estimated from the block model prepared by Avalon and audited originally by RPA on November 21, 2012 which was updated and re-estimated as of May 3, 2013. The mineral reserve estimate is derived from this block model by applying the appropriate technical and economic parameters to extraction of the REE with proven underground mining methods.

The mineral reserve has been estimated based on conversion of the high grade mineral resources at a cut-off value greater than US$320/t NMR. Payable elements include the REE, zirconium, niobium and tantalum. No Inferred mineral resources were converted to mineral reserves. The high grade mineral resources are 34.7% and 14.7% of the total Measured and Indicated mineral resources, respectively.

The key design criteria set for the Nechalacho mine are:

- Initial design based on a 20-year life-of-mine ("LOM") of high grade material.
- Mechanized cut or drift and fill and long hole mining methods with paste backfill.
- Minimum mining thickness of 5 m.
- Extraction ratio of 94.2%.
- Internal dilution of 8.5%.
- External dilution of 5% applied to all stopes.
- Estimated total average dilution for the life of mine of approximately 11%.
- Production rate of 2,000 t/d ore (730,000 t/y).
- Ore bulk density of 2.91 t/$m^3$.

The mineral reserve estimate for the Nechalacho Project shown in the table below has an effective date of May 3, 2013. The figures in the table are rounded to reflect that the numbers are estimates. The conversion of mineral resources to mineral reserves includes technical information that requires subsequent calculations or estimates to derive sub-totals, totals and weighted averages. Such calculations or estimations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, Micon International Limited ("Micon") does not consider them to be material.

| **Mineral Reserve Estimate as at May 3, 2013** | | | |
|---|---|---|---|
| **Description** | **Mineral Reserve Category** | | |
| | **Proven** | **Probable** | **Proven and Probable** |
| Tonnage (Mt) | 3.68 | 10.93 | 14.61 |
| TREO (%) | 1.7160 | 1.6923 | 1.6980 |
| HREO (%) | 0.4681 | 0.4503 | 0.4548 |
| HREO/TREO | 27.28% | 26.61% | 26.78% |
| $La_2O_3$ | 0.256% | 0.256% | 0.256% |
| $Ce_2O_3$ | 0.570% | 0.567% | 0.568% |
| $Pr_2O_3$ | 0.072% | 0.071% | 0.071% |
| $Nd_2O_3$ | 0.284% | 0.283% | 0.283% |
| $Sm_2O_3$ | 0.065% | 0.065% | 0.065% |
| $Eu_2O_3$ | 0.008% | 0.008% | 0.008% |
| $Gd_2O_3$ | 0.062% | 0.061% | 0.061% |
| $Tb_2O_3$ | 0.010% | 0.010% | 0.010% |
| $Dy_2O_3$ | 0.058% | 0.056% | 0.056% |
| $Ho_2O_3$ | 0.011% | 0.010% | 0.010% |
| $Er_2O_3$ | 0.029% | 0.027% | 0.028% |

| Mineral Reserve Estimate as at May 3, 2013 | | | |
|---|---|---|---|
| **Description** | **Mineral Reserve Category** | | |
| | **Proven** | **Probable** | **Proven and Probable** |
| $Tm_2O_3$ | 0.004% | 0.004% | 0.004% |
| $Yb_2O_3$ | 0.023% | 0.022% | 0.022% |
| $Lu_2O_3$ | 0.003% | 0.003% | 0.003% |
| $Y_2O_3$ | 0.259% | 0.249% | 0.251% |
| $ZrO_2$ | 3.440% | 3.309% | 3.342% |
| $Nb_2O_5$ | 0.425% | 0.413% | 0.416% |
| $Ta_2O_5$ | 0.046% | 0.045% | 0.045% |

1. CIM definitions were followed for Mineral Reserves.
2. Mineral Reserves are based on Mineral Resources published by Avalon in News Release dated November 26th, 2012 and audited by Roscoe Postle Associates Inc., and modified as of May 3, 2013.
3. Mineral Reserves are estimated using price forecasts for 2016 for rare earth oxides given below.
4. HREO grade comprises $Y_2O_3$, $Eu_2O_3$, $Gd_2O_3$, $Tb_2O_3$, $Dy_2O_3$, $Ho_2O_3$, $Er_2O_3$, $Tm_2O_3$, $Yb_2O_3$, and $Lu_2O_3$. TREO grade comprises all HREO and $La_2O_3$, $Ce_2O_3$, $Nd_2O_3$, $Pr_2O_3$, and $Sm_2O_3$.
5. Mineral Reserves are estimated using a NMR cash cost cut-off value of US$320/t.
6. Rare earths were valued at an average net price of US$62.91/kg, $ZrO_2$ at US$3.77/kg, $Nb_2O_5$ at US$56/kg, and $Ta_2O_5$ at US$256/kg. Average REO price is net of metallurgical recovery and payable assumptions for contained rare earths, and will vary according to the proportions of individual rare earth elements present. In this case, the proportions of REO as final products were used to calculate the average price.
7. Mineral reserves calculation includes an average internal dilution of 8.5% and external dilution of 5% on secondary stopes.
8. The mine plan was developed by Avalon Advanced Materials Inc. engineers and reviewed by Micon International Limited. The QP for this Mineral Reserve is Barnard Foo., P. Eng., M. Eng., MBA, Senior Mining Engineer, Micon International Limited.

Micon believes the key assumptions, parameters and methods used to convert mineral resource to mineral reserve are appropriate. To the best of Micon's knowledge there are no known mining, metallurgical, infrastructure, permitting or other relevant factors that may materially affect the mineral reserve estimate.

Mineral Resource August 15, 2013 Update

Subsequent to the FS, an internal resource update was completed and released on August 15, 2013. This update reflects the improved understanding of the geometry of the resource. It incorporates drill results from the eight-hole winter 2013 drill program and the final 41 holes from the 2012 summer drill program. These holes were not incorporated into the resource model used in the FS.

The estimated Measured Mineral Resources in the base case now stand at 12.56 million tonnes averaging 1.71% TREO, 0.38% HREO and 22.5% HREO/TREO. The only change of consequence in methodology from the November 26, 2012 Resource estimate was that the base case cut-off grade, expressed as Net Metallurgical Return ("NMR"), increased from US$320 to US$345 per tonne due to minor changes in estimated operating costs, as per the FS. Work is continuing on optimizing the mine plan to incorporate more of the high grade ore identifiable at higher NMR cut-offs into the early years of production.

The mineral resource estimate was prepared by a senior resource geologist employed by Avalon Advanced Materials Inc., under the supervision of the Company's Vice-President, Exploration, William Mercer, Ph.D., P.Geo. (Ont), P. Geo. (NWT) who is the qualified person for Avalon for this resource estimate. Dr. Mercer is also providing overall direction on the project and monitoring of the QA/QC on the laboratory analyses.

| Nechalacho Deposit Mineral Resources as at August 15, 2013 above a US$345/tonne NMR Cut-Off | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Category** | **Zone** | **Tonnes (millions)** | **TREO (%)** | **HREO (%)** | **HREO/ TREO (%)** | **$ZrO_2$ (%)** | **$Nb_2O_5$ (%)** | **$Ta_2O_5$ (%)** |
| **Measured** | **Basal** | **12.56** | **1.71** | **0.38** | **22.50** | **3.20** | **0.405** | **0.0404** |
| | Upper | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Total Measured | | 12.56 | 1.71 | 0.38 | 22.50 | 3.20 | 0.405 | 0.0404 |
| **Indicated** | **Basal** | **49.33** | **1.62** | **0.35** | **21.27** | **3.07** | **0.405** | **0.0398** |
| | Upper | 47.21 | 1.52 | 0.15 | 10.11 | 2.12 | 0.291 | 0.0195 |
| Total Indicated | | 96.54 | 1.57 | 0.25 | 16.00 | 2.61 | 0.349 | 0.0299 |
| **Measured and Indicated** | **Basal** | **61.90** | **1.64** | **0.35** | **21.53** | **3.10** | **0.405** | **0.0399** |
| | Upper | 47.21 | 1.52 | 0.15 | 10.11 | 2.12 | 0.291 | 0.0195 |
| Total Measured and Indicated | | 109.11 | 1.59 | 0.27 | 16.81 | 2.67 | 0.356 | 0.0311 |
| **Inferred** | **Basal** | **58.16** | **1.38** | **0.26** | **18.89** | **2.80** | **0.380** | **0.0351** |
| | Upper | 102.09 | 1.38 | 0.13 | 9.70 | 2.38 | 0.334 | 0.0204 |
| Total Inferred | | 160.25 | 1.38 | 0.18 | 13.07 | 2.53 | 0.351 | 0.0257 |

1. CIM definitions were followed for Mineral Resources.
2. The Qualified Person for this Mineral Resource estimate is William Mercer, PhD, P.Geo. (Ontario), P. Geo.(NWT), VP, Exploration, Avalon Advanced Materials Inc..
3. HREO (Heavy Rare Earth Oxides) is the total concentration of: $Y_2O_3$, $Eu_2O_3$, $Gd_2O_3$, $Tb_4O_7$, $Dy_2O_3$, $Ho_2O_3$, $Er_2O_3$, $Tm_2O_3$, $Yb_2O_3$ and $Lu_2O_3$.
4. TREO (Total Rare Earth Oxides) is HREO plus: $La_2O_3$, $CeO_2$, $Pr_6O_{11}$, $Nd_2O_3$ and $Sm_2O_3$.
5. Rare earths were valued at an average net price of US$62.91/kg, $ZrO_2$ at US$3.77/kg, $Nb_2O_5$ at US$56/kg, and $Ta_2O_5$ at US$256/kg. Average REO price is net of metallurgical recovery and payable assumptions for contained rare earths, and will vary according to the proportions of individual rare earth elements present. In this case, the proportions of REO as final products were used to calculate the average price.
6. The changes in methodology from the November 26, 2012 Resource were the cut-off grade and the interpolation method. The cut-off grade, expressed as Net Metallurgical Return ("NMR"), increased from US$320 to US$345 per tonne. NMR is defined as "Net Metal Return" or the in situ value of all payable metals, net of estimated metallurgical recoveries, and in the case of Nb, Ta and Zr, off-site processing costs. The revised interpolation method utilized the elevation above the lower contact of the Basal Zone to provide better geologic continuity of the ore zone. The effect on overall tonnage and grade is not material.
7. $ZrO_2$ refers to Zirconium Oxide, $Nb_2O_5$ refers to Niobium Oxide, $Ta_2O_5$ refers to Tantalum Oxide.
8. See the table below for individual rare earth oxide details.
9. See the table for Basal Zone tonnes and TREO grades at higher NMR cut-off values.
10. Values for HREO/TREO may differ due to rounding.

| Nechalacho Deposit Measured, Indicated and Inferred Rare Earth Oxide Grades as at August 15, 2013 above a US$345/tonne NMR Cut-Off | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Category** | **Zone** | **Tonnes (millions)** | **$La_2O_3$ (%)** | **$CeO_2$ (%)** | **$Pr_6O_{11}$ (%)** | **$Nd_2O_3$ (%)** | **$Sm_2O_3$ (%)** | **$Eu_2O_3$ (%)** | **$Gd_2O_3$ (%)** | **$Tb_4O_7$ (%)** | **$Dy_2O_3$ (%)** | **$Ho_2O_3$ (%)** | **$Er_2O_3$ (%)** | **$Tm_2O_3$ (%)** | **$Yb_2O_3$ (%)** | **$Lu_2O_3$ (%)** | **$Y_2O_3$ (%)** |
| **Measured** | **Basal** | **12.56** | **0.266** | **0.622** | **0.078** | **0.295** | **0.066** | **0.0082** | **0.060** | **0.0094** | **0.047** | **0.008** | **0.022** | **0.003** | **0.017** | **0.002** | **0.207** |
| | Upper | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Total Measured | | 12.56 | 0.266 | 0.622 | 0.078 | 0.295 | 0.066 | 0.0082 | 0.060 | 0.0094 | 0.047 | 0.008 | 0.022 | 0.003 | 0.017 | 0.002 | 0.207 |
| **Indicated** | **Basal** | **49.33** | **0.258** | **0.603** | **0.074** | **0.283** | **0.061** | **0.0076** | **0.055** | **0.0084** | **0.043** | **0.007** | **0.019** | **0.002** | **0.015** | **0.002** | **0.187** |
| | Upper | 47.21 | 0.279 | 0.653 | 0.080 | 0.297 | 0.057 | 0.0061 | 0.041 | 0.0045 | 0.017 | 0.002 | 0.006 | 0.001 | 0.004 | 0.001 | 0.071 |
| Total Indicated | | 96.54 | 0.268 | 0.627 | 0.077 | 0.290 | 0.059 | 0.0068 | 0.048 | 0.0065 | 0.030 | 0.005 | 0.012 | 0.002 | 0.010 | 0.001 | 0.130 |
| **Measured and Indicated** | **Basal** | **61.90** | **0.260** | **0.607** | **0.075** | **0.285** | **0.062** | **0.0077** | **0.056** | **0.0086** | **0.043** | **0.008** | **0.019** | **0.003** | **0.015** | **0.002** | **0.191** |
| | Upper | 47.21 | 0.279 | 0.653 | 0.080 | 0.297 | 0.057 | 0.0061 | 0.041 | 0.0045 | 0.017 | 0.002 | 0.006 | 0.001 | 0.004 | 0.001 | 0.071 |
| Total Measured and Indicated | | 109.11 | 0.268 | 0.627 | 0.077 | 0.291 | 0.060 | 0.0070 | 0.049 | 0.0068 | 0.032 | 0.005 | 0.014 | 0.002 | 0.010 | 0.001 | 0.139 |
| **Inferred** | **Basal** | **58.16** | **0.223** | **0.528** | **0.066** | **0.252** | **0.051** | **0.0064** | **0.046** | **0.0067** | **0.033** | **0.006** | **0.014** | **0.002** | **0.011** | **0.002** | **0.136** |
| | Upper | 102.09 | 0.243 | 0.608 | 0.072 | 0.271 | 0.049 | 0.0054 | 0.036 | 0.0038 | 0.015 | 0.002 | 0.005 | 0.001 | 0.004 | 0.001 | 0.061 |
| Total Inferred | | 160.25 | 0.236 | 0.579 | 0.070 | 0.264 | 0.050 | 0.0058 | 0.040 | 0.0049 | 0.021 | 0.003 | 0.008 | 0.001 | 0.007 | 0.001 | 0.088 |

| Nechalacho Deposit Measured, Indicated and Inferred Mineral Resources for Basal Zone by NMR Cut-Off Value as at August 15, 2013 at NMR Cut-off Values over $345/tonne | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Zone** | **NMR Cut-Off ($USD)** | **Tonnes (millions)** | **TREO (%)** | **HREO (%)** | **HREO/ TREO (%)** | **$ZrO_2$ (%)** | **$Nb_2O_5$ (%)** | **$Ta_2O_5$ (%)** |
| **Measured** | | | | | | | | |
| Basal | ≥345 | 12.56 | 1.71 | 0.38 | 22.50 | 3.20 | 0.405 | 0.0404 |
| Basal | ≥600 | 8.28 | 1.98 | 0.48 | 24.29 | 3.79 | 0.468 | 0.0480 |
| Basal | ≥800 | 5.11 | 2.20 | 0.58 | 26.17 | 4.23 | 0.520 | 0.0544 |
| Basal | ≥1000 | 2.49 | 2.49 | 0.68 | 27.38 | 4.77 | 0.586 | 0.0620 |
| **Indicated** | | | | | | | | |
| Basal | ≥345 | 49.33 | 1.62 | 0.35 | 21.27 | 3.07 | 0.405 | 0.0398 |
| Basal | ≥600 | 28.66 | 1.95 | 0.45 | 23.21 | 3.68 | 0.472 | 0.0479 |
| Basal | ≥800 | 16.15 | 2.20 | 0.55 | 24.87 | 4.13 | 0.521 | 0.0542 |
| Basal | ≥1000 | 6.99 | 2.52 | 0.66 | 26.03 | 4.66 | 0.583 | 0.0614 |
| **Measured and Indicated** | | | | | | | | |
| Basal | ≥345 | 61.90 | 1.64 | 0.35 | 21.53 | 3.10 | 0.405 | 0.0399 |
| Basal | ≥600 | 36.94 | 1.96 | 0.46 | 23.46 | 3.70 | 0.471 | 0.0479 |
| Basal | ≥800 | 21.27 | 2.20 | 0.55 | 25.19 | 4.15 | 0.521 | 0.0543 |
| Basal | ≥1000 | 9.48 | 2.52 | 0.66 | 26.38 | 4.69 | 0.584 | 0.0616 |
| **Inferred** | | | | | | | | |
| Basal | ≥345 | 58.16 | 1.38 | 0.26 | 18.89 | 2.80 | 0.380 | 0.0351 |
| Basal | ≥600 | 22.41 | 1.74 | 0.37 | 21.09 | 3.40 | 0.453 | 0.0431 |
| Basal | ≥800 | 6.68 | 2.04 | 0.49 | 24.26 | 3.84 | 0.502 | 0.0506 |
| Basal | ≥1000 | 1.81 | 2.42 | 0.61 | 25.31 | 4.17 | 0.547 | 0.0570 |

The main change in estimation method utilized in this resource estimate was relative elevation. This methodology is one way to adapt the estimation method to the rolling nature of the bottom of the Basal Zone.

*10. Mining Operations*

Underground mining of the Measured and Indicated mineral resource of the Basal Zone was investigated for the FS. The majority of the mineral resource of the Basal Zone contemplated for development lies directly beneath and to the north of Long Lake, approximately 200 m below surface. Thus, the deposit is to be mined using underground mining methods.

The planned mine production rate is 2,000 t/d (730,000 t/y) of ore and the mine life based on that portion of the Mineral Resources that have been defined in sufficient detail to qualify as Mining Reserves is 20 years.

Geotechnical information for the mine design was based on geotechnical data collection completed in conjunction with Avalon's on-going exploration drill program. The analysis indicated that excavations 15 m wide, 5 m high and 100 m in length will be stable with the proper installation of ground support and mitigation strategies.

The deposit at the Nechalacho Project is relatively flat lying and will be mined with a combination of longhole stoping, and cut and fill methods. The mine will be accessed through a mine portal located near the concentrator. The dimensions of the 1,600 metre main ramp were designed to accommodate the overhead conveyor system and access for men and equipment.

Sub-zones less than 10 metres thick will be mined by cut or drift and fill methods in a primary and secondary mining sequence. Sub-zones over 10 metres thick will be mined with longhole stoping. Secondary stopes would be

mined after the adjoining primary stopes have been filled. The mining of the secondary stopes would be the same as the mining of the primary stope.

Blasted material would be mucked and transported by rubber tired equipment to the crusher station. The crushed ore would be transported to the surface by conveyor.

Paste backfill will be used to improve the overall mine stability, reduce the surface footprint for the Nechalacho TMF, and enable the extraction of secondary stopes for increased mining recovery.

*11. Processing and Recovery Operations*

The metallurgical processing described below is that in the FS.

Processing – Flotation Concentrator

The grinding circuit was designed to be a conventional rod mill/ball mill operation. The rod mill will be operated in open circuit, and the ball mill in closed circuit with classifying hydrocyclones. A final grind p80 of 38µm is targeted.

The cyclone overflow was designed to gravitate to two stages of magnetic separation, followed by a desliming circuit. The magnetics from the magnetic separation circuit and the fines from desliming will be routed to tailings. The deslimed slurry will feed the flotation circuit.

This flotation circuit design comprises three stages of bulk flotation, four stages of cleaner flotation and a single cleaner scavenger stage. Flotation concentrate would be pumped to a gravity separation circuit for further enrichment before being thickened and filtered to final product concentrate. The light material (gravity tailings) would be recycled to the bulk rougher flotation circuit.

Concentrate production will be stored in a covered bulk storage facility and shipped to the hydrometallurgical processing plant each summer using barges to cross Great Slave Lake at the rate of 145,000 wet tonnes per year (10% moisture is assumed).

The tailings will be thickened, the overflow from which will be pumped to the process water tank although a portion will be fed to a water treatment plant to remove impurities. The tailings thickener underflow will be directed to either the TMF or the paste backfill plant. The paste backfill plant has been designed to produce 1,738 t/d of backfill using concentrator tailings.

Processing – Hydrometallurgical Plant

A hydrometallurgical plant in the FS was designed to be built at Pine Point to produce mixed rare earth concentrate from the flotation concentrate at the planned rate of 49,900 tonnes per year (at approximately 16.5% TREO and a secondary product of EZC at the rate of approximately 103,800 tonnes per year (containing 12.5% Zr).

The hydrometallurgical plant designed for Pine Point comprises the following process sections:

- Pre-leach.
- Sulphuric acid bake.
- Water leach.
- Neutralization and impurity removal.
- Impurity removal re-dissolution.
- Rare earth precipitation.

- Waste water treatment.
- Tailings neutralization.

The concentrate barged from Nechalacho would be fed to the pre-leach section of the plant where excess sulphuric acid produced in the water leach section will be used to neutralize the base materials. The product from the pre-leach circuit would be filtered and the solids fed to the acid bake system while the filtrate would feed the iron reduction circuit.

The filter cake from the pre-leach circuit would be mixed with concentrated sulphuric acid and fed into the acid baking rotary kiln where the REE in the concentrate would be converted to sulphates at a temperature of 220$^{o}$C. The discharge from the acid bake kiln would be leached in water to recover approximately 80% of the LREE and 50% of the HREE. The solids containing the balance of the REE, along with most of the zirconium, niobium and tantalum, would be filtered, washed, neutralized and dried to approximately 8% moisture. This dried product would be packaged and shipped to customers as EZC.

The rare earth filtrate from the water leach process would be cleaned through several neutralization and impurity removal steps. The resulting slurry would be filtered and washed and the final rare earth precipitate dried to approximately 8% moisture.

In order to minimize process water usage in the plant, tailings water would be recycled into the water leach circuit. Pilot plant results showed no negative changes in REE recoveries with recycled tailings water.

The mixed rare earth concentrate is envisioned in the FS to be shipped in 35-40 tonne capacity sealed containers and taken by truck to the rail head at Hay River and then by rail to a REE Separation Plant and Refinery in Geismar, Louisiana. The Company has investigated the potential for sales of EZC directly to customers, primarily in China.

Tailings from the hydrometallurgical process would be stored in a tailings management facility to be constructed within a historic open pit. Decant water from the tailings management facility will be discharged to an adjacent historic open pit for natural infiltration into the groundwater aquifer.

Rare Earth Separation Plant and Refinery

In August 2011, the Company concluded that rare earth separation and refining should be a part of its development plan and a PFS on the rare earth separation plant and refinery was commissioned and subsequently completed in March 2012. The FS also included a rare earth separation plant and refinery.

In the FS, the separation plant and refinery is planned to be situated adjacent to an existing industrial facility in Geismar, Louisiana where Avalon had a purchase option on a suitably-sized property. Electrical power, fresh water, sodium hydroxide and hydrochloric acid would be supplied via tie-in to an adjacent third party chemical production facility and rail spurs connected to the existing rail line in the adjacent facility would accommodate shipment of concentrate feed stock to and shipment of marketable product from the separation plant. The design capacity in the FS has been based on the PFS capacity of 10,000 tonnes per year of TREO although forecast average annual production from the FS would be approximately 6,800 tonnes of TREO.

The rare earth refinery design consists of two key sections, the leaching plant to remove impurities, and the separation plant where products are separated and refined to the quality required for the customers.

The leaching plant design comprises a series of processes, including re-dissolution of the mixed rare earth precipitate, re-precipitation, solvent extraction and selective precipitation. Impurities, principally uranium and thorium, would be removed in a series of dissolution, selective precipitation, filtration and solvent extraction steps.

The separation plant design uses solvent extraction circuits based on the common Chinese configuration of stages and is divided into 16 extraction steps, each with a specific number of stages for loading, extraction, washing and stripping, and sized according to the feed composition. The design of entire extraction circuits comprises a total of approximately 1,000 mixer/settlers.

The separation plant design will produce 10 different pure rare earth oxides products in accordance with the specifications indicated in the following table.

| List of Products from the Rare Earth Separation Plant and Refinery | | | |
|---|---|---|---|
| **Product** | **Design Plant Production (t/y)** | **Product Distribution (%)** | **Feasibility Study Specification [(1)]** |
| La Oxide | 1,583 | 16.0 | 3 N |
| Ce Oxide | 3,572 | 36.0 | 3 N |
| Pr Oxide | 451 | 4.0 | 3 N |
| Nd Oxide | 1,783 | 18.0 | 3 N |
| Sm Oxide | 391 | 4.0 | 2 N |
| Eu Oxide | 49 | 0.5 | 4 N |
| Gd Oxide | 371 | 4.0 | 3 N |
| Tb Oxide | 54 | 0.5 | 4 N |
| Dy Oxide | 271 | 3.0 | 4 N |
| Y Oxide | 1,170 | 11.0 | 5 N |
| Lu Oxide | 14 | 0.1 | 3 N |
| Er/Ho/Tm/Yb Carbonate Mix[(2)] | 292 | 3.0 | 2 N |
| **Total** | **10,000** | **100.0** | |

**NOTES:**

(1) "N" stands for the number of nines purity produced as final product, for example 3 N = 99.9%.
(2) This stream containing four different rare earth carbonates for which there is limited market at the present time will be stockpiled initially and eventually disposed of if markets are not forthcoming.

A kerosene mixture is used as the extracting agent for most separations. Hydrochloric acid is used as the stripping agent. Deionized water is added in the washing and stripping stages to dilute and adjust the reagent concentrations.

The purified strip solution from the respective solvent extraction stage would feed the atmospheric precipitation tanks where soda ash or oxalic acid is added in order to precipitate the pure REE as carbonates or oxalates, respectively. The slurry streams containing the precipitates are thickened, filtered, dried and calcined to produce pure rare earth oxides. The filtrate is then forwarded to the water treatment facility. The mixed holmium, erbium, thulium, and ytterbium stream will be precipitated as carbonate and, hence, would not be calcined.

The dry rare earth oxide or carbonate products are cooled and then packaged in drums ready for shipment to customers. The product storage facility would provide two weeks capacity, to interface between plant production and continuous product dispatch via rail, air or ocean transportation.

*12. Infrastructure, Permitting and Compliance Activities*

Permit Status and Environmental Issues

The Nechalacho property is situated in an area known as the Akaitcho Territory, an area which is subject to a comprehensive land claim negotiation involving four communities of the Dene Nation. The area is also subject to a settled Land Claim of the Tli Cho Government who refer to the area as the Monfwe overlap.

Under the Mackenzie Valley Resource Management Act ("MVRMA") and Regulations, the Mackenzie Valley Land and Water Board ("MVLWB") administers land use permits and water licenses. Upon completion of a preliminary screening process, projects deemed to potentially have significant adverse impacts are referred to the Mackenzie Valley Environmental Impact Review Board ("MVEIRB") to initiate an environmental assessment process. The MVRMA allows local and particularly Aboriginal input into land and water use permitting. The MVRMA establishes a three-part environmental assessment process:

- Preliminary screening (MVLWB)
- Environmental assessment (MVEIRB)
- Environmental impact review (MVEIRB, if necessary)

Subsequent to the acquisition of the Thor Lake property, and continuation of community engagement meetings, Avalon applied to the MVLWB for an exploration permit, and a two year permit was granted as of July 2007. It was under this permit that the drilling programs in 2007 to April 2009 were conducted. Avalon applied for an extension of this permit in early 2009, and a two year extension was granted by the MVLWB making the permit valid to July 2011. In December 2009, Avalon applied for an addendum to the existing exploration permit to allow for a second drill unit to be added to the program and the construction of a short take-off and landing ("STOL") airstrip. The permit addendum and a separate airstrip land use permit were granted and issued in January 2010 and valid to July 2011. The land use permit for the construction of the airstrip has since been satisfactorily concluded. Current exploration activities at Thor Lake are under a new land use permit issued by the MVLWB on June 23, 2011, that was originally issued for a period of five years beginning on July 5, 2011. However, on July 7, 2016, the MVLWB granted Avalon an extension of this permit to July 4, 2018.

On April 23, 2010, Avalon submitted a land use and water license permit application through the MVLWB, for the mining, flotation processing and hydrometallurgical processing in the NWT. Upon completion of the MVLWB preliminary screening process, the Nechalacho Project was referred to the MVEIRB on June 11, 2010, for environmental assessment.

On May 20, 2011, the Company submitted the Developers Assessment Report ("DAR"), (more commonly referred to as an Environmental and Social Impact Statement). In November, 2011, the DAR was deemed by MVEIRB to be in conformity with the terms of reference. First Round information requests were received and addressed from November 2011 to May 2012. In mid-August 2012, Avalon participated in the environmental assessment process technical sessions organized by MVEIRB for various regulators and community representatives. Subsequently, Avalon completed and submitted all additional work and undertakings requested by MVEIRB and other regulators for clarification purposes at the technical sessions. Avalon then entered and completed the Second Round Information Requests stage. The environmental assessment process ended with public hearings held on February 18 – 20, 2013 in Yellowknife, NWT and February 22, 2013 in Fort Resolution, NWT. The final Report of Environmental Assessment (the "Report of EA") was released by MVEIRB on July 26, 2013, recommending approval by the responsible Ministers. This approval was received on November 4, 2013. Applications for the necessary construction and operating permits and licences were submitted in December 2013, and were subsequently amended into a two phase permitting process of 1) low impact site preparation activities and; 2) the full construction and operations permits. A Class A Land Use Permit and Class B Water Licence were approved on April 24, 2014 and May 22, 2014 respectively for identified low impact activities including site preparation, early camp erection, portal development and associated infrastructure such as roads, power and water treatment expected to take up to a full year, pending financing. Avalon submitted a $50,000 security payment for the first phase of this activity and completed the site clearing phase of the project. The additional phases may proceed with the filing of additional site security. The permitting process for the full construction and operating permits continued to advance, including public Technical Review Sessions held in Yellowknife July 22-24, 2014. Responses to intervener comments were initiated in 2014; however since these technical review sessions the work on these permits has since been progressing intermittently to conserve resources. Approximately 4-6 months would be required to finalize these permits, once the Company commences the final application process. This would not in any way limit the first year of pre-construction activity as approved under the existing permits, qualified by the filing of identified financial assurance.

In its 220 page Report of EA, MVEIRB set out five measures that, when implemented, will mitigate any predicted environmental impacts so that they are no longer significant. These measures require the Company to:

- Ensure through comprehensive monitoring that the water released from the Project into the receiving environment does not cause significant impacts;
- Develop and implement a wildlife and wildlife habitat protection plan and wildlife effects monitoring program, with an emphasis on caribou, and mitigation if required; and
- Complete a socio-economic agreement with the Government of the Northwest Territories ("GNWT") before construction begins.

Work on advancing plans to implement the measures identified above has been well advanced, including engagement with the Company's Aboriginal partners and regulators. As part of its philosophy of open and transparent communications, engagement with Aboriginal partners on the environmental management plans required as part of the permitting process was initiated prior to submission to the regulators, helping to both improve the quality of the plans and facilitate the permitting process. Following the technical review sessions with regulators and the communities of interest, the Company has submitted proposed and updated water quality monitoring programs, wildlife and wildlife habitat protection plans and a wildlife effects monitoring program for which discussions are ongoing. The socio-economic agreement has been put on hold pending finalizing of the project designs. Updates to plans were submitted in late 2014 in response to intervener comments and annual reports are submitted to the government as per the water license requirement.

A copy of all information submitted by the Company can be found on MVEIRB's public registry at www.reviewboard.ca.

Avalon has received a letter from Transport Canada that confirmed that the water bodies located within the tailings management facility ("TMF") are not considered navigable and do not require any additional authorizations from Transport Canada. A section 35(2) fisheries authorization or letters of advice from the Department of Fisheries and Oceans ("DFO") under the *Fisheries Act* (Canada) may be required, though the ponds within the TMF are not considered as fisheries habitat (do not contain fish). In addition, a response from DFO to the MVEIRB stated that "DFO has not identified any activities or components of the project that require an authorization or permit under the Fisheries Act".

Past exploration activity on the Thor Lake property included underground bulk sampling, drilling and trenching on a separate rare metals resource called the North T deposit. Stockpiles of waste rock from underground development have been progressively reclaimed by Avalon without obligation. Three old construction camp trailers have been sent to Yellowknife for disposal while three remaining trailers have been refurbished for future use by Avalon, and a building is being used to store equipment. There is little surface disturbance from historical exploration activities apart from miscellaneous buildings, a 60,000 gallon capacity fuel tank farm (empty), a tent camp and a core storage area left on the Thor Lake property. There are no significant environmental liabilities left by past exploration activities. The diesel fuel remaining in the tank farm was consumed during the 2007 and 2008 exploration programs. The Company has undertaken extensive general cleanup of material left from previous exploration utilizing First Nations labour. During 2014, a fire break was constructed around the property and a fire sprinkler system installed on the core storage area as a precaution against forest fires concerns during the year. In 2017, a site maintenance and cleanup campaign was completed at the exploration camp and commentary was submitted to the Government of the NWT related to proposed regulatory initiatives and the draft caribou management plan.

Accessibility, Climate, Physiography and Planned Infrastructure

The Thor Lake property is characterized by low relief, between 230 m and 255 m above sea level and relatively subdued topography. The area is a typical boreal forest of the Canadian Shield and is primarily covered by open growths of stunted spruce, birch, poplar and jack pine which mantle isolated, glaciated rocky outcrops. Approximately one third of the property is occupied by lakes and swamps. Thor Lake is generally shallow with typical depths of the order of three to four metres.

Topography is typical of the Canadian Shield, gently rolling with abundant bedrock exposure with glacial till cover, and numerous shallow lakes. Vegetation is dominated by spruce and poplar which do not grow to a size to be harvested economically.

Air temperature at the Nechalacho site recorded from June, 2008 to October, 2010 displayed typical seasonal fluctuations, with warm temperatures occurring from late May to August, with the coldest period occurring from December to February. The monthly average temperatures expected at site range from -26°C in January to 16°C in July. Monthly average temperatures rise above 0°C for significant periods of time in May and fall below 0°C for significant periods in October.

Average annual total precipitation at Thor Lake is approximately 275 mm. Rainfall predominates during May to October, and snowfall predominates during October to April. Six snow courses were established throughout the Nechalacho site in March, 2009. Mean snow depths varied from 31.3 cm to 66.6 cm in the vicinity of Thor Lake. Forested areas that were generally less exposed to wind had a tendency to accumulate the thickest snowpacks.

Relative humidity is generally highest during the winter months, while summers are generally drier.

The dominant wind direction at the site is from the east-northeast during November to June. Wind directions had a tendency to be more dispersed from July to October; however, an east-northeast trend was still evident. The average hourly wind speed at 20 m above ground level is 4.54 m/s. Wind speeds at 20 m above ground are generally in the range of 2 to 6 m/s, with occasional wind speeds exceeding 10 m/s.

The Thor Lake site has no road access from Yellowknife, although there is a historical 5 kilometre road from the Thor Lake site to the shore of Great Slave Lake. This road is presently used to haul supplies shipped by barge or trucked on an ice road to the Thor Lake site. At the present time, year round access is primarily achieved by aircraft. The use of winter ice roads on Great Slave Lake is also feasible, but is not included as an integral part of the FS. A temporary barge dock and a materials storage area will be constructed on the shore of Great Slave Lake. A camp, offices, shops, yards, diesel tank farm, propane storage facility, and access roads to the tailings management facility and the barge dock on Great Slave Lake will be developed. Electrical power at the site will be initially provided by a diesel power generating station, supplemented if possible by renewable energy sources including solar power. The diesel plant design is based upon having spare capacity at any given time. Opportunities for the construction of a road to site will continue to be monitored due to the potential financial and safety benefits, though this would be the subject of an additional environmental assessment process.

The proposed location of the hydrometallurgical plant contemplated in the FS is at Pine Point, NWT, which is a brownfield site formerly used as a lead/zinc mining operation located 90 kilometres east of Hay River in the NWT. This proposed site is accessible by all-weather roads and highways. A temporary barge dock and yard at the shore of Great Slave Lake would be developed for the movement of concentrate and supplies. Offices, shops, yards, and access roads to the tailings management facility and the temporary barge dock on Great Slave Lake would need to be developed. Clean (low GHG) electrical power would be obtained from the southern NWT power grid, from the Taltson Dam hydroelectric facility. The use of diesel generators to supplement the grid power is planned for times when hydroelectric power availability is limited at the expanded production rate.

*13. Capital and Operating Costs*

Capital Cost Estimate

A summary of the FS capital cost estimate for the Nechalacho Project is presented in the following table.

| **Nechalacho Project Capital Cost Summary** | | | |
|---|---|---|---|
| **Cost Category** | **NWT[(1)] ($ million)** | **LA[(2)] ($ million)** | **Total ($ million)** |
| Mine development | 81.58 | - | 81.58 |
| Main process facilities | 351.24 | 192.51 | 543.75 |
| Infrastructure | 150.68 | 78.82 | 229.50 |
| EPCM | 119.27 | 38.57 | 157.84 |
| Indirect construction costs | 175.56 | 27.25 | 202.81 |

| Nechalacho Project Capital Cost Summary | | | |
|---|---|---|---|
| **Cost Category** | **NWT[(1)] ($ million)** | **LA[(2)] ($ million)** | **Total ($ million)** |
| Owner's costs | 36.76 | 18.95 | 55.71 |
| Contingency | 120.91 | 44.90 | 165.81 |
| Closing costs / bond | 13.00 | 3.16 | 16.16 |
| **Pre-production capital cost** | **1,049.00** | **404.16** | **1,453.16** |
| Sustaining capital | 102.72 | 19.12 | 121.84 |
| **Total capital cost** | **1,151.72** | **423.28** | **1,575.00** |

**NOTES**:

(1) NWT – Costs applicable to the Nechalacho and Pine Point sites in the Northwest Territories.
(2) LA – Costs applicable to Geismar, Louisiana.

The scope of the estimate encompasses the engineering, administration, procurement services, construction, pre-commissioning and commissioning of the project. The estimate was completed to a level consistent with an AACEI (Association of Advanced Cost Engineering International) Class 3 estimate with target accuracy level of ±15%, based on second quarter 2012 prices, excluding escalation.

The total estimated pre-production capital cost is $1.453 million. The life-of-mine sustaining capital is estimated at $122 million.

Operating Cost Estimate

A summary showing the average annual and life-of-mine unit operating costs by project cost area is presented below.

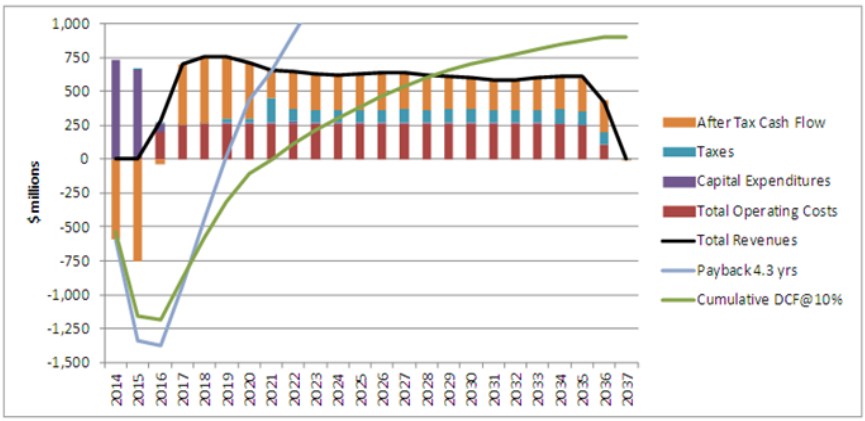
| Life of Mine Average Operating Costs per Project Cost Area | | |
|---|---|---|
| **Project Section** | **Average Annual Costs ($ million)** | **LOM Average Unit Costs ($/t milled)** |
| Reagents & Consumables | 97.2 | 133.20 |
| Fuel & power | 50.7 | 69.48 |
| Labour | 36.7 | 50.26 |
| Freight | 29.4 | 40.31 |
| G&A | 26.8 | 36.74 |
| Other | 23.7 | 32.29 |
| **Project total** | **264.5** | **362.28** |

The FS operating cost estimates have been prepared on an annual basis for the life of the mine. The operating cost estimate has been prepared with an estimated level of accuracy of ±15% based on the design of the plant and facilities as described in detail in the FS.

Cash Flow Analysis

An assessment of the project has been prepared on the basis of a discounted cash flow model, from which net present value ("NPV"), internal rate of return ("IRR"), payback and other measures of project viability can be determined. Assessments of NPV are generally accepted within the mineral industry as representing the economic value of a project after allowing for the cost of capital invested. A 10% discount rate is commonly used for the base case.

A summary of the Life of Mine cash flows and the cumulative discounted and undiscounted cash flows is presented below.




The table below shows the results of the economic evaluation of the FS projected cash flows.

| Feasibility Study Economic Evaluation | | | | |
|---|---|---|---|---|
| | **Discount rate (%/year)** | **Pre-Tax $ million** | **After Tax $ million** | **Payback (years)** |
| Undiscounted Cash Flow | | 6,052 | 4,381 | 4.3 |
| Net Present Value | 8 | 1,833 | 1,262 | 5.5 |
| | 10 | 1,351 | 900 | 6.3 |
| | 12 | 981 | 620 | 7.2 |
| Internal Rate of Return | | 22.5% | 19.6% | |

The FS estimates that the Nechalacho Project provides a payback of 4.3 years on the undiscounted cash flow, or 6.3 years on the cash flow discounted at 10%/year, leaving a considerable reserve "tail". The cash operating margin is seen to remain positive over the whole Life of Mine period, and is particularly strong in the first four years of full production.

*14. Exploration, Development and Production*

Optimization of the FS

During the course of executing the FS, Avalon had identified a number of opportunities for project optimization that may improve project economics, reduce technical risk, enhance metallurgical recoveries, improve operational efficiencies and to meet environmental requirements. These include:

- Reviewing the current mine plan and design in particular the crusher location, access ramp and paste backfill system.
- Optimization of the crushing and grinding circuit, plant layouts and materials of construction.
- Laboratory testwork on the concentrator flowsheet to further improve reagent selection and flotation recoveries.
- Improvements to the hydrometallurgical plant processes.
- Alternative impurity removal scenarios.

- Potential to separate lanthanum and cerium at the hydrometallurgical plant and stockpile for future sales.
- Potential to reintroduce cracking of zircon to increase direct production of HREE and separate the by-products from the EZC.
- Potential sales of magnetite by-product from the concentrator.
- Potential to defer construction of the refinery and toll process mixed rare earth concentrate through a refinery or refineries built and operated by others.
- Potential to use excess capacity in the refinery to toll process third party production and reduce operating costs.
- Updated environmental studies, including water treatment testing to demonstrate compliance with regulatory requirements.
- Energy options and other potential cost reductions associated with road access.

These opportunities are under consideration and will continue to be investigated as the Nechalacho Project proceeds.

**(B) Current Work and Future Plans**

Subsequent to the completion of the FS in April 2013, the Company has been investigating optimization opportunities identified in the FS and conducting testwork/technical studies necessary to confirm potential benefits and with a view to potentially updating the development model of specific opportunities among those noted above. A number of design optimization activities were initiated that have focused primarily on improving project economics, improving operation efficiency and reducing project risk. These include the following:

- Underground mine plan, including mining method, underground equipment and facilities
- Nechalacho site and concentrator building layout and design
- Hydrometallurgical plant location
- Concentrate handling and shipping
- Metallurgical process development for both the concentrator and hydrometallurgical plant

In addition two further drill programs were completed in winter (HQ rig) and summer (PQ rig), 2014. These programs, totalling 22 holes and 4,908 metres, were mainly for the purpose of collecting further mineralized drill core for metallurgical purposes. The geological drill database has been updated but no new resource has been estimated.

Underground Mine

An initial study was carried out to determine the most appropriate mining method to be used. Particular consideration was given to the mining cost, the undulating floor of the Basal Zone, the changing Basal Zone thickness, and the need to be able to maintain a relatively constant grade of ore. A hybrid mining method consisting of "drift and fill" primary stopes, and "up-hole" bulk mining (uppers for the secondary stopes) was selected and a new mine plan developed accordingly for a 2,000 tonnes of ore per day, 20 year life-of-mine operation.

Concentrator Plant

The crushing and milling circuits have also been re-examined. The milling circuit can be revised to include a SAG mill allowing the removal of secondary and tertiary crushing and resulting in more energy efficient comminution circuit. A further study concluded that there were both cost and operability advantages in moving the primary crusher from the underground location previously considered, to an above ground location near the SAG mill. This change also included replacing the conveyor system with haul trucks to bring the ore to the surface.

Laboratory testwork and a pilot plant trial of an updated Concentrator flowsheet have also been completed. This work has confirmed a potential overall improvement in REE flotation recoveries to approximately 89% (compared to approximately 78% in the FS) using a simpler and easier to operate flowsheet.

These results were achieved using a flowsheet without de-sliming ahead of flotation, with no gravity enrichment of final concentrate and with zero recycling of tailings from the four stages of cleaner flotation; all of which will result in a simpler plant to operate. The principal change has been the introduction of a superior reagent suite together with an increase in the flotation mass pull from 18.0% to 21.4%.

Environmental testing of the new tailings composition from the modified reagent suite has indicated no negative impacts on environmental performance. A simplified flowsheet is anticipated to improve environmental performance through reduced energy use, reduced carbon dioxide emissions and improvements in water treatment efficiencies.

As part of the optimization work, potential modifications are expected to be made to the site layout and the concentrator including revising the milling equipment and developing the surface ore handling/crushing area, modifying the equipment layout in the concentrator building and reducing the required size and volume of the building.

Hydrometallurgical Plant Flowsheet

Significant modifications to the Hydrometallurgical Plant flowsheet are now envisaged based on the extensive testwork program undertaken since the FS.

This flowsheet optimization work for the Hydrometallurgical Plant has resulted in the development of an alkali cracking process to potentially replace the sulphuric acid baking used to treat the flotation concentrate in the FS. Optimization of this flowsheet is nearly completed with the details around reagent recovery and recycling being the only outstanding items. Work here has indicated an 80% reduction in hydrochloric acid ("HCl"), 90% reduction in magnesium oxide and almost 100% reduction in calcium carbonate could be achievable.

The sulphuric acid baking process utilized in the FS resulted in approximately 47% of the HREE contained in the flotation concentrate (as well as the niobium and tantalum) remaining trapped in the Enriched Zirconium Concentrate ("EZC") specialty by-product. The alkali cracking process successfully alters (or "cracks") the zircon in the flotation concentrate which enables the contained HREE (and most of the zirconium) to be released into solution. Total HREE recoveries reporting to the Refinery could now be in excess of 90% of the HREE in the flotation concentrate, as opposed to the approximately 52% recovery contemplated in the FS. In addition, the alkali cracking process would allow for the recovery of zirconium in a form for which there is already established markets.

A further benefit of this alternative process is that the hydrochloric acid will be recovered without the use of sulphuric acid and the production of large volumes of gypsum waste. Instead, a clean sodium chloride (salt) waste product is produced which is easier to dispose of and could potentially be of some use. The reduction in HCl transport achieved through re-cycling is an additional cost and sustainability advantage.

Light rare earth element ("LREE") leach recoveries are also generally improved with the updated flowsheet (with the exception of cerium which becomes oxidized during the cracking process, making it less amenable to the acid leaching).

Hydrometallurgical Plant Location.

Several sites in western Canada are under consideration for the location of a potential new Hydrometallurgical Plant design. The original design contemplated in the FS was planned to be located in Pine Point, NWT, but this area has insufficient infrastructure to support the new potential plant design. Geismar was also considered as a potential location, but costs for transporting the concentrate to Louisiana remain high. Eventually a

number of potential sites meeting the necessary infrastructure requirements were identified in Saskatchewan and Alberta and these are now undergoing further evaluation. An excellent potential site was identified in Saskatchewan, but nothing has yet been finalized.

The potential for re-locating the Hydrometallurgical Plant outside the Pine Point, NWT area would likely require the shipment of concentrate by rail from Hay River, NWT. The entire shipping process has been carefully looked at including the containers required both for barge shipment and rail shipment, the concentrate loading requirements at Nechalacho, barging across Great Slave Lake, rail car requirements for shipment from Hay River, and a storage/trans-shipment facility at Hay River. A concept has been developed to include all of the shipping components from container loading at Nechalacho to railcar loading in Hay River in a single contract, potentially reducing project capital costs and simplifying the shipping operation.

It is noted that these changes have been presented to the regulators, Aboriginal groups and other communities of interest and due to the environmental benefits of these changes associated with lower energy use, fewer reagents and water treatment benefits, are not considered significant and will not impact on the permitting process in the NWT.

Metallurgical Process Development

Metallurgical testwork since the FS has been conducted under the direction of the Company's Senior Vice President, Metallurgy and Technology Development, Mr. David Marsh. Recent work has focused on various optimization opportunities within the FS base case flowsheets for the Concentrator and in particular for the Hydrometallurgical Plant.

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 recovery circuit(s) 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. The material is being stored in Yellowknife and Lakefield, Ontario, 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.

Efforts to recover the niobium and tantalum from the solid residue after acid leaching have so far proved unsuccessful and work in this regard has been placed on hold. This latest work has confirmed that total HREE recoveries of approximately 93% can be achieved in the hydrometallurgical plant directly from the flotation concentrate.

The final economics for the potential revised process are still being determined. However, initial estimates of increased power and reagent consumption associated with the processes and logistical issues have necessitated consideration of alternative locations for the hydrometallurgical plant with better infrastructure and reagent availability.

In fiscal 2016 Avalon conducted metallurgical testwork investigations related to the potential recovery of zirconium and production of marketable quality zirconium basic sulphate ("ZBS") and zirconium oxychloride ("ZOC") products.

Refinery

In early 2014 the Company entered into an agreement which would have had Solvay toll-process the Company's rare earth concentrate into separated and purified rare earth oxides rather than the Company building its own refinery. In early 2016 Avalon and Solvay mutually terminated their refining agreement and left the door open to initiate discussions on an updated refining toll contract when market conditions became favorable for such discussions to take place.

Markets Update

The Company continues to monitor developments in the global rare earths market. Illegal production in China is reported to be at least 20,000 tonnes per year and some estimates go as high as 40,000 tonnes. Verification of the exact quantity being produced or sold illegally is very difficult. As a result of the illegal activity, the market price for all rare earths has fallen dramatically and availability out of China is reported to be good. This has lowered the pressure on non-Chinese consumers to seek outside China sources of supply and has led, in part, to the Chapter 11 filing of Molycorp Inc., one of the two major producers of rare earths outside China. In 2016 very few consumers of rare earths were concerned about the availability of rare earths. Low pricing levels and product availability has reduced the interest of consumers in investing in rare earth projects outside China. However, since the start of 2017 prices for certain REE (Nd, Pr, Dy) have begun to increase due to increased demand for magnets for motors of hybrid and electric vehicles. Future price trends for rare earths still depend on decisions made in China. China remains the dominant producer at approximately 90% of supply. Prices could continue to increase as demand increases and if China continues to restrict output from illegal producers and continues to restrict output from producers who do not follow environmental regulations. Prices could be maintained or even fall as demand increases if China decides to release stockpiles of rare earths it has apparently accumulated during the last few years or if it instructs government approved producers to increase supply.

2017 Work Program

During fiscal 2017 a brief site visit was conducted to do the camp maintenance work and do some sampling on known lithium occurrences on the northern part of the property. There are three mineralized zones on the property immediately north of Thor Lake with geology similar to classic pegmatite deposits, referred to historically as the R-, S- and T-Zones. It was known that these zones contain lithium-bearing minerals but no systematic mapping and sampling had previously been conducted. The work in this short program concentrated on the S Zone, which is exposed in outcrop and old trenches. Continuous chip samples were collected in the trenches and thirteen selected samples sent for analysis as an initial test for lithium enrichment. The remaining samples will be analyzed in the next phase of analytical work. The thirteen initial samples were submitted to a lab in Yellowknife for preparation and analysis yielding encouraging results. The average $Li_2O$ content of all thirteen samples was 1.0% $Li_2O$ with two samples containing over 2% $Li_2O$. Understanding of the overall distribution of lithium in the S Zone will improve with further analytical work and mineralogical studies.

**Separation Rapids Lithium Project**

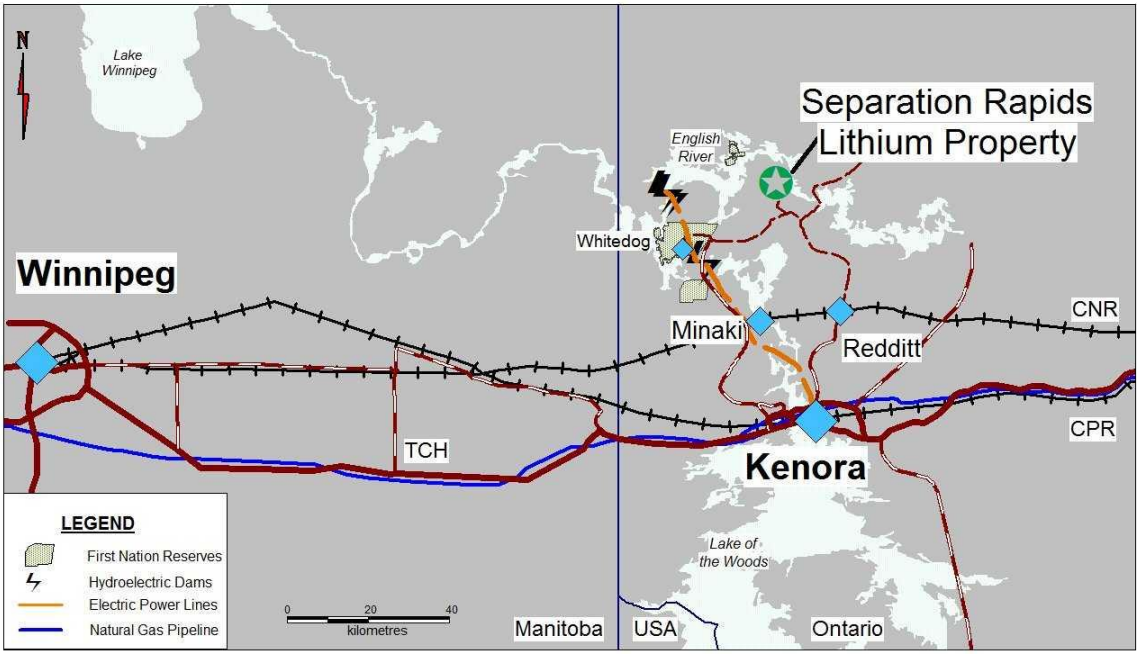
**(A) Summary of Technical Report**

*1. Current Technical Report*

The most recent technical report on the property is entitled "NI 43-101 Technical Report on the Preliminary Economic Assessment of Lithium Hydroxide Production Separation Rapids Lithium Project Kenora, Ontario" dated November 10, 2016, effective October 21, 2016 (the "Technical Report") and prepared by Steven R. Aiken, P.Eng. and Kevin E. Hawton, P.Eng. of Knight Piesold Limited, Richard Gowans, P.Eng., Christopher Jacobs, CEng, MIMMM, Eur Ing, Bruce Pilcher, CEng, FIMMM, FAusIMM(CP) and Jane Spooner, P.Geo, all of Micon, and David L. Trueman, Ph.D., P.Geo, each of whom is a qualified person pursuant to NI 43-101.

The current Technical Report follows an earlier, Pre-feasibility Study ("PFS") completed in 1999 and updated in 2000, also by Micon. The PFS was based on the original development model of producing a lithium mineral product for glass-ceramics applications and did not consider battery materials as a potential primary product. The Technical Report was prepared to exclusively evaluate the lithium battery materials market opportunity and the economics of producing a lithium hydroxide product from the petalite concentrate, something which has not been done previously to the knowledge of the Company. It does not preclude the possibility of producing petalite concentrate for the glass-ceramics market, since it is an intermediate product for battery materials production. Future work will consider both markets as opportunities.

**Figure 2.1**
**Location of the Avalon Separation Rapids Property**




Avalon, 2016.

The Separation Rapids property is located in northwestern Ontario, 55 km due north of Kenora and about 70 km by road. It is centred on latitude 50 15' 30" N, longitude 94 35' W (UTM coordinates: 388441E 5568996N in Zone 15, NAD83). In the Technical Report, the property consists of eight mineral claims and one Mining Lease. The claims comprised 90 claim units, totalling 1,440 ha (3,558 acres). The Mining Lease encompasses the mineralized zone and is referred to as Lease or Licence Number 108395 (Paterson Lake CLM469). The lease covers an area of 421.441 ha over the area of the Separation Rapids Lithium Deposit ("SRLD") and adjacent lands. Subsequent to the Technical Report Avalon acquired an additional seven claims bringing the property to fifteen mineral claims comprising 153 claim units totalling 2,448 hectares. With the Mining Lease the total area is now 2,869 hectares.

Other than minor reclamation requirements that are largely funded under the existing Advanced Exploration Approval (presently called Bulk Sample Permission), there are no known environmental liabilities associated with the Separation Rapids property. Avalon has the right to access the Separation Rapids property to conduct routine exploration work, although additional Exploration permits will be required for larger scale work programs such as diamond drilling in the future. This involves further consultation with Indigenous peoples. There are no known factors or risks that may affect access, title or the right or ability to perform work on the property.

Mining and mineral concentration will take place at the Separation Rapids property. Petalite concentrate will be shipped by truck to a hydrometallurgical processing plant planned to be located in the City of Kenora, Ontario. A trans-shipment facility will be required in order to access rail transportation for product shipment and inbound supplies. Avalon has not made the final site selection for the hydrometallurgical plant and trans-shipment facility and has not acquired ownership or rights to any land for these facilities.

The Separation Rapids area is typical of much of northwestern Ontario and the Canadian Shield. The property is relatively flat with an average elevation of approximately 350 m asl. Local topographic relief is limited to 50 m or less with typical Precambrian glaciated terrain. The English River system is proximal to all claim groups. The

area is located within the Boreal Hardwood Transition or Mixed Boreal Forest. A Species at Risk Act assessment was completed and no endangered or at risk species were identified in the area of the proposed project. The climate is typical of Canada's mid-latitudes with long, cold winters and comparatively short spring-summer-fall periods.

The closest centre with significant services is Kenora. Forestry, tourism and mining are the three largest sectors of the Kenora economy.

Properties immediately adjacent to the property were held by Avalon, Pacific Iron Ore Corporation, GoldON Resources Ltd. and Gossan Resources Ltd. Subsequent to the completion of the Technical Report Avalon has acquired the claims owned by GoldON.

*3. History*

Rare-element mineralization in the area was first encountered along the English River near Separation Rapids in 1932. The petalite-bearing SRLD and an associated group of rare-metal pegmatites, were discovered by Dr. Fred Breaks of the Ontario Geological Survey (OGS) as a result of a detailed study of rare-metal pegmatites in the region between 1994 and 1996.

*4. Geological Setting, Mineralization and Deposit Types*

The Late Archean SRLD belongs to the petalite sub-type of the complex-type class of rare-metal pegmatites. The SRLD, its parent granite, the Separation Rapids Pluton, and associated rare-metal pegmatites occur within the Archean Separation Lake Metavolcanic Belt (SLMB) which forms the boundary between the English River subprovince to the north and the Winnipeg River subprovince to the south. Both subprovinces are part of the larger Archean Superior Province of the Canadian Shield. Avalon has divided the SRLD into the Separation Rapids Pegmatite, the Western Pegmatite and the Eastern Swarm.

As described in the Technical Report, petalite, potassium feldspar and sodium feldspar are the major rock-forming and primary minerals in the Separation Rapids Pegmatite (SRP), with subordinate amounts of other minerals including spodumene, lithian muscovite, lepidolite, and quartz. The petalite-bearing Unit 6 is the principal unit of interest within the Separation Rapids Pegmatite (SRP). Geological mapping and assays for surface and drill core samples show that mineralogy and lithium oxide ($Li_2O$) grades of the mineralization in the SRP are relatively homogeneous and that the petalite is close to the theoretical (stoichiometric) chemical composition, as well as being very pure, with marked absence of deleterious elements such as iron. Subsequent to the completion of the Technical Report Avalon has completed further work on the mineralogy and resources and also drilling as reported in Section (B)(c) below due to recognition of the abundance and importance of lepidolite increased since the completion of the report.

*5. Exploration*

Following the discovery of the SRLD in 1996, Avalon carried out a brief prospecting and sampling program in November, 1996. This was followed by a program of geological mapping, trenching, line-cutting and magnetometry in 1997 and 1998.

In the period from 2000 to 2014, little work of a geoscientific nature was carried out at the property. The main activity relating to advancing the project was metallurgical and, consequently, the main activities at site were collection of samples, up to bulk sample size, for metallurgical testing.

*6. Drilling*

Avalon undertook a number of drilling campaigns between 1997 and 2001. In the Technical Report the total number of drill holes is 72 for a cumulative total of 10,708 m, as summarized in table 6.1. Three of these holes were

drilled between 26 April and 4 May, 2001 for the purposes of a geomechanical investigation of the rock mass at the proposed open pit mine and to develop suitable pit slope design parameters. The potential for water inflow into the open pit was also evaluated.

**Table 6.1**
**Summary Drilling Statistics, Separation Rapids Pegmatite**

| Year | Purpose | Number of Holes | Metres | Size |
|---|---|---|---|---|
| 1997 | Geological/resources | 30 | 4,922 | NQ |
| 1998 | Geological/resources | 27 | 3,829 | NQ |
| 2001 | Geotechnical | 3 | 537 | NQ |
| 2001 | Geological/resources | 12 | 1,420 | NQ |
| **Total** | | **72** | **10,708** | |

*7. Sampling, Analysis and Data Verification*

Surface samples taken in the 1990s were shipped to independent laboratories, the one in Thunder Bay, Ontario for preparation then to other independent laboratories in Mississauga, Ontario and Vancouver, British Columbia for subsequent assaying. Surface samples were analysed for lithium and a range of other elements including tin, rubidium, cesium, tantalum, gallium and niobium.

In the 1990s, drill core was logged and split with half of the core being sent for assay and the other half being stored in core boxes on site. Core sample intervals were varied according to the lithology, to a maximum of 3 m. Split core samples were shipped to a laboratory in Don Mills, Ontario, where they were assayed for lithium, rubidium, cesium and tantalum. A total of 2,516 drill core samples were assayed with an additional 223 duplicate analyses. Check-assaying was routinely carried out for lithium and rubidium in an independent laboratory.

The drilling database contains 185 specific gravity values for various lithologies on the SRLD. This comprises 118 measurements on pegmatite, 66 on amphibolite and one measurement which was considered an outlier and was rejected. The average SG for pegmatite is 2.62 for the 118 samples (one high outlier at 3.16 removed). The average SG for amphibolite (waste) is 3.04 based on the 66 measurements. The SG measurements show low variability (standard deviation of 0.08, or 3% for pegmatite and 0.05 or 2% for amphibolite) indicating that the risk of significant error is also low.

The mineral resource estimate completed was based on the original drilling by Avalon in 1997 to 2001, and the assay database created in 1999. Quality assurance/quality control procedures were applied and included check assays at a second laboratory and independent assaying. Subsequently, Avalon completed further verification of the drill data, including cross-checking the database against original field records, such as drill logs, cross-checking the assays against laboratory assay certificates and reassaying drill core splits with inserted internally certified lithium standards. The comparison of the different independent laboratory data sets is favourable. This indicates high and acceptable reliability in the analyses.

Avalon also verified the drill hole database against historic data records such as drill logs, assay certificates, and other original sources of data in order to ensure that there were no errors present in the Avalon database used for resource estimation. Drill hole angle, direction and the maximum hole depth were also verified.

As of 6 July, 2016, the Avalon database contained records for 2,790 downhole samples which were assayed for the 1997, 1998 and 2001 drill programs. A random sample of 12% of the assay values contained in the Avalon database were compared against the values as reported on the original certificates of analysis. No errors were found in the downhole assay values as entered into the Avalon database from the original historic database.

Avalon prepared a certified rock lithium analysis standard by shipping 16 kg of Separation Rapids Pegmatite to an independent laboratory in Langley, British Columbia that specializes in preparing samples for rock analysis standards. A Round Robin analysis procedure was then completed with five samples of the material being shipped to each of six laboratories for lithium analysis, with associated analytical methods performed.

It was concluded that the lithium standard was a suitable standard for QA/QC of Separation Rapids drill core samples. The certified value for the standard SR2016 is 1.48% $Li_2O$ with a standard deviation of 0.03% $Li_2O$ for future analyses of Separation Rapids samples.

*8. Mineral Processing and Metallurgical Testing*

A number of phases of metallurgical testing since 1997 have been completed by Avalon using samples obtained from the SRLD. The work prior to 2014 was mainly undertaken at a lab in Ontario. This work not only included the recovery of petalite, but also a number of other mineral products which can be found in the lithium bearing pegmatite as well. The work since 2014 has focused on the recovery of a petalite flotation concentrate and the subsequent processing of this concentrate to produce a high quality lithium hydroxide product suitable for the lithium battery industry.

Avalon utilized a German company that specializes in the processing of high purity industrial and strategic minerals to develop a process for recovering the petalite and achieving target product grade of >4% $LiO_2$. This contractor also investigated the recovery of a low impurity feldspar by-product and tested this product to determine its suitability in a number of industrial applications.

Avalon investigated the potential to use petalite as a source of both lithium carbonate and lithium hydroxide. Initial investigations for producing these lithium chemicals were completed by two separate independent contractors.

Table 8.1 lists all the flotation/concentrator testwork reports issued since the project was re-activated in 2014. Table 8.2 lists the hydrometallurgical testwork programs.

**Table 8.1**
**List of Mineral Processing Testwork Reports**

| Date | Title | Remarks |
|---|---|---|
| June 2014 | Processing of Petalite Ore from Separation Rapids | Petalite and feldspar flotation testwork on coarse grained mineralized material. |
| August 2014 | Physical Processing of Fine Grained Ore from Separation Rapids | As above but using fine grained mineralized material. |
| September 2014 | Processing of Petalite Ceramic Application Tests | Sample of petalite was tested to determine key physical/chemical characteristics for ceramic applications. |
| September 2014 | Sample Production of Petalite and Feldspar Concentrate | 20 kg of both materials were produced for providing samples to potential clients. |
| November 2014 | Flowsheet and Core Machinery | Base flotation flowsheet and preliminary equipment recommendations. |
| December 2014 | Locked Cycle Petalite Flotation Tests on Fine Grained Ore (FGO) | Bench scale determination of petalite flotation recovery with locked cycle tests. |
| June 2015 | Pretests Pilot Scale Sample Production of Petalite and Feldspar Concentrates | To determine optimum conditions for magnetic separation and product filtration. |
| July 2015 | Analysis of Nb/Ta in Magnetic Fraction of Separation Rapids Ore | Determination of nature of Nb and Ta in magnetics discard stream. |
| December 2015 | Testing and characterization of a feldspar filler | Sample of feldspar was tested to determine key physical/chemical characteristics for |

| Date | Title | Remarks |
|---|---|---|
| | | flier applications. |
| May 2016 | Pilot Scale Sample Production of 1t Petalite Concentrate | Bulk sample processed to produce a 1 t sample of petalite. |
| June 2016 | Evaluation of HPQ Potential of Flotation Tailings from the Big Whopper Pegmatite | Testwork investigations to determine if tailings from pilot plant could be used to produce a high purity quartz (HPQ) product. |
| May 2016 | Testing of Feldspar sample as potential paint filler | Note confirming tests indicating Avalon feldspar matches existing paint fillers. |
| 2015/2016 | Various flotation tests analyses | Excel spreadsheets with test results plus various small petalite sample production tests. |
| October 2016 | Sample Production – Feldspar Filler | Feldspar concentrate with lower silica content produced by introducing a number of cleaner flotation stages. This was then milled to a d50 of 6 µm and determined to have a SWERF value of 0.6%. |

**Table 8.2**
**List of Recent Hydrometallurgical Testwork Reports**

| Date | Title | Remarks |
|---|---|---|
| May 2015 | Preliminary Li leaching, purification and Li carbonate and hydroxide preparation from petalite concentrate | Testwork to determine if battery specification carbonate and hydroxide can be produced from petalite. |
| December 2015 | Li Carbonate Production from Petalite Concentrate | Bench optimization of process to produce battery specification lithium carbonate. |
| December 2015 | Process Alternatives- High Level Operating Cost Assessment | Compared various lithium hydroxide production processes to identify most cost efficient. |
| September/October 2016 | Hydrometallurgical Bench Scale Test Program/Process Simulation and Economic Model | Bench scale assessment of most favourable conditions for main stream unit operations including electrodialysis and development of process design criteria. |

Through the completion of these testwork programs Avalon was able to demonstrate the following:

- A petalite concentrate assaying over 4% $Li_2O$ can be produced which, because of its low impurity levels, is potentially an excellent feed material to the specialized glass/ceramics industries.
- A low impurity mixed (sodium/potassium) feldspar concentrate can also be produced which has applications in a number of ceramic applications as well as a filler in paints and other products.
- There is potential to produce other by-products from the mineralized material, including a high purity quartz, and for additional lithium recovery from the magnetic fraction.
- The petalite can be used as a feed source to produce both lithium carbonate and lithium hydroxide for the battery and energy storage industries.
- The use of electrodialysis has been shown as a viable for producing lithium hydroxide from a lithium sulphate solution.

There remain a number of areas within the process flowsheet that have the potential for improvement and optimization in terms of lower costs and increased process efficiencies.

*9. Mineral Resource Estimates*

Lithium and feldspar mineral resource estimates for the Separation Rapids project have been prepared by Benjamin Webb, P.Geo. (B.C.), Principal of BMW Geoscience LLC. The mineral resource estimates have been reviewed in detail by David L. Trueman, Ph.D., P.Geo., who is the Qualified Person for the resource estimates.

Lithium Mineral Resource Estimate

The Technical Report project database contains 69 drill holes for 10,171 m with 2,790 assay results. The data were used to create a 3D model of the host lithology which was used to constrain the interpolation of assays. The project database is maintained in Maxwell DataShed™ software and the resource estimation utilized MineSight 3D.

The Separation Rapids Lithium Project Measured plus Indicated and Inferred mineral resource effective October 21, 2106 are presented in the table 9.1 below.

**Table 9.1**
**Separation Rapids, Mineral Resource Estimate at 0.6% $Li_2O$ Cut-off Grade**
**As at 21 October, 2016**

| Class | Tonnes (Mt) | $Li_2O$ (%) | Total Feldspar (%) | $Ta_2O_5$ (%) | $Cs_2O$ (%) | $Rb_2O$ (%) | SG |
|---|---|---|---|---|---|---|---|
| Measured | 4.03 | 1.32 | 39 | 0.006 | 0.017 | 0.343 | 2.66 |
| Indicated | 3.97 | 1.26 | 39 | 0.007 | 0.025 | 0.362 | 2.67 |
| Measured plus Indicated | 8.00 | 1.29 | 39 | 0.006 | 0.021 | 0.352 | 2.66 |
| Inferred | 1.63 | 1.42 | 39 | 0.008 | 0.016 | 0.360 | 2.64 |

Notes:

1. CIM Definition Standards for Mineral Resources and Mineral Reserves, 10 May, 2014 were followed for this mineral resource estimate.
2. The Qualified Person for this mineral resource is David L. Trueman, Ph.D.,P.Geo.(MB).
3. The resource estimate is constrained by a 3D geologic model of the mineralized material.
4. Assay intervals for $Li_2O$, $Ta_2O_5$, $Cs_2O$ and $Rb_2O$ were interpolated using the Inverse Distance Weighted method to create a 3D block model.
5. The resource cut-off grade of 0.6% $Li_2O$ was chosen to capture mineralization that is potentially amenable to mining, mineral concentration and off-site processing.
6. Li, Ta, Cs and Rb were originally analyzed on all samples at an independent laboratory in Thunder Bay, Ontario utilizing ICP (Li, Ta) and AA (Rb and Cs) and check analyses completed at a second independent laboratory in Don Mills, Ontario utilizing AA (Li) and ICP (Rb).
7. As well as due diligence to verify historic data, Avalon completed additional check analyses of historic drill core in 2016 utilizing an independent laboratory in Vancouver with a combination of fusion and ICP (method CCP-PKG01). Included as QA/QC procedures was a lithium rock standard within the check analysis batches.
8. Total Feldspar is the total of potassium feldspar (microcline) and sodium feldspar (albite) and the value reflects the mean and median value of all samples with quantitative mineralogy determined.
9. The percentage of Total Feldspar is based on analyses completed utilizing X-Ray diffraction and Qemscan® instrumentation on samples representing all lithological subunits of the mineral deposit. These analyses were completed at a Canadian university in 1999 (method: XRD) and an independent laboratory in 2016 (XRD and Qemscan®, Kamloops). This is supported by quantitative mineralogy of metallurgical samples determined at two independent facilities.
10. All figures are rounded to reflect the relative accuracy of the estimates. Summation of individual columns may not add-up due to rounding.
11. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into Mineral Reserves.
12. In addition, while the terms "measured", "indicated" and "inferred" mineral resources are required pursuant to National Instrument 43-101, the U.S. Securities and Exchange Commission does not recognize such terms. Canadian standards differ significantly from the requirements of the U.S. Securities and Exchange Commission, and mineral resource information contained herein is not comparable to similar information regarding mineral reserves disclosed in accordance with the requirements of the U.S. Securities and Exchange Commission. U.S. investors should understand that "inferred" mineral resources have a great amount of uncertainty as to their existence and great uncertainty as to their economic and legal feasibility. In addition, U.S. investors are cautioned not to assume that any part or all of Avalon's mineral resources constitute or will be converted into reserves.

Variographic analysis was undertaken to support the classification of the resource.

A block model covering the entire Separation Rapids Pegmatite consisting of 10 m by 3 m by 10 m blocks was constructed using MineSight 3D software. Blocks were elongated east-west to fit the strike of the deposit and were not rotated.

Interpolation of block values was done in two passes using the Inverse Distance Weighted with a power parameter of 2 (IDW2) method and block matching on ore code (OREC). A mineralization code of 6 was assigned to all blocks at least 1% within the 3D geological model of Unit 6 and a mineralization code of 1 was assigned for all other blocks. This ensures that all blocks containing mineralization received an interpolated grade. The search ellipsoid was rotated 105° to match the strike of the deposit so that the narrowest search distance was at a 15° azimuth perpendicular to strike.

Estimated Feldspar Resources

The Separation Rapids Project is a potential producer of high purity feldspar, a mixture of albite and potassium feldspar, in addition to lithium chemicals and/or petalite. In order to determine the feldspar content of the SRLD various mineralogical studies have been completed. As reported in the technical report, these included Qemscan and X-Ray diffraction. It is considered that Qemscan® measurement of 39% on individual samples can be accepted as a reasonable estimate of the feldspar content of the whole pegmatite body. In addition, Qemscan of bulk metallurgical test samples gave similar values with a mean of 41.3% total feldspar and a median of 39.7% total feldspar.

*10. Mining Operations*

Pit Optimization

Pit optimization was undertaken using the mineral resource block model imported into Surpac™ to create a block model compatible with the pit optimization software. A preliminary optimization was performed using Whittle™ software. Cost parameters were applied to the optimization model to assess the volume of mineral resources available for economic development. The purpose of the modelling was to generate an estimate of the mineable tonnage based on the mineral resources.

As a result of optimization, a number of ultimate pit shells were produced. Pit shell 6 was chosen as the optimum pit. A conceptual pit design was conducted using recommended slope design parameters and the optimum pit shell 6 as a template. The bench to bench face angle is $80^{o}$. A safety berm width of 4 m was applied every 10 m bench except where an 8 m safety berm has been used every third bench. A haul road width of 15 m was used from the pit base, to the surface on the assumption that two-way traffic would be operating in the mine.

Mining Method

Conventional open pit methods using drilling and blasting, loading with excavators and shovels and hauling with rigid dump trucks are proposed. Waste from the pit will initially be composed of overburden and will be dumped in the topsoil stockpile.

The project will be undertaken by contractor-operated equipment and labour. This was selected as the base case following a cost comparison of Owner versus contractor mining operations.

Preproduction waste rock will be used to construct site roads, including the main haul roads and will also be used for the construction of tailing, concentrate and settling basin dam walls.

A production schedule has been produced in MineSched™ software. The production schedule is based on mining 700,000 t/y of high grade and 250,000 t/y of low grade material. The life of the mine is expected to be 10 years

with approximately 7.0 Mt of high grade ore at 1.41% $Li_2O$ and 2.4 Mt of low grade ore at 0.66% $Li_2O$ mined over the length of the project.

*11. Processing and Recovery Operations*

Recovery Methods

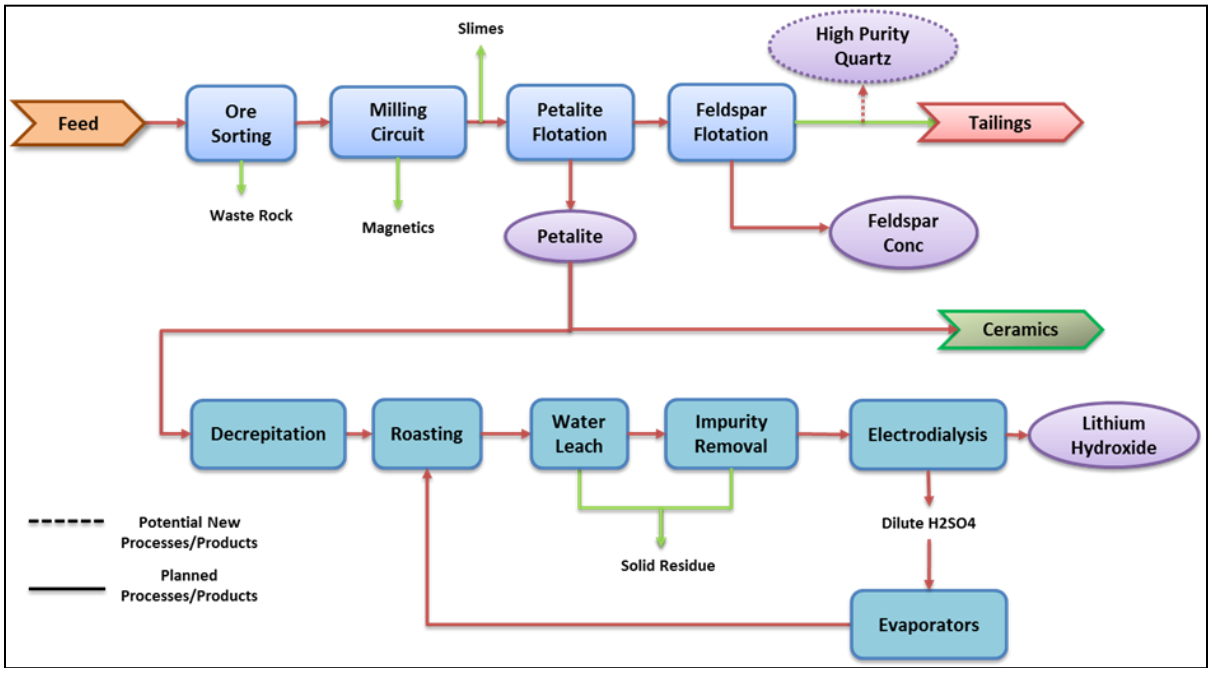
The process selected for the PEA comprises the mineral separation and recovery of a petalite concentrate containing >4.0% $Li_2O$ and a mixed sodium/potassium feldspar from petalite tailings. The process includes processing of petalite by hydrometallurgical methods to produce battery grade lithium hydroxide.

Results from the testwork programs have been used to develop a processing flowsheet, mechanical equipment list and reagent consumptions. In addition a "Metsim" simulation model of the entire process has been generated, data from which has been used for sizing process equipment and calculating heat and energy balances. The selected flowsheet is shown in Figure 11.1.

The process design is based on the following assumptions:

- Optical sorting mass waste rejection is 14.8% with lithium losses of 1.9%.
- Mass pull to slimes after comminution is 6% of sorted ore with 6.5% lithium losses.
- Mass pull to magnetics is 14.6% of sorted ore tonnage with lithium losses of 14.5%.The petalite flotation concentrate contains 4.0% $Li_2O$% and lithium recovery to petalite is 65.2% of flotation feed content.
- Water leach lithium extraction after decrepitation and roast is 93.8%.
- Lithium losses from impurity removal is 3%.
- A final lithium hydroxide product purity of 99.5% $LiOH.H_2O$.
- Plant availabilities of 93% for the concentrator and 85% for the hydrometallurgical plant.

**Figure 11.1**
**Simplified Process Block Flow Diagram**



*12. Infrastructure, Permitting and Compliance Activities*

Project Infrastructure

The Separation Rapids project includes four main facilities:

- Mine.
- Concentrator.
- Trans-shipment facility.
- Hydrometallurgical plant.

*Mine and Concentrator*

Site buildings will include separate buildings for the crusher and concentrator, maintenance facilities and warehousing, change and lunch room facilities, offices and laboratory and a guard house. Heating, ventilation and air conditioning will be provided for all buildings as required. Propane will be used to fuel the heating system. Fresh water and fire water for the site will be provided from the English River. Sanitary waste water treatment will be provided at the site using appropriately sized parallel septic tanks and field bed. The septic tanks will be pumped periodically and material discharged to an appropriately licensed facility.

Approximately 5 MW of electrical power will be required for the mine and concentrator and will be supplied from the existing Whitedog Falls hydro dam. An emergency back-up generator will also be provided at the site fueled either by diesel or propane. Diesel fuel storage facilities will be provided to supply the mine equipment and smaller site vehicles. A propane tank farm will also be installed to accommodate the site heating and back-up power generation.

Hydrogen fluoride is required in the flotation process. A facility will be constructed to receive 49% aqueous hydrogen fluoride by truck and store it as required to meet the process plant requirements.

A telecommunications system will be installed at the site to provide telephone service and internet access, and to support the site security and fire detection systems. Distribution will be provided by a fibre optics system in the concentrator and related facilities and a wireless system for the mine site.

No camp facilities are envisioned for this project. It is anticipated that the work force will live in Kenora and the surrounding area. Buses will be provided to transport workers between Kenora and the mine site.

*Trans-shipment Facility*

As there is no rail access to the mine/concentrator site, delivery of reagents to, and shipment of concentrates from, the site will be by truck. However, some of the reagents are likely to be supplied by rail and rail access will be required to get products to market. To accommodate this, a trans-shipment facility will be constructed. One potential site is adjacent to the CNR line in the vicinity of Redditt, Ontario, where there is good road access from both Kenora and the mine site.

A rail siding will be required at the site for the loading and unloading of rail cars. The siding is expected to consist of two tracks approximately 1 km in length with switches to access the mainline at each end.

Hydrofluoric acid is required for the flotation process at the concentrator. It is expected that anhydrous hydrofluoric acid will be provided by railcar from the United States. The facility will also include the capability to dilute the acid to produce a 49% aqueous hydrogen fluoride solution that will then be loaded on trucks for delivery to the mine site.

Grid power is available in the Redditt area to meet the power requirements for this facility. A small diesel generator will be provided to supply emergency power if required. A small day tank will be provided for diesel storage. Fresh water for the site will be provided either from a well or from access to a local lake. Water treatment facilities will be provided as required. Sanitary waste water treatment requirements will be minimal at the site as only a small staff is required for operations. Sewage treatment facilities will be provided as required.

It is anticipated that the site will access the communications infrastructure in the area for telephone and internet. Back-up will be provided with the use of a cellular modem.

*Hydrometallurgical Plant*

Avalon has identified several possible sites in or near Kenora that could be used for the hydrometallurgical plant. One potential location is the site of the former Abitibi paper mill an industrial site with good infrastructure having approximately 27.5 ha in area providing ample space for the required facilities.

Although the site is currently supplied by power, water, natural gas and city sanitary sewer services, most of these would need upgrading to meet the requirements of the hydrometallurgical plant. However, the site is located within easy access of the electrical power and natural gas needed for the plant.

Plant and fire water requirements will be sourced from the Winnipeg River. Water discharge is expected to be very small. It will be treated as necessary and can be accommodated by the city sewer system.

A new building will be required to house the hydrometallurgical plant. Three existing buildings may be used for offices, laboratories, lunch/wash rooms, warehouses, and product storage and load out facilities.

The site was previously served by a rail siding off the Canadian Pacific Railways (CPR) line. Although the rails have been removed it would be possible to reactivate this line to provide rail service directly to the site if that was required.

Telephone and internet services will be available from local suppliers in the area.

<u>Environmental Studies, Permitting and Social or Community Impact</u>

The project site lies in an area adjacent to the English River which supports a variety of wildlife and fisheries, as well as tourism. The area surrounding the project site is undeveloped and forested.

The Federal and Ontario Provincial permitting processes are well defined and understood. The Ministry of Northern Development and Mines is responsible for coordinating the various regulatory agencies in the mine permitting process.

The project is small in scale without many of the risks frequently found at other mines such as acid mine drainage. Based on the 2007 baseline work, all tailings, mine rock, aggregate and concentrate materials are expected to be inert and air and water quantities utilized and discharged are relatively small and can be managed to acceptable standards with conventional technologies. Meetings, including a multi-Ministry meeting, have already been held with all key regulators to develop positive relationships early and to review the proposed project. Similarly, positive relationships have already been developed with Indigenous Peoples as well as political and community representatives.

Given the relatively small size and low environmental risk, no permitting delays are anticipated and all permits should be acquired in a timely manner that will not negatively impact the project schedule. Based on discussions with the Canadian Environmental Assessment Agency in 2017, once sufficient information is provided to validate that the Canadian Environmental Protection Act 2012 (CEAA) production triggers are not exceeded, the

CEAA will not apply to the project. This means that primarily Provincial permitting will be required which will be beneficial to the permitting time line.

*Environmental Baseline*

For the mine and concentrator site, an environmental baseline study program has been conducted, investigating regional and site specific aspects, such as water quality, hydrology, vegetation, wildlife, fisheries, archaeology, and socioeconomics. The ecology of the project area was investigated with field visits carried out in all four seasons during 1998 and 1999. The majority of these data remain valid, and additional 2017 spring and fall baseline studies have been completed to validate this work. Some additional work has been completed related to more recent regulatory changes. A draft Project Description was produced in 2017 and utilized in consultation on the environmental programs with regulators and indigenous organizations. Engagement will be ongoing with respect to this process. .

Given that the proposed site for the metallurgical facility to be located in Kenora is located at an existing industrially-zoned and previously operated site, an environmental baseline study for the metallurgical site is not required. An environmental risk study will be completed on the proposed site to ensure Avalon is not inheriting liabilities from previous site use.

*Tailings and Concentrate Management*

The principal objective of the tailings and concentrate management area (TCMA) is to provide safe and secure storage of the process waste products, while ensuring the protection of the environment during operations and in the long-term after closure.

Approximately 1.2 Mt of magnetic concentrates, 0.5 Mt of tailing slime, 1.4 Mt of hydrometallurgical plant tailings, and 3.8 Mt of feldspar concentrate (partially concentrated material rejected from the petalite circuit that will undergo additional processing in future to produce a low impurity feldspar product) will be produced over the life of the project. The magnetic concentrates and a portion of the feldspar material will be stored separately due to their potential to be reprocessed in the future.

The TCMA will consist of valley impoundment type facilities located approximately 1.5 km southwest of the open pit. No fish or fish habitat will be impacted.

Tailings will be filtered in the concentrator and the hydrometallurgical plant and trucked to the TCMA as solids. The hydrometallurgical tailings will be stored with the combined tailings in the central cell of the TCMA. There will be no long term storage of tailings at the hydrometallurgical plant. The small amount of runoff water resulting from precipitation on the TCMA will be recycled back to the plant for process use, making this a zero discharge facility.

*Mine Rock Aggregate and Mineralized Material Management*

Given the inert nature of the waste material from the open pit and the scarcity of aggregate in the area, all mine rock is considered as a potentially usable aggregate product. Approximately 52 Mt of coarse mine rock aggregate and 1.3 Mt of crushed and optically sorted rejects (fine aggregate) will be generated during the life of the project. The aggregate materials will consist primarily of amphibolite and pegmatitic granite rock, with a lesser amount of feldspathic material. At this stage, these materials will be managed together. The coarse mine rock aggregate will be placed in two storage areas to the west of the open pit while the fine aggregate will be stored near the concentrator for easy access for road maintenance, storage facility construction and pit road construction. Any particulate in runoff water will be settled out in small ponds adjacent to these facilities and the water will be returned to the original drainage basins.

The mine rock aggregate materials have been characterized as non-acid generating. No fish or fish habitat will be impacted. A minimum 75 meter forested buffer will be maintained along all fish habitat to minimize potential for impacts and to allow transportation corridors for wildlife, as per consultation with aboriginal communities and regulators.

*Water Management*

The design and implementation of a comprehensive water management plan for the mine site will be fundamental to the project. The key water management issues are runoff from and seepage associated with the open pit, the plant site, the waste rock facilities and the TMCA. The principal objectives of the water management plan will be to minimize the volume of potentially impacted water generated from the site and minimize the amount of water extracted from the English River for processing and general mine site use by maximizing the use of reclaimed runoff water (for example, plant site runoff and mine dewatering flows) through internal concentrator recycling and use of filtered tailing and concentrate storage. To the extent that it is practical, all water that is impacted by processing operations to a single point in order to minimize the locations that require monitoring and treatment.

A simple water balance for the Separation Rapids site was prepared to provide estimates of the volumes of runoff reporting to each pond/basin on the site. This model will be utilized to develop more detailed water management strategies and ensure a zero discharge from the TCMA during operations.

*Closure and Rehabilitation*

Following the cessation of mining, the open pit would be allowed to flood. Flooding would occur naturally through inflows of groundwater and surface water runoff.

The TCMA will be closed and rehabilitated in a safe and secure manner in full accordance with government regulations and good engineering practices. Following closure, the TCMA will be a reclaimed landform that sheds runoff. Discussions regarding opportunities for beneficial use of the pit and TCMA are ongoing with the Indigenous stakeholders.

Progressive rehabilitation of benches of the coarse rock aggregate storage areas is planned to minimize the potential for aesthetic visual concerns during operations, particularly on the river view sides. . Full progressive rehabilitation of the first rock dump will be completed utilizing material stripped for the construction of the second rock dump to minimize reclamation costs, visual impacts, replace habitat and reduce financial assurance liabilities.

All sediment basins associated with the TCMA and the mine rock aggregate stockpiles will be breached and revegetated as necessary for closure unless alternate beneficial reuses are identified during engagement activities and permitting.

All machinery and equipment from the crusher, process plant and other ancillary facilities would be removed for reuse, salvage or disposal, and all buildings and infrastructure will be removed or demolished. All chemicals or hazardous materials will be returned to the supplier or removed to an appropriate waste disposal facility by a licensed contractor. Petroleum storage tanks will be removed in accordance with applicable regulations. General waste materials will be disposed of in an offsite, licensed landfill site.

A 5 year post-closure monitoring program will follow closure of the mine that includes maintenance of the revegetated areas, assessment of the physical stability of the aggregate storage facilities and TCMA, surface water and groundwater quality, and periodic biological monitoring of the aquatic and terrestrial ecosystems in the immediate vicinity of the site. The monitoring program will continue, as required, until the target objectives of the site closure have been achieved.

In the unlikely event that alternate feedstocks for the hydrometallurgical plant are not identified, machinery would be removed from the hydrometallurgical plant site. The buildings will continue to be usable in the industrial park setting.

*Community and Indigenous Peoples Engagement*

Consultation with local First Nations and the public was initiated in 1997. This continued in a reduced manner during the period of inactivity, but was increased again in 2013. A Memorandum of Understanding (MOU), initially signed with the Wabaseemoong Independent Nation (WIN) in 1999, was renewed in 2013.

Avalon maintains an engagement log which records the numerous meetings held and summaries of the meeting content, and reports this annually in its Sustainability Report.

An archaeological study was completed in 1998. This will be reviewed with the communities of interest and updated if required. There may be a requirement to complete additional traditional knowledge studies in the next phase of project development. A socioeconomic assessment of the project is included in the 2007 environmental study. This will be updated in the next phase of the project.

Avalon has a full time representative in Kenora who facilitates ongoing engagement with Indigenous Peoples, communities, regulators and politicians and that contributes to the strong support for the project.

## *13. Capital and Operating Costs*

Capital Costs

The basis for the capital cost estimate is contract mining, a 950,000 t/y concentrator that recovers approximately 145,000 t/y of petalite concentrate and 100,000 t/y of feldspar concentrate, and a hydrometallurgical facility that produces approximately 14,520 t/y of high purity lithium hydroxide product suitable for the battery market. The life-of-mine (LOM) capital cost estimate is summarised in Table 13.1. The estimate is given in Canadian dollars, with a base date of third quarter, 2016. Owing to rounding of the estimates, some totals may not agree.

**Table 13.1**
**LOM Capital Estimate**

| | Initial Capital ($ millions) | Sustaining Capital ($ millions) | Total Capital ($ millions) |
|---|---|---|---|
| Mining | 2.0 | | 2.0 |
| Concentrator – direct costs | 112.9 | | 112.9 |
| Hydrometallurgical Facility – direct costs | 167.5 | | 167.5 |
| Tailings – direct costs | 7.3 | 6.0 | 13.3 |
| Indirect costs | 123.9 | 0.3 | 124.2 |
| Owner's costs | 3.9 | | 3.9 |
| Closure Bond | 5.5 | | 5.5 |
| Contingency | 84.7 | 0.9 | 85.6 |
| **Total** | **507.7** | **7.2** | **514.9** |

The capital cost estimate for this project presented herein is considered to be at a scoping level with an accuracy of +50%/-35% and carrying a contingency of 20% on total initial estimated capital.

Operating Costs

Operating costs have been determined by Avalon's in-house technical personnel with the exception of the mining costs which were determined by Micon. The estimated costs are expressed in Canadian dollars and are based on:

- Total tonnes mined as determined by mining schedule and typical industry rates.
- Anticipated labour complements and appropriate labour rates.
- Reagent consumptions from testwork and budget supply prices.
- Energy estimates calculated from electrical equipment loads and gas consumptions.
- Estimates for miscellaneous minor operating expenses.

The estimated average annual project operating costs assuming a mine life of 9.83 years and unit costs for the first 10 years of production when both petalite and feldspar are produced are summarized in Table 13.2

**Table 13.2**
**Summary of LOM Operating Costs**

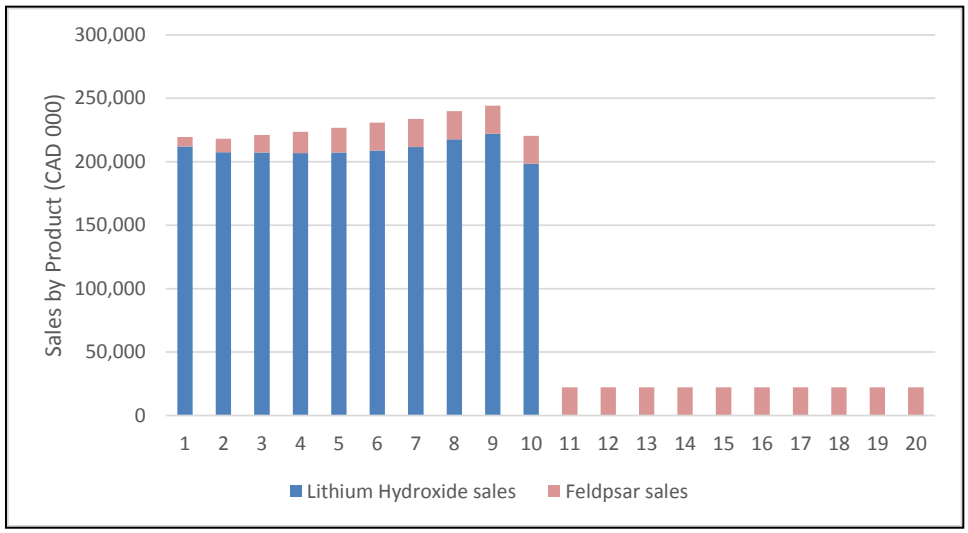
| **Category** | **Annual ($'000)** | **$/t Processed** | **$/kg Lithium Hydroxide** |
|---|---|---|---|
| Mining | 29,416.53 | 30.96 | 1.98 |
| Concentrator processing | 36,738.53 | 38.67 | 2.46 |
| TCMA, waste rock, water management | 1,241.10 | 1.31 | 0.08 |
| Concentrate transport | 2,045.42 | 2.15 | 0.14 |
| Hydrometallurgical processing | 23,348.68 | 24.58 | 1.56 |
| General and Administration | 4,104.78 | 4.32 | 0.27 |
| **Total Cash Production Costs** | **96,895.05** | **101.99** | **6.49** |

Economic Analysis

Micon has prepared its assessment of the project on the basis of a discounted cash flow model, from which Net Present Value (NPV), Internal Rate of Return (IRR), payback and other measures of project viability can be determined. Assessments of NPV are generally accepted within the mining industry as representing the economic value of a project after allowing for the cost of capital invested. The base case cash flow projection assumes a constant price of US$11,000/t lithium hydroxide, $LiOH.H_2O$. Feldspar sales are at a constant price of US$170/t.

Annual sales of lithium hydroxide and low impurity feldspar over the LOM period are shown in Figure 13.1 Note that feldspar sales ramp up from 34,000 t in Year 1 to 100,000 t in Year 6, and remain at that level for the remainder of the 20 year project life. On average over that period, feldspar sales represent 16% of total sales revenue.

**Figure 13.1**
**Annual Sales Revenues by Product**



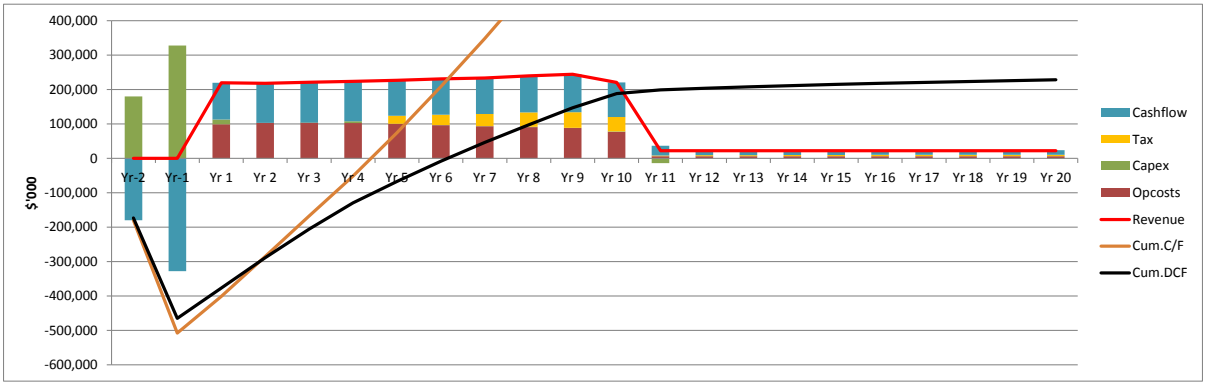

Annual cash flows over the whole LOM period are presented in Table 13.3 and shown graphically Figure 13.2.

**Table 13.3**
**LOM Cash Flow Summary**

| | **LOM total ($'000)** | **$/t milled** | **% Gross Revenue** | **Margin (%)** | **$/t $LiOH.H_2O$** |
|---|---|---|---|---|---|
| Mining (Contractor) | 291,380 | 31.21 | 14% | | 1,985 |
| Mill/Concentrator | 410,980 | 44.02 | 20% | | 2,799 |
| Tailings Management | 12,200 | 1.31 | 1% | | 83 |
| Conc. Transport | 20,106 | 2.15 | 1% | | 137 |
| Hydrometallurgical Plant | 229,518 | 24.58 | 11% | | 1,563 |
| G&A | 51,026 | 5.46 | 2% | | 348 |
| **Direct Site Costs** | **1,015,210** | **108.73** | **48%** | **52%** | **6,915** |
| *Less* By-product credits | (399,458) | (42.78) | -19% | | (2,721) |
| **Cash Operating Costs** | **615,753** | **65.95** | **29%** | **71%** | **4,194** |
| Royalties | - | - | 0% | | - |
| Production Taxes | - | - | 0% | | - |
| **Total Cash Costs** | **615,753** | **65.95** | **29%** | **71%** | **4,194** |
| Depreciation | 512,986 | 54.94 | 24% | | 3,494 |
| Mine Closure\Reclamation | 5,503 | 0.59 | 0% | | 37 |
| **Total Production Costs** | **1,134,242** | **121.48** | **54%** | **46%** | **7,726** |

Note that this preliminary economic assessment is preliminary in nature; as the metallurgical processes developed require further work to confirm that a commercially acceptable product can be consistently produced and sold in the marketplace. There is no certainty that the preliminary economic assessment model will be realized.

**Figure 13.2**
**Life-of-Mine Cash Flows**




The project demonstrates an undiscounted payback of 4.5 years, or approximately 6.2 years when discounted at 8.0%, leaving a tail of over 3.5 years of lithium hydroxide production.

The base case evaluates to an IRR of 19.3% before taxes and 16.5% after tax. At a discount rate of 8.0%, the net present value ($NPV_8$) of the cash flow is $343.8 million before tax and $228.3 million after tax.

The sensitivity of project returns to changes in all revenue factors (including grades, recoveries, prices and exchange rate assumptions) and also to capital and operating costs, was tested over a range of 30% above and below base case values. The analysis suggests that the project is most sensitive to revenue drivers, and is moderately sensitive to changes in operating costs and capital cost. While the latter remain positive across the range of the sensitivity analysis, NPV falls to zero for product prices of less than 78% of base case assumptions.

Micon concludes that this study demonstrates the potential viability of the project as a producer of lithium hydroxide with by-product feldspar within the targeted range of accuracy of the estimated capital and operating costs, as well as for product prices above 78% of base case values.

Markets Studies and Contracts

*Lithium*

The U.S. Geological Survey (USGS) reports production of lithium minerals and products. In terms of gross product weight, Australia is the largest single producer of lithium minerals and chemicals, with output exceeding 400,000 t/y spodumene. Chile is the second ranking producer with a range of lithium chemicals recovered from subsurface brines. In terms of contained lithium, Australia and Chile are also significant producers of lithium.

Lithium consumption in batteries has increased significantly over the past five years, to the point where it now surpasses demand in ceramics and glass. Rechargeable lithium batteries are used in a wide range of applications including cell phones, cameras, portable electronic devices, hand-held tools and increasingly, in electric vehicles and electrical grid storage. It is expected that battery demand will continue to outpace other lithium demand sectors and will drive overall lithium demand. While the automotive sector is expected to show the most rapid growth, projected growth in global lithium demand also includes consumer electronics and grid energy storage sectors.

It is projected that demand for lithium hydroxide will grow at a higher rate than that for lithium carbonate based on changes in battery technologies. Avalon considers that the Separation Rapids Lithium Project will be well-placed to supply new battery production facilities in North America.

*Lithium Prices*

Lithium is not traded on any formally recognized exchange and there are few sources of reliable publicly available price data. Transactions are negotiated directly between seller and buyer and payment terms are rarely reported.

Apart from a sharp correction in 2010, prices for both lithium carbonate and lithium hydroxide have risen steadily over the past decade. Prices reported by Industrial Minerals journal as of mid-August, 2016 were US$8,500-11,000/t delivered in Europe, or US$8,300-10,000/t delivered in Europe for Chinese material.

Avalon has reviewed all publicly available lithium price forecasts. There is no consensus among analysts on future lithium chemicals prices. For Lithium hydroxide prices in 2019-2020, when Avalon may enter the market, forecasts range from current price levels to as high as US$25,000/t, with the average being around US$16,000-17,000/t. For the purposes of the PEA, Avalon has used a relatively conservative average price assumption of US$11,000/t FOB plant for lithium hydroxide consistent with reported current price levels.

*Feldspar*

The feldspar group is by far the most abundant group of minerals in the earth's crust, forming about 60% of terrestrial rocks. They are widely produced with global output estimated by the USGS in 2015 at 21.2 Mt. Turkey, Italy, India and China are by far the largest producers. Production in the United States has declined steadily over the past five years. The USGS does not report any production from Canada.

Feldspar is an important ingredient in the manufacture of glass and an important raw material in ceramics because it acts as a fluxing agent, reducing the strength, toughness, and durability of the ceramic body, and cements the crystalline phase of other ingredients, softening, melting and wetting other batch constituents. Feldspars also are used as fillers and extenders in applications such as paints, plastics and rubber. The glass market for feldspar in the United States represents the largest market at around 68% while ceramics account for 23% and filler and other applications, including chemicals, paints, rubber and plastics, represent less than 10%.

It is projected that between 2015 and 2022, feldspar demand in the United States will grow at a compound average annual growth rate of 3.8% to reach nearly 800,000 t/y. Through discussions with market participants and industry experts, and evaluation of data provided in purchased reports and publicly available information, Avalon estimates that 100,000 t/y of feldspar can be sold into the glass, ceramics, frits/glazes and filler markets at an average price of US$170/t. Sales will be built up to 100,000 t/y over a period of five years.

*Contracts*

At this stage of development of the Separation Rapids Lithium Project, there are no material contracts in place.

*14. Exploration, Development and Production*

Project Development Schedule

A period of four years has been scheduled for project development from completion of the PEA. Process design will be finalized and pilot plant work is scheduled to start within three months when permitting will also commence. A period of 35 weeks has been allowed for completion of a feasibility study, followed by engineering and procurement. A period of 78 weeks has been allowed for construction. A period of 21 weeks has been allowed for commissioning and a further 22 weeks for ramp-up to full production.

Interpretation and Conclusions

The PEA demonstrates that the SRLD can be developed into an economically robust mining and processing operation to produce a lithium hydroxide feedstock for the lithium ion battery and energy storage industries. It does not preclude the possibility of producing other lithium products for glass-ceramics applications.

The environmental impacts of the project are minor as a result of the low levels and nature of impurities in the SRLD material. This is expected to reduce risk of permitting delays.

The site is well located with easy access to important infrastructure facilities for power supply, skilled labour and material transportation. Engagement to date with local communities has resulted in good support for the project and the potential exists for greater engagement and utilization of local businesses.

Given the potential for a range of products to be recovered from the SRLD, the potential also exists to develop a staged approach to project development and financing that will allow Avalon to adapt to market uncertainties as the project advances. Such a staged approach may start with the production of lithium mineral concentrates for glass-ceramics consumers, resulting in cash flow before investing further in a hydrometallurgical plant to produce a derivative battery material from the petalite concentrate. A petalite concentrate may be saleable to a third party battery material producer equipped to process similar lithium mineral concentrates. Such opportunities are likely to emerge over the next few years as the market for battery materials grows. A staged approach has the potential to reduce capital investment risk. A staged approach would also include development of a demonstration plant in order to provide the required volumes of product samples to potential customers for evaluation and acceptance, as well as to provide improved operating and cost parameters, and potentially improved prospects for project financing.

This PEA has shown that the Separation Rapids Lithium Project offers a number of other advantages that will contribute to reduced capital investment risk. These include the relatively low environmental impacts and strong support for the project within the local community due to the long history of engagement and the positive relationships developed with local indigenous communities, notably Wabaseemoong Independent Nation.

Recommendations in the PEA

Given the potential for a range of products to be recovered from the SRLD, it was recommended by Micon that Avalon develops a staged approach to project development and financing that will allow the Company to adapt to market uncertainties as the project advances.

Recommendations for different areas of the project are set out below.

*Geology and Mineral Resources*

Detailed mapping should be undertaken to the west and east of the SRLD to explore for projected extensions of the lithium deposit to increase potentially recoverable lithium resources and explore for new zones of related rare metal mineralization such as tantalum and cesium. Further investigations into other potential sources of petalite and lithium minerals in the region could potentially provide additional feed material.

Detailed mineralogical studies should be completed in order to further refine mineralogical zonation patterns within the pegmatite Subunits 6a, b, c and d using complementary methods such as XRD, Qemscan®, electron microprobe, spectral analysis and optical methods. In particular, lithium mineral zonation patterns may be important for maintenance of a consistent feed for the mill. Further detailed petrography of the feldspar minerals is required for a better understanding of the potentially economic feldspar content and quality.

*Exploration and Resource Definition Drilling*

It is recommended that a minimum 10,000 m diamond drill program be carried out with two main objectives:

1. Expand the known petalite/lithium resources to depth and laterally to increase the confidence level of the inferred resources to the Measured and Indicated categories.

2. Test exploration targets along both the eastern and western extensions of the SRLD, including the undrilled Western Pegmatite to delineate additional lithium resources and discover other rare metal mineralized zones that the geological model predicts could occur in the area.

The program should include:

- Detailed mineralogical mapping.
- Geotechnical logging of the drill holes for open pit design considerations.
- Analysis of representative waste rock for environmental considerations.

It is recommended that geotechnical studies are undertaken concurrent with the proposed drilling program to support the overall pit slopes and design of ramps and haulways.

*Metallurgical Testwork*

Metallurgical testwork should continue with the overall objectives of optimizing the existing flowsheets and studying variants that will create optionality as to what the final product mix should be, bearing in mind that there are at least four potential lithium products (minerals, carbonate, hydroxide, metal) that can be recovered from the mineralization and multiple potential by-products (feldspars, high purity quartz, tantalum, rubidium and cesium).

Further optimization testwork is recommended in the following areas:

Concentrator:

- Confirm efficiency and performance of ore sorting when processing low grade material from the pit extremities and the "low grade material" introduced into resources by the mining schedule.
- Optimization and re-piloting of the flotation circuit to improve recoveries and reduce reagent consumptions and costs.
- Investigation of alternatives for further pre-concentration ahead of flotation, such as gravity-based processes.
- Investigation into the recovery of lithium micas (including lepidolite) and other potential products from the magnetics material and lepidolite-rich sub-zones in the deposit.
- Determination of what the final lithium product mix should be based on product pricing (determined through ongoing market development work), future market demand and production costs.
- Further work on the recovery of a high purity quartz product from coarse-grained mineralization.

Hydrometallurgical Plant:

There are a number of opportunities to optimize the hydrometallurgical plant process efficiencies and costs. These include:

- Evaluation of fluidized bed roasting as an alternative to the decrepitation kiln.
- Optimization of membrane selection for the electrodialysis cells.
- Piloting of circuit to confirm influence of recycle streams of overall flowsheet and efficiencies.
- Optimization of heat balance and recovery.
- Detailed analysis of the leached solids in order to determine whether this material is of economic value.
- Consideration for optionality in the process flowsheet to produce either a carbonate, hydroxide or possibly another lithium chemical/metal product for the battery market.

Demonstration Plant:

Customers in all potential markets will require significant sample material for detailed evaluation before committing to any off-take agreements. Generation of such samples in the required quantities can only be produced through the operation of a demonstration-scale production plant. This also provides assurance of a reliable process and the ability to manufacture products of consistent quality.

In addition, such a facility would provide significant information for reliable scale-up to a full production facility and potentially reduce perceived investor risk in the project.

Finally it can also serve as an interim production facility to begin serving the market at a low level and as a test facility for evaluation of other product opportunities and other new development opportunities.

The optimal scale of such a demonstration plant and the length of operation will need to be determined based on market development work conducted in conjunction with the feasibility study.

*Marketing*

Further work is recommended in the following areas as the project proceeds to prefeasibility and feasibility analysis:

- Continued analysis of lithium markets and prices, and developments in battery technologies and developments in glass-ceramics markets.
- Assessment of opportunities to market lithium mineral (petalite) concentrates in North America.
- More detailed analysis of markets for feldspar in the United States, Europe and Mexico in order to determine if it should be recovered as a co- or by-product of lithium hydroxide and refine the potential unit revenue from a range of feldspar products.
- Analysis of opportunities in the rubidium chemicals market.
- Assessment of markets for high purity quartz as a potential by-product.
- Assessment of markets for other identified and potential products beyond those included in this study.

These plus other potential by-products currently being investigated not only give the project the potential for further economic enhancement but also provide a strong and flexible production base capable of reducing the impact of any future down turns in any of the markets being targeted.

*Environmental/Social*

The following should be undertaken as project development proceeds:

- Continue to engage with the local Indigenous Peoples, community, regulators and government to maximize local development opportunities and minimize undesirable environmental impacts.
- Conclude a partnership arrangement with the Wabaseemoong Independent Nation as committed to under the existing MOU between WIN and Avalon, and accommodate other Aboriginal groups with interests in the area.
- Update socioeconomic studies as part of the proposed Environmental and Social Impact Assessment (ESIA).
- Complete historical environmental baseline validation and fill in identified gaps. Complete a Project Description and ESIA.
- Update the groundwater study and assess the geotechnical design parameters for the pit, mine rock aggregate, concentrate and tailing management facilities. Assess the potential for river water to enter the open pit and make appropriate amendments as required.

- Complete additional ABA and humidity cell leachate studies on the mine rock aggregate, concentrate and tailings as required. Complete biological toxicity testing of effluents and water treatment studies as required on pilot or demonstration plant water and tailing when available.
- Geotechnical and hydrogeological investigations for the TCMA and stockpile locations, including identification and characterization of potential local construction materials (i.e., till, sand and gravel).
- Detailed topographic mapping should be obtained for the full project site. (See geological mapping and drilling, above).
- Additional laboratory testing of the tailings and concentrates to better understand their physical properties as delivered to the TCMA (i.e., filterability, workability, placed density, strength, etc.).
- Trade-off study to determine if filtered tailings is the preferred disposal and storage method. Consideration should be given to operating in a northern climate with long, cold winter months.

Proposed Work Program in the PEA

Avalon's proposed work program and budget for ongoing project optimization and feasibility studies contained in the PEA is summarized in Table 14.1

**Table 14.1**
**Avalon Proposed Budget for Ongoing Work**

| **Activity** | Budget (Cdn$) |
|---|---|
| Exploration and drilling | 1,500,000 |
| Updated mineral resource estimate | 35,000 |
| Metallurgical testwork (bench scale) | 850,000 |
| Pilot plant studies | 1,700,000 |
| Access road studies | 10,000 |
| Hydro-electric study | 25,000 |
| TCMA studies and design | 35,000 |
| Geotechnical drill program | 30,000 |
| Geotechnical testing | 10,000 |
| Detailed mine design and planning | 50,000 |
| Hydrometallurgical plant site selection | 10,000 |
| Evaluate underground mining option | 30,000 |
| Hydrogeological study and ground water modelling | 25,000 |
| Environmental studies and data gathering | 900,000 |
| Local community and stakeholder engagement | 50,000 |
| Engineering, design, costing and report | 4,000,000 |
| Market development | 900,000 |
| **Sub-total** | **10,160,000** |
| **Demonstration Plant** | **25,000,000** |

**(B) Current Work and Future Plans**

(a) Spring 2017 Drilling Program

The Spring 2017 drilling program was completed during the quarter ended May 31, 2017. Five holes (SR17-70 to 74) totaling 1,473 metres were drilled. Two holes were drilled on each of the west and east extensions of the main deposit, extending the resource and mapping the extent of the distinct lepidolite and lithium mica rich sub-zones. These holes also contributed to developing a new resource block model to identify target areas for future resource expansion. The fifth hole (SR17-70) was drilled on an untested target located approximately 1km west of the main

deposit, but was not completed due to difficult ground conditions. This hole and a second planned hole on the West Pegmatite will be completed in a future program, when access conditions improve. The summer geological mapping program outlined six new pegmatite targets based on either lithogeochemical or biogeochemical (vegetation) sampling. The westernmost occurrence, known as the Glitter pegmatite, has never been drill-tested and yielded 1.18% Li2O over 14.8 metres in a continuous chip sample of petalite mineralization collected this summer, confirming results obtained by previous operators.

All drill hole data is being brought into Avalon's database and recent work on the resource block model following the spring drilling program has focused on generating a detailed mineralogical model of the deposit. The new drill hole data also contributed to a better understanding of resource geometry for mine planning purposes, in particular the spatial distribution of the lepidolite rich sub-zone that comprises at least 20% of the known resource. The block model created will help guide future drilling designed to expand the resource to depth. A revised mineral estimate was also generated (presented below) that was not materially different from the 2016 resource estimate based on the historical drilling data except for differentiating resources contained in the two main lithium mineralogical sub-zones.

(b) Metallurgical Process Testwork

Mapping mineralogical zonation in the deposit is integral to designing an appropriate flowsheet for the planned Phase 1 production facility in order to maximize recoveries of lepidolite and petalite which will need to be concentrated separately. 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. 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.

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 ($Li_2O$) can be readily recovered from Separation Rapids ore. Additional testwork on the lepidolite flowsheet initiated in November is designed to confirm or improve upon the 90% recovery previously achieved, as well as to increase the $Li_2O$ content of the concentrate. This work will include 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 current flotation flowsheet for petalite includes a magnetic separation stage to remove iron-bearing minerals which would otherwise report to the petalite concentrate. Since the main iron-bearing minerals in the ore are micas that also contain significant lithium, the magnetic material is effectively another lithium concentrate. Additional testwork is planned to upgrade this concentrate and create another potential economic feed for the production of lithium battery materials from the Separation Rapids resource.

In a separate flotation test program, Avalon is designing a process to produce a high grade petalite concentrate (4.5% $Li_2O$) with greatly reduced levels of sodium and potassium to meet a potential customer's requirements for a specialized, high purity product. Initial results have already achieved acceptable levels of 0.11% sodium oxide ($Na_2O$) and 0.22% potassium oxide ($K_2O$) with the expectation that additional testwork could further reduce these levels. This high purity petalite concentrate will be a premium quality material for certain specialty glass applications.

Avalon's Phase 1 plant would also include a hydrometallurgical process circuit to produce lithium hydroxide from petalite using the innovative new process flowsheet developed by the Company in 2016. The Company recently filed an application for patent protection of this new petalite hydrometallurgical process flowsheet. Lithium hydroxide produced from the Separation Rapids petalite concentrate material was sent to the National Research Council ("NRC")

who 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 with a focus on the potential use of fluidized bed roasting for pre-treating the petalite. 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 will focus initially 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

(c) Mineral Resources

The Mineral Resources estimate for Separation Rapids was updated in the Q1 2018. The main objectives of this work were to distinguish the lepidolite rich portion of the deposit from that where lithium is hosted largely in petalite and incorporate the data from results of the 2017 drill program into an updated resource block model. With the additional drilling completed in 2017 the new resource model is based on 74 drill holes totalling 11,641 metres.

The new estimate has total Measured and Indicated Resources of 8.12 million tonnes at a grade of 1.37% $Li_2O$ at a 0.6% $Li_2O$ cutoff grade. In addition, the Deposit includes an estimated Inferred Resource of 1.20 million tonnes at 1.33% $Li_2O$. 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% $Li_2O$. This represents 23% of the total tonnage of Measured and Indicated Resources at virtually the same $Li_2O$ grade as the petalite rich portion of the deposit. Although there is no material change in the overall tonnage of the resource, the drilling enabled improved delineation of the deposit, it now includes a grade and tonnage estimate for the lepidolite + petalite pegmatite and the more detailed geological modeling resulted in an overall grade increase. The estimate of the feldspar content of these resources has not changed and remains, as reported in the previous resource estimate, at 39% feldspar.

The Deposit is hosted within a large, highly-evolved pegmatite body of the rare petalite sub-type, similar to the "Tanco" pegmatite: a rare metals producer located 60 km to the west at Bernic Lake, Manitoba. The Separation Rapids pegmatite forms a vertically-dipping body varying in thickness up to 70 metres and is traceable for approximately 1.5 km along strike. Unlike the Tanco pegmatite, it is highly deformed and was essentially flattened and stretched into its present sub-vertical orientation. The Deposit exhibits typical mineralogical zoning characteristics seen in other highly evolved rare metal pegmatites like Tanco, such as well-developed wall zones and a petalite-rich intermediate zone. Exploration potential exists to discover additional mineralogical sub-zones typical for such pegmatites enriched in other rare metals, notably tantalum and cesium. The Deposit has been partially delineated by exploration drilling over 500 metres of strike length to a depth of 260 metres, and is open for expansion.

The petalite rich pegmatite occurs in one main body which contains the largest part of the resource and 11 smaller pegmatite bodies. The lepidolite rich pegmatite occurs in two larger dikes to the northwest and northeast of the petalite pegmatite and 14 smaller dikes. These zones are open to depth and along strike.

The primary lithium bearing minerals in the deposit are petalite and lepidolite with minor spodumene. The feldspars include both albite and potassium feldspar. The other major rock-forming minerals are quartz and muscovite (also lithium-bearing). Accessory minerals include columbite-tantalite, cassiterite, apatite and topaz. Results from 74 historic diamond drill holes totalling 11,644 metres were used to create a 3-D model of the host pegmatite.

The model includes lithium resources with an average grade of below 1% $Li_2O$. The lower grade lithium mineralization consists of a swarm of narrow lithium-bearing pegmatite dykes intruded into meta-volcanic rocks, where tests indicate the lithium resource can be pre-concentrated using optical sorting technology.

The previous 2016 resource block model has had an open pit mine design applied to it using Whittle Pit optimization resulting in 9.34 million tonnes of mineralized material at an average grade of 1.22% $Li_2O$ within the pit.

The pit has a strip ratio of 1:5.6, resulting in 52 million tonnes of waste rock for stockpiling for use as aggregate. For the purpose of the PEA, the mine depth was limited to 260 metres. This open pit design includes inferred resources that are too speculative geologically and thus cannot be relied upon for economic considerations. The new resource estimate has not as yet had an open pit mine plan applied to it.

The mine design has not been optimized and the appropriate timing to transition the operation to underground mining has yet to be determined. Further drilling is designed to identify additional resources at depth (as well as along strike) which would create the opportunity to include an underground mining operation in the development model.

**Separation Rapids, Mineral Resource Estimate at 0.6% $Li_2O$ Cut-off Grade**
**As at November 15, 2017**

| Class | Petalite Zone | | | Lepidolite-Petalite Zone | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | Tonnes (Mt) | $Li_2O$ (%) | $Rb_2O$ (%) | Tonnes (Mt) | $Li_2O$ (%) | $Rb_2O$ (%) | Tonnes (Mt) | $Li_2O$ (%) | $Rb_2O$ (%) |
| 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 |

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 $\geq$ 4 drill holes and a distance $\leq$ 25 m to the nearest composite and additional blocks with excellent geological and grade continuity, while indicated material includes blocks using $\geq$ 3 drill holes and a distance $\leq$ 35 m to the nearest composite and blocks with geological and grade continuity, and inferred material was defined as blocks with composites from $\geq$ 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 $t/m^3$ was used for unit 6ABC and 2.62 $t/m^3$ for unit 6D.
11. The cut-off grade reported in this resource estimate, 0.6% $Li_2O$, 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.

(d) 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 26 million cars were sold in China in 2016, 10% of sales in 2019 is expected to amount to at least 2.6 million vehicles, an ambitious target

So far during 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 to produce the electric vehicles it expects to sell by 2030.

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.

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. Prices as reported by other services such as Benchmark Minerals Intelligence have continued to escalate since that time due to rapidly growing demand from battery makers. Current prices estimates by Benchmark Mineral Intelligence are US$17,500/t for lithium carbonate in September 2017. (Lithium hydroxide typically carries a premium of US$2,000/t over lithium carbonate to reflect the added processing cost of converting carbonate to hydroxide)

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 glass and ceramics (which commonly use lithium in the mineral form) will also continue to be a growth market for lithium albeit not at the rate anticipated for lithium battery applications. Many existing and new glass formulations for automotive, cell phones, and video displays that require high strength, contain lithium and this will remain an important market in years to come.

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.

(e) Environmental Assessment and Community Engagement Update

Avalon is committed to developing the 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. Sites for infrastructure, including the tailing management facility, have been identified that do not impact fish or other wildlife habitat. Leachate work has been initiated on the site rock and tailings to confirm that these have a low risk of generating acid rock drainage. 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 was 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, tailing and concentrate storage areas will not contribute effluents of environmental concern. Additional environmental assessment of the waste rock and tailing materials, based on recent drilling and metallurgical work, was initiated in an effort to validate the earlier work. Dry stacking of tailing and concentrates will minimize long term storage risk, water use and optimize effluent quantity. 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 Project business opportunities. The Company has also initiated dialogue with the Métis Nation of Ontario who 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 Metis 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.

(f) 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).

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 2018.

The present concept is to build this facility at a scale that would facilitate on-going profitable small-scale production. A throughput rate of in the order of 100,000 tonnes per annum of ore is envisioned which would require a capital investment in the rate of $30-40 million. 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.

Further drilling is also contemplated in order to increase the total lithium resources in the main Separation Rapids lithium deposit, which is open for expansion to depth below 200 metres with the deepest holes at present indicating similar widths and grades as in the near surface holes. In addition, the lepidolite-rich sub-unit of the main

pegmatite is also open for expansion to depth and along strike. This work is considered a second priority since the existing resource is more than adequate to serve the requirements for Phase 1 production start-up and there is a high degree of confidence in the potential for delineating additional economic resources on the property.

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.

**Other Properties and Assets**

In addition to the Nechalacho Project and the Separation Rapids Lithium Minerals Project, the Company owns three other rare metals and minerals projects, one of which (the East Kemptville Tin-Indium Project) is currently active. The Company's other assets which are inactive are the Warren Township Calcium Feldspar Project and the Lilypad Lakes Tantalum-Cesium Project. The Company abandoned its interest in the New Brunswick Tin Exploration Project in fiscal 2017. The Company also owns royalty interests in two development projects which are not in production.

Unless otherwise stated, the technical information contained in this section of the Annual Report in respect of other properties and assets of the Company has been reviewed and approved by Dr. William Mercer, P.Geo., Vice President, Exploration who is a qualified person for the purposes of NI 43-101.

**East Kemptville Tin-Indium Project**

The 100% owned East Kemptville Tin-Indium Project is located approximately 45 kilometres northeast of Yarmouth, in Yarmouth County, southwestern Nova Scotia in the vicinity of the former East Kemptville Tin Mine. Highway #203, which connects the Town of Yarmouth to the southwest with the Town of Shelburne to the east, passes a short distance to the northwest of the project area. The East Kemptville Tin mine was developed in 1985 on a resource of tin-copper-zinc mineralization known geologically as a "greisen". Greisens are hydrothermal mineral deposits associated with granites consisting of a stockwork of mineralized veins and replacement zones in altered and mineralized granitic rocks.

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 (which was done in 2014 and renewed for 2015 and 2016). Ultimately, with completion of a feasibility study and related environmental assessment work, a form of mining lease is obtainable from the government to secure the requisite surface land rights. Negotiations with the surface rights holders toward securing full tenure to the East Kemptville site are advancing steadily, (including a detailed due diligence review on environmental liabilities).

The Company first acquired a 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 year ended August 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 total area covered by the new Special Licence is 2,880 acres. The new Special Licence designated Special Licence No. 50462, has a term of three years beginning February 2, 2015, is renewable for an additional two one-year periods and includes an obligation to incur $5.25 million in expenditures by January 31, 2018 (of which $3,152,858 had been incurred by August 31, 2017). The Company is unlikely to meet the expenditure requirements of the Special Lease by and the Company will need to negotiate with the government to renew or replace the special licence. Subsequent to the end of fiscal 2017, the Company commenced the process toward converting the Special Licence into a mining lease which it anticipates completing in the first half of 2018.

A drilling program was completed in the summer and early fall of 2014. It comprised of seven drill holes totaling 984 metres on the Baby Zone. The objective of the drill program was verification of historic drill data by twinning in some cases, of historic drill holes, but applying quality control and quality assurance processes as specified under CIM guidelines for resource estimation.

In October 2014, the Company completed its first resource estimate prepared in accordance with NI 43-101 for the East Kemptville Project. As announced in the Company's news release dated October 31, 2014, the estimated Indicated Mineral Resources are 18.47 million tonnes averaging 0.176% tin, 0.173% zinc and 0.064% copper and the estimated Inferred Mineral Resources are 16.95 million tonnes averaging 0.148% tin, 0.122% zinc and 0.062% copper at a 0.10% tin cut-off grade, as more fully detailed in Table 1 below. Note that the 0.10% tin cut-off grade employed in the base case simply reflects the cut-off grade used historically.

Table 1: Mineral Resources, East Kemptville Main and Baby Zones

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

Notes:

1. CIM definitions were followed for Mineral Resources.
2. The Independent Qualified Person for this Mineral Resource estimate is Donald Hains, P. Geo..
3. The resource estimate is based on 275 drill holes totalling 29,587 metres drilled between 1979 and 1991 by previous operators and 7 holes totalling 984 metres drilled by the Company in 2014.
4. Drill data was organized in Maxwell DataShed and for estimation purposes was transferred to MineSight 3D software, wherein the block model was developed.
5. Resources were estimated by interpolating composites within a block model of 5x5x3 m blocks. Interpolation used the inverse distance squared method with localization of higher grades.
6. Indicated material was defined as blocks with an average distance to interpolated composites of ≤ 50 m while inferred material was defined as blocks with an average distance to interpolated composites of ≤ 75 m, thus limiting the depth of the resource to 75 m below drill holes.
7. Three metre composites were capped at 1% Sn, 1% Zn, and 0.5% Cu which are the 99$^{th}$ percentiles of assay data for those elements, reducing contained tin by about 1% compared to uncapped resource.
8. The median density of available data of 2.78 t/m$^3$ was used for all mineralized material.
9. Several possible cut-off grades are reported in this resource estimate and it has yet to be determined what cut-off grade will be appropriate in the context of present-day metal prices and operating costs. The cut-off grade of 0.1% Sn reflects past mining practice at East Kemptville.
10. Mineral resources that are not mineral reserves do not have demonstrated economic viability and their value may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other issues.

In February 2015, the Company completed a Conceptual Redevelopment Study (the "Study"), on the East Kemptville Tin Deposit (the "Deposit") to confirm the business case for re-development of the Deposit. The Study

was prepared by Hains Engineering Company Limited of Toronto ("Hains") and indicated that, given the preliminary assumptions used on costs and revenues, there is potential for attractive economics. The Study was very preliminary in nature and included inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Further definition drilling will be required before these mineral resources can be incorporated into a mining reserve and relied upon in an economic analysis for feasibility study purposes. There is no certainty that these inferred resources will be converted to reserves or that the preliminary economics indicated in the Study will be realized.

Hains' proposed model assumes conventional open pit mining with milling rate at 10,000 tonnes per day. Whittle pit optimization based on the NI 43-101 resource released in October 2014 indicated a pit containing 49.3 million tonnes of mineral resources (which includes resources classified both as Indicated and Inferred) within the pit at average diluted grades of 0.113% tin. 0.131% zinc and 0.053% copper, including 5.87 million tonnes of low grade stockpile material.

A 2015 drilling program was completed in November 2015 and had the objective of upgrading inferred mineral resources in the Main and Baby Zones into the indicated and measured categories as well as testing other known tin occurrences in the area. In addition, the drilling program provided further samples for metallurgical testing and assisted in developing geotechnical knowledge of the deposit. Twenty-two drill holes totalling 4,514 metres were completed, on the Main, Baby and Duck Pond Zones with assay results from the Baby Zone holes released on November 3, 2015. Results were in line with expectations and confirm continuity of the mineralized zone to depth. During the Quarter, the surface ore stockpiles were resampled and the historical estimate of average grades was confirmed. During 2016 a series of grab samples were collected from the surface ore stockpiles and the results provided a confirmation of the reported historical estimate of the average grade of the stockpiles as given in the table below. In addition, bulk samples were collected from the stockpile for metallurgical testwork. A drilling program will be required to more systematically sample the stockpiles and map the internal grade distribution in more detail. This information will be included in a future resource update.

The estimate of resources present in the Low Grade Stockpile at East Kemptville reported by Rio Algom Limited in the East Kemptville Closure Plan Report dated December 1993 and filed with the Government of Nova Scotia was verified. In order to verify the tonnage a volume estimate was completed utilizing the original 1983 topography prior to mining, topography from the 1992 topographic survey and present topography to estimate the volume of the stockpile. A density (SG) of 1.6 $t/m^3$ was then applied as this was considered reasonable from past experience with estimating resources in stockpiles and dumps. The estimate of tonnage is within 5.5% overall of that given by Rio Algom in the mine closure document.

In order to verify the metal grade of the low grade stockpile, a surface sampling program was completed. A program was completed with two independent samples at points at 50 m intervals across the length and width of the low grade stockpile, plus samples around one side of the bottom of the pile. The two samples from each site were kept separate in order to investigate any sampling bias on the part of one or other sampler. The samples collected totalled 270 kgs in weight. Locations were determined by chain, compass and handheld GPS. Samples collected from each site were shipped to Activation Laboratories Limited for analysis including multielement Ultratrace-7 (56 elements) and XRF for Sn (plus 19 elements including whole rock analysis). The grades estimated by Avalon in 2015 are in reasonable agreement to the average resource grade reported by Rio Algom Limited in the above mentioned Closure Plan (1993) and thus confirm the estimate of Sn, Zn and Cu grade of the Low Grade Stockpile. For example, the RAL Closure Plan quotes Sn grades of 0.091% Sn estimated from the block model during mining and 0.106% Sn from surface sampling by RAL. The comparison shows that Sn is within 11% of the surface samples quoted by RAL and higher than the block model estimate. Zinc as measured by Avalon is also within 11% of the RAL value. Copper is close to the block model estimate and slightly below the RAL surface sample estimates.

Given the likely heterogeneity of the material in the stockpiles, largely due to the variable grades of the mineralization, the agreement is considered acceptable to verify the estimates in the Closure Plan and to class the Low Grade Stockpile as an Inferred Mineral Resource. Additional measurement and sampling of the stockpile is required to confirm the historic tonnage and grade data.

On the basis of its investigation, Avalon considers that the Low Grade Stockpile may be reported as an inferred mineral resource as summarized in Table EK 2. Metal grades are the average of the RAL and Avalon surface sampling, as shown previously in Table EK 1.

**Table EK 2**
**Low Grade Stockpile Estimated Mineral Resource**

| Tonnes (Mt) | Grade (%) | | |
|---|---|---|---|
| | **Sn** | **Zn** | **Cu** |
| 5.87 | 0.112 | 0.100 | 0.61 |

Notes:

1. The resource is classified as "Inferred" following CIM Definition Standards 2014 for mineral resources.
2. The Qualified Person for this mineral resource estimate is Donald Hains, P.Geo., of Hains Engineering Company Limited.
3. Resources were estimated by examination of historical RAL data and Avalon's 2015 sampling of the Low Grade Stockpile.
4. 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.

It is recommended by Hains that a drill program be completed on the stockpile to verify the grade with depth within the pile with drill holes on a grid at 50-m intervals. This would require 2,000 to 4,000 m in about 75 – 120 drill holes at an estimated cost of about $300,000 to $600,000, or $0.05-0.10/t. The drilling could be with a reverse circulation drill or similar, depending on the size distribution of the rock in the pile. In addition, mineralogical and metallurgical work is required to assess the degree of oxidation of the sulphide minerals present in the stockpile.

Bench scale metallurgical testing, using sample material collected during the 2014 drill program, was carried out a commercial laboratory located in Cornwall, England with expertise in tin metallurgy, and was completed late in December, 2015. This work program investigated all aspects of the flowsheet including milling, copper and zinc sulphide flotation as well as tin recovery by both gravity and flotation processes. The recovery of indium to the zinc concentrate was also monitored. This test program will eventually lead to larger scale pilot plant testing (if metal prices increase sufficiently) using representative bulk samples collected from future drilling and existing ore stockpiles at the site. The results from this test program confirmed the ability to produce a tin concentrate with >50% tin, a zinc concentrate of >50% zinc (also containing 0.175% Indium) and a copper concentrate at >20% copper with scope for further grade improvements.

During fiscal 2017, project work was focused 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. 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 out on the stockpile before production is initiated to map the internal grade distribution in more detail for future process plant scheduling.

This recent work has confirmed that the small scale 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 included 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. 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 impact by removing sources of on-site acid mine drainage and by taking advantage of existing tailings management facilities and the open pits. Processing of the stockpiles would contribute to the long term environmental remediation of the site.

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 tin mineralization from the stockpiles 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 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.

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 tailing 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 Person under NI 43-101.

**New Brunswick Tin Exploration Project**

*Mount Douglas Tin-Tungsten Property*

During the year ended August 31, 2016, the Company entered into an option agreement to earn a 100% interest (subject to a 2.0% NSR, which can be bought back for $1.0 million) in certain mineral claims located in Charlotte County, New Brunswick. The Company wrote off its investment in the project in fiscal 2017 and returned the claims to the original owner in September 2017.

*Mascarene Copper-Nickel-Cobalt Property*

During the year ended August 31, 2016, the Company entered into an option agreement to earn a 100% interest (subject to a 2.0% NSR, of which half (1%) can be bought back for $1.0 million) in certain mineral claims located in the Mascarene Peninsula, Charlotte County, southern New Brunswick. The property is located near Highway 772 south of Saint George. Access is possible on the property on old logging roads and trails, plus a powerline that intersects the property can be used for access on foot or ATV. During fiscal 2017 the Company terminated the option agreement and returned these claims to the original owners.

**Warren Township Calcium Feldspar Project**

The Warren Township Calcium Feldspar Project is a mineral development opportunity located near the Village of Foleyet, 100 kilometres west of Timmins, Ontario. The project consists of a mining lease totalling 687.736 hectares which is 100% owned by the Company. The lease covers a portion of the Shawmere Anorthosite Complex hosting a large historic resource (not prepared in accordance with NI 43-101) of a high purity anorthosite.

Anorthosite is an unusual mafic igneous intrusive rock consisting of greater than 90% plagioclase feldspar. Previous work has demonstrated that this material can be processed to produce a high quality calcium feldspar raw

material for the manufacture of reinforcing glass fibre and other industrial products such as mineral fillers. The location of the property near both road and rail transportation infrastructure and its proximity to markets in southern Ontario and the northeastern United States offers the potential for development of a low-cost, highly profitable industrial minerals operation.

In June 2012, Avalon received a permit under the *Aggregate Resources Act* (Ontario) to operate a quarry at Warren Township on 240 hectares of land.

The Company does not plan any further work on the project until it identifies renewed market interest in the calcium feldspar product.

**Lilypad Lakes Tantalum-Cesium Project**

The Lilypad Lakes Tantalum-Cesium Project consists of 14 claims, totalling 3,107.99 hectares, covering a field of tantalum and cesium mineralized pegmatites, and located 150 kilometres northeast of Pickle Lake, Ontario. The claims were staked by the Company between January 1999 and October 2000 and are 100% owned by the Company with no underlying royalties.

The project has been inactive since 2001 awaiting a recovery in tantalum prices or new demand for cesium minerals before considering further expenditures. The Company has no plans for the work on the project for the foreseeable future.

**Wolf Mountain Platinum-Palladium Property Royalty**

The Wolf Mountain Platinum-Palladium Project is located approximately 90 kilometres northeast of Thunder Bay, Ontario. In November 2003, Avalon sold its 40% working interest in the project to its joint venture partners for $20,000 and a 0.4% NSR interest in the two properties. The joint venture can purchase this NSR interest from the Company at any time for $1,000,000. In August, 2014, Avalon purchased an additional 2% NSR, which was held by the original vendor of the property, for $15,000, of which up to 1.0% can be purchased by the joint venture partners for $1,000,000.

**East Cedartree Gold Property Royalty**

The Company holds a 2% NSR interest in five claims, which it retained after selling these claims to a third party, comprising part of the East Cedartree Gold Property located 70 kilometres southeast of Kenora, Ontario. The title holder to the claims can re-purchase a 1% NSR from the Company at any time for $1,000,000.

**Item 4A. Unresolved Staff Comments**

None.

**Item 5. Operating and Financial Review and Prospects**

***(i) Critical Accounting Policies***

Some of our critical accounting policies are as follows. See Note 3 to the August 31, 2017 consolidated financial statements for a detailed description of our accounting policies.

**Exploration and evaluation assets**

The Company is in the exploration and development stage with respect to its mineral properties. The exploration and evaluation assets on the Company's consolidated statement of financial position relate to mineral

rights acquired and exploration and evaluation expenditures incurred in respect to resource projects that are in the exploration and evaluation stage.

Exploration and evaluation expenditures include costs which are directly attributable to acquisition, surveying, geological, geochemical, geophysical, exploratory drilling, land maintenance, sampling, and assessing technical feasibility and commercial viability. These expenditures are capitalized as exploration and evaluation assets until the technical feasibility and commercial viability of extracting the mineral resource of a project are demonstrable. During the exploration period, exploration and evaluation assets are not amortized.

Exploration and evaluation assets are allocated to cash generating units ("CGUs") for the purpose of assessing such assets for impairment and each project is identified as a separate CGU. A project is tested for impairment when facts and circumstances suggest that the carrying amount of that project may exceed its recoverable amount, and the recoverable amount of the project is estimated. If the recoverable amount of the project is estimated to be less than its carrying amount, the carrying amount of the project is reduced to its recoverable amount, and an impairment loss is recognized immediately in the consolidated statement of comprehensive loss.

Once the technical feasibility and commercial viability of extracting a mineral resource of a project are demonstrable, the relevant exploration and evaluation asset is assessed for impairment, and any impairment loss is recognized, prior to the balance being reclassified as a development asset in property, plant and equipment ("PPE").

The determination of the demonstration of technical feasibility and commercial viability is subject to a significant degree of judgment and assessment of all relevant factors. In general, technical feasibility may be demonstrable once a positive feasibility study is completed. When determining the commercial viability of a project, in addition to the receipt of a feasibility study, the Company also considers factors such as the existence of markets and/or long term contracts for the product and the ability to obtain the relevant operating permits.

All subsequent expenditures to ready the property for production are capitalized within development assets, other than those costs related to the construction of property, plant and equipment.

Once production has commenced, all costs included in development assets are reclassified to mining properties.

Exploration and evaluation expenditures incurred prior to the Company obtaining the right to explore the property are recorded as an expense in the period in which they are incurred.

**Impairment of Non-Financial Assets**

At the end of each reporting period, the Company reviews the carrying amounts of its non-financial assets with finite lives at the CGU level to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the relevant CGU is estimated in order to determine the extent of the impairment loss, if any. A CGU is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The Company's CGUs are typically its significant individual exploration and evaluation assets, development projects or mines. In certain circumstances, when the recoverable amount of an individual asset can be determined, impairment assessment is performed at the individual asset level. Where a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual CGUs, or otherwise they are allocated to the smallest group of CGUs for which a reasonable and consistent allocation basis can be identified.

The recoverable amount of an asset is the higher of fair value less costs of disposal and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset (or CGU) is estimated to be less than its carrying amount, the carrying amount of the asset (or CGU) is reduced to its recoverable amount, and an impairment loss is recognized immediately in profit or loss.

At the end of each reporting period, the Company assesses whether there is any indication that impairment losses that were recognized in prior periods may no longer exist or have decreased. If such an indication exists, the estimated recoverable amount of the asset (or CGU) is revised and the carrying amount of the asset (or CGU) is increased to the revised estimate of its recoverable amount, to the extent that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset (or CGU) in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

**Site Closure and Reclamation Provision**

The Company's mining exploration activities are subject to various governmental laws and regulations relating to the protection of the environment. These environmental regulations are continually changing and are generally becoming more restrictive. The Company has made, and intends to make in the future, expenditures to comply with such laws and regulations or constructive obligations. Provision for site closure costs is recorded at the time an environmental disturbance occurs, and is measured at the Company's best estimate of the expected value of future cash flows required to reclaim the disturbance upon site closure, discounted to their net present value. The net present value is determined using a pre-tax discount rate that is specific to the liability. The estimated net present value is re-measured at the end of each reporting period, or when changes in circumstances occur and/or new material information becomes available. Increases or decreases to the provision arise due to changes in legal, constructive or regulatory requirements, the extent of environmental remediation required and cost estimates. The net present value of the estimated costs of these changes is recorded in the period in which the change is identified and quantifiable.

Upon initial recognition of site closure provision there is a corresponding increase to the carrying amounts of related assets and the cost is amortized as an expense on a units-of-production basis over the life of the related assets. The value of the provision is progressively increased over the life of the operation as the effect of discounting unwinds and such increase is recognized as an interest expense.

**Critical accounting judgements 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.

***(ii) 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 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. 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 - 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.

***(iii) 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 recovered 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.

**A. Operating Results**

The following discussion is intended to supplement the audited consolidated financial statements of the Company for the years ended August 31, 2017, 2016 and 2015, and the related notes thereto, which have been prepared in accordance with IFRS as issued by the IASB. This discussion should be read in conjunction with the audited consolidated financial statements contained in this Annual Report on Form 20-F. This contains forward-looking statements that are subject to risk factors set out under the heading "Item 3. Key Information – D. Risk Factors". See "Cautionary Note Regarding Forward-Looking Statements" above.

**Year ended August 31, 2017 compared with the year ended August 31, 2016**

| | 2017 | 2016 |
|---|---|---|
| **Revenue** | | |
| Interest income | $ 28,211 | $ 35,160 |
| | | |
| **Expenses** | | |
| Corporate and administrative expenses | 2,877,792 | 3,221,418 |
| Impairment loss on exploration and evaluation assets | 178,118 | 223,938 |
| General exploration | 23,677 | 37,987 |
| Depreciation | 35,656 | 38,282 |
| Share based compensation | 183,108 | 345,435 |
| Foreign exchange loss (gain) | 5,137 | (9,274) |
| Financing transaction costs | 601,335 | 10,598 |
| Increase (Decrease) in fair value of warrants denominated in foreign currency | (229,747) | 122,561 |
| Increase (Decrease) in fair value of convertible redeemable preferred shares | 131,250 | - |
| Increase (Decrease) in fair value of derivative liabilities | (103,326) | - |
| | 3,703,000 | 3,990,945 |
| **Net Loss before Income Taxes** | (3,674,789) | (3,955,785) |
| **Deferred Income Tax Recoveries** | 317,468 | 416,140 |
| | | |
| **Net Loss and Total Comprehensive Loss for the year** | $ (3,357,321) | $ (3,539,645) |

During the year ended August 31, 2017 ("Fiscal 2017" or the "Year"), the Company's net loss decreased by $182,324 from a net loss of $3,539,645 for the year ended August 31, 2016 ("Fiscal 2016") to a net loss of $3,357,321 for Fiscal 2016. The overall decrease in the net loss as compared to the prior year was due to the factors discussed below:

***Interest income***

Lower cash balances resulted in interest income decreasing to $28,211 for Fiscal 2017 compared to $35,160 for Fiscal 2016.

***Corporate and administrative expenses***

Corporate and Administrative expenses totalled $2,877,792 during Fiscal 2017, a 12% decrease from the amount incurred in Fiscal 2016 ($3,221,418). The main areas of decreased operating expenses for the Year were expenses on public and investor relations, salaries and benefits, insurance expense, filing and transfer fees, and legal and related advisory fees.

Expenses on public and investor relations for the Year decreased by $126,841 (23%) to $430,136 compared to $556,977 in Fiscal 2016. The decrease was primarily related to the decreased amount of work provided by consultants. Higher consulting fees were incurred in Fiscal 2016 for investor relations activities to build investor awareness about the Company's shift in focus back to its lithium business and the Company name change which was approved by shareholders in February 2016.

Salaries and benefits for the Year decreased by approximately 6% to $1,509,865 compared to $1,607,078 in Fiscal 2016. The decrease in salaries and benefits was primarily related to the reduced staffing levels and to the decrease in the provision for accrued vacation days.

Insurance expenses for the Year decreased by approximately 21% to $130,787 compared to $165,613 for Fiscal 2016. This decrease is related to the reduction to the directors' and officers' liability insurance coverage from $30,000,000 to $20,000,000 for the 2016/2017 policy year.

Filing and transfer fees decreased by 20% to $93,633 during the Year compared to $116,484 for Fiscal 2016. The decrease is primarily related to the decrease in the decrease in annual listing fees paid and the elimination of services provided by a US-based transfer agent after the Company's move to the OTCQX Best Market from the NYSE MKT in December 2015.

Legal and related advisory fees decreased by 58% to $18,679 during the Year compared to the $44,635 for fiscal 2016. As part of its continuing effort to reduce costs, more routine matters and filings are now handled in-house.

***Impairment loss on exploration and evaluation assets***

As at August 31, 2017, the Company had decided to terminate the option agreement on its Mount Douglas Tin-Tungsten Property, and accordingly the cost incurred to-date of $135,109 has been written off as an impairment loss in the Year. These claims were returned to the original owner in September 2017. The Company also terminated an option agreement in certain mineral claims located south of St. George, New Brunswick and returned these claims to the original owners during the Year, accordingly the cost incurred to-date of $39,929 has been written off as an impairment loss.

As at August 31, 2016, the Company decided not to renew the mineral claims of its Miramichi Tin Property which were due for renewal in September 2016, accordingly the cost incurred to-date of $218,620 was written off as an impairment loss in Fiscal 2016.

***Share based Compensation***

Share based compensation decreased to $183,108 for Fiscal 2017 compared to $345,435 for Fiscal 2016. This decrease is primarily related to the decrease in the estimated fair values of options earned during the Year compared to Fiscal 2016.

***Financing transaction costs***

In March 2017, the Company entered into a preferred share purchase agreement (the "Agreement") with an entity managed by the Lind Partners ("Lind") and issued 500 Series A1 Preferred Shares (the "Preferred Shares") at a price of $5,000 per share for gross proceeds of $2,500,000. Pursuant to Canadian securities laws, the securities issuable under this private placement will be subject to a hold period, which expired on July 11, 2017 (the "Hold Period").

The 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 over a 24 months period ending on March 10, 2019, to a cap of $6,750 per share. After the Hold Period, the 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 ("VWAP") of the common shares on the TSX immediately prior to the date that notice of conversion is given (the "Conversion Option").

In conjunction with this private placement, Lind received a commitment fee of $125,000 and 6,900,000 common share purchase warrants (the "A1 Warrants"). Each A1 Warrant entitles the holder to purchase one common share of the Company at a price of $0.23 per common share until March 10, 2022.

After the Hold Period, Lind has the basic right to convert 25 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 100 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 is also 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 (the "Put Option"), upon the occurrence of certain events as set out in the Agreement (most of which are beyond the Company's control) (the "Redemption Events"). The triggering Redemption Events include certain key financial and non-financial conditions, which include change of control, insolvency and liquidity conditions etc. as defined in the Agreement. These Redemption Events also limit the Company from obtaining other debt or preferred share financings that are not junior to the Preferred Shares other than certain project-related financings, as well as other at-the-market, equity lines or credit type of common share offerings, or convertible security financings where the price of the common share is not fixed at a predetermined price. In addition, if the Redemption Event is a change of control event, the redemption amount will be equal to 110% of the applicable redemption amount at that time. No Redemption Event had occurred since the issuance of the Preferred Shares.

The Company has the right to redeem all of the outstanding Preferred Shares at any time after the Hold Period at a 5% premium to the redemption value (the "Call Option"). The Company also 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 Preferred Shares that were subject to that conversion for the redemption amount in cash plus a 5% premium.

At any time while any Preferred Shares are outstanding, Lind has the option of subscribing for up to an additional 165 Series A2 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 ("Series A2 Option"). Lind will also receive a certain number of Series A2 warrants ("A2 Warrants") when it exercised the Series A2 Option. The number of A2 Warrants to be issued and the exercise price of A2 Warrants will be calculated by using similar formulas used in determining the number and the exercise price of the A1 Warrants.

The Preferred Share is a hybrid instrument that contains multiple embedded derivatives: the Conversion Option, Put Option and Call Option. The Company had designated the entire hybrid contract (the Preferred Share and all of the embedded derivatives) as a financial liability at FVTPL in accordance with IAS 32, *Financial Instruments: Presentation* ("IAS 32") and IAS 39, *Financial Instruments: recognition and measurement* ("IAS 39") and re-measured at each financial statement reporting date, with the resulting change in value being recorded as increase or decrease in fair value of convertible redeemable preferred shares in the consolidated statement of comprehensive loss. The Company had determined that the total fair value of the Preferred Shares at issuance at $2,625,000.

The A1 Warrant had also been classified as a financial liability at FVTPL and re-measured at each financial statement reporting date using the Black-Scholes pricing model, with the resulting change in value being recorded as increase or decrease in fair value of derivative liabilities in the consolidated statement of comprehensive loss. The fair value of the A1 Warrants was estimated at $236,488 (or $0.0343 for each warrant) at issuance.

Cash issuance costs incurred relating to this private placement totaled $239,847 and had been recorded in the Statement of Comprehensive Loss as financing transaction costs.

The fair values of the Preferred Shares and the A1 warrants at issuance totaled $2,861,488 and the excess of this amount over the gross proceeds ($2,500,000) of $361,488 had been recorded as a financing transaction cost in the Statement of Comprehensive Loss as a financing transaction cost.

***Increase in fair value of convertible redeemable preferred shares***

As discussed above under financing transaction costs, the fair value of the Preferred Shares had been re-measured as at August 31, 2017 to be $2,646,000, resulting in an increase of $131,250 in the fair value of the Preferred Shares being recognized on the Statement of Comprehensive Loss for Fiscal 2017.

***Increase (Decrease) in fair value of warrants denominated in foreign currency and derivative liabilities***

The derivative liabilities consist of the warrants denominated in foreign currency and the A1 warrants.

In June 2014, the Company completed the US$ Unit Offering and issued 9,237,875 Units of the Company at a price of $0.469 (US$0.433) per Unit pursuant to the security purchase agreement for gross proceeds of $4,331,200 (US$4,000,000). Each Unit is comprised of a common share and 0.70 of an US$ Warrant. Each US$ Warrant is exercisable into a common share of the Company at an exercise price of US$0.56 per share commencing on December 13, 2014 until June 13, 2021, and is subject to certain anti-dilution provisions, which may reduce the exercise price, with a limit of US$0.5095.

In accordance with IAS 32 and IAS 39, the fair value of the US$ Warrant component of the Unit totaling $2,200,946 had been classified and recorded as a financial liability 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. Using the Black-Scholes pricing model, the total fair value of these warrants had been re-measured at $181,671, $411,418, and $288,857 as at August 31, 2017, August 31, 2016 and August 31, 2015, respectively, which resulted in a gain of $229,747 for Fiscal 2017 (being the decrease in the estimated value of the US$ Warrants between August 31, 2016 and August 31, 2017), and a loss of $122,561 for Fiscal 2016 (being the increase in the estimated value of these warrants between August 31, 2015 and August 31, 2016).

As discussed above under financing transaction costs, the fair value of the A1 Warrants had been re-measured as at August 31, 2017 to be $133,162, resulting in a decrease (gain) of $103,326 being recorded on the Statement of Comprehensive Loss for Fiscal 2017.

***Deferred Income Tax Recoveries***

In Fiscal 2017, the Company has incurred Canadian Exploration Expenditures ("CEE") of $2,255,184 related to certain flow-through equity financings completed in Fiscal 2016 and Fiscal 2017. Accordingly, the Company has recognized a pro rata amount of the flow-through share premium of $416,140 through the consolidated statement of comprehensive loss as a deferred income tax recovery with a corresponding reduction to the deferred flow-through share premium liability. In Fiscal 2016, the Company had recognized a deferred income tax recovery of $416,140 resulting from the CEE of $3,854,975 incurred in Fiscal 2016 related to certain flow-through equity financings completed in Fiscal 2015 and Fiscal 2016.

**Year ended August 31, 2016 compared with the year ended August 31, 2015**

| | 2016 | 2015 |
|---|---|---|
| **Revenue** | | |
| Interest income | $ 35,160 | $ 66,014 |
| | | |
| **Expenses** | | |
| Corporate and administrative expenses | 3,221,418 | 3,949,320 |
| Impairment loss on exploration and evaluation assets | 223,938 | 6,425 |
| Write-off of land acquisition option payments | - | 212,960 |
| General exploration | 37,987 | 33,782 |
| Depreciation | 38,282 | 55,730 |
| Share based compensation | 345,435 | 788,880 |
| Foreign exchange (gain) loss | (9,274) | (25,355) |
| Financing transaction costs | 10,598 | - |
| Increase (Decrease) in fair value of warrants denominated in foreign currency | 122,561 | (1,431,765) |
| | 3,990,945 | 3,589,977 |
| **Net Loss before Income Taxes** | (3,955,785) | (3,523,963) |
| **Deferred Income Tax Recoveries** | 416,140 | 347,589 |
| | | |
| **Net Loss and Total Comprehensive Loss for the year** | $ (3,539,645) | $ (3,176,374) |

During Fiscal 2016 the Company's net loss increased by $363,271 from a net loss of $3,176,374 for the year ended August 31, 2015 ("Fiscal 2015") to a net loss of $3,539,645 for Fiscal 2016. The overall decrease in the net loss as compared to the prior year was due to the factors discussed below:

***Interest income***

Lower cash balances resulted in interest income decreasing to $35,160 for Fiscal 2016 compared to $66,014 for Fiscal 2015.

***Corporate and administrative expenses***

Corporate and Administrative expenses totalled $3,221,418 during Fiscal 2016, an 18% decrease from the amount incurred in Fiscal 2015 ($3,949,320). The main areas of decreased operating expenses for the Year were salaries, benefits and directors' fees, filing and transfer fees, audit assurance and related services, financing advisory services and expenses, occupancy costs and marketing and sales expenses.

Salaries, benefits and directors' fees for the Year decreased by approximately 20% to $1,693,399 compared to $2,107,173 in Fiscal 2015. The decrease in salaries, benefits and directors' fees was primarily related to reduced staffing levels and the further reduction in directors' fees starting in January 2016.

Filing and transfer fees decreased by 32% to $116,484 during Fiscal 2016 compared to $170,600 for Fiscal 2015. The decrease is primarily related to the decrease in participation fees paid to the Ontario Securities Commission and the decrease in annual listing fees paid due to the Company's move to the OTCQX Best Market from the NYSE MKT. The participation fee paid during Fiscal 2016 was based on the Company's average market capitalization in Fiscal 2015, whereas the participation fee paid in fiscal 2015 was based on the Company's average market capitalization in fiscal 2011.

Fees for audit assurance and related compliance services for Fiscal 2016 decreased by approximately 33% to $115,391 compared to $171,755 in Fiscal 2015. The decrease is primarily related to the elimination of quarterly financial statement review services and related compliance services in Q2 to Q4 of Fiscal 2016 to conserve cash resources as these services are no longer required following the expiry of the 2013 shelf prospectus in October 2015 and after the Company became a "non-accelerated filer" in the USA under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010.

No financial advisory fees and expenses were incurred during Fiscal 2016 compared to $37,853 for the Fiscal 2015. This decrease is related to a decreased amount of work with respect to financing initiatives related to the Project provided by third party consultants.

Occupancy costs decreased by 11% to $303,096 during Fiscal 2016 compared $340,322 in Fiscal 2015. The decrease is primarily related to the closing of the Company's office in Delta, BC in May of 2015.

Marketing and sales related expenses decreased by $61,730 (44%) during the Year compared to Fiscal 2015, which primarily related to the reduction in travel and to the decrease in fees paid to consultants in assisting the Company in sales and market development and government relations work. This was achieved by performing a higher portion of the work in-house.

Expenses on public and investor relations Fiscal 2016 increased by $91,834 (20%) to $556,977 compared to $465,144 in Fiscal 2015. The increase was primarily related to the increase number of investor conferences and roadshows undertaken during the Year to increase investor awareness about the Company's shift in focus back to its lithium business and the Company's name change which was approved by shareholders in February 2016.

***Impairment loss on exploration and evaluation assets***

As at August 31, 2016, the Company decided not to renew the mineral claims of its Miramichi Tin Property which were due for renewal in September 2016, accordingly the cost incurred to-date of $218,620 was written off as an impairment loss in Fiscal 2016.

In Fiscal 2015, property holding costs of $6,425 incurred on Warren Township were written off as an impairment loss.

***Write-off of land acquisition option payments***

During the year ended August 31, 2014, the Company entered into an option agreement to purchase a land parcel in Geismar, Louisiana. In Fiscal 2015, the option payments made totaling $212,960 were written off after the option agreement had expired.

***Share based Compensation***

Share based compensation decreased to $345,435 for Fiscal 2016 compared to $788,880 for Fiscal 2015. This decrease is primarily related to the decrease in the estimated fair values and the number of options earned during the Year compared to Fiscal 2015.

***Increase (Decrease) in fair value of warrants denominated in foreign currency***

As discussed above, the US$ Warrants had been re-measured at each financial statement reporting date using the Black-Scholes pricing model, resulting in a loss of $122,561 for Fiscal 2016 and a gain of $1,431,765 for Fiscal 2015.

***Deferred Income Tax Recoveries***

In Fiscal 2016, the Company has incurred Canadian Exploration Expenditures ("CEE") of $3,854,975 related to certain flow-through equity financings completed in Fiscal 2015 and Fiscal 2016 as disclosed in in Note 13 of the Consolidated Financial Statements. Accordingly, the Company has recognized a pro rata amount of the flow-through share premium of $416,140 through the consolidated statement of comprehensive loss as a deferred income tax recovery with a corresponding reduction to the deferred flow-through share premium liability. In Fiscal 2015, the Company had recognized a deferred income tax recovery of $347,589 resulting from the CEE incurred in Fiscal 2015 related to the December 2014 Private Placement as disclosed in Note 13 of the Consolidated Financial Statements.

**B. Liquidity and Capital Resources**

In management's view, given the nature of the Company's operations, which consist of the exploration and development of mining 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.

As at August 31, 2017, the Company has current assets of $1,367,481 and current liabilities of $1,042,507. As disclosed earlier under "Administration and Other", the holder of the Preferred Shares is entitled to demand repayment of the applicable redemption value per share in cash (which totaled $2,520,000 as at August 31, 2017) upon the occurrence of certain Redemption Events. Excluding the deferred flow-through share premium of $49,467 and the liability for warrants denominated in foreign currency of $181,671, the Company's adjusted working capital was $556,112 (calculated by adding back the deferred flow-through share premium of $49,467 and the liability for warrants denominated in foreign currency of $181,671 to the working capital of $324,974). As the de-recognition of the balance of the deferred flow-through share premium and the liability for warrants denominated in foreign currency will not require the future out flow 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. Substantially all of the Company's cash and cash equivalents are held at a major Canadian chartered bank in cashable guaranteed investment certificates bearing an annual interest rate of 1.1%. As at August 31, 2016, the Company had adjusted working capital of $1,160,471 and cash and cash equivalents on hand of $1,360,487.

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 $1,800,000 (excluding capitalized salaries and benefits), with approximately $1,500,000 of these expenditures being allocated to the Separation Rapids Lithium Project.

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 January,

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 additional funds on favourable terms or at all. 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 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, with the exception the Mount Douglas Tin-Tungsten property and its cobalt prospect in New Brunswick, 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 at August 31, 2017, the Company is also required to incur additional CEE of $538,510 (the remaining balance of the required expenditures resulting from the private placements completed in June and August 2017) by December 31, 2018. The Company is also required to incur additional CEE of $466,175 by December 31, 2018 relating to the private placement completed subsequent to the end of the Year.

Subsequent to the end of the Year, the Company completed a private placement and issued 3,215,000 flow-through common shares at a price of $0.145 per share (of which 305,000 flow-through common shares were subscribed by certain directors and officers of the Company) and 4,800,000 non-flow-through units at a price of $0.12 per unit for gross proceeds of $1,042,175.

During Fiscal 2017, the Company completed the following financing transactions:

i) On November 7, 2016, the Company completed a private placement and issued 4,545,454 flow-through common shares at $0.22 per share for gross proceeds of $1,000,000.

ii) On December 23, 2016, the Company completed a private placement and issued 2,500,000 flow-through common shares at $0.15 per share for gross proceeds of $375,000.

iii) On June 12, 2017, the Company completed a private placement and issued 3,400,000 flow-through common shares at $0.15 per share for gross proceeds of $510,000.

iv) On August 16, 2017, the Company completed a private placement and issued 3,100,000 flow-through common shares at $0.145 per share for gross proceeds of $449,500.

v) In March 2017, as discussed under Operating Results for 2017, the Company entered into the Agreement with Lind and issued 500 Series A1 Preferred Shares at a price of $5,000 per share for gross proceeds of $2,500,000.

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 Annual Report, the minimum lease commitments under these leases are as follows:

| | | | |
|---|---|---|---|
| Fiscal year ended August 31, | 2018 | $ | 236,996 |
| | 2019 | $ | 315,995 |
| | 2020 | $ | 105,332 |
| | 2021 and thereafter | $ | - |

**C. Research and Development, Patents and Licenses, etc.**

Research and development expenditures incurred during Fiscal 2017 and Fiscal 2016 totalled $428,900 and $1,120,656 respectively.

The Company has invested significant amounts of resources in researching, developing and optimizing the metallurgical processes to recover the REE from the Nechalacho mineral deposit. The bulk of these R&D investigations have been conducted at a commercial laboratory in Lakefield Ontario, although further work has also been conducted at other globally recognized research institutes elsewhere in Ontario, USA and South Africa.

The areas investigated have included ore comminution and froth flotation to produce a mineral concentrate, followed by numerous hydrometallurgical processes aimed at firstly leaching the REE and then removing the various impurities such that a high purity bulk REE precipitate can be produced for toll treating by others. None of the processes developed or implemented are known to be protected by any third party patents or licences as they are commonly applied to other metallurgical systems. However, Avalon is investigating the potential merit of patenting the overall combination of processes for the treatment of similar ore bodies or mineral concentrates.

Leading up to the compilation of the PEA for the Separation Rapids Lithium Project extensive testwork was conducted to develop the flotation process for producing concentrates of both petalite and a mixed feldspar. This work included both bench scale and pilot scale work programs. In addition process testwork was conducted with regards the development of processes to produce both lithium carbonate and lithium hydroxide from the petalite concentrate. Processes to produce both products were developed with further attention then paid to the hydroxide process and production of final hydroxide crystals which meet battery grade specifications. In fiscal 2017, Avalon filed a provisional application (number 62419532) for patent under 37 CFR 1.29 which covers the process of producing lithium hydroxide from petalite with corresponding recycling of sulphuric acid. Subsequent to the end of fiscal 2017, the Company filed an International Patent Application for this process.

**D. Trend Information**

While the Company does not have any producing mines it is directly affected by trends in the metal industry.

After a significant upward spike in prices in 2011, rare earth prices fell back almost a quickly in 2012 and trended downward to mid-2015. Prices remained flat until 2017 where they started to increase again due to increasing demand for magnets for motors of hybrid and electric vehicles. Future prices for rare earths are difficult to predict as they are influenced by demand for REE containing products such as electric motors for hybrid and electric vehicles, but also by Chinese government policy. Increased demand for hybrid and electric vehicles should lead to higher prices for rare earths, however the Chinese government may not want a repeat of very high REE prices which occurred in 2012 and so may release REEs into the market that some observers believe they have accumulated, or instruct Chinese producers to increase output to keep prices stable. Demand for REE products may be impacted by demand for some of the products incorporating rare earths. Lack of growth in these markets may adversely affect the demand for REE products.

Lithium is not traded on any formally recognized exchange and there are few sources of reliable publicly available price data. Transactions are negotiated directly between seller and buyer and payment terms are rarely reported. According to Benchmark Mineral Intelligence the price for lithium has tripled since early 2015. Their lithium index shows lithium at US$5,500/tonne in early 2015 and at US$16,500/tonne in September 2017. Demand for lithium ion batteries for electric vehicles (EVs) is the main driver of increased demand for lithium and the demand

for EVs is expected to continue. The impact on future lithium prices will be determined by the actual future demand for EVs and the speed at which new production of lithium that is required to meet the EV demand comes into the market.

Tin prices in 2017 have remained constant near the US20,000/t mark with little change in demand or new production expected in the near future. No significant new trend in the tin market is expected in the short or medium term.

Overall market prices for securities in the mineral resource sector and factors affecting such prices, including base metal prices, political trends in the countries such companies operate, and general economic conditions, may have an effect on the terms on which financing is available to the Company, if at all.

Except as disclosed, the Company does not know of any trends, demands, commitments, events or uncertainties that will result in, or that are reasonably likely to result in, its liquidity either materially increasing or decreasing at present or in the foreseeable future. Material increases or decreases in liquidity are substantially determined by the success or failure of the Company's exploration and development programs. The Company currently does not and also does not expect to engage in currency hedging to offset any risk of currency fluctuations.

**E. Off-balance sheet arrangements**

The Company has no off-balance sheet arrangements.

**F. Tabular disclosure of contractual obligations**

As of August 31, 2017, the Company had the following contractual obligations:

| | Payment due by period | | | | |
|---|---|---|---|---|---|
| | **Total** | **<1 year** | **1-3 years** | **3-5 years** | **More than 5 years** |
| Trade payables and other payables | $ 811,369 | $ 811,369 | $ - | $ - | $ - |
| Operating Lease | 737,322 | 315,995 | 421,327 | - | - |
| Total | $ 1,548,691 | $ 1,127,364 | $ 421,327 | $ - | $ - |

**G. Safe Harbor**

The Company seeks safe harbor for our forward-looking statements contained in Items 5.E and F. See the heading "Cautionary Note Regarding Forward-Looking Statements" above.

**Item 6. Directors, Senior Management and Employees**

**A. Directors and Senior Management**

The following is a list of the Company's directors and senior management as of the date of this annual report. The directors were elected by the Shareholders on February 22, 2017, with the exception of Ms. Mohr who was appointed by the Board on March 23, 2017, and are elected for a term of one year, which term expires at the election of the directors at the next annual meeting of shareholders.

| Name, Present Position with the Company and Country of Residence | Principal Occupation | Director/Officer Since |
|---|---|---|
| DONALD S. BUBAR<br>Director, Chief Executive Officer and President<br>Ontario, Canada | President and CEO of the Company | February 17, 1995 |
| ALAN FERRY [(1) (2)]<br>Director<br>Ontario, Canada | Self-employed businessperson since July 2007. | February 24, 2000 |
| BRIAN D. MACEACHEN [(1)]<br>Director and Chairman<br>Nova Scotia, Canada | Executive Consultant since July 2012; prior thereto, Executive Vice President of Brigus Gold Corp. (formerly Linear Gold Corp., a mining exploration company) since October 2009 and President and CEO of Linear Metals Company (a mining exploration company) from January 2008 to April 2012; prior thereto, CFO and Vice-President of Finance of Brigus Gold Corp. and Linear Metals Company. | November 16, 1998 |
| PATRICIA MOHR [(1)]<br>Director<br>British Columbia, Canada | Retired. Prior thereto Vice President, Economics and Commodity Market Specialist at Scotiabank's Executive Offices in Toronto from 1985 to 2016. | March 23, 2017 |
| JANE PAGEL[(2)]<br>Director<br>Ontario, Canada | Self-employed businessperson; Interim President and CEO Sustainable Development Technology Canada June 2014 - June 2015; President and CEO Ontario Clean Water 2010-2014; SVP and Principal Jaques Whitford 2000-2009, acquired by Stantec, Principal 2009-2010. | February 24, 2016 |
| KENNETH G. THOMAS[(2)]<br>Director<br>Ontario, Canada | President, Ken Thomas & Associates Inc., a consulting firm to the mining industry since 2012 and Senior Vice President, Projects, Kinross Gold Corporation from December 2009 to July 2012; prior thereto Global Managing Director and Board Director, Hatch, an international engineering and construction company. | February 25, 2014 |
| R. JAMES ANDERSEN<br>Chief Financial Officer and Vice President, Finance<br>Ontario, Canada | Chief Financial Officer and Vice President, Finance of the Company since June 2001 | June 11, 2001 |
| DAVID MARSH<br>Senior Vice President, Metallurgy and Technology Development<br>Ontario, Canada | Senior Vice President, Metallurgy and Technology Development of the Company since August 2012; prior thereto, General Manager- Technical Projects Development at Paladin Energy from July 2006 to September 2011. | August 1, 2012 |
| WILLIAM MERCER<br>Vice President, Exploration<br>Ontario, Canada | Vice President, Exploration of the Company since June 2007, prior thereto, self-employed Geological Consultant from October 2006 to December 2010. | June 21, 2007 |

| Name, Present Position with the Company and Country of Residence | Principal Occupation | Director/Officer Since |
|---|---|---|
| PIERRE NEATBY<br>Vice President, Sales and Marketing<br>Ontario, Canada | Vice President, Sales and Marketing of the Company since July 2010; prior thereto, Vice President of Noranda Inc. and Managing Director of European Sales of Noranda Inc. (an international mining company). | July 1, 2010 |
| MARK WISEMAN<br>Vice President, Sustainability<br>Ontario, Canada | Vice President, Sustainability of the Company since November 2011; prior thereto, Director Health, Safety and Environment for Xstrata Nickel's Koniambo Project, a division of Xstrata plc (an international mining company, presently Glencore) from 1990 to 2010. | November 7, 2011 |

**NOTES:**
(1) Member of the Audit Committee
(2) Member of the Compensation, Governance and Nominating Committee

***Family Relationships***

There are no family relationships between any directors or executive officers of the Company.

***Arrangements***

There are no known arrangements or understandings with any major shareholders, customers, suppliers or others, pursuant to which any of the Company's officers or directors was selected as an officer or director of the Company.

***Conflicts of Interest***

To the best of the Company's knowledge, and other than as disclosed in this annual report, there are no known existing or potential conflicts of interest between the Company and its directors, officers or promoters, except that certain of the Company's directors, officers and promoters serve as directors and officers of other public companies, and therefore it is possible that a conflict may arise between their duties as a director, officer or promoter of the Company and their duties as a director or officer of such other companies.

The directors and officers of the Company are aware of the existence of laws governing accountability of directors and officers for corporate opportunity and requiring disclosures by directors of conflicts of interest and the Company will rely upon such laws in respect of any directors' and officers' conflicts of interest or in respect of any breaches of duty by any of its directors or officers. All such conflicts will be disclosed by such directors or officers in accordance with the CBCA, and they will govern themselves in respect thereof to the best of their ability in accordance with the obligations imposed upon them by law.

The majority of the Company's directors are also directors, officers or shareholders of other companies that are engaged in the business of acquiring, developing and exploiting natural resource properties. Such associations may give rise to conflicts of interest from time to time. Such a conflict poses the risk that the Company may enter into a transaction on terms which place the Company in a worse position than if no conflict existed. The directors of the Company are required by law to act honestly and in good faith with a view to the best interest of the Company and to disclose any interest which they may have in any project or opportunity of the Company. However, each director has a similar obligation to other companies for which such director serves as an officer or director. The Company has no specific internal policy governing conflicts of interest.

***Cease Trade Orders, Bankruptcies, Penalties or Sanctions***

To the Company's knowledge, no director or executive officer of the Company is, as of the date hereof, or was within ten years before the date hereof, a director, chief executive officer or chief financial officer of any company (including the Company) that:

(i) was subject to a cease trade order, an order similar to a cease trade order, or an order that denied the relevant company access to any exemption under securities legislation, that was in effect for a period of more than 30 consecutive days (an "Order") that was issued while the director or executive officer was acting in the capacity as director, chief executive officer or chief financial officer; or

(ii) was subject to an Order that was issued after the director or executive officer ceased to be a director, chief executive officer or chief financial officer and which resulted from an event that occurred while that person was acting in the capacity as director, chief executive officer or chief financial officer.

To the Company's knowledge, no director or executive officer of the Company, or a shareholder holding a sufficient number of the Company's securities to affect materially the control of the Company:

(i) is, as at of the date hereof, or has been, within the ten years before the date hereof, a director or executive officer of any company (including the Company) that, while that person was acting in that capacity, or within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets; or

(ii) has, within the ten years before the date hereof, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director, executive officer or shareholder.

To the Company's knowledge, no director or executive officer of the Company, or a shareholder holding a sufficient number of securities of the Company to affect material the control of the Company, has been subject to:

(i) any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority, or

(ii) any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.

***Legal Proceedings and Regulatory Actions***

The Company is and has not been a party as a defendant to, and none of its properties are or were the subject of, any legal proceedings during the financial year of the Company ended August 31, 2017 that involve a claim for damages which exceeds ten per cent of the current assets of the Company, and no such legal proceedings are known to Avalon to be contemplated.

There were no penalties or sanctions imposed against the Company by a court relating to securities legislation or by a securities regulatory authority during the financial year of the Company ended August 31, 2017, no other penalties or sanctions have been imposed by a court or regulatory body against the Company that would likely be considered important to a reasonable investor in making an investment decision with respect to the securities of Avalon, and no settlement agreements were entered into with a Court relating to securities legislation or with a securities regulatory authority during the financial year of the Company ended August 31, 2017.

***Interest of Management and Others in Material Transactions***

The Company is not aware of any material interest, direct or indirect, in any transaction within the three most recently completed financial years involving any director, executive officer, proposed nominee for election as a director or any shareholder holding more than 10% of the voting rights attached to the common shares or any associate or affiliate of any of the foregoing that has materially affected or will materially affect the Company, other than as set forth herein.

***Transfer Agent and Registrar***

The Company's transfer agent and registrar is TSX Trust Company, with its principal office at 100 Adelaide Street West, Suite 301, Toronto, ON M5H 1S3.

**B. Compensation**

During the last completed fiscal year of the Company, the Company had five named executive officers ("NEOs"), namely, its Chief Executive Officer ("CEO") and President, Donald Bubar, its Chief Financial Officer ("CFO") and Vice President, Finance, R. James Andersen, its Senior Vice President, Metallurgy and Technology Development, David Marsh, its Vice President, Sales and Marketing, Pierre Neatby, and its Vice President, Exploration, William Mercer.

***1) Compensation Discussion and Analysis***

*Compensation, Governance and Nominating Committee*

The Compensation, Governance and Nominating Committee (the "CGN Committee") of the Board is responsible for making recommendations to the Board with respect to the compensation of the executive officers of the Company as well as, among other things, with respect to the Company's stock option plan (the "Stock Option Plan") and any other employee benefits and/or plans and with respect to directors' compensation. The Board (exclusive of the CEO, who is also a member of the Board) reviews such recommendations and gives final approval to the compensation of the executive officers.

The CGN Committee currently consists of Alan Ferry (Chair), Kenneth G, Thomas and Jane Pagel, each of whom are independent, pursuant to the rules of the TSX. Each of Mr. Ferry, Dr. Thomas and Ms. Pagel has direct and extensive experience in corporate management and compensation issues in either the mining industry and/or the financial industry. Mr. Ferry is a member of the committee responsible for compensation matters of Guyana Goldfields Inc. and GPM Metals Inc., which are publicly listed mineral exploration or mining companies. Dr. Thomas served as Senior Vice President, Projects, Kinross Gold Corporation from December 2009 to June 2012, Global Managing Director and Director, Hatch from November 2005 to November 2009 and Chief Operating Officer, Crystallex International Corporation from April 2003 to October 2005. In addition he served in senior roles at Barrick Gold Corporation from 1987 to 2001, including Senior Vice President, Technical Services, during which times he was responsible for determining the compensation of those employees whom he directly and indirectly supervised, which numbered in excess of several dozen. Ms. Pagel is a self-employed businessperson and chair of the board of directors of BluMetric Environmental Inc., a publically traded company in the fields of water/wastewater treatment and professional environmental services. She served as the Interim President and CEO Sustainable Development Technology Canada from June, 2014 to June, 2015. Prior to that, she was president and CEO of the Ontario Clean Water Agency from 2010 until her retirement in early 2014. Previous industry positions held by Ms Pagel include Principal Government and Industrial Relations at Stantec; Senior Vice President and Principal at Jacques Whitford; Vice President Government Relations at Philip Services; and president of Zenon Environmental Laboratories. This experience relating to executive compensation matters collectively provides members of the CGN Committee with a suitable perspective to make decisions on the appropriateness of the Company's compensation policies and practices.

The CGN Committee has not to date felt it necessary to engage any compensation consultant or advisor to assist it in the performance of its duties.

*Compensation Objectives and Structure*

The overall compensation objective adopted by the CGN Committee is to ensure that executive compensation is fair and reasonable, rewards management performance and is, by being competitive, sufficient to attract and retain experienced and talented executives. Due to the nature of the mineral industry, executive talent has significant mobility and, as a result, competition for experienced executives in the past has been great. The Company's compensation policies are designed to recognize the foregoing. The foregoing objective also recognizes the fundamental value added by a motivated and committed management team in accomplishing the Company's principal corporate objectives.

Historically, the compensation provided by the Company to its executive officers, including the CEO, has had three components: base salary, bonuses and long term incentive compensation in the form of stock options (see "Stock Option Plan"). Bonus compensation is a cash component of management compensation in order to permit the recognition of outstanding individual efforts, performance, achievements and/or accomplishments by members of the Company's management team. Any specific bonus amounts are awarded on the recommendation of the CGN Committee and ultimately at the discretion of the Board, with bonus amounts for members of the Company's management team other than the CEO being based primarily on the recommendations of the CEO. The appropriateness and amount of any bonuses to the CEO and/or management team members has to date been considered annually by the CGN Committee and Board on a discretionary basis as no formal bonus plan based on quantitative and/or qualitative benchmarks has been established for the Company as yet.

Base salary is the principal component of each executive officer's overall compensation and reflects the fixed component of pay that compensates the relevant executive officer for fulfilling his or her day to day roles and responsibilities. The CGN Committee has typically in the past reviewed the base salary levels and considered the individual performance of the CEO and of each other executive officer and historically has compared executive compensation for other companies operating in the mineral industry.

Recently, however, the overall financial condition of the Company and the overall depressed nature of the junior resource sector in Canada and elsewhere has significantly factored into the setting of the cash remuneration levels of the Company's senior management and, in particular, has resulted in there being no or minimal increases in the cash remuneration of senior management for the calendar years 2014 – 2017, and a reduction in such cash remuneration during the period 2014 – 2017 as outlined under "Base Salary and Bonus" below. Given the nature of the Company as an exploration and development stage resource company without existing mineral production and without any attendant revenues derived thereon, compensation has in the past been generally based on comparative, qualitative or subjective measures, rather than quantitative benchmarks. No specific benchmarks, weights or percentages are assigned to any of the measures or objectives upon which the executive compensation is generally based.

Annual salary adjustments, if any, have historically been made on a calendar year basis, typically being determined towards the end of each calendar year and made effective January 1 of the following year.

*Compensation Risk Management*

The CGN Committee evaluates the risks, if any, associated with the Company's compensation policies and practices. Implicit in the mandate of the Board is that the Company's policies and practices respecting compensation, including those applicable to the Named Executive Officers, be designed in a manner which is in the best interests of the Company and its shareholders.

In particular, the Company's executive compensation policies incorporate a balanced compensation program design (see "Compensation Objectives and Structure") and include elements of fixed and variable compensation and short and longer term incentives.

The base salary component of the compensation provided by the Company to its executive officers is set annually. The bonus component of the compensation provided by the Company to its executive officers in the past has been discretionary, is currently based on qualitative or subjective measures rather than quantitative benchmarks, and is subject to the prior approval of the CGN Committee. Discretionary assessment of the performance of executive officers by the Committee ensures that bonus awards align with both perceived and actual performance and the risks associated with such performance and any bonus award. No bonuses have been awarded to any members of senior management since 2014.

The stock option component of the compensation provided by the Company to its executive officers is both "longer term" and "at risk" and, accordingly, is directly linked to the achievement of longer term value creation. Since the benefits of such compensation, if any, are generally not realized by the executive officers until a significant period of time has passed and that there are typically deferred vesting provisions attached to each option grant (see "Stock Option Plan" below), the incentive for executive officers to take inappropriate or excessive risks with regard to their compensation that are financially beneficial to them at the expense of the Company and its shareholders is limited.

The CGN Committee believes that it is unlikely that an executive officer would take inappropriate or excessive risks at the expense of the Company and its shareholders that would be beneficial to them with regard to their short term compensation when their longer term compensation might be put at risk from their actions. Due to the size of the Company, the CGN Committee is able to monitor and consider any risks which may be associated with the Company's compensation policies and practices. Risks, if any, may be identified and mitigated through regular meetings of the Board during which financial and other information relating to the Company are reviewed, and which includes senior executive compensation. The CGN Committee has not identified any risks arising from the Company's compensation policies and practices that it believes would be reasonably likely to have a material adverse effect on the Company.

Although the Company has not as yet adopted any specific policies in this regard, in the event that a director or an executive officer purchases financial instruments that are designed to hedge or offset a decrease in the market value of the Company's equity securities granted as compensation or held, directly or indirectly by the director or the executive officer, such purchases must be disclosed in insider reporting filings. To date, no such purchases have been disclosed by any director or executive officer of the Company.

*Base Salary and Bonus*

The CGN Committee, in respect of the setting of salaries for the Named Executive Officers for 2017, recommended to the Board and the Board determined that, there would be no salary increases for the Named Executive Officers in 2017. This determination recognized the then current financial situation of the Company and the overall depressed nature of the junior resource sector in Canada.

Effective September 1, 2016, each of the Named Executive Officers agreed to receive 20% of their base salary (25% in the case of Mr. Bubar) in non-cash compensation on an indefinite basis in exchange for additional stock options, being in the case of Mr. Bubar, options to purchase 300,000 common shares of Avalon, in the case of Messrs. Andersen and Marsh, options to purchase 250,000 common shares and in the case of Messrs. Mercer and Neatby, options to purchase 200,000 common shares. All of the foregoing options were granted effective November 8, 2016, have an exercise price of $0.17 per share, have a two year term and vested immediately.

No discretionary bonuses were awarded to any Named Executive Officers of the Company for 2017.

*Options*

The CGN Committee is of the view that the granting of options is an appropriate method of providing long-term incentives to senior management of the Company and, in general, aligns the interests of senior management with those of the shareholders by enabling senior management to participate in and be rewarded by an increase in the market price of the Company's common shares. Participation in the Stock Option Plan also provides a significant

incentive to the participants to enter into and subsequently to continue their employment with the Company, particularly when the Company may not have the financial resources and/or pension and other benefit plans to attract and retain experienced personnel. In addition, the CGN Committee is of the view that the Company's compensation mix must be consistent with industry norms which supports the provision by the Company of a longer term compensation incentive. This longer term compensation incentive is best realized by providing compensation linked to share price performance such as options. The number and terms of options previously granted to the named executives have been and are expected to continue to be taken into account, as well as the number and terms of options granted by peer group companies in determining whether and in what quantity new option grants should be made in any year. Also, as discussed under "Base Salary and Bonus" above, additional options have been granted to members of senior management in lieu of receipt by them of certain specified cash salary amounts.

The Company's current objective under the Stock Option Plan is to allot to the CEO options to purchase 1,000,000 common shares, to the CFO and Senior Vice President options to purchase 600,000 common shares and to officers at the Vice President level options to purchase 400,000 common shares (the "target allotments"). The foregoing allotments do not include the additional options granted to the Named Executive Officers, as described under "Base Salary and Bonus" above.

The Company typically grants one fifth of an employee's option allotment on an annual basis The methodology applied by the Company permits exceptions to be made, for example, to recognize exceptional employee contributions and to permit flexibility in negotiating employment contracts.

*Circumstances Triggering Termination and Change of Control Benefits*

As noted below under the heading "Employment Contracts", there are certain circumstances that trigger payments and other benefits to the CEO upon termination and change of control. The CGN Committee views such provisions as not only being fair and necessary to protect the CEO, but also to encourage the CEO to pursue those transactions such as mergers or take-overs that are beneficial to the Company and its shareholders, but that may result in the termination of the CEO's employment with the Company.

*Stock Option Plan*

The Stock Option Plan, approved by shareholders on February 22, 2017, is a fixed percentage plan that provides that the maximum number of options which may be outstanding at any time under the Stock Option Plan and any other compensation arrangement of the Company is 10% of the Company's issued and outstanding common shares. Eligible Participants under the Stock Option Plan include insiders or employees of the Company or any of its subsidiaries, and any other person or company engaged to provide ongoing management, consulting or advisory services to the Company.

The Company maintains the Stock Option Plan in order to provide effective incentives to directors, officers and senior management personnel of the Company and to enable the Company to attract and retain experienced and talented individuals in those positions by permitting such individuals to directly participate in an increase in share value created for the Company's shareholders.

Incentive options granted under the Stock Option Plan entitle the purchase of shares at a price and for the length of time determined by the Board provided that the price cannot be lower than the market price of the common shares on the TSX on the day prior to or on the day of the grant and the expiry date cannot be more than 10 years after the date of the grant. Further, the policies of the TSX also provide that the said exercise price of any options so granted cannot be reduced without shareholder approval.

Options under the Stock Option Plan are typically granted in such numbers as reflect the level of responsibility of the particular optionee and his or her contribution to the business and activities of the Company. Options may also be granted under the Stock Option Plan to consultants. Options granted under the Stock Option Plan typically have a five year term and are typically made cumulatively exercisable by the holders thereof in equal proportions of the aggregate number of shares subject to the options over specified time periods. Historically, after an

initial grant, options have been re-granted upon such having been exercised. In the event a take-over bid (within the meaning of the Securities Act (Ontario)) is made for the common shares of the Company, then all unvested options thereupon become exercisable by the holder. Options terminate immediately upon an optionee's employment with the Company being terminated (unless otherwise determined by the Board) or unless such termination is a result of death, disability or retirement, in which case termination occurs 12 months from the occurrence of the relevant event (subject to the earlier expiry of the options in the normal course). The terms of the Stock Option Plan further provide that the exercise price at which common shares may be issued under the Stock Option Plan cannot be less than the current market price of the common shares when the relevant options are granted.

As at November 24, 2017, 10,435,000 common shares, being 5.0% of the currently issued common shares of the Company, were issuable pursuant to unexercised options granted to such date under the Stock Option Plan.

Incentives to Participants under the Stock Option Plan may also be provided by the granting of stock appreciation rights. Stock appreciation rights, which can be attached to an option at the discretion of the Company at any time, entitle a Participant in the Stock Option Plan to elect, in lieu of exercising an outstanding Option, to receive the number of common shares equivalent in value to the difference between his or her option exercise price and the then existing market value of the shares multiplied by the number of common shares over which he or she could otherwise exercise his or her option. No stock appreciation rights have been granted under the Stock Option Plan to date.

The rules of the TSX require that all unallocated options, rights or other entitlements under plans such as the Stock Option Plan must be re-approved by a majority of the relevant issuer's directors and by shareholders every three years after institution of the relevant plan. Under the policies of the TSX, if the Company wishes to make certain amendments to the Stock Option Plan, it must obtain shareholder approval.

***2) Summary Compensation Table***

The following table sets forth particulars concerning the compensation paid or accrued for services rendered to the Company by its NEOs in all capacities during the last three most recently completed financial years ended August 31:

| **Name and principal position** | **Year** | **Salary ($)** | **Share-based awards ($)** | **Option-based awards ($)[1]** | **Non-equity incentive plan compensation ($)** | **Pension value ($)[2]** | **All other compensation ($)[3]** | **Total compensation ($)** |
|---|---|---|---|---|---|---|---|---|
| DONALD BUBAR [4] President and CEO | 2017 | 300,000 | Nil | 42,109 | Nil | Nil | 1,023 | 343,132 |
| | 2016 | 300,000 | Nil | 21,578 | Nil | Nil | 998 | 322,576 |
| | 2015 | 316,667 | Nil | 52,812 | Nil | Nil | 1,023 | 370,502 |
| R. JAMES ANDERSEN CFO and Vice President, Finance | 2017 | 240,000 | Nil | 28,338 | Nil | Nil | Nil | 268,338 |
| | 2016 | 240,000 | Nil | 23,423 | Nil | Nil | Nil | 263,423 |
| | 2015 | 250,000 | Nil | 30,761 | Nil | Nil | Nil | 280,761 |
| DAVID MARSH Senior Vice President, Metallurgy and | 2017 | 288,000 | Nil | 28,338 | Nil | Nil | Nil | 316,338 |
| | 2016 | 290,286 | Nil | 23,423 | Nil | Nil | 1,023 | 314,732 |
| | 2015 | 295,532 | Nil | 36,602 | Nil | Nil | Nil | 332,134 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Technology Development | | | | | | | | |
| PIERRE NEATBY Vice President, Sales and Marketing | 2017 | 208,000 | Nil | 21,359 | Nil | Nil | Nil | 229,359 |
| | 2016 | 208,000 | Nil | 16,507 | Nil | Nil | Nil | 224,507 |
| | 2015 | 216,667 | Nil | 30,279 | Nil | Nil | 748 | 247,694 |
| WILLIAM MERCER Vice President, Exploration | 2017 | 194,133 | Nil | 21,949 | Nil | Nil | 1,023 | 217,105 |
| | 2016 | 208,000 | Nil | 10,547 | Nil | Nil | 1,023 | 219,570 |
| | 2015 | 210,758 | Nil | 18,048 | Nil | Nil | Nil | 228,806 |

**NOTES:**

(1) These amounts represent the "grant date fair value" of options granted to the respective Named Executive Officer, which have been determined by using the Black-Scholes model, a mathematical valuation model that ascribes a value to an option based on a number of factors in valuing the option-based awards, including the exercise price of the option, the price of the underlying security on the date the option was granted, and assumptions with respect to the volatility of the price of the underlying security and the risk-free rate of return. Calculating the value of options using this methodology is very different from a simple "in-the-money" value calculation. In fact, options that are well out-of-the-money can still have a significant "grant date fair value" based on a Black-Scholes valuation, especially where, as in the case of the Company, the price of the common shares underlying the option is highly volatile. Accordingly, caution must be exercised in comparing grant date fair value amounts with cash compensation or an in-the-money option value calculation. The same caution applies to the total compensation amounts shown in the last column above, which are based in part on the grant date fair value amounts set out in the column for Option-based awards. These values are consistent with the accounting values used in the Company's financial statements. The Company selected the Black-Scholes model given its prevalence of use within North America.

(2) The Company does not have a pension plan.

(3) Medical expenses paid by the Company on behalf of the respective Named Executive Officer.

(4) Mr. Bubar does not receive any additional compensation for serving as a director of the Company.

Base Salary for the NEOs are determined by the Board upon the recommendation of the CGN Committee and its recommendations are reached primarily by informal comparison with the remuneration paid by other reporting issuers with the same size and industry and with publicly available information on remuneration that the CGN Committee feels is suitable.

The annual base salary paid to NEOs is, for the purpose of establishing appropriate increases, reviewed annually by the Board upon the recommendation of the CGN Committee as part of the annual review of executive officers. The decision on whether to grant an increase to the executive's base salary and the amount of any such increase is in the sole discretion of the Board and the CGN Committee.

***Non-Equity Incentive Plan Compensation***

One of the three components of the Company's compensation package is a discretionary annual cash bonus, paid to recognize individual performance in attaining corporate goals and objectives. The Company does not have a long-term incentive plan.

***Option Based Award***

An Option Based Award is in the form of an incentive stock option plan. The objective of the incentive stock option is to reward NEOs, employees' and directors' individual performance at the discretion of the Board upon the recommendation of the CGN Committee.

The Company currently maintains a formal stock option plan, under which stock options have been granted and may be granted to purchase shares equal to 10% of the Company's issued capital from time to time. For details of the stock option plan please review the Company's Management Information Circular for the Annual and Special

Meeting of Shareholders held February 22, 2017 which is available on the Company's SEDAR profile at www.sedar.com and on the Company's EDGAR profile at www.sec.gov.

The stock option plan is administered by the CGN Committee. The process the Company uses to grant option based awards is outlined in the Company's Stock Option Policy that was adopted by the Board on August 30, 2013.

***3) Incentive Plan Awards***

*Outstanding share-based awards and option-based awards*

The following table sets forth the options granted to the NEOs to purchase or acquire securities of the Company outstanding at the end of the most recently completed financial year ended August 31, 2017:

| | **Option-based Awards** | | | | **Share-based Awards** | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Number of securities underlying unexercised options (#)** | **Option exercise price ($)** | **Option expiration Date** | **Value of unexercised in-the-money options ($)[1]** | **Number of shares or units of shares that have not vested (#)** | **Market or payout value of share-based awards that have not vested ($)** | **Market or payout value of vested share-based awards not paid out or distributed ($)** |
| DONALD BUBAR Director, President and CEO | 200,000[2] | 1.19 | Feb28/18 | Nil | Nil | Nil | Nil |
| | 300,000[5] | 0.17 | Nov07/18 | Nil | Nil | Nil | Nil |
| | 150,000[3] | 0.59 | Jan06/19 | Nil | Nil | Nil | Nil |
| | 200,000[2] | 0.81 | Mar04/19 | Nil | Nil | Nil | Nil |
| | 150,000[4] | 0.22 | Nov23/19 | Nil | Nil | Nil | Nil |
| | 200,000[2] | 0.36 | Feb29/20 | Nil | Nil | Nil | Nil |
| | 150,000[4] | 0.12 | Jan11/21 | $3,000 | Nil | Nil | Nil |
| | 200,000[2] | 0.13 | Feb28/21 | $2,000 | Nil | Nil | Nil |
| | 200,000[2] | 0.18 | Feb28/22 | Nil | Nil | Nil | Nil |
| R. JAMES ANDERSEN CFO and Vice President, Finance | 120,000[2] | 0.88 | May31/18 | Nil | Nil | Nil | Nil |
| | 250,000[5] | 0.17 | Nov07/18 | Nil | Nil | Nil | Nil |
| | 150,000[3] | 0.59 | Jan06/19 | Nil | Nil | Nil | Nil |
| | 120,000[2] | 0.54 | May31/19 | Nil | Nil | Nil | Nil |
| | 125,000[4] | 0.22 | Nov23/19 | Nil | Nil | Nil | Nil |
| | 120,000[2] | 0.30 | May31/20 | Nil | Nil | Nil | Nil |
| | 125,000[4] | 0.12 | Jan11/21 | $2,500 | Nil | Nil | Nil |
| | 120,000[2] | 0.25 | May31/21 | Nil | Nil | Nil | Nil |
| | 120,000[2] | 0.15 | May31/22 | Nil | Nil | Nil | Nil |
| DAVID MARSH | 250,000[5] | 0.17 | Nov07/18 | Nil | Nil | Nil | Nil |

| | Option-based Awards | | | | Share-based Awards | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Number of securities underlying unexercised options (#)** | **Option exercise price ($)** | **Option expiration Date** | **Value of unexercised in-the-money options ($)[1]** | **Number of shares or units of shares that have not vested (#)** | **Market or payout value of share-based awards that have not vested ($)** | **Market or payout value of vested share-based awards not paid out or distributed ($)** |
| Senior Vice President, Metallurgy and Technology Development | 40,000[2] | 0.59 | Jan06/19 | Nil | Nil | Nil | Nil |
| | 120,000[2] | 0.54 | May31/19 | Nil | Nil | Nil | Nil |
| | 125,000[4] | 0.22 | Nov23/19 | Nil | Nil | Nil | Nil |
| | 120,000[2] | 0.30 | May31/20 | Nil | Nil | Nil | Nil |
| | 70,000[4] | 0.21 | Aug06/20 | Nil | Nil | Nil | Nil |
| | 125,000[4] | 0.12 | Jan11/21 | $2,500 | Nil | Nil | Nil |
| | 120,000[2] | 0.25 | May 31/21 | Nil | Nil | Nil | Nil |
| | 120,000[2] | 0.15 | May 31/22 | Nil | Nil | Nil | Nil |
| PIERRE NEATBY Vice President, Sales and Marketing | 80,000[2] | 0.88 | May31/18 | Nil | Nil | Nil | Nil |
| | 200,000[5] | 0.17 | Nov07/18 | Nil | Nil | Nil | Nil |
| | 80,000[2] | 0.54 | May31/19 | Nil | Nil | Nil | Nil |
| | 50,000[4] | 0.22 | Nov23/19 | Nil | Nil | Nil | Nil |
| | 80,000[2] | 0.30 | May31/20 | Nil | Nil | Nil | Nil |
| | 100,000[4] | 0.21 | Aug06/20 | Nil | Nil | Nil | Nil |
| | 100,000[4] | 0.12 | Jan11/21 | $2,000 | Nil | Nil | Nil |
| | 80,000[2] | 0.25 | May31/21 | Nil | Nil | Nil | Nil |
| | 80,000[2] | 0.15 | May31/22 | Nil | Nil | Nil | Nil |
| WILLIAM MERCER Vice President, Exploration | 200,000[5] | 0.17 | Nov07/18 | Nil | Nil | Nil | Nil |
| | 80,000[2] | 0.70 | Dec01/18 | Nil | Nil | Nil | Nil |
| | 100,000[4] | 0.22 | Nov23/19 | Nil | Nil | Nil | Nil |
| | 80,000[2] | 0.22 | Nov30/19 | Nil | Nil | Nil | Nil |
| | 80,000[2] | 0.12 | Nov30/20 | $1,600 | Nil | Nil | Nil |
| | 100,000[4] | 0.12 | Jan11/21 | $2,000 | Nil | Nil | Nil |
| | 80,000[2] | 0.16 | Nov30/21 | Nil | Nil | Nil | Nil |

(1) In-the-Money Options is the difference between the market value of the underlying securities at August 31, 2017 and the exercise price of the option. The closing market price of the Company's common shares as at August 31, 2017 was $0.14 per common share.

(2) These options vest as to 25% thereof on each of the first four anniversaries of the date of grant thereof and have a term of five years.

(3) These options vest as to 50% thereof on each of the date of grant and the first anniversary thereof and have a term of five years.

(4) These options were 100% vested on the date of grant and have a term of five years.
(5) These options were 100% vested on the date of grant and have a term of two years.

*Incentive plan awards – value vested or earned during the year*

An "incentive plan" is any plan providing compensation that depends on achieving certain performance goals or similar conditions within a specific period. An "incentive plan award" means compensation awarded, earned, paid or payable under an incentive plan.

The following table sets forth the value vested or earned during the year of option-based awards, share-based awards and non-equity incentive plan compensation paid to NEOs during the most recently completed financial year ended August 31, 2017:

| Name | Option-based awards – Value vested during the year ($)[(1)] | Share-based awards – Value vested during the year ($) | Non-equity incentive plan compensation – Value earned during the year ($) |
|---|---|---|---|
| DONALD BUBAR<br>Director, President and CEO | 2,750 | Nil | Nil |
| R. JAMES ANDERSEN<br>CFO and Vice President, Finance | Nil | Nil | Nil |
| DAVID MARSH<br>Senior Vice President, Metallurgy and Technology Development | Nil | Nil | Nil |
| PIERRE NEATBY<br>Vice President, Sales and Marketing | Nil | Nil | Nil |
| WILLIAM MERCER<br>Vice President, Exploration | 800 | Nil | Nil |

(1) The value of the options vested during the year for each NEO is based on the closing market price of the Company's common shares on the TSX on the vesting date less the option exercise price.

***4) Pension Plan Benefits***

No pension plan or retirement benefit plans have been instituted by the Company and none are proposed at this time.

***Use of Financial Instruments***

The Company does not have in place policies which restrict the ability of directors or NEOs to purchase financial instruments, such as prepaid variable forward contracts, equity swaps, collars, or units of exchange funds, that are designed to hedge or offset a decrease in market value of equity securities granted as compensation or held, directly or indirectly, by a director or NEO. Any such purchases would be subject to applicable insider reporting requirements.

***5) Termination and Change of Control Benefits***

The Company has entered into employment agreements with each of the NEOs. Employment agreements can be terminated:

a) by the employee by providing a minimum of 30 days notice to the Company;

b) by the Company by payment of termination benefits that provide for a payment, which in the case of Donald Bubar, President and CEO, and R. James Andersen, CFO and Vice President, Finance, of an amount equal to three years the then current salary for each of Donald Bubar and R. James Andersen, respectively, and, in the case of the other NEOs, equal to twelve months' salary plus one month per year to a maximum of 24 months;

A "change of control" shall be deemed to have occurred when any person, entity or group becomes the beneficial owner of 50.1% or more of the combined voting power of the Company's then outstanding voting securities entitled to vote generally in the election of directors; or completion of the sale or other disposition by the Company of all or substantially all of the Company's assets or a reorganization or merger or consolidation of the Company with any other entity or corporation, at which time the severance payment becomes due and payable on closing of the transaction, other than:

(i) a reorganization or merger or consolidation that would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent, either by remaining outstanding or by being converted into voting securities of another entity, more than 50.1% of the combined voting power of the voting securities of the Company or such other entity outstanding immediately after such reorganization or merger or consolidation; or
(ii) a reorganization or merger or consolidation effected to implement a recapitalization or reincorporation of the Company (or similar transaction) that does not result in a material change in beneficial ownership of the voting securities of the Company or its successor.

The following amounts would have been required to be paid assuming a change of control event took place on the last business day of the Company's most recently completed financial year:

| Name | Change of Control | Amount ($) |
|---|---|---|
| DONALD BUBAR<br>Director, President and CEO | 3x annual salary | 1,200,000 |
| R. JAMES ANDERSEN<br>CFO and Vice President, Finance | 3x annual salary | 900,000 |
| DAVID MARSH<br>Senior Vice President, Metallurgy and Technology Development | 12 months +<br>1 month per year of employment | 540,000 |
| PIERRE NEATBY<br>Vice President, Sales and Marketing | 12 months +<br>1 month per year of employment | 433,333 |
| WILLIAM MERCER<br>Vice President, Exploration | 12 months +<br>1 month per year of employment | 411,667 |

***6) Director Compensation***

Directors of the Company (excluding Donald Bubar, who is an officer of the Company) are paid a base yearly fee of $10,000 plus a fee of $400 per Board or Committee meeting attended in person or by conference telephone. An additional fee of $3,000 is paid to each of the Chair of the Board and the Chair of any other permanent committee of the Board.

In addition, pursuant to the Stock Option Plan, the Company typically grants options to purchase common shares to directors of the Company. During the year ended August 31, 2017, 225,000 options were granted to a new director and an aggregate of 150,000 options were granted to certain directors to replace options expired during the Year.

The directors are indemnified by the Company against all costs, charges and expenses reasonably incurred by such director in respect of any action or proceeding to which such director is made a party by reason of being a director of the Company, subject to the limitations in respect thereof contained in the Canada Business Corporations Act.

The Company maintains insurance coverage with respect of directors' and officers' liability which is limited to $20,000,000 per claim and $20,000,000 per policy period, subject to deductibles of $150,000 to $250,000 as defined in the policy. The current policy is for a one-year term and expires on July 20, 2018. The premium paid by the Company in respect of said insurance in fiscal 2017 was $81,600.

The following table sets forth the value of all compensation paid to the directors, excluding Donald Bubar, President and CEO who is paid as an officer and not as a director:

| Name | Fees earned ($) | Share-based awards ($)[1] | Option-based awards ($)[2] | Non-equity incentive plan compensation ($)[3] | Pension value ($)[4] | All other compensation ($)[5] | Total ($) |
|---|---|---|---|---|---|---|---|
| Alan Ferry * | 16,700 | Nil | 3,889 | Nil | Nil | Nil | 20,589 |
| Brian D. MacEachen * | 21,200 | Nil | 3,889 | Nil | Nil | Nil | 25,089 |
| Peter McCarter *[6] | 9,300 | Nil | 3,889 | Nil | Nil | Nil | 13,189 |
| Patricia Mohr *[7] | 7,400 | Nil | 20,280 | Nil | Nil | Nil | 27,680 |
| Jane Pagel* | 13,200 | Nil | Nil | Nil | Nil | Nil | 13,200 |
| Kenneth G. Thomas * | 12,800 | Nil | Nil | Nil | Nil | Nil | 12,800 |

*Independent and Non-Employee Directors.

(1) The Company does not currently have any share-based award plans.

(2) These amounts represent the "grant date fair value" of options granted to the respective Named Executive Officer, which have been determined by using the Black-Scholes model, a mathematical valuation model that ascribes a value to an option based on a number of factors in valuing the option-based awards, including the exercise price of the option, the price of the underlying security on the date the option was granted, and assumptions with respect to the volatility of the price of the underlying security and the risk-free rate of return. Calculating the value of options using this methodology is very different from a simple "in-the-money" value calculation. In fact, options that are well out-of-the-money can still have a significant "grant date fair value" based on a Black-Scholes valuation, especially where, as in the case of the Company, the price of the common shares underlying the option is highly volatile. Accordingly, caution must be exercised in comparing grant date fair value amounts with cash compensation or an in-the-money option value calculation. The same caution applies to the total compensation amounts shown in the last column above, which are based in part on the grant date fair value amounts set out in the column for Option-based awards. These values are consistent with the accounting values used in the Company's financial statements. The Company selected the Black-Scholes model given its prevalence of use within North America.

(3) The Company does not have a non-equity incentive plan.

(4) The Company does not have any pension plans.

(5) The Company does not have any other benefit plans for its directors.

(6) Mr. McCarter served as a director until February 22, 2017.

(7) Ms. Mohr became a director on March 23, 2017.

The Company may grant incentive stock options to directors of the Company from time to time pursuant to the stock option plan of the Company and in accordance with the policies of the TSX.

***Outstanding share-based awards and option-based awards***

The following table sets forth the options granted to the directors to purchase or acquire securities of the Company outstanding at August 31, 2017:

| | Option-based Awards | | | | Share-based Awards | | |
|---|---|---|---|---|---|---|---|
| **Name[1]** | **Number of securities underlying unexercised options (#)** | **Option exercise price ($)** | **Option expiration date** | **Value of unexercised in-the-money options ($)[2]** | **Number of shares or units of shares that have not vested (#)** | **Market or payout value of share-based awards that have not vested ($)** | **Market or payout value of vested share-based awards not paid out or distributed ($)** |
| Alan Ferry | 50,000[4] | 0.99 | Apr29/18 | Nil | Nil | Nil | Nil |
| | 50,000[4] | 0.84 | Mar05/19 | | | | |
| | 75,000[4] | 0.48 | Jul14/19 | | | | |
| | 50,000[5] | 0.22 | Nov23/19 | | | | |
| | 50,000[4] | 0.16 | Nov30/21 | | | | |
| Brian D. MacEachen | 50,000[4] | 1.01 | Apr19/18 | Nil | Nil | Nil | Nil |
| | 50,000[4] | 0.99 | Apr29/18 | | | | |
| | 50,000[4] | 0.72 | Mar12/19 | | | | |
| | 75,000[4] | 0.48 | Jul14/19 | | | | |
| | 60,000[5] | 0.22 | Nov23/19 | | | | |
| | 50,000[4] | 0.16 | Nov30/21 | | | | |
| Patricia Mohr | 225,000[3] | 0.16 | Apr16/22 | Nil | Nil | Nil | Nil |
| Jane Pagel | 225,000[3] | 0.14 | Feb24/21 | Nil | Nil | Nil | Nil |
| Kenneth G. Thomas | 225,000[3] | 0.81 | Mar04/19 | Nil | Nil | Nil | Nil |
| | 50,000[5] | 0.22 | Nov23/19 | | | | |

(1) For the compensation of Donald Bubar who is a NEO of the Company, see "Incentive Plan Awards" above.
(2) In-the-Money Options is the difference between the market value of the underlying securities at August 31, 2017 and the exercise price of the option. The closing market price of the Company's common shares as at August 31, 2017 was $0.14 per common share.
(3) These options vest as to 25% thereof on each of the first four anniversaries of the date of grant thereof and have a term of five years.
(4) These options vest as to 50% thereof on each of the date of grant and the first anniversary thereof and have a term of five years.
(5) These options were 100% vested on the date of grant and have a term of five years.

***Incentive plan awards – value vested or earned during the year***

An "incentive plan" is any plan providing compensation that depends on achieving certain performance goals or similar conditions within a specific period. An "incentive plan award" means compensation awarded, earned, paid or payable under an incentive plan.

The following table sets forth the value vested or earned during the year of option-based awards, share-based awards and non-equity incentive plan compensation paid to directors during the year ended August 31, 2017:

| Name[(1)] | Option-based awards – Value vested during the year ($) [(2)] | Share-based awards – Value vested during the year ($) | Non-equity incentive plan compensation – Value earned during the year ($) |
|---|---|---|---|
| Alan Ferry | Nil | Nil | Nil |
| Brian D. MacEachen | Nil | Nil | Nil |
| Peter McCarter | Nil | Nil | Nil |
| Patricia Mohr | Nil | Nil | Nil |
| Jane Pagel | 3,375 | Nil | Nil |
| Kenneth G. Thomas | Nil | Nil | Nil |

(1) For the compensation of Donald Bubar who is a NEO of the Company, see "Incentive Plan Awards" above.
(2) The value of the options vested during the year for each director is based on the closing market price of the Company's common shares on the TSX on the vesting date less the option exercise price.

**C. Board Practices**

The Board is currently comprised of six directors. The size and experience of the Board is important for providing the Company with effective governance in the mineral industry. The Board's mandate and responsibilities can be effectively and efficiently administered at its current size. The Board has functioned, and is of the view that it can continue to function, independently of management as required. Directors are elected for a term of one year at the annual meeting of shareholders. At the Annual Meeting, held on February 22, 2017, the shareholders elected Messrs. Bubar, Ferry, MacEachen, Thomas and Ms. Pagel as directors. Ms. Mohr was appointed a director of the Company by the Board of Directors on March 23, 2017.

The Board has considered the relationship of each director to the Company and currently considers five of the six directors to be "unrelated" (Mr. Ferry, Mr. MacEachen, Dr. Thomas, Ms. Pagel and Ms. Mohr). "Unrelated director" means a director who is independent of management and free from any interest and any business or other relationship which could reasonably be perceived to materially interfere with the director's ability to act with a view to the best interest of the Company, other than interests and relationships arising solely from shareholdings.

Procedures are in place to allow the Board to function independently. At the present time, the Board has experienced directors that have made a significant contribution to the Company's success, and are satisfied that it is not constrained in its access to information, in its deliberations or in its ability to satisfy the mandate established by law to supervise the business and affairs of the Company. Committees meet independent of management and other directors.

*Mandate of the Board of Directors, its Committees and Management*

The role of the Board is to oversee the conduct of the Company's business, including the supervision of management, and determining the Company's strategy. Management is responsible for the Company's day to day operations, including proposing its strategic direction and presenting budgets and business plans to the Board for consideration and approval. The strategic plan takes into account, among other things, the opportunities and risks of the Company's business. Management provides the Board with periodic assessments as to those risks and the implementation of the Company's systems to manage those risks. The Board reviews the personnel needs of the Company from time to time, having particular regard to succession issues relating to senior management. Management is responsible for the training and development of personnel. The Board assesses how effectively the Company communicates with shareholders, but has not adopted a formal communications policy. Through the Audit Committee, and in conjunction with its auditors, the Board assesses the adequacy of the Company's internal control and management information systems. The Board looks to management to keep it informed of all significant developments relating to or affecting the Company's operations. Major financings, acquisitions, dispositions and investments are

subject to Board approval. The Board adopted a formal mandate for the Board, the Chair of the Board and the CEO. The Board meets quarterly and additionally as required. The Board and committees may take action at these meetings or at a meeting by conference call or by written consent.

*Majority Voting Policy*

The Board has adopted a policy providing that in an uncontested election of directors, any nominee who receives a greater number of votes "withheld" than votes "for" will tender his or her resignation to the Chairman of the Board promptly following the shareholders' meeting. The Compensation, Governance and Nominating Committee ("CGN Committee") of the Board will consider the offer of resignation and will make a recommendation to the Board on whether to accept it. In considering whether or not to accept the resignation, the CGN Committee will consider all factors deemed relevant by members of such committee. The CGN Committee will be expected to accept the resignation except in situations where the considerations would warrant the applicable director continuing to serve on the Board. The Board will make its final decision and announce it in a press release within 90 days following the meeting. A director who tenders his or her resignation pursuant to this policy will not participate in any meeting of the Board or the CGN Committee at which the resignation is considered.

*Board Effectiveness Assessment*

The CGN Committee of the Board has implemented a process for periodically assessing the effectiveness of the Board as a whole, as well as its committees and individual directors. As part of the assessment process, each director receives a comprehensive survey which covers, among other matters, the overall functioning of the Board and each Board committee, including its composition, structure and processes; the management structure and reporting functions; the Company's strategic direction and commitment to sustainability; the Board's operational oversight, the Board's relationship with management; and other relevant aspects of the Board's responsibilities and processes. The completed surveys are then compiled into a report which is provided to the CGN Committee. The CGN Committee reviews the results of the Board surveys and puts forward any recommendations it feels appropriate to address any comments or concerns expressed by directors. The report, along with the recommendations of the CGN Committee, is then presented to the Board for further discussion.

**Committees**

*Audit Committee*

The Audit Committee assists the Board in its oversight of the Company's consolidated financial statements and other related public disclosures, the Company's compliance with legal and regulatory requirements relating to financial reporting, the external auditors, qualifications and independence and the performance of the internal audit function and the external auditors. The Audit Committee has direct communications channels with the Company's auditors. The Audit Committee reviews the Company's financial statements and related management's discussion and analysis of financial and operating results. The Audit Committee can retain legal, accounting or other advisors.

The Audit Committee currently consists of three directors (Brian MacEachen (chair), Alan Ferry and Patricia Mohr). All of the members are unrelated, financially literate and at least one member has accounting or related financial expertise. "Financially literate" means the ability to read and understand statements of financial position, statements of operations and comprehensive loss, statements of shareholders' equity, statements of cash flow and notes to financial statements. "Accounting or related financial expertise" means the ability to analyze and interpret a full set of financial statements, including the notes attached thereto.

Mr. MacEachen is a Chartered Professional Accountant with over 20 years of experience in overseeing the financial management of publicly traded companies. He holds a BBA and a CPA designation.

Mr. Ferry is a retired Chartered Financial Analyst with over 25 years of experience as a mining analyst with various investment dealers. He holds a B.Sc. and serves on the board of directors of four publicly traded companies and the audit committee of three publicly traded companies.

Ms. Mohr is the former Vice President, Economics and Commodity Market Specialist at Scotiabank's Executive Offices in Toronto, before retiring in 2016 after 31 years with the bank. Prior to joining Scotiabank, Ms. Mohr spent a number of years with Alberta Energy Co. Ltd. (now EnCana Corp.) in Calgary and with CP Ships and Canadian Pacific Bermuda in London as Corporate Economist. She holds an Honours B.A. Degree and an M.A. Degree in Economics from The University of British Columbia.

The Board has adopted a charter for the Audit Committee which is reviewed annually and sets out the role and oversight responsibilities of the Audit Committee with respect to:

- its relationship with and expectation of the external auditors, including the establishment of the independence of the external auditor and the approval of any non-audit mandates of the external auditor;
- determination of which non-audit services the external auditor is prohibited from providing;
- the engagement, evaluation, remuneration, and termination of the external auditors;
- appropriate funding for the payment of the auditor's compensation and for any advisors retained by the Audit Committee;
- its relationship with and expectation of the internal auditor;
- its oversight of internal control;
- disclosure of financial and related information; and
- any other matter that the Audit Committee feels is important to its mandate or that which the Board chooses to delegate to it.

*Compensation, Governance and Nominating Committee*

The CGN Committee is responsible for reviewing the compensation of the Company's directors and officers and making recommendations to the Board with respect thereto.

The CGN Committee of the Board is responsible for making recommendations to the Board with respect to the compensation of the executive officers of the Company as well as, among other things, with respect to the Company's Stock Option Plan and any other employee benefits and/or plans and with respect to directors' compensation. The Board (exclusive of the CEO, who is also a member of the Board) reviews such recommendations and gives final approval to the compensation of the executive officers.

The CGN Committee currently consists of Alan Ferry (Chair), Kenneth G. Thomas and Jane Pagel, each of whom are independent. Each of Mr. Ferry, Dr. Thomas and Ms. Pagel has direct and extensive experience in corporate management and compensation issues in either the mineral industry and/or the financial industry. Mr. Ferry is a member of the committee responsible for compensation matters of Guyana Goldfields Inc. and GPM Metals Inc., which are publicly listed mineral exploration or mining companies. Dr. Thomas served as Senior Vice President, Projects, Kinross Gold Corporation from December 2009 to June 2012, Global Managing Director and Director, Hatch from November 2005 to November 2009 and Chief Operating Officer, Crystallex International Corporation April 2003 to October 2005. In addition he served in senior roles at Barrick Gold Corporation from 1987 to 2001, including Senior Vice President, Technical Services, during which times he was responsible for determining the compensation of those employees whom he directly and indirectly supervised, which numbered in excess of several dozen. Ms. Pagel is a self-employed businessperson and chair of the board of directors of BluMetric Environmental Inc., a publically traded company in the fields of water/wastewater treatment and professional environmental services. She served as the Interim President and CEO Sustainable Development Technology Canada from June, 2014 to June, 2015. Prior to that, she was president and CEO of the Ontario Clean Water Agency from 2010 until her retirement in early 2014. Previous industry positions held by Ms Pagel include Principal Government and Industrial Relations at Stantec; Senior Vice President and Principal at Jacques Whitford; Vice President Government Relations at Philip Services; and president of Zenon Environmental Laboratories.

The CGN Committee has not to date felt it necessary to engage any compensation consultant or advisor to assist it in the performance of its duties. This experience relating to executive compensation matters collectively

provides members of the Committee with a suitable perspective to make decisions on the appropriateness of the Company's compensation policies and practices.

The CGN Committee of the Board is responsible for recommending candidates for nomination to the Board, and governing the desirable characteristics for directors. In making such recommendations, the CGN Committee considers:

(a) the competencies and skills that the Board considers to be necessary for the Board, as a whole, to possess;
(b) the competencies and skills that the Board considers each existing director to possess; and
(c) the competencies and skills each new nominee will bring to the boardroom.

The CGN Committee reviews compensation levels for all officers and in particular compensation levels for the CEO. The CGN Committee is responsible for, among other things, developing or approving performance indicators and corporate objectives which the President and CEO is responsible for meeting, determining or recommending to the Board the compensation of the President and CEO, and reviewing the adequacy and form of compensation of the Board and members of the committees of the Board in light of the responsibilities and risks involved in being a director, in the case of the Board, and a chairman, in the case of Board committees. The CGN Committee meets as often as is necessary to carry out its responsibilities.

The CGN Committee is permitted access to all records and corporate information that it determines are required in order to perform its duties. The CGN Committee has the authority to engage independent counsel and other advisors as it determines necessary to carry out its duties and to set and pay the compensation for any advisors engaged by it.

The CGN Committee currently consists of three directors (Mr. Ferry, Dr. Thomas and Ms. Pagel). All of the members are unrelated directors.

**D. Employees**

As at August 31, 2017, the Company has 13 employees (August 31, 2016 - 15, August 31, 2015 - 21), all of the employees are located in Ontario.

**E. Share Ownership**

As of November 24, 2017, the Company had 208,494,080 common shares issued and outstanding. The following table sets forth the share ownership of the individuals referred to in "Compensation" as of November 24, 2017, who were insiders as of that date:

| Name of Beneficial Owner | Number of Shares | Percent |
|---|---|---|
| R. James Andersen | 300,000 | 0.0 |
| Donald Bubar | 5,961,100 | 2.9 |
| Alan Ferry | 225,000 | 0.0 |
| Brian D. MacEachen | 340,000 | 0.0 |
| Patricia Mohr | 65,000 | 0.0 |
| William Mercer | 106,234 | 0.0 |
| Pierre Neatby | 23,500 | 0.0 |
| Jane Pagel | 34,000 | 0.0 |
| Kenneth G. Thomas | 49,000 | 0.0 |

*Outstanding Options*

The following information, as of November 24, 2017, reflects outstanding options held by the individuals referred to in "Compensation":

| Name | Number of common shares underlying unexercised options (#) | Grant Date | Exercise Price ($) | Expiration Date |
|---|---|---|---|---|
| DONALD BUBAR | 200,000 | Mar01/13 | 1.19 | Feb28/18 |
| | 300,000 | Nov08/16 | 0.17 | Nov07/18 |
| | 150,000 | Jan07/14 | 0.59 | Jan06/19 |
| | 200,000 | Mar05/14 | 0.81 | Mar04/19 |
| | 150,000 | Nov24/14 | 0.22 | Nov23/19 |
| | 200,000 | Mar02/15 | 0.36 | Feb29/20 |
| | 150,000 | Jan12/16 | 0.12 | Jan11/21 |
| | 200,000 | Mar01/16 | 0.13 | Feb28/22 |
| | 200,000 | Mar01/17 | 0.18 | Feb28/21 |
| R. JAMES ANDERSEN | 120,000 | Jun01/13 | 0.88 | May31/18 |
| | 250,000 | Nov8/16 | 0.17 | Nov7/18 |
| | 150,000 | Jan07/14 | 0.59 | Jan06/19 |
| | 120,000 | Jun05/14 | 0.54 | May31/19 |
| | 125,000 | Nov24/14 | 0.22 | Nov23/19 |
| | 120,000 | Jun1/15 | 0.30 | May31/20 |
| | 125,000 | Jan12/16 | 0.12 | Jan11/21 |
| | 120,000 | Jun01/16 | 0.25 | May31/21 |
| | 120,000 | Jun01/17 | 0.15 | May31/22 |
| DAVID MARSH | 250,000 | Nov08/16 | 0.17 | Nov07/18 |
| | 40,000 | Jan07/14 | 0.59 | Jan06/19 |
| | 120,000 | Jun05/14 | 0.54 | May31/19 |
| | 125,000 | Nov24/14 | 0.22 | Nov23/19 |
| | 120,000 | Jun1/15 | 0.30 | May31/20 |
| | 70,000 | Aug7/15 | 0.21 | Aug6/20 |
| | 125,000 | Jan12/16 | 0.12 | Jan11/21 |
| | 120,000 | Jun01/16 | 0.25 | May31/21 |
| | 120,000 | Jun01/17 | 0.15 | May31/22 |
| PIERRE NEATBY | 80,000 | Jun01/13 | 0.88 | May31/18 |
| | 200,000 | Nov8/16 | 0.17 | Nov7/18 |
| | 80,000 | Jun05/14 | 0.54 | May31/19 |
| | 50,000 | Nov24/14 | 0.22 | Nov23/19 |
| | 80,000 | Jun1/15 | 0.30 | May31/20 |
| | 100,000 | Aug7/15 | 0.21 | Aug6/20 |
| | 100,000 | Jan12/16 | 0.12 | Jan11/21 |

| Name | Number of common shares underlying unexercised options (#) | Grant Date | Exercise Price ($) | Expiration Date |
|---|---|---|---|---|
| | 80,000 | Jun01/16 | 0.25 | May31/21 |
| | 80,000 | Jun01/17 | 0.15 | May31/22 |
| WILLIAM MERCER | 200,000 | Nov8/16 | 0.17 | Nov7/18 |
| | 80,000 | Dec02/13 | 0.70 | Dec01/18 |
| | 100,000 | Nov24/14 | 0.22 | Nov23/19 |
| | 80,000 | Dec02/14 | 0.22 | Nov30/19 |
| | 80,000 | Dec1/15 | 0.12 | Nov30/20 |
| | 100,000 | Jan12/16 | 0.12 | Jan11/21 |
| | 80,000 | Dec1/16 | 0.16 | Nov30/21 |
| ALAN FERRY | 50,000 | Apr29/13 | 0.99 | Apr29/18 |
| | 50,000 | Mar06/14 | 0.84 | Mar5/19 |
| | 75,000 | Jul15/14 | 0.48 | Jul14/19 |
| | 50,000 | Nov24/14 | 0.22 | Nov23/19 |
| | 50,000 | Dec01/16 | 0.16 | Nov30/21 |
| BRIAN D. MACEACHEN | 50,000 | Apr19/13 | 1.01 | Apr19/18 |
| | 50,000 | Apr29/13 | 0.99 | Apr29/18 |
| | 50,000 | Mar13/14 | 0.72 | Mar12/19 |
| | 75,000 | Jul15/14 | 0.48 | Jul14/19 |
| | 60,000 | Nov24/14 | 0.22 | Nov23/19 |
| | 50,000 | Dec01/16 | 0.16 | Nov30/21 |
| PETER MCCARTER | 50,000 | Nov24/14 | 0.22 | Nov23/19 |
| PATRICIA MOHR | 225,000 | Apr 17/17 | 0.16 | Apr 16/22 |
| JANE PAGEL | 225,000 | Feb25/16 | 0.14 | Feb24/21 |
| KENNETH G. THOMAS | 225,000 | Mar05/14 | 0.81 | Mar04/19 |
| | 50,000 | Nov24/14 | 0.22 | Nov23/19 |

*Outstanding Warrants*

The following information, as of November 24, 2017, reflects outstanding share purchase warrants held by the individuals referred to in "Compensation":

| Name | Number of common shares underlying unexercised warrants (#) | Issuance Date | Exercise Price ($) | Expiration Date |
|---|---|---|---|---|
| DONALD BUBAR | Nil | n/a | n/a | n/a |
| R. JAMES ANDERSEN | Nil | n/a | n/a | n/a |
| DAVID MARSH | Nil | n/a | n/a | n/a |
| PIERRE NEATBY | Nil | n/a | n/a | n/a |
| WILLIAM MERCER | Nil | n/a | n/a | n/a |

| Name | Number of common shares underlying unexercised warrants (#) | Issuance Date | Exercise Price ($) | Expiration Date |
|---|---|---|---|---|
| ALAN FERRY | Nil | n/a | n/a | n/a |
| BRIAN D. MACEACHEN | Nil | n/a | n/a | n/a |
| PETER MCCARTER | Nil | n/a | n/a | n/a |
| PATRICIA MOHR | Nil | n/a | n/a | n/a |
| JANE PAGEL | Nil | n/a | n/a | n/a |
| KENNETH G. THOMAS | Nil | n/a | n/a | n/a |

**Item 7. Major Shareholders and Related Party Transactions**

**A. Major Shareholders**

As far as it is known to the Company, it is not directly or indirectly owned or controlled by any other corporation or by the Canadian Government, or any foreign government, or by any other natural or legal person.

To the knowledge of the Company's directors and senior officers, no shareholder is the direct and/or indirect owner of more than five (5%) percent of the Company's common shares, or the owner of more than five percent of the outstanding shares of each class of the Company's voting securities.

***Changes in ownership by major shareholders***

To the best of the Company's knowledge, there have been no changes in the ownership of the Company's shares by its significant shareholders other than as disclosed herein.

***Voting Rights***

The Company's major shareholders do not have different voting rights.

***Shares Held in the United States***

As of November 21, 2017, there were 250 holders of record in the United States holding 46,064,580 of the Company's common shares representing approximately 67% of the total number of shareholders, and approximately 22% of the total number of common shares issued. The common shares are issued in registered form and the percentage of shares reported to be held by record holders in the United States is taken from the records of the TSX Trust Company in the City of Toronto, the registrar and transfer agent for our common shares.

***Change of Control***

As of the date of this annual report, there were no arrangements known to the Company which may, at a subsequent date, result in a change of control of the Company.

***Control by Others***

To the best of the Company's knowledge, the Company is not directly or indirectly owned or controlled by another corporation, any foreign government, or any other natural or legal person, severally or jointly.

**B. Related Party Transactions**

There had been no material trading transactions with related parties during the year ended August 31, 2017. The Company did not make any loans (including guarantees of any kind) to any related parties throughout fiscal 2017 and there were no amounts outstanding due from or due to any related parties as at November 28, 2017.

Subsequent to the end of the Year, the Company completed a private placement and issued 3,215,000 flow-through common shares at a price of $0.145 per share and 4,800,000 non-flow-through units at a price of $0.12 per unit for gross proceeds of $1,042,175. 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, respectively.

**Management transactions**

The Company has identified its directors and key members of its senior management team. The compensation costs for key management personnel for the years ended August 31, 2017 and 2016 are as follows:

| | 2017 | 2016 |
|---|---|---|
| Salaries, benefits and directors' fees | $ 1,744,508 | $ 1,803,314 |
| Share-based compensation [(1)] | 281,657 | 337,541 |
| | $ 2,026,165 | $ 2,140,855 |

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

Share-based compensation decreased by $55,884 to $281,657 during Fiscal 2017 compared to Fiscal 2016. This decrease is primarily related to the decrease in the estimated fair values of options earned during Fiscal 2017 compared to Fiscal 2016.

**C. Interests of Experts and Counsel**

Unless otherwise stated, the technical information set forth herein relating to the Nechalacho Project under the heading "Nechalacho Project", is substantially derived from and in some instances extracted from: (a) the technical report entitled "Technical Report Disclosing the Results of the Feasibility Study on the Nechalacho Rare Earth Elements Project" dated May 31, 2013, effective April 17, 2013 (the "Technical Report") and prepared by Tudorel Ciuculescu, M.Sc., P.Geo. of RPA, Kevin Hawton, P.Eng. of Knight Piesold Limited, and Bernard Foo, P.Eng., Richard Gowans, P.Eng., Christopher Jacobs, C.Eng., MIMMM, and Jane Spooner, P.Geo., all of Micon, each of whom is a qualified person pursuant to NI 43-101; and (b) the Company's news release dated August 15, 2013 each of which is available for review on the Company's SEDAR profile at www.sedar.com and on the Company's website at www.avalonadvancedmaterials.com, and on the Company's EDGAR profile at www.sec.gov.

Unless otherwise stated, the technical information set forth herein relating to the Separation Rapids Lithium Project under the heading "Separation Rapids Lithium Project", is substantially derived from and in some instances extracted from the technical report entitled "NI 43-101 Technical Report on the Preliminary Economic Assessment of Lithium Hydroxide Production Separation Rapids Lithium Project Kenora, Ontario" dated November 10, 2016, effective October 21, 2016 (the "Technical Report") and prepared by Steven R. Aiken, P.Eng. and Kevin E. Hawton, P.Eng. of Knight Piesold Limited, Richard Gowans, P.Eng., Christopher Jacobs, CEng, MIMMM, Eur Ing, Bruce Pilcher, CEng, FIMMM, FAusIMM(CP) and Jane Spooner, P.Geo, all of Micon, and David L. Trueman, Ph.D., P.Geo, each of whom is a qualified person pursuant to NI 43-101 which is available for review on the Company's SEDAR profile at www.sedar.com and on the Company's website at www.avalonadvancedmaterials.com, and on the Company's EDGAR profile at www.sec.gov.

Dr. William Mercer, P.Geo., Vice President, Exploration of the Company, David Marsh, Senior Vice President, Metallurgy and Technology Development of the Company, and Donald S. Bubar, P. Geo., President and Chief Executive Officer of the Company, are the qualified persons who prepared or supervised the preparation of, or reviewed and approved, as applicable, the technical information (including the technical information relating to

mineral processing and metallurgy) contained under the headings "Nechalacho Project" and “Separation Rapids Lithium Project” and Mr. Mercer also reviewed and approved the technical information contained in "Other Properties and Assets".

Other than 5,961,100 common shares of the Company held by Mr. Bubar, the aforementioned firms and persons held either less than one percent or no securities of the Company or of any associate or affiliate of the Company at or following the time when they prepared the Technical Report, or prepared or supervised the preparation of, or approved, as applicable, the technical information contained under the headings "Nechalacho Project" and "Other Properties and Assets", as applicable, and either did not receive any or received less than a one percent direct or indirect interest in any securities of the Company or of any associate or affiliate of the Company in connection with the preparation, supervision of the preparation, or approval, of such disclosure.

Other than Messrs. Mercer, Marsh and Bubar, who are currently officers of the Company, none of the aforementioned persons, nor any directors, officers or employees of such aforementioned firms, is currently expected to be elected, appointed or employed as a director, officer or employee of the Company or of any associate or affiliate of the Company.

Ernst & Young LLP, Chartered Professional Accountants are the independent auditors of the Company in respect of the audited consolidated financial statements of the Company for the year ended August 31, 2017. Ernst & Young LLP is independent within the meaning of the Rules of Professional Conduct of the Chartered Professional Accountants of Ontario and the rules and standards of the Public Company Accounting Oversight Board (United States) and the securities laws and regulations administered by the SEC.

**Item 8. Financial Information**

**A. Consolidated Statements and Other Financial Information**

The following financial statements of the Company are attached to this Annual Report:

- Reports of Independent Registered Public Accounting Firms;
- Consolidated Statements of Financial Position as at August 31, 2017, and August 31, 2016;
- Consolidated Statements of Comprehensive Loss, change in equity and cash flows for the years ended August 31, 2017, 2016 and 2015;
- Notes to Financial Statements for the years ended August 31, 2017, 2016 and 2015.

***Legal Proceedings***

The Company is not involved in any legal or arbitration proceedings, including those relating to bankruptcy, receivership or similar proceedings and those involving any third party, which may have, or had in the recent past, significant effects on the Company’s financial position or profitability, including governmental proceedings pending or known to be contemplated.

***Dividend Policy***

The Company has never paid any dividends and does not intend to in the near future.

**B. Significant Changes**

None.

**Item 9. The Offer and Listing**

**A. Price History of Stock**

The common shares of Avalon are listed on the TSX under the symbol "AVL" and trade on the OTCQX® Best Market under the symbol "AVLNF" and the Frankfurt Stock Exchange under the symbol “OU5”.

The following table sets forth the high and low prices expressed in Canadian dollars on TSX in Canada and in United States dollars on the NYSE MKT and on the OTCQX, as applicable, for the Company’s common shares for the past five years, for each quarter for the last two fiscal years, and for the last six months.

| | TSX (Canadian Dollars) | | NYSE MKT/OTCQX (United States Dollars) | |
|---|---|---|---|---|
| **Last Five Fiscal Years** | **High** | **Low** | **High** | **Low** |
| 2017 | 0.23 | 0.13 | 0.17 | 0.00 |
| 2016 | 0.33 | 0.10 | 0.26 | 0.07 |
| 2015 | 0.50 | 0.15 | 0.46 | 0.11 |
| 2014 | 1.09 | 0.45 | 1.07 | 0.40 |
| 2013 | 2.40 | 0.52 | 2.47 | 0.50 |
| | | | | |
| **2016- 2017** | **High** | **Low** | **High** | **Low** |
| Fourth Quarter ended August 31, 2017 | 0.16 | 0.13 | 0.12 | 0.10 |
| Third Quarter ended May 31, 2017 | 0.19 | 0.14 | 0.14 | 0.10 |
| Second Quarter ended February 28, 2017 | 0.23 | 0.14 | 0.17 | 0.10 |
| First Quarter ended November 30, 2016 | 0.22 | 0.14 | 0.17 | 0.00 |
| | | | | |
| **2015- 2016** | **High** | **Low** | **High** | **Low** |
| Fourth Quarter ended August 31, 2016 | 0.26 | 0.19 | 0.21 | 0.14 |
| Third Quarter ended May 31, 2016 | 0.33 | 0.12 | 0.26 | 0.08 |
| Second Quarter ended February 28, 2016 | 0.14 | 0.10 | 0.11 | 0.07 |
| First Quarter ended November 30, 2015 | 0.20 | 0.11 | 0.16 | 0.08 |
| | | | | |
| **Last Six Months** | **High** | **Low** | **High** | **Low** |
| November 2017 (from November 1 through 21, 2017) | 0.15 | 0.11 | 0.12 | 0.08 |
| October 2017 | 0.15 | 0.13 | 0.13 | 0.10 |
| September 2017 | 0.16 | 0.13 | 0.13 | 0.10 |
| August 2017 | 0.16 | 0.13 | 0.12 | 0.10 |
| July 2017 | 0.15 | 0.14 | 0.12 | 0.10 |
| June 2017 | 0.16 | 0.14 | 0.12 | 0.10 |
| May 2017 | 0.16 | 0.14 | 0.12 | 0.10 |

_____

*****The Company was initially listed on the TSX Venture Exchange and graduated to the TSX on February 28, 2008.
******The Company was original quoted on the OTCQX starting on August 5, 2009 and listed on the NYSE MKT from December 21, 2010 to December 17, 2015 and commenced to be quoted on the OTCQX® Best Market since December 18, 2015.

**B. Plan of Distribution**

Not Applicable.

**C. Markets**

***Common Shares***

Avalon's common shares became listed and posted for trading on the TSX on February 28, 2008 under the trading symbol "AVL", prior to which they were listed on the TSX Venture Exchange under the same trading symbol. Effective December 18, 2015, the Company's common shares are traded on the OTCQX® Best Market LLC in the United States under the symbol "AVLNF". The Company's common shares were listed on the NYSE MKT LLC in the United States also under the trading symbol "AVL" from December 22, 2010 until December 17, 2015. The Company's common shares are also traded on the Frankfurt Stock Exchange in Germany under the symbol "OU5".

The following table sets out the range of the market price and trading volumes of the common shares on the TSX for the periods indicated:

| Period | High ($) | Low ($) | Volume |
|---|---|---|---|
| **2017** | | | |
| November [(1)] | 0.15 | 0.11 | 6,574,457 |
| October | 0.15 | 0.13 | 5,046,223 |
| September | 0.16 | 0.13 | 4,050,491 |
| August | 0.16 | 0.13 | 3,993,464 |
| July | 0.15 | 0.14 | 1,149,842 |
| June | 0.16 | 0.14 | 2,155,449 |
| May | 0.16 | 0.14 | 2,820,801 |
| April | 0.17 | 0.14 | 2,990,482 |
| March | 0.19 | 0.16 | 3,090,972 |
| February | 0.20 | 0.18 | 4,636,767 |
| January | 0.23 | 0.15 | 9,212,824 |
| **2016** | | | |
| December | 0.17 | 0.14 | 5,470,930 |
| November | 0.19 | 0.15 | 2,245,283 |
| October | 0.21 | 0.14 | 3,486,740 |
| September | 0.22 | 0.20 | 3,061,822 |

**Note:**
(1) November 1, 2017 through November 21, 2017.

The following table sets out the range of the market price and trading volumes of the common shares on the OTCQX/NYSE MKT for the periods indicated:

| Period | High (US$) | Low (US$) | Volume |
|---|---|---|---|
| **2017** | | | |
| November [(1)] | 0.12 | 0.08 | 1,986,000 |
| October | 0.13 | 0.10 | 3,397,547 |
| September | 0.13 | 0.10 | 1,269,075 |
| August | 0.12 | 0.10 | 1,687,333 |
| July | 0.12 | 0.10 | 887,449 |
| June | 0.12 | 0.10 | 637,061 |
| May | 0.12 | 0.10 | 1,383,758 |
| April | 0.13 | 0.10 | 851,128 |
| March | 0.14 | 0.11 | 1,692,109 |
| February | 0.16 | 0.13 | 2,492,041 |

| Period | High (US$) | Low (US$) | Volume |
|---|---|---|---|
| January | 0.17 | 0.10 | 1,622,881 |
| **2016** | | | |
| December | 0.12 | 0.10 | 1,330,445 |
| November | 0.14 | 0.00 | 1,069,746 |
| October | 0.17 | 0.10 | 914,818 |
| September | 0.17 | 0.08 | 1,018,496 |

**Note:**
(1) November 1, 2017 through November 21, 2017.

***Prior Sales***

As of November 24, 2017, the only securities that the Company has outstanding that are not listed or quoted on a marketplace are: 405 Series A1 Preferred Shares, 10,435,000 stock options granted under the Company's Stock Option Plan, 23,356,513 warrants issued to various stakeholders and 1,580,727 brokers' compensation warrants. Set forth in the following tables is information with respect to the stock options, warrants and brokers' compensation warrants issued during the most recently completed financial year.

The Stock Option Plan provides for the issuance of up to 10% of the number of issued and outstanding common shares of the Company to eligible employees, directors and service providers of the Company. The number of options available to be granted under the Stock Option Plan 7,312,420 as of September 1, 2016 and 9,338,552 as of August 31, 2017.

There has been no change to the exercise price of any outstanding options during the fiscal year ended August 31, 2017.

***Stock Options***

The following table sets out the stock options granted during the fiscal year ended August 31, 2017.

| Date of Grant | Date of Expiry | Number of Options Granted | Exercise Price of Options Granted |
|---|---|---|---|
| September 1, 2016 | August 31, 2021 | 90,000 | $0.20 |
| November 8, 2016 | November 7, 2018 | 1,400,000 | $0.17 |
| December 1, 2016 | November 30, 2021 | 240,000 | $0.16 |
| January 11, 2017 | January 11, 2019 | 250,000 | $0.18 |
| January 11, 2017 | January 11, 2022 | 100,000 | $0.18 |
| March 1, 2017 | February 28, 2019 | 100,000 | $0.18 |
| March 1, 2017 | February 28, 2022 | 240,000 | $0.18 |
| April 17, 2017 | April 16, 2022 | 225,000 | $0.16 |
| June 1, 2017 | May 31, 2019 | 125,000 | $0.15 |
| June 1, 2017 | May 31, 2022 | 410,000 | $0.15 |

***Warrants***

The following table sets out the warrants issued during the fiscal year ended August 31, 2017.

| Date of Issuance | Date of Expiry | Number of Warrants Issued | Exercise Price of Warrants Issued |
|---|---|---|---|
| March 10, 2017 [(1)] | March 10, 2022 | 6,900,000 | $0.230 |

**Note**:
(1) Issued pursuant to the March 2017Private Placement completed on March 10, 2017

***Brokers' Compensation Warrants***

The following table sets out the brokers' compensation warrants issued during the fiscal year ended August 31, 2017.

| Date of Issuance | Date of Expiry | Number of Warrants Issued | Exercise Price of Warrants Issued |
|---|---|---|---|
| November 7, 2016[(1)] | November 7, 2018 | 272,727 | $0.250 |
| December 23, 2016[(2)] | December 23, 2018 | 150,000 | $0.150 |
| June 12, 2017[(3)] | June 12, 2019 | 204,000 | $0.150 |
| August 16, 2017[(4)] | August 16, 2019 | 186,000 | $0.145 |

**Note:**

(1) Issued pursuant to the November 2016 Private Placement completed on November 7, 2016
(2) Issued pursuant to the December 2016 Private Placement completed on December 23, 2016
(3) Issued pursuant to the June 2017 Private Placement completed on June 12, 2017
(4) Issued pursuant to the August 2017 Private Placement completed on August 16, 2017

**D. Selling Shareholders**

Not Applicable.

**E. Dilution**

Not Applicable.

**F. Expenses of the Issue**

Not Applicable.

**Item 10. Additional Information**

Additional information relating to the Company can be found under the Company's profile on the SEDAR website at www.sedar.com. Additional information, including directors' and officers' remuneration and indebtedness, principal holders of the Company's securities and securities authorized for issuance under equity compensation plans, if applicable, is contained in the Company's information circular for its most recent annual meeting of shareholders. Additional financial information is provided in the Company's audited consolidated financial statements and management's discussion and analysis for its most recently completed financial year.

**A. Share Capital**

Avalon's authorized share structure consists of an unlimited number of common shares, of which 196,735,521 common shares were outstanding as at August 31, 2017 and 25,000,000 preferred shares, of which 480 Series A1 Preferred Shares were outstanding as at August 31, 2017. As of November 24, 2017, Avalon had 208,494,080 common shares issued and outstanding and 405 Series A1 Preferred Share issued and outstanding.

**B. Memorandum and Articles of Association**

**Common Shares**

All issued and outstanding common shares are fully paid and non-assessable. Holders of common shares of the Company are entitled to receive notice of any meetings of shareholders of the Company, to attend and to cast one vote per common share of the Company at all such meetings. Holders of common shares of the Company do not have cumulative voting rights with respect to the election of directors and, accordingly, holders of a majority of the

common shares of the Company entitled to vote in any election of directors may elect all directors standing for election. Holders of common shares are entitled to receive on a pro-rata basis such dividends, if any, as and when declared by the Board of Directors of the Company at its discretion from funds legally available therefore and upon the liquidation, dissolution or winding up of the Company are entitled to receive on a pro-rata basis the net assets of the Company after payment of debts and other liabilities, in each case subject to the rights, privileges, restrictions and conditions attaching to any other series or class of shares ranking senior in priority to or on a pro-rata basis with the holders of common shares of the Company with respect to dividends or liquidation. The common shares of the Company do not carry any pre-emptive, subscription, redemption or conversion rights, nor do they contain any sinking or purchase fund provisions.

**Series A1 Preferred Shares**

The holder of the Series Al Preferred Shares (the "Holder") then outstanding shall not be entitled to receive any dividend on Series Al Preferred Shares. The Holder may not transfer, sell or trade the Series Al Preferred Shares. The Series Al Preferred Shares redemption value that starts at $5,000 per share and increases by $250 per share each quarter over a 24 month period ending on March 10, 2019, to a cap of $6,750 per share. The Holder may convert the Series Al Preferred Shares into common shares from time to time 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. The Holder is entitled to certain adjustments if there shall occur any reorganization, recapitalization, reclassification, consolidation, arrangement, subdivision, amalgamation or merger involving the Company. In certain circumstances, The Holder is 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 (the "Redemption Events"). The triggering Redemption Events include certain key financial and non-financial conditions, which include change of control, insolvency and liquidity conditions. These Redemption Events also limit the Company from obtaining other debt or preferred share financings that are not junior to the Preferred Shares other than certain project-related financings, as well as other at-the-market, equity lines or credit type of common share offerings, or convertible security financings where the price of the common share is not fixed at a predetermined price. In addition, if the Redemption Event is a change of control event, the redemption amount will be equal to 110% of the applicable redemption amount at that time. The Company has the right to redeem all of the outstanding Series A1 Preferred Shares at any time at a 5% premium to the redemption value. The Company also 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 Series A Preferred Shares that were subject to that conversion for the redemption amount in cash plus a 5% premium.

**Powers and Duties of Directors**

The directors manage or supervise the management of the affairs and business of the Company and have authority to exercise all such powers of the Company as are not, by the *Canada Business Corporations Act* or by the Articles of Continuance, required to be exercised by the Company in a general meeting.

Directors will serve as such until the next annual meeting. A director who is, in any way, directly or indirectly interested in an existing or proposed contract or transaction with the Company whereby a duty or interest might be created to conflict with his duty or interest as a director, shall declare the nature and extent of his interest in such contract or transaction or the conflict or potential conflict with his duty and interest as a director. Such director shall not vote in respect of any such contract or transaction with the Company in which he is interested and if he shall do so, his vote shall not be counted, but he shall be counted in the quorum present at the meeting at which such vote is taken. However, notwithstanding the foregoing, directors shall have the right to vote on determining the remuneration of the directors. The Company is not aware of any material interest, direct or indirect, in any transaction within the three most recently completed financial years involving any director, executive officer, or proposed nominee for election as a director or any associate or affiliate of any of the foregoing.

The directors may from time to time on behalf of the Company: (a) borrow money upon the credit of the Company; (b) issue, re-issue, sell or pledge debt obligations of the Company; (c) subject to the provisions of the Canada Business Corporations Act, as now enacted or as the same may from time to time be amended, re-enacted or

replaced, give a guarantee on behalf of the Company to secure performance of an obligation of any person; and (d) mortgage, hypothecate, pledge or otherwise create a security interest in all or any property of the Company owned or subsequently acquired, to secure any obligation of the Company.

The directors may from time to time delegate to a director, a committee of directors or an officer of the Company any or all of the powers conferred on the board as set out above, to such extent and in such manner as the Board shall determine at the time of such delegation. Except in the case of any class or series of shares of the Company listed on a stock exchange, the Company shall have a lien on the shares registered in the name of a shareholder or his legal representative for a debt of that shareholder to the Company. Between annual and general meetings of the Company, the directors of the Company may appoint one or more additional directors to serve until the next annual and general meeting, but the number of additional directors shall not at any time exceed one-third of the number of directors who held office at the expiration of the last annual and general meeting.

Every director shall be an individual 18 or more years of age, and no one who is of unsound mind and has been so found by a court in Canada or elsewhere, or who has the status of a bankrupt shall be a director. A director need not be a shareholder. At least 25% of the directors of the Company must be resident Canadians.

**Shareholders**

An annual general meeting is held once in every calendar year at such time and place as may be determined by the directors. A quorum for the transaction of business at any meeting of shareholders is two persons present in person, each being a shareholder entitled to vote thereat or a duly appointed proxy or proxyholder for an absent shareholder so entitled, holding or representing in the aggregate not less than 25% of the issued and outstanding shares of the Company carrying voting rights at the meeting of shareholders. There is no limitation imposed by the laws of Canada or by the charter or other constituent documents of the Company on the right of a non-resident to hold or vote the common shares, other than as provided in the *Investment Canada Act* (the "Investment Act") discussed below under "Item 10. Additional Information, D. Exchange Controls."

In accordance with the laws of Canada, directors shall be elected annually by an "ordinary resolution" which means a resolution passed by the shareholders of the Company at an annual meeting by a simple majority of the votes cast in person or by proxy. A director's term of office shall be from the date of the meeting at which he is elected or appointed until the close of the annual meeting next following, or until his successor is elected or appointed.

Under the laws of the Canada Business Corporations Act and the *Securities Act* (Ontario) certain items such as an amendment to the Company's articles or entering into a merger requires approval by a special resolution which means: (a) a resolution passed by a majority of not less than two-thirds of the votes cast by the shareholders of the Company who, being entitled to do so, vote in person or by proxy at a general meeting of the Company; or (b) a resolution consented to in writing by every shareholder of the Company who would have been entitled to vote in person or by proxy at a general meeting of the Company, and a resolution so consented to is deemed to be a special resolution passed at a general meeting of the Company.

The Company has adopted a by-law (By-law No. 2) relating to the nomination of directors by shareholders of the Company in certain circumstances. By-Law No.2 provides a clear process for shareholders to follow for director nominations and sets out a reasonable time frame for nominee submissions and the provision of accompanying information. The purpose of By-law No.2 is to treat all shareholders fairly by ensuring that all shareholders receive adequate notice of the nominations to be considered at a meeting and can thereby exercise their voting rights in an informed manner. In addition, By-law No.2 should assist in facilitating an orderly and efficient meeting process.

**C. Material Contracts**

The Company has not entered into any material contracts within the last two years immediately preceding the date of this annual report, other than contracts entered into in the ordinary course of business or that are summarized elsewhere in this annual report.

**D. Exchange Controls**

Canada has no system of exchange controls. There are no Canadian restrictions on the repatriation of capital or earnings of a Canadian public company to non-resident investors. There are no laws in Canada or exchange restrictions affecting the remittance of dividends, profits, interest, royalties and other payments to non-resident holders of the issuer's securities, except as discussed below under "Item 10. Additional Information, E. Taxation."

There are no limitations under the laws of Canada or in the organizing documents of the Company on the right of foreigners to hold or vote securities of the Company, except that the Investment Canada Act may require review and approval by the Minister of Industry (Canada) of certain acquisitions of "control" of the Company by a "non-Canadian". The threshold for acquisitions of control is generally defined as being one-third or more of the voting shares of the Company. "Non-Canadian" generally means an individual who is not a Canadian citizen, or a corporation, partnership, trust or joint venture that is ultimately controlled by non-Canadians.

**E. Taxation**

**Certain Canadian Federal Income Tax Considerations**

The following summarizes the principal Canadian federal income tax considerations generally applicable to the holding and disposition of common shares in the capital of the Company by a United States resident, who holds common shares solely as capital property, and does not use or hold, and will not be deemed to use or hold, the common shares in carrying on a business in Canada, referred to as a "U.S. Holder". This summary is based on the current provisions of the *Income Tax Act* (Canada), referred to as the "Tax Act", the regulations thereunder, all amendments thereto publicly proposed by the government of Canada, the published administrative practices of the Canada Revenue Agency, and the current provisions of the *Canada-United States Tax Convention, 1980*, as amended, referred to as the "Treaty". Except as otherwise expressly provided, this summary does not take into account any provincial, territorial or foreign (including without limitation, any United States) tax law or treaty. It has been assumed that all currently proposed amendments to the Tax Act will be enacted substantially as proposed and that there is no other relevant change in any governing law or practice, although no assurance can be given in these respects.

**Each U.S. Holder is advised to obtain tax and legal advice applicable to such U.S. Holder's particular circumstances.**

A U.S. Holder will be liable to pay a Canadian withholding tax on every dividend that is or is deemed to be paid or credited to the U.S. Holder on the U.S. Holder's common shares. The statutory rate of withholding tax is 25% of the gross amount of the dividend. The Treaty reduces the statutory rate with respect to dividends paid to a U.S. Holder, if that U.S. Holder is the beneficial owner of the dividend and is eligible for benefits under the Treaty. Where applicable, the general rate of withholding tax under the Treaty is reduced to 15% of the gross amount of the dividend, but if the U.S. Holder is a company that beneficially owns at least 10% of the voting stock of the Company, the rate of withholding tax is reduced to 5% for dividends. The Company is required to withhold the applicable tax from the dividend payable to the U.S. Holder, and to remit the tax to the Receiver General of Canada for the account of the U. S. Holder.

A U.S. Holder generally will not be subject to income tax under the Tax Act in respect of a capital gain realized on the disposition or deemed disposition of a common share unless the common share constitutes "taxable Canadian property" of the U.S. Holder for purposes of the Tax Act and the gain is not exempt from tax pursuant to the terms of the Treaty.

Provided that the common shares are listed on a "designated stock exchange" for purposes of the Tax Act (which currently includes the TSX) at the time of disposition, the common shares generally will not constitute "taxable Canadian property" of a U.S. Holder, unless at any time during the 60 month period immediately preceding the disposition: (i) the U.S. Holder, persons with whom the U.S. Holder did not deal at "arm's length" for the purposes of the Tax Act, partnerships in which the U.S. Holder or a person with whom the U.S. Holder did not deal at arm's length held a membership interest directly or indirectly through one or more partnerships, or the U.S. Holder together with all

such persons, owned 25% or more of the issued shares of any class of the Company and; (ii) more than 50% of the fair market value of the common shares was derived directly or indirectly from one or any combination of real or immovable property situated in Canada, "Canadian resource properties" (as defined in the Tax Act), "timber resource properties" (as defined in the Tax Act), or options in respect of, or interests in, or for civil law rights in, such property whether or not such property exists.

U.S. Holders who may hold common shares as "taxable Canadian property" should consult their own tax advisors.

**Certain United States Federal Income Tax Consequences**

The following is a general summary of certain material U.S. federal income tax considerations applicable to a U.S. Holder (as defined below) arising from and relating to the acquisition, ownership, and disposition of common shares of the Company.

This summary is for general information purposes only and does not purport to be a complete analysis or listing of all potential U.S. federal income tax considerations that may apply to a U.S. Holder arising from and relating to the acquisition, ownership, and disposition of common shares. In addition, this summary does not take into account the individual facts and circumstances of any particular U.S. Holder that may affect the U.S. federal income tax consequences to such U.S. Holder, including specific tax consequences to a U.S. Holder under an applicable tax treaty. Accordingly, this summary is not intended to be, and should not be construed as, legal or U.S. federal income tax advice with respect to any U.S. Holder. This summary does not address the U.S. federal alternative minimum, U.S. federal estate and gift, U.S. state and local, and non-U.S. tax consequences to U.S. Holders of the acquisition, ownership, and disposition of common shares. Except as specifically set forth below, this summary does not discuss applicable tax reporting requirements. Each U.S. Holder should consult its own tax advisor regarding the U.S. federal, U.S. federal alternative minimum, U.S. federal estate and gift, U.S. state and local, and non-U.S. tax consequences relating to the acquisition, ownership and disposition of common shares.

No legal opinion from U.S. legal counsel or ruling from the Internal Revenue Service (the "IRS") has been requested, or will be obtained, regarding the U.S. federal income tax consequences of the acquisition, ownership, and disposition of common shares. This summary is not binding on the IRS, and the IRS is not precluded from taking a position that is different from, and contrary to, the positions taken in this summary. In addition, because the authorities on which this summary is based are subject to various interpretations, the IRS and the U.S. courts could disagree with one or more of the positions taken in this summary.

**Scope of this Summary**

Authorities

This summary is based on the Internal Revenue Code of 1986, as amended, or the "Code", Treasury Regulations (whether final, temporary, or proposed), published rulings of the IRS, published administrative positions of the IRS, the Convention Between Canada and the United States of America with Respect to Taxes on Income and on Capital, signed September 26, 1980, as amended, or the "Canada-U.S. Tax Convention", and U.S. court decisions that are applicable and, in each case, as in effect and available, as of the date of this document. Any of the authorities on which this summary is based could be changed in a material and adverse manner at any time, and any such change could be applied on a retroactive or prospective basis which could affect the U.S. federal income tax considerations described in this summary. This summary does not discuss the potential effects, whether adverse or beneficial, of any proposed legislation that, if enacted, could be applied on a retroactive or prospective basis.

U.S. Holders

For purposes of this summary, the term "U.S. Holder" means a beneficial owner of common shares that is for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the U.S.;
- a corporation (or other entity taxable as a corporation for U.S. federal income tax purposes) organized under the laws of the U.S., any state thereof or the District of Columbia;
- an estate whose income is subject to U.S. federal income taxation regardless of its source; or
- a trust that (1) is subject to the primary supervision of a court within the U.S. and the control of one or more U.S. persons for all substantial decisions or (2) has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

Non-U.S. Holders

For purposes of this summary, a "non-U.S. Holder" is a beneficial owner of common shares that is not a U.S. Holder. This summary does not address the U.S. federal income tax consequences to non-U.S. Holders arising from and relating to the acquisition, ownership, and disposition of common shares. Accordingly, a non-U.S. Holder should consult its own tax advisor regarding the U.S. federal, U.S. federal alternative minimum, U.S. federal estate and gift, U.S. state and local, and non-U.S. tax consequences (including the potential application of and operation of any income tax treaties) relating to the acquisition, ownership, and disposition of common shares.

U.S. Holders Subject to Special U.S. Federal Income Tax Rules Not Addressed

This summary does not address the U.S. federal income tax considerations applicable to U.S. Holders that are subject to special provisions under the Code, including, but not limited to, U.S. Holders that: (a) are tax-exempt organizations, qualified retirement plans, individual retirement accounts, or other tax-deferred accounts; (b) are financial institutions, underwriters, insurance companies, real estate investment trusts, or regulated investment companies; (c) are broker-dealers, dealers, or traders in securities or currencies that elect to apply a mark-to-market accounting method; (d) have a "functional currency" other than the U.S. dollar; (e) own common shares as part of a straddle, hedging transaction, conversion transaction, constructive sale, or other arrangement involving more than one position; (f) acquired common shares in connection with the exercise of employee stock options or otherwise as compensation for services; (g) hold common shares other than as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment purposes); or (h) own or have owned (directly, indirectly, or by attribution) 10% or more of the total combined voting power of the outstanding shares of the Company. This summary also does not address the U.S. federal income tax considerations applicable to U.S. Holders who are: (a) U.S. expatriates or former long-term residents of the U.S.; (b) persons that have been, are, or will be a resident or deemed to be a resident in Canada for purposes of the Income Tax Act (Canada) (the "Tax Act"); (c) persons that use or hold, will use or hold, or that are or will be deemed to use or hold common shares in connection with carrying on a business in Canada; (d) persons whose common shares constitute "taxable Canadian property" under the Tax Act; or (e) persons that have a permanent establishment in Canada for the purposes of the Canada-U.S. Tax Convention. U.S. Holders that are subject to special provisions under the Code, including, but not limited to, U.S. Holders described immediately above, should consult their own tax advisors regarding the U.S. federal, U.S. federal alternative minimum, U.S. federal estate and gift, U.S. state and local, and non-U.S. tax consequences relating to the acquisition, ownership and disposition of common shares.

If an entity or arrangement that is classified as a partnership (or "pass-through" entity) for U.S. federal income tax purposes holds common shares, the U.S. federal income tax consequences to such partnership and the partners of such partnership generally will depend on the activities of the partnership and the status of such partners (or owners). This summary does not address the tax consequences to any such partnership or partner. Partners of entities or arrangements that are classified as partnerships for U.S. federal income tax purposes should consult their own tax advisors regarding the U.S. federal income tax consequences arising from and relating to the acquisition, ownership, and disposition of common shares.

**Passive Foreign Investment Company Rules**

If the Company were to constitute a "passive foreign investment company" under the meaning of Section 1297 of the Code, or a "PFIC", as defined further below, for any year during a U.S. Holder's holding period, then certain different and potentially adverse rules will affect the U.S. federal income tax consequences to a U.S. Holder

resulting from the acquisition, ownership and disposition of common shares. In addition, in any year in which the Company is classified as a PFIC, such holder will be required to file an annual report with the IRS containing such information as Treasury Regulations and/or other IRS guidance may require. A failure to satisfy such reporting requirements may result in an extension of the time period during which the IRS can assess a tax. U.S. Holders should consult their own tax advisors regarding the requirements of filing such information returns under these rules, including the requirement to file an IRS Form 8621.

PFIC Status of the Company

The Company generally will be a PFIC if, for a tax year, (a) 75% or more of the gross income of the Company is passive income (the "income test") or (b) 50% or more of the value of the Company's assets either produce passive income or are held for the production of passive income, based on the quarterly average of the fair market value of such assets (the "asset test"). "Gross income" generally includes all sales revenues less the cost of goods sold, plus income from investments and from incidental or outside operations or sources, and "passive income" generally includes, for example, dividends, interest, certain rents and royalties, certain gains from the sale of stock and securities, and certain gains from commodities transactions.

Active business gains arising from the sale of commodities generally are excluded from passive income if substantially all of a foreign corporation's commodities are stock in trade of such foreign corporation or other property of a kind which would properly be included in inventory of such foreign corporation, or property held by such foreign corporation primarily for sale to customers in the ordinary course of business and certain other requirements are satisfied.

For purposes of the PFIC income test and asset test described above, if the Company owns, directly or indirectly, 25% or more of the total value of the outstanding shares of another corporation, the Company will be treated as if it (a) held a proportionate share of the assets of such other corporation and (b) received directly a proportionate share of the income of such other corporation. In addition, for purposes of the PFIC income test and asset test described above, and assuming certain other requirements are met, "passive income" does not include certain interest, dividends, rents, or royalties that are received or accrued by the Company from certain "related persons" (as defined in Section 954(d)(3) of the Code), to the extent such items are properly allocable to the income of such related person that is not passive income.

In addition, under certain attribution rules, if the Company is a PFIC, U.S. Holders will be deemed to own their proportionate share of the stock of any subsidiary of the Company that is also a PFIC, or a "Subsidiary PFIC", and will be subject to U.S. federal income tax on their proportionate share of (a) a distribution on the stock of a Subsidiary PFIC and (b) a disposition or deemed disposition of the stock of a Subsidiary PFIC, both as if such U.S. Holders directly held the shares of such Subsidiary PFIC.

The Company believes that it was classified as a PFIC during the tax year ended August 31, 2017, and may be a PFIC in its current and future tax years. The determination of whether any corporation was, or will be, a PFIC for a tax year depends, in part, on the application of complex U.S. federal income tax rules, which are subject to differing interpretations. In addition, whether any corporation will be a PFIC for any tax year depends on the assets and income of such corporation over the course of each such tax year and, as a result, cannot be predicted with certainty as of the date of this document. Accordingly, there can be no assurance that the IRS will not challenge any determination made by the Company (or a Subsidiary PFIC) concerning its PFIC status. Each U.S. Holder should consult its own tax advisors regarding the PFIC status of the Company and any Subsidiary PFIC.

Default PFIC Rules Under Section 1291 of the Code

If the Company is a PFIC, the U.S. federal income tax consequences to a U.S. Holder of the acquisition, ownership, and disposition of common shares will depend on whether such U.S. Holder makes an election to treat the Company and each Subsidiary PFIC, if any, as a "qualified electing fund" or "QEF" under Section 1295 of the Code, or a "QEF Election", or a mark-to-market election under Section 1296 of the Code, or a "Mark-to-Market Election". A

U.S. Holder that does not make either a QEF Election or a Mark-to-Market Election will be referred to in this summary as a "Non-Electing U.S. Holder."

A Non-Electing U.S. Holder will be subject to the rules of Section 1291 of the Code with respect to (a) any gain recognized on the sale or other taxable disposition of common shares and (b) any excess distribution received on common shares. A distribution generally will be an "excess distribution" to the extent that such distribution (together with all other distributions received in the current tax year) exceeds 125% of the average distributions received during the three preceding tax years (or during a U.S. Holder's holding period for our common shares, if shorter).

Under Section 1291 of the Code, any gain recognized on the sale or other taxable disposition of common shares (including an indirect disposition of the stock of any Subsidiary PFIC), and any "excess distribution" received on common shares, must be ratably allocated to each day in a Non-Electing U.S. Holder's holding period for the respective common shares. The amount of any such gain or excess distribution allocated to the tax year of disposition or distribution of the excess distribution and to years before the entity became a PFIC, if any, would be taxed as ordinary income. The amounts allocated to any other tax year would be subject to U.S. federal income tax at the highest tax rate applicable to ordinary income in each such year, and an interest charge would be imposed on the tax liability for each such year, calculated as if such tax liability had been due in each such year. A Non-Electing U.S. Holder that is not a corporation must treat any such interest paid as "personal interest," which is not deductible.

If the Company is a PFIC for any tax year during which a Non-Electing U.S. Holder holds common shares, the Company will continue to be treated as a PFIC with respect to such Non-Electing U.S. Holder, regardless of whether the Company ceases to be a PFIC in one or more subsequent tax years. A Non-Electing U.S. Holder may terminate this deemed PFIC status by electing to recognize gain (which will be taxed under the rules of Section 1291 of the Code discussed above), but not loss, as if such common shares were sold on the last day of the last tax year for which the Company was a PFIC.

QEF Election

A U.S. Holder that makes a timely and effective QEF Election for the first tax year in which its holding period of its common shares begins generally will not be subject to the rules of Section 1291 of the Code discussed above with respect to its common shares. A U.S. Holder that makes a timely and effective QEF Election will be subject to U.S. federal income tax on such U.S. Holder's pro rata share of (a) the net capital gain of the Company, which will be taxed as long-term capital gain to such U.S. Holder, and (b) the ordinary earnings of the Company, which will be taxed as ordinary income to such U.S. Holder. Generally, "net capital gain" is the excess of (a) net long-term capital gain over (b) net short-term capital loss, and "ordinary earnings" are the excess of (a) "earnings and profits" over (b) net capital gain. A U.S. Holder that makes a QEF Election will be subject to U.S. federal income tax on such amounts for each tax year in which the Company is a PFIC, regardless of whether such amounts are actually distributed to such U.S. Holder by the Company. However, for any tax year in which the Company is a PFIC and has no net income or gain, U.S. Holders that have made a QEF Election would not have any income inclusions as a result of the QEF Election. If a U.S. Holder that made a QEF Election has an income inclusion, such U.S. Holder may, subject to certain limitations, elect to defer payment of current U.S. federal income tax on such amounts, subject to an interest charge. If such U.S. Holder is not a corporation, any such interest paid will be treated as "personal interest," which is not deductible.

A U.S. Holder that makes a timely and effective QEF Election with respect to the Company generally (a) may receive a tax-free distribution from the Company to the extent that such distribution represents "earnings and profits" of the Company that were previously included in income by the U.S. Holder because of such QEF Election and (b) will adjust such U.S. Holder's tax basis in its common shares to reflect the amount included in income or allowed as a tax-free distribution because of such QEF Election. In addition, a U.S. Holder that makes a QEF Election generally will recognize capital gain or loss on the sale or other taxable disposition of common shares.

The procedure for making a QEF Election, and the U.S. federal income tax consequences of making a QEF Election, will depend on whether such QEF Election is timely. A QEF Election will be treated as "timely" if such QEF Election is made for the first year in the U.S. Holder's holding period for our common shares in which the Company

was a PFIC. A U.S. Holder may make a timely QEF Election by filing the appropriate QEF Election documents at the time such U.S. Holder files a U.S. federal income tax return for such year. If a U.S. Holder does not make a timely and effective QEF Election for the first year in the U.S. Holder's holding period for its common shares, the U.S. Holder may still be able to make a timely and effective QEF Election in a subsequent year if such U.S. Holder also makes a "purging" election to recognize gain (which will be taxed under the rules of Section 1291 of the Code discussed above) as if such common shares were sold for their fair market value on the day the QEF Election is effective.

A QEF Election will apply to the tax year for which such QEF Election is timely made and to all subsequent tax years, unless such QEF Election is invalidated or terminated or the IRS consents to revocation of such QEF Election. If a U.S. Holder makes a QEF Election and, in a subsequent tax year, the Company ceases to be a PFIC, the QEF Election will remain in effect (although it will not be applicable) during those tax years in which the Company is not a PFIC. Accordingly, if the Company becomes a PFIC in another subsequent tax year, the QEF Election will be effective and the U.S. Holder will be subject to the QEF rules described above during any subsequent tax year in which the Company qualifies as a PFIC.

U.S. Holders should be aware that there can be no assurance that the Company will satisfy record keeping requirements that apply to a QEF, or that the Company will supply U.S. Holders with information that such U.S. Holders require to report under the QEF rules, in event that the Company is a PFIC and a U.S. Holder wishes to make a QEF Election. Thus, U.S. Holders may not be able to make a QEF Election with respect to their common shares. Each U.S. Holder should consult its own tax advisors regarding the availability of, and procedure for making, a QEF Election.

Mark-to-Market Election

A U.S. Holder may make a Mark-to-Market Election only if the common shares are marketable stock. Our common shares generally will be "marketable stock" if our common shares are regularly traded on (a) a national securities exchange that is registered with the Securities and Exchange Commission, (b) the national market system established pursuant to section 11A of the Securities and Exchange Act of 1934, or (c) a foreign securities exchange that is regulated or supervised by a governmental authority of the country in which the market is located, provided that (i) such foreign exchange has trading volume, listing, financial disclosure, and meets other requirements and the laws of the country in which such foreign exchange is located, together with the rules of such foreign exchange, ensure that such requirements are actually enforced and (ii) the rules of such foreign exchange ensure active trading of listed stocks. If such stock is traded on such a qualified exchange or other market, such stock generally will be "regularly traded" for any calendar year during which such stock is traded, other than in de minimis quantities, on at least 15 days during each calendar quarter.

A U.S. Holder that makes a Mark-to-Market Election with respect to its common shares generally will not be subject to the rules of Section 1291 of the Code discussed above with respect to such common shares. However, if a U.S. Holder does not make a Mark-to-Market Election beginning in the first tax year of such U.S. Holder's holding period for our common shares or such U.S. Holder has not made a timely QEF Election, the rules of Section 1291 of the Code discussed above will apply to certain dispositions of, and distributions on, our common shares.

A U.S. Holder that makes a Mark-to-Market Election will include in ordinary income, for each tax year in which the Company is a PFIC, an amount equal to the excess, if any, of (a) the fair market value of our common shares, as of the close of such tax year over (b) such U.S. Holder's tax basis in such common shares. A U.S. Holder that makes a Mark-to-Market Election will be allowed a deduction in an amount equal to the excess, if any, of (a) such U.S. Holder's adjusted tax basis in our common shares, over (b) the fair market value of such common shares (but only to the extent of the net amount of previously included income as a result of the Mark-to-Market Election for prior tax years).

A U.S. Holder that makes a Mark-to-Market Election generally also will adjust such U.S. Holder's tax basis in our common shares to reflect the amount included in gross income or allowed as a deduction because of such Mark-to-Market Election. In addition, upon a sale or other taxable disposition of common shares, a U.S. Holder that makes a

Mark-to-Market Election will recognize ordinary income or ordinary loss (not to exceed the excess, if any, of (a) the amount included in ordinary income because of such Mark-to-Market Election for prior tax years over (b) the amount allowed as a deduction because of such Mark-to-Market Election for prior tax years).

A Mark-to-Market Election applies to the tax year in which such Mark-to-Market Election is made and to each subsequent tax year, unless our common shares cease to be "marketable stock" or the IRS consents to revocation of such election. Each U.S. Holder should consult its own tax advisor regarding the availability of, and procedure for making, a Mark-to-Market Election.

Although a U.S. Holder may be eligible to make a Mark-to-Market Election with respect to our common shares, no such election may be made with respect to the stock of any Subsidiary PFIC that a U.S. Holder is treated as owning, because such stock is not marketable. Hence, the Mark-to-Market Election will not be effective to eliminate the application of the default rules of Section 1291 of the Code described above with respect to deemed dispositions of Subsidiary PFIC stock or distributions from a Subsidiary PFIC.

Other PFIC Rules

Under Section 1291(f) of the Code, the IRS has issued proposed Treasury Regulations that, subject to certain exceptions, would cause a U.S. Holder that had not made a timely QEF Election to recognize gain (but not loss) upon certain transfers of common shares that would otherwise be tax-deferred (e.g., gifts and exchanges pursuant to corporate reorganizations). However, the specific U.S. federal income tax consequences to a U.S. Holder may vary based on the manner in which common shares are transferred.

Certain additional adverse rules will apply with respect to a U.S. Holder if the Company is a PFIC, regardless of whether such U.S. Holder makes a QEF Election. For example under Section 1298(b)(6) of the Code, a U.S. Holder that uses common shares as security for a loan will, except as may be provided in Treasury Regulations, be treated as having made a taxable disposition of such common shares.

Special rules also apply to the amount of foreign tax credit that a U.S. Holder may claim on a distribution from a PFIC. Subject to such special rules, foreign taxes paid with respect to any distribution in respect of stock in a PFIC are generally eligible for the foreign tax credit. The rules relating to distributions by a PFIC and their eligibility for the foreign tax credit are complicated, and a U.S. Holder should consult with its own tax advisor regarding the availability of the foreign tax credit with respect to distributions by a PFIC.

The PFIC rules are complex, and each U.S. Holder should consult its own tax advisors regarding the PFIC rules and how the PFIC rules may affect the U.S. federal income tax consequences of the acquisition, ownership, and disposition of common shares.

**Ownership and Disposition of Common Shares**

The following discussion is subject to the rules described above under the heading "Passive Foreign Investment Company Rules."

Distributions on Common Shares

Subject to the PFIC rules discussed above, a U.S. Holder that receives a distribution, including a constructive distribution, with respect to a common share will be required to include the amount of such distribution in gross income as a dividend (without reduction for any Canadian income tax withheld from such distribution) to the extent of the current or accumulated "earnings and profits" of the Company, as computed for U.S. federal income tax purposes. A dividend generally will be taxed to a U.S. Holder at ordinary income tax rates if the Company is a PFIC. To the extent that a distribution exceeds the current and accumulated "earnings and profits" of the Company, such distribution will be treated first as a tax-free return of capital to the extent of a U.S. Holder's tax basis in our common shares and thereafter as gain from the sale or exchange of such common shares. (See "Sale or Other Taxable Disposition of Common Shares" below). However, the Company may not maintain the calculations of earnings and

profits in accordance with U.S. federal income tax principles, and each U.S. Holder should therefore assume that any distribution by the Company with respect to our common shares will constitute ordinary dividend income. Dividends received on common shares generally will not be eligible for the "dividends received deduction". Subject to applicable limitations and provided the Company is eligible for the benefits of the Canada-U.S. Tax Convention, or the common shares are readily tradeable on a U.S. securities market, dividends paid by the Company to non-corporate U.S. Holders, including individuals, generally will be eligible for the preferential tax rates applicable to long-term capital gains for dividends, provided certain holding period and other conditions are satisfied, including that the Company not be classified as a PFIC in the tax year of distribution or in the preceding tax year. The dividend rules are complex, and each U.S. Holder should consult its own tax advisor regarding the application of such rules.

Sale or Other Taxable Disposition of Common Shares

Subject to the PFIC rules discussed above, upon the sale or other taxable disposition of common shares, a U.S. Holder generally will recognize capital gain or loss in an amount equal to the difference between the amount of cash plus the fair market value of any property received and such U.S. Holder's tax basis in such common shares sold or otherwise disposed of. Subject to the PFIC rules discussed above, gain or loss recognized on such sale or other disposition generally will be long-term capital gain or loss if, at the time of the sale or other disposition, our common shares have been held for more than one year.

Preferential tax rates apply to long-term capital gain of a U.S. Holder that is an individual, estate, or trust. There are currently no preferential tax rates for long-term capital gain of a U.S. Holder that is a corporation. Deductions for capital losses are subject to significant limitations under the Code.

**Additional Considerations**

Additional Tax on Passive Income

Individuals, estates and certain trusts whose income exceeds certain thresholds will be required to pay a 3.8% Medicare surtax on "net investment income" including, among other things, dividends and net gain from disposition of property (other than property held in certain trades or businesses). Special Rules apply to PFICs. U.S. Holders should consult with their own tax advisors regarding the effect, if any, of this tax on their ownership and disposition of common shares.

Receipt of Foreign Currency

The amount of any distribution paid to a U.S. Holder in foreign currency, or on the sale, exchange or other taxable disposition of common shares, generally will be equal to the U.S. dollar value of such foreign currency based on the exchange rate applicable on the date of receipt (regardless of whether such foreign currency is converted into U.S. dollars at that time). A U.S. Holder will have a basis in the foreign currency equal to its U.S. dollar value on the date of receipt. Any U.S. Holder who converts or otherwise disposes of the foreign currency after the date of receipt may have a foreign currency exchange gain or loss that would be treated as ordinary income or loss, and generally will be U.S. source income or loss for foreign tax credit purposes. Different rules apply to U.S. Holders who use the accrual method of tax accounting. Each U.S. Holder should consult its own U.S. tax advisors regarding the U.S. federal income tax consequences of receiving, owning, and disposing of foreign currency.

Foreign Tax Credit

Subject to the PFIC rules discussed above, a U.S. Holder that pays (whether directly or through withholding) Canadian income tax with respect to dividends paid on our common shares generally will be entitled, at the election of such U.S. Holder, to receive either a deduction or a credit for such Canadian income tax paid. Generally, a credit will reduce a U.S. Holder's U.S. federal income tax liability on a dollar-for-dollar basis, whereas a deduction will reduce a U.S. Holder's income subject to U.S. federal income tax. This election is made on a year-by-year basis and applies to all foreign taxes paid (whether directly or through withholding) by a U.S. Holder during a year.

Complex limitations apply to the foreign tax credit, including the general limitation that the credit cannot exceed the proportionate share of a U.S. Holder's U.S. federal income tax liability that such U.S. Holder's "foreign source" taxable income bears to such U.S. Holder's worldwide taxable income. In applying this limitation, a U.S. Holder's various items of income and deduction must be classified, under complex rules, as either "foreign source" or "U.S. source." Generally, dividends paid by a foreign corporation should be treated as foreign source for this purpose, and gains recognized on the sale of stock of a foreign corporation by a U.S. Holder should be treated as U.S. source for this purpose, except as otherwise provided in an applicable income tax treaty, and if an election is properly made under the Code. However, the amount of a distribution with respect to our common shares that is treated as a "dividend" may be lower for U.S. federal income tax purposes than it is for Canadian federal income tax purposes, resulting in a reduced foreign tax credit allowance to a U.S. Holder. In addition, this limitation is calculated separately with respect to specific categories of income. The foreign tax credit rules are complex, and each U.S. Holder should consult its own U.S. tax advisors regarding the foreign tax credit rules.

Backup Withholding and Information Reporting

Under U.S. federal income tax law and Treasury Regulations, certain categories of U.S. Holders must file information returns with respect to their investment in, or involvement in, a foreign corporation. For example, U.S. return disclosure obligations (and related penalties) are imposed on individuals who are U.S. Holders that hold certain specified foreign financial assets in excess of certain threshold amounts. The definition of specified foreign financial assets includes not only financial accounts maintained in foreign financial institutions, but also, unless held in accounts maintained by a financial institution, any stock or security issued by a non-U.S. person, any financial instrument or contract held for investment that has an issuer or counterparty other than a U.S. person and any interest in a foreign entity. U.S. Holders may be subject to these reporting requirements unless their common shares are held in an account at certain financial institutions. Penalties for failure to file certain of these information returns are substantial. U.S. Holders should consult with their own tax advisors regarding the requirements of filing information returns, including the requirement to file an IRS Form 8938.

Payments made within the U.S. or by a U.S. payor or U.S. middleman, of dividends on, and proceeds arising from the sale or other taxable disposition of, common shares will generally be subject to information reporting and backup withholding tax, at the rate of 28%, if a U.S. Holder (a) fails to furnish such U.S. Holder's correct U.S. taxpayer identification number (generally on Form W-9), (b) furnishes an incorrect U.S. taxpayer identification number, (c) is notified by the IRS that such U.S. Holder has previously failed to properly report items subject to backup withholding tax, or (d) fails to certify, under penalty of perjury, that such U.S. Holder has furnished its correct U.S. taxpayer identification number and that the IRS has not notified such U.S. Holder that it is subject to backup withholding tax. However, certain exempt persons generally are excluded from these information reporting and backup withholding rules. Any amounts withheld under the U.S. backup withholding tax rules will be allowed as a credit against a U.S. Holder's U.S. federal income tax liability, if any, or will be refunded, if such U.S. Holder furnishes required information to the IRS in a timely manner. Each U.S. Holder should consult its own tax advisors regarding the information reporting and backup withholding rules.

**F. Dividends and Paying Agents**

Not Applicable.

**G. Statement by Experts**

Not Applicable.

**H. Documents on Display**

We are subject to the informational requirements of the Exchange Act and file reports and other information with the SEC. You may read and copy any of our reports and other information at, and obtain copies upon payment of prescribed fees from, the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. In addition, the SEC maintains a Website that contains reports, proxy and information statements and other

information regarding registrants that file electronically with the SEC at http://www.sec.gov. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

We are required to file reports and other information with the securities commissions in Canada. You are invited to read and copy any reports, statements or other information, other than confidential filings, that we file with the provincial securities commissions. These filings are also electronically available from the Canadian System for Electronic Document Analysis and Retrieval ("SEDAR") (www.sedar.com), the Canadian equivalent of the SEC's electronic document gathering and retrieval system.

As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the furnishing and content of proxy statements to shareholders.

We will provide without charge to each person, including any beneficial owner, to whom a copy of this annual report has been delivered, on the written or oral request of such person, a copy of any or all documents referred to above which have been or may be incorporated by reference in this annual report (not including exhibits to such incorporated information that are not specifically incorporated by reference into such information). Requests for such copies should be directed to us at the following address: 130 Adelaide St. West, Suite 1901, Toronto, ON, M5H 3P5. The Company is required to file financial statements and other information with the Securities Commission in each of the Provinces and Territories of Canada, except Quebec, electronically through SEDAR which can be viewed at www.sedar.com.

**I. Subsidiary Information**

Not Applicable.

**Item 11. Quantitative and Qualitative Disclosures about Market Risk**

**(a) Credit risk**

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation.

The Company is not exposed to any significant credit risk as at August 31, 2017. The Company's cash and cash equivalents are either on deposit with two major Canadian Chartered banking groups in Canada or invested in bankers' acceptance notes or guaranteed investment certificates issued by two major Canadian Chartered banking groups. The Company's receivables primarily consist of Goods and Services Tax/Harmonized Sales Tax receivable, government grants and refundable security deposits with various federal and provincial governments and are therefore not subject to significant credit risk. The Company's financial assets that are exposed to credit risk are as follows:

| | August 31, 2017 | August 31, 2016 |
|---|---|---|
| Cash and cash equivalents held at major financial institutions | $ 1,073,574 | $ 1,360,487 |
| Other receivables | 117,718 | 226,485 |

**(b) Liquidity risk**

Liquidity risk is the risk that an entity will not be able to meet its financial obligations as they come due. The Company has in place a planning and budgeting process to assist in determining the funds required to support the Company's normal operating requirements on an on-going basis and its plans for exploration and development expenditures. The Company ensures that there are sufficient funds to meet its short-term requirements, taking into account its anticipated cash flows from operations and its holdings of cash and cash equivalents.

The Company had cash and cash equivalents at August 31, 2017 in the amount of $1,073,574 (2016 - $1,360,487) in order to meet short-term business requirements. At August 31, 2017, the Company had adjusted current liabilities of $811,369 (calculated by excluding the deferred flow-through share premium of $49,467 from the total current liabilities of $860,836) (2016 - $726,395). As the de-recognition of the balances of the deferred flow-through share premium will not require the future out flow of resources by the Company, it is management's belief that the adjusted current liabilities figure provides useful information in assessing the Company's liquidity. Accounts payable have contractual maturities of less than 30 days and are subject to normal trade terms. As disclosed in Note 9 of the accompanying financial statements, the holder of the Preferred Shares is entitled to demand repayment of the applicable redemption value per share in cash (which totaled $2,520,000 as at August 31, 2017) upon the occurrence of certain Redemption Events.

**(c) Market risk**

Market risk consists of interest rate risk and foreign currency risk. The Company is exposed to interest rate risk and foreign currency risk.

*Interest rate risk*

Interest rate risk consists of two components:

(i) To the extent that payments made or received on the Company's monetary assets and liabilities are affected by changes in the prevailing market interest rates, the Company is exposed to interest rate cash flow risk.
(ii) To the extent that changes in prevailing market rates differ from the interest rate in the Company's monetary assets and liabilities, the Company is exposed to interest rate price risk.

Considering the Company's budget expenditures for the next twelve months and its current cash and cash equivalents of $1,073,574 as at August 31, 2017, with other variables held constant, sensitivity to a plus or minus 25 basis points change in interest rates would not have any significant effect on the Company's net loss over a twelve month period.

*Foreign currency risk*

Foreign currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate due to changes in foreign exchange rates. The Company is exposed to foreign currency risk to the extent that monetary assets and liabilities are denominated in foreign currency.

The Company's functional currency is the Canadian dollar. The majority of the Company's purchases are transacted in Canadian dollars. Other than the US$ Warrants, the Company had no other significant financial assets or financial liabilities denominated in foreign currencies as at August 31, 2017 and August 31, 2016.

The Company's anticipated on-going expenditures to be transacted in U.S. dollars for the next twelve month period are approximately US$250,000. If the Canadian dollar weakens (or strengthens) 5% against the U.S. dollar with other variables held constant, it would not have any significant effect on the Company's expenditures over a twelve month period.

**(d) Other price risk**

Other price risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate due to changes in market prices, other than those arising from interest rate risk or foreign currency risk. The Company is not exposed to other price risk with respect to its financial instruments.

The prices of metals and minerals fluctuate widely and are affected by many factors outside of the Company's control. The prices of metals and minerals and future expectation of such prices have a significant impact

on the market sentiment for investment in mining and mineral exploration companies. This in turn may impact the Company's ability to raise equity financing for its long term working capital requirements.

**Item 12. Description of Securities Other than Equity Securities**

**A. to C.**

Not Applicable.

**D. American Depository Receipts**

The Company does not have securities registered as American Depository Receipts.

## Part II

### Item 13. Defaults, Dividend Arrearages and Delinquencies

None.

### Item 14. Material Modifications to the Rights of Security Holders and Use of Proceeds

**A. to D.**

None.

**E. Use of Proceeds**

Not Applicable.

### Item 15. Controls and Procedures

**A. Disclosure Controls and Procedures**

An evaluation was performed under the supervision and with the participation of the Company's management, including the Company's CEO and the Company's CFO of the effectiveness of the design and operation of the Company's disclosure controls and procedures pursuant to Rules 13a-15(b) and 15d-15(b) of the Exchange Act as of August 31, 2017. Based on their evaluation, the Company's CEO and CFO have concluded that the disclosure controls and procedures were effective to give reasonable assurance that the information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is (i) recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and (ii) accumulated and communicated to management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

**B. Management's Annual Report on Internal Control Over Financial Reporting**

The Company's management, including the Company's CEO and CFO, is responsible for establishing and maintaining adequate internal control over the Company's internal control over financial reporting, as such term is defined in Rule 13a-15(f) under the Exchange Act. The Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with IFRS as issued by the IASB. The Company's internal control over financial reporting includes policies and procedures that: pertain to the maintenance of records that, in reasonable detail accurately and fairly reflect the transactions and disposition of assets; provide reasonable assurance that transactions are recorded as necessary to permit preparation of the consolidated financial statements in accordance with IFRS and that receipts and expenditures are being made only in accordance with authorization of management and directors of the Company; and provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on the consolidated financial statements.

Because of their inherent limitations, internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Furthermore, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The Company's management, (with the participation of the CEO and the CFO), conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as at August 31, 2017. This evaluation was based on the criteria set forth in Internal Control-Integrated Framework ("COSO 2013 Framework") issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on its assessment, management has

concluded that the Company's internal control over financial reporting was effective as at August 31, 2017, and management's assessment did not identify any material weaknesses.

**C. Attestation Report of the Registered Public Accounting Firm**

This Annual Report does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the "Dodd-Frank Act"), which permits the Company to provide only management's report in this Annual Report. The Dodd-Frank Act permits a "non-accelerated filer" to provide only management's report on internal control over financial reporting in an Annual Report and omit an attestation report of the issuer's registered public accounting firm regarding management's report on internal control over financial reporting.

**D. Changes in Internal Control Over Financial Reporting**

Based upon their evaluation of our controls, our CEO and CFO have concluded that, there were no changes in our internal control over financial reporting or in other factors during Fiscal 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

**Item 16. [Reserved]**

**Item 16A. Audit Committee Financial Expert**

The Board determined that Mr. Brian MacEachen, Mr. Alan Ferry and Ms. Patricia Mohr are qualified as Audit Committee Financial Experts and all members are independent as determined by the rules set forth in the NYSE American Company Guide.

**Item 16B. Code of Ethics**

The Company has adopted a Code of Business Conduct and Ethics (the "Business Code") and requires its directors, officers, employees and consultants to maintain the highest level of integrity in their dealings with each other and with the Company's shareholders, business partners, prospective investors and other stakeholders. This Business Code is intended to document some of the specific principles of conduct and ethics which will be followed by our directors, officers and employees in the performance of their responsibilities with respect to the Company's business. It is intended to:

- promote honest and ethical conduct and manage conflicts that may arise;
- promote full, fair, accurate, timely and understandable disclosure to the public including our periodic reports required to be filed with the Canadian securities regulatory authorities;
- promote compliance with applicable governmental rules and regulations;
- provide guidance to directors, officers and employees of the Company to help them recognize and deal with ethical issues;
- provide a mechanism to report unethical conduct; and
- help foster a culture of honesty and accountability.

Our directors have committed that they will comply at all times with the principles set forth in this Business Code and they expect each of our officers and employees to do likewise. The Company has posted the Business Code on its website at www.avalonadvancedmaterials.com. There were no amendments to or waivers granted from any provision of the Business Code during the fiscal year ended August 31, 2017.

**Item 16C. Principal Accountant Fees and Services**

The independent auditor for the year ended August 31, 2017 was Ernst & Young LLP, Chartered Professional Accountants, and the independent auditor for the years ended August 31, 2016 and 2015 was Deloitte LLP, Chartered Professional Accountants.

The following table provides detail in respect of audit, audit related, tax and other fees billed by the Company's external auditors for professional services:

| Reporting Period | Auditor | Audit Fees [(1)] | Audited-Related Fees [(2)] | Tax Fees [(3)] | All Other Fees [(4)] |
|---|---|---|---|---|---|
| August 31, 2017 | Ernst & Young LLP | $Nil | $Nil | $Nil | $Nil |
| | Deloitte LLP | $50,000 | $Nil | $Nil | $Nil |
| August 31, 2016 | Deloitte LLP | $86,000 | $15,000 | $Nil | $Nil |

**Notes:**

(1) "Audit Fees" include the aggregate professional fees billed by the Company's auditor for the audit of the annual financial statements and other regulatory audits and filings.

(2) "Audit-Related Fees" include professional fees billed by the Company's auditor related to assurances and related services related to the performance of the audit or review (including interim reviews) of financial statements not included in "Audit Fees".

(3) "Tax Fees" include the aggregate fees billed for professional services rendered for tax compliance, tax advice and tax planning.

(4) "All Other Fees" include the aggregate fees billed for products and services other than as set out under the headings "Audit Fees", "Audit Related Fees" and "Tax Fees".

The Audit Committee approved 100% of the fees paid to the principal accountant for audit-related, tax and other fees in the fiscal year 2017. The Audit Committee pre-approves all non-audit services to be performed by the auditor in accordance with the Audit Committee Charter. There were no hours expended on the principal accountant's engagement to audit the Company's financial statements for the most recent fiscal year that were attributed to work performed by persons other than the principal accountant's full-time, permanent employees.

**Item 16D. Exemptions from the Listing Standards for Audit Committees**

Not applicable.

**Item 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers**

None.

**Item 16F. Changes in Registrants Certifying Accountant**

At the Company's request, the Company's former independent auditor, Deloitte LLP, Chartered Professional Accountants, resigned effective August 31, 2017 and Ernst & Young LLP, Chartered Professional Accountants was engaged as the Company's new independent auditor effective August 31, 2017. The disclosure required pursuant to this Item 16F was included in the Company's Current Report on Form 6-K filed with the SEC on September 13, 2017, including Exhibits 99.1, 99.2 and 99.3, which are hereby incorporated by reference into this Annual Report.

**Item 16G. Corporate Governance**

Not applicable.

**Item 16H. Mine Safety Disclosure.**

Not applicable.

## Part III

### Item 17. Financial Statements

Not Applicable.

### Item 18. Financial Statements

The Company's financial statements are stated in Canadian Dollars and are prepared in accordance with IFRS as issued by the IASB. The Consolidated Financial Statements and Notes appear on Pages F-1 through F-45 of this Annual Report, are incorporated herein by reference, and include the following:

- Reports of Independent Registered Public Accounting Firms;
- Consolidated Statements of Financial Position as at August 31, 2017, and August 31, 2016;
- Consolidated Statements of Comprehensive Loss, change in equity and cash flows for the years ended August 31, 2017, 2016 and 2015; and
- Notes to Financial Statements for the years ended August 31, 2017, 2016 and 2015.

### Item 19. Exhibits

***Financial Statements***

| **Description** | **Page** |
|---|---|
| Consolidated Financial Statements and Notes | F-1 – F-45 |

***Exhibits***

| **Number** | **Name** |
|---|---|
| 1.1 | Articles of Continuance of Avalon Advanced Materials Inc.[(1)] |
| 1.2 | By-law #1 of Avalon Advanced Materials Inc.[(2)] |
| 1.3 | Articles of Amendment of Avalon Advanced Materials Inc. [(3)] |
| 1.4 | By-law #2 of Avalon Advanced Materials Inc. [(3)] |
| 1.5 | Articles of Amendment of Avalon Advanced Materials Inc. [(8)] |
| 4.1 | Mining lease #3178 dated July 6, 2006[(4)] |
| 4.2 | Mining lease #3179 dated July 6, 2006[(4)] |
| 4.3 | Mining lease #3265 dated April 28, 2008[(4)] |
| 4.4 | Mining lease #3266 dated April 28, 2008[(4)] |
| 4.5 | Mining lease #3267 dated April 28, 2008[(4)] |
| 4.6 | Mining lease #108395 dated November 16, 2009[(5)] |
| 4.12 | Amending Agreement between Avalon Advanced Materials Inc. and Secutor Capital Management Company, dated May 26, 2015[(6)] |
| 4.13 | Form of Warrant Certificate[(6)] |
| 4.14 | Form of Broker Warrant Certificate[(6)] |
| 4.15 | Stock Option Plan[(7)] |
| 12.1 | Certification of the Principal Executive Officer pursuant to Rule 13a-14(a) |
| 12.2 | Certification of the Principal Financial Officer pursuant to Rule 13a-14(a) |
| 13.1 | Certificate of Principal Executive Officer pursuant to 18 U.S.C. Section 1350 |
| 13.2 | Certificate of Principal Financial Officer pursuant to 18 U.S.C. Section 1350 |
| 15.1 | Management's Discussion and Analysis of Financial Statements for the year ended August 31, 2017 |
| 16.1 | Change of Auditor Notice and Letters[(9)] |

**(1)** Incorporated by reference from the Company's Form 6-K filed with the SEC on February 14, 2011
**(2)** Incorporated by reference from the Company's Form 6-K filed with the SEC on February 15, 2011
**(3)** Incorporated by reference from the Company's Form 6-K filed with the SEC on February 26, 2016
**(4)** Incorporated by reference from the Company's Form 20-F filed with the SEC on December 1, 2014

**(5)** Incorporated by reference from the Company's Form 20-F filed with the SEC on November 29, 2016
**(6)** Incorporated by reference from the Company's Form 6-K filed with the SEC on May 27, 2015
**(7)** Incorporated by reference from the Company's Form 6-K filed with the SEC on January 19, 2017
**(8)** Incorporated by reference from the Company's Form 6-K filed with the SEC on March 17, 2017
**(9)** Incorporated by reference from the Company's Form 6-K filed with the SEC on September 13, 2017

**SIGNATURES**

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this Annual Report on its behalf.

**AVALON ADVANCED MATERIALS INC.**

Dated: November 24, 2017

(signed) "R. James Andersen"
R. James Andersen
Vice President, Finance and Chief Financial Officer