AVALON
ADVANCED MATERIALS INC.

# Sustainability Report
# 2017


# Concentrating on Cleantech Materials Production

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# Forward Looking Statements

This Report contains “forward-looking statements” within the meaning of the United States Private Securities Litigation Reform Act of 1995 and applicable Canadian securities legislation. Generally, these forward-looking statements can be identified by the use of forward-looking terminology such as “potential”, “scheduled”, “anticipates”, “continues”, “expects”, “is expected”, “targeted”, “planned”, “believes”, “will”, “intends” or variations of such words and phrases or the negative thereof. Statements that are not based on historical fact contained in this report, including through documents incorporated by reference herein, are subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of Avalon to be materially different from those expressed or implied by such forward-looking statements. Forward-looking statements reflect the Company’s current views with respect to future events and include among other things, statements with respect to the Company integrating sustainability into all aspects of its business, that the Company pursues sustainability in all areas of its business and actively promotes improved mineral industry practice with investors, potential partners and government, that the Company will strive to ensure that our projects are energy efficient and protective of the environment, the existence of any significant potential for creating additional shareholder value through exceptional sustainability performance, remaining committed to doing Avalon’s part to advocate for improved sustainability performance, the anticipation that it would proceed with certain plans, activities or achieve certain goals or efficiencies, assumptions related to future economic, market or other conditions that while considered reasonable by the Company, are inherently subject to risks and uncertainties, including significant business, economic, competitive, political and social uncertainties and contingencies. Although Avalon has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking statements, there may be other factors that cause results not to be as anticipated, estimated or intended. Factors that may cause actual results to differ materially from expected results described in forward-looking statements include, but are not limited to, market conditions, the possibility of cost overruns or unanticipated costs and expenses, the impact of proposed optimizations at the Company’s projects, actual results of exploration activities, mineral reserves and mineral resources and metallurgical recoveries, discrepancies between actual and estimated production rate, mining operational and development risks and delays, regulatory restrictions (including environmental), activities by governmental authorities, financing delays, joint venture or strategic alliances risks, or other risks in the mining industry; as well as those risk factors set out in the Company’s current Annual Information Form, Management’s Discussion and Analysis and other disclosure documents available under the Company’s profile filed with the securities regulatory authorities in all provinces and territories of Canada, other than Québec, and available at www.sedar.com. Most of the foregoing factors are beyond Avalon’s ability to control or predict. There can be no assurance that the plans, intentions or expectations upon which these forward-looking statements are based will occur. The forward-looking statements contained herein are qualified in their entirety by this cautionary statement. Readers should not place undue reliance on the forward-looking statements, which reflect management’s plans, estimates, projections and views only as of the date hereof. The forward-looking statements contained herein are presented for the purpose of assisting readers in understanding the Company’s expected sustainability performance, the Company’s plans and objectives, and may not be appropriate for other purposes. Avalon does not undertake to update any forward-looking statements that are contained herein, except in accordance with applicable securities law. All currency in this Report is in Canadian dollars, unless otherwise noted.

# Message from the President & CEO

Once again, I am delighted to present Avalon's sustainability goals, objectives, motivations and challenges to our Communities of Interest (COI). I hope readers will gain a sense for how integral sustainability is to support our mission of building a profitable cleantech materials business that embraces high performance in areas of social and environmental responsibility. We pursue sustainability in all areas of our business and promote improved mineral industry practices with investors, potential partners and government. Transparently reporting to our COI is a strategic advantage that we believe will ultimately lead to enhanced shareholder value.

This year's theme is "Concentrating on Cleantech Materials Production" to reflect our focus on defining profitable business opportunities in this emerging sector. 'Concentrating' also describes the initial focus of our business development model: to produce valuable concentrates of our lithium minerals from which battery materials can then be extracted and refined.

To be successful in the production of cleantech materials, one needs to be positioned with a resource and ready to serve the market when new technology creates demand for which the supply chain is unprepared. This is the circumstance in which we found ourselves in 2015 with the Separation Rapids Lithium Project: an asset we have had in our portfolio since 1996. Renewable energy and electric vehicles (EVs) are creating a lot of the new demand for non-traditional, niche market commodities such as lithium and rare earth elements, but anticipating which elements will see the next big demand is challenging. This is why we adopted the strategy of holding a diversified mineral property portfolio with exposure to a broad range of rare metals and minerals - a strategy that is expected to benefit our shareholders going forward. Avalon is in an advantageous position to react relatively quickly to new opportunities in the cleantech materials marketplace, such as we are witnessing now with lithium.

Don Bubar

While Avalon's business involves extraction from a primary mineral resource, that is where the similarity ends with the traditional mining industry. The risk and the opportunities with producing cleantech materials are very different from the traditional mining industry, where processes and markets are well-known and the business risk is mainly associated with quantifying the integrity of the resource in the ground. Production of cleantech materials is more like a manufacturing business, where

**In April 2017, Avalon welcomed Ms. Patricia Mohr to the Company's Board of Directors.**

"Ms. Mohr brings extensive knowledge of national and international economic, financial and commodity market developments to the Company's Board of Directors. Ms. Mohr also shares an interest in lithium and other specialty metals and materials, and I believe she will be a great asset in advancing both Avalon's Separation Rapids Lithium and East Kemptville Tin-Indium projects."

- Avalon's President and CEO, Don Bubar

the risk is in being able to define a process to consistently produce a refined chemical product at a competitive cost that will meet the specifications demanded by cleantech customers.

We continue to see benefits in providing leadership and promoting excellence in sustainable business practices, and I believe this is critical to our project development success. Acting sustainably gives Avalon a strategic advantage, aligning the Company with its stakeholders' values, including cleantech companies who audit their supply chains to ensure that their raw materials are sourced from environmentally and socially responsible operators.

**We continue to see benefits in providing leadership and promoting excellence in sustainable business practices**

## Avalon's products are integral to the growing cleantech industry

The global transition to EVs is accelerating and it seems not a week goes by without game changing announcements from automakers, battery manufacturers or governments. For example, Volkswagen recently announced they will now be investing US$84 billion to meet their goal of bringing 300 EV models to market by 2030, with US$60 billion of this investment going towards lithium ion battery production and development. Governments are encouraging rapid EV adoption by announcing target dates to implement bans on the sales of traditional gasoline and diesel engine cars. In October 2017, China announced that starting in 2019 there will be a "new energy vehicles" sales quota for automakers in China of 10% of annual sales, rising to 12% in 2020, with hefty fines if not met. What is less in the news, however, is the question "where will the critical materials needed to fuel this growth come from?" The supply chain still needs to be created.

The lithium ion battery is the energy storage technology that is enabling the transition to EVs. But EVs are just part of the story. Equally important are the growing applications of lithium ion batteries in home and grid energy storage, as well as power tools and communication devices. There is no substitute for lithium in this technology, ensuring growing demand for lithium compounds for at least the next 10-20 years. Avalon's Separation Rapids Project can not only feed this increasing appetite for lithium compounds, but also anchor downstream economic activity and opportunities in Ontario for these rapidly expanding EV technology opportunities.

The EV age has arrived, and the critical material supply chains, notably lithium but also rare earths, will need to grow exponentially to keep pace with the rapidly growing demand.

Many EV manufacturers are planning to use permanent magnet (particularly neodymium iron boron magnet) electric motors instead of AC induction motors. Chinese magnet producers are ramping up capacity to feed the growing demand. The outcome is a shift to long term, lock-in contracts for supplies of the magnet rare earths, notably neodymium and praseodymium.

Renewed rare earths demand and a reinvigorated cycle of interest in creating a supply chain outside China are inevitable. Accordingly, we have kept our Nechalacho Rare Earth Elements Project on hold and


*In its Q3, Tesla delivered 26,150 electric vehicles - its all-time best quarter for Model S and X deliveries - representing a 17.7% increase over the previous quarter. Tesla expects a 31% increase in sales in 2017, compared to 2016.*

ready to re-activate when interest from capital markets returns. With a completed Feasibility Study, Nechalacho remains one of the few advanced rare earth projects outside China that is in a position to offer a sustainable new supply of rare earths to the global marketplace.

## Mineral education is important to strengthen the industry

Sustainability reports such as this one provide tangible evidence that the mineral development industry is evolving rapidly as it transitions to cleantech materials production, embraces new technology and greatly reduces the environmental footprint traditionally associated with the historic mining industry.

It is important to remember that cleantech depends on metals and minerals that must be extracted from the ground and that this can now be done in a sustainable way. Canada has been a leader in mineral exploration and development technology and can also be the leader in responsible resource development.

**We must get more geoscience into the school science curriculum**

It saddens me to see that the public education system has not kept pace, resulting in declining awareness of the relevance of metals and minerals to modern society. We must get more geoscience back into the school science curriculum so younger generations can better appreciate where "stuff comes from" and create more awareness about the career opportunities that the mineral industry can offer, especially in the north. This has been a personal project of mine for many years, that I support through numerous philanthropic initiatives including the Prospectors and Developers Association of Canada (PDAC)'s Mining Matters program where I recently joined the Board of Directors.

### Dense Media Separation (DMS) is a technology that takes advantage of the difference in material densities to separate solids into two or more products.

In so doing, it is possible to remove waste from ore prior to incurring an expensive and energy-consuming separation process. DSM is an older technology that was once more frequently employed, but lost favour due to more advanced methods. Its simplicity through minimal use of reagents, low environmental impact and low energy use makes it consistent with a sound sustainable approach to development. This technology is planned to be incorporated into the East Kemptville Project flowsheet, where recent testwork has shown 95% of the mined tin can be concentrated into 50% of the mass before milling. Using DMS, the processing plant can have a much smaller environmental footprint and cost significantly less.

With DMS technology, the feed ore material, which is composed of minerals with different densities, is crushed and screened before being mixed in a ferrosilicon slurry with a specific density. Solids with a density less than the ferrosilicon slurry will float, while those with a higher density will sink – separating out the valuable minerals. After separation, the ferrosilicon can be recovered by magnets and recycled.

At East Kemptville, the tin-bearing cassiterite material will "sink," while any gangue mineral will "float." The sinks will be collected and processed for tin recovery while the floats will be part of the final tailing that will be disposed of in a permanently stable condition. However, Avalon will continue to monitor the market and investigate the potential for beneficial use of the sulfide floats.

*Petalite crystal sample from Avalon's Separation Rapids Lithium Project*

Lastly, I would like to acknowledge support from the Government of Ontario for committing $500,000 towards assisting Avalon with piloting and scaling up its proprietary process to recover lithium hydroxide from Separation Rapids' petalite. The funding by the Government of Ontario was made through the Northern Innovation Program of the Northern Ontario Heritage Fund Corporation (NOHFC): a program designed to support the development and commercialization of new technologies that will contribute to future prosperity in Northwestern Ontario. The NOHFC and the Government of Ontario are to be commended for recognizing that Northern Ontario's mineral wealth can be leveraged to create the full energy storage supply chain in the province.

Successful completion of the pilot plant process optimization work supported by the NOHFC will allow Avalon to move forward on designing, financing and constructing its planned Phase 1 Demonstration Plant.

I remain convinced that a sustainability focus will add value to our business. Avalon is committed to providing leadership for the junior resource sector toward a more sustainable future for the Canadian mineral industry.

Sincerely,

Donald S. Bubar

## Lithium hydroxide product was successfully made from petalite concentrate using Avalon's proprietary hydrometallurgical process.

The product sample was evaluated by the National Research Council of Canada as a potential feed material for Li-rich NMC-type lithium ion battery cathodes. Elemental analysis of Avalon's product confirmed that it had low levels of metal impurities, within the range reported by commercial suppliers of battery grade lithium hydroxide materials.

*National Research Council of Canada's unique 2325-type coin cell technology/components. Photo credit: National Research Council of Canada*

## Avalon continues to support Jason Willson and Luke Bickerton, as detailed in the Company's 2016 Sustainability Report.

Jason Willson is studying the character and formation of indium mineralization at the East Kemptville deposit for his master's program at the University of Windsor.

Luke Bickerton is studying the hydrothermal and structural evolution of the East Kemptville deposit for his PhD at Laurentian University, co-registered at Saint Francis Xavier University in Nova Scotia.

Avalon is engaging with students and universities as it moves forward on similar research projects in geology and environmental studies at the Separation Rapids Project.

*Project geologist Derek Thomas and geology student Jason Willson study ore from the East Kemptville Tin-Indium Project*

# Message from the Vice President, Sustainability

Welcome, and thank you for reading Avalon's 2017 Sustainability Report, where we once again review our sustainability progress and goals to keep ourselves accountable to commitments.

This year, we advanced our sustainability reporting with the transition to the Global Reporting Initiative's (GRI) Standards: a streamlined guidance launched in October 2016, replacing the GRI G4 guidelines used previously. The GRI Standards represent the global best practice for reporting on a range of economic, environmental and social impacts. While the updated GRI Index is organized slightly differently than in previous years, we believe no data or commentary has been lost in this transition.

Sustainable operations add value for Avalon's Communities of Interest (COI): Aboriginal governments and organizations, academia and industry associations, employees and contractors, end use customers and potential partners, government, investors and financial institutions, local communities, non-profit organizations and regulators. Along with implementing risk and change management, Avalon integrates its sustainability objectives into business planning, work activities and assessments in all stages of project development. These initiatives have the potential to make our projects more cost effective, decrease risk and contribute to a more simplified permitting process - all contributing to shareholder value.

## Avalon is a leader in the industry

I am proud to acknowledge that Avalon continues to be a leader in the mineral development industry and was recognized several times throughout its 2017 fiscal year (FY2017) for our commitment, and our peoples' commitment, to leading industry best practices.

**Avalon is the only known exploration company to measure and report on its GHG footprint**

Avalon was able to assist in the creation of the PDAC's greenhouse gases (GHG) calculator as part of the PDAC's energy footprint initiative. Avalon is one of the only known exploration companies to measure and report on its GHG footprint (as found within this Report) in order to provide an industry perspective.


Mark Wiseman

This information and advice will be important to the PDAC in creating recommendations to keep mineral development companies in Canada accountable for their GHG footprint.

We are also researching the possibility of creating a Mining Association of Canada (MAC)'s *Towards Sustainable Mining* (TSM)-like system to measure exploration companies' sustainability performance. Avalon is the only non-producer currently voluntarily reporting to TSM's internationally recognized standards for operating companies' performance; a recognized reporting system for companies in development would be a significant step forward for the Canadian mining industry.

In November 2016, Avalon received the "Best Use of Renewables for Mine Exploration" Award at the Energy and Mines' Renewables in Mining Conference. Avalon was recognized by the Energy and Mines World Congress for installing and operating a renewable energy system that integrated a diesel generator, battery bank, inverter system and solar panels at the Nechalacho Project. The initial idea was that the solar and battery system would be able to operate the camp for short periods, thus saving diesel consumption. This was achieved; however, far greater savings in diesel consumption were realized because the system enabled safely moving from the non-electric inefficient diesel heating systems to improved high efficiency tent heaters. These heaters required reliable pure electrical power for digital controls. The success of a system like this depends on the enthusiasm of those involved in seeking success. My congratulations to Avalon's VP, Exploration, Bill Mercer, and Camp Manager, Randy O'Keefe, and electrician Peter Green for their excellent work. We also acknowledge, with thanks, that the Northwest Territories (NWT) government gave some financial and technical assistance.

Strong health and safety performance is a critical part of operating sustainably. Avalon continues to support the one day health and safety course at the PDAC Conference in Toronto since Bill Mercer initiated it in 2012. Strong health and safety performance contributes to efficient work sites, less down time due to accidents and improved employee productivity. We are now building on this success by developing and running the first environment course, patterned on the health and safety course model, at the upcoming 2018 PDAC Conference.

And finally, I was proud to support the Canadian Trade Commission in April 2017 by representing the Canadian exploration industry at a conference in India. As a panel member, I spoke on sustainability in the Canadian exploration and mining industry for a global audience.

*Solar panels at the Nechalacho Rare Earth Elements Project*

## Separation Rapids Lithium Project Activities

Avalon completed extensive work to develop and permit a staged-development approach to the Separation Rapids Project (Kenora, Ontario): a project with the potential to produce high purity lithium compounds for both high strength glass and ceramics, and lithium chemicals for energy storage. You can read more about the project on Avalon's website at AvalonAM.com/projects/separation_rapids.

### Spring Drilling Program

Avalon conducted a drilling program at Separation Rapids to both expand the lithium resource and provide better definition of the lithium mineralogical zoning in the total resource. In advance of this drilling program, Avalon developed a unique site specific Emergency Response Plan that took into consideration the difficult spring access conditions for the site. We made the decision to transport employees by helicopter during periods when the road conditions were poor, to reduce both safety risk and potential environmental impacts. In the event of a possible night time accident when helicopter access was not an option, we ensured that there were adequate personnel and equipment onsite. This slowed the


*Spring 2017 drilling program at the Separation Rapids Lithium Project* drilling program's progress slightly, but the health and safety of our workers will always be first priority at Avalon. Avalon also completed risk assessment training/retraining for the geology team members in advance of the drilling program, developing mitigation for identified medium and high level risks.

Unfortunately, there was one contractor medical aid injury during this drilling program in April 2017. A member of the drill crew incurred a neck muscle injury, returning to his regular shift on light duty the next day. Ironically, a root cause analysis indicated that new guarding on the drill, designed to reduce injury risk, resulted in a different body position that lead to the injury. The drilling company subsequently began researching additional changes to the guarding. Avalon employees have not had an accident since September 2013.

### Permitting and Developing

Avalon completed a significant amount of work to develop and permit the Separation Rapids Project throughout the year; for example, completing:

- an independent consultant review of the site for Species at Risk and ongoing internal review of Species at Risk Act (SARA) recovery plans with potential to impact Company sites, with no concerns identified;
- tailing, concentrate, aggregate (mine rock) and water management facility designs;
- the draft Project Description in March 2017; and
- the first phase of the environmental baseline validation study.

The sites selected for tailing and waste rock will not impact fish or fish habitat. Avalon also completed initial leachate studies on all wastes and ores and initiated long term humidity cell test work in FY2017.

### Community and Government Relations

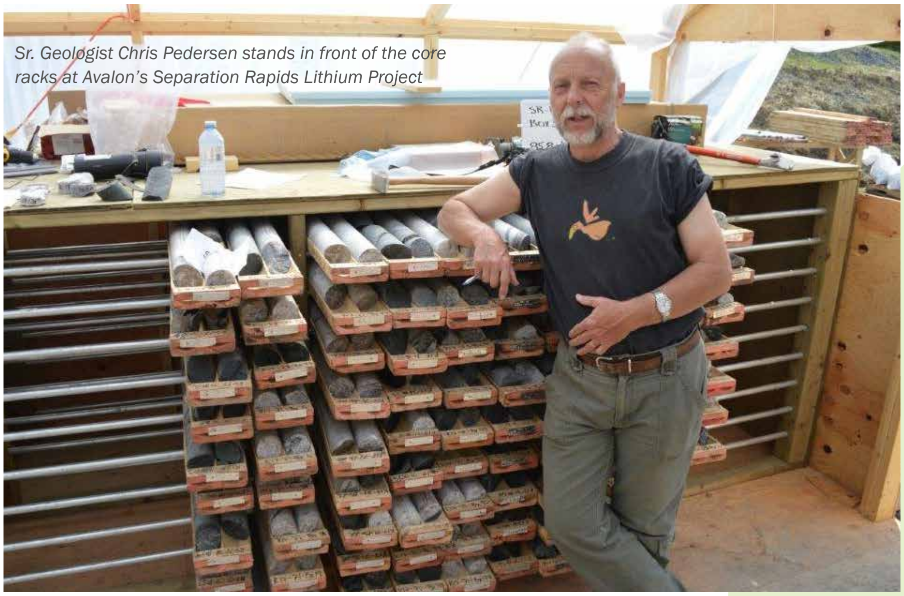
Community and government relations are an extremely important part of permitting a project and developing a successful business within a community. To this end, local contractors, as well as community consultants and businesses, were employed for a range of activities at the project.

Avalon hosted a full-day multi-ministry meeting in April 2017 in Kenora, with the objective of receiving input from the regulators; determining additional information requirements; detailing short term baseline study needs; and discussing if the project would be required to undergo the Canadian Environmental Assessment Act (CEAA) process. The meeting had good participation from the Ministry of Environment, Ministry of Natural Resources and Ministry of Northern Development and Mines (MNDM). No new significant gaps were identified by the regulators.

A follow-up teleconference with the CEAA Agency and the MNDM occurred in June 2017 and confirmed that the Separation Rapids Project should not trigger the CEAA due to its small size and low risk.

Avalon continued an open and positive dialogue with the Wabaseemoong Independent Nation (WIN) in FY2017. In April, Avalon held a meeting with the WIN Chief and Council to review the project and discuss next steps.

Avalon opened a formal dialogue with the Métis Nation of Ontario (MNO). In April, Avalon supported a Valued Components Workshop held in Kenora with over 60 Métis people from the local communities and the Region 1 Consultation Committee members in attendance. While the meeting was generally positive, there was some concern expressed



*Sr. Geologist Chris Pedersen stands in front of the core racks at Avalon's Separation Rapids Lithium Project* regarding permitting and the fact that the project would not likely trigger CEAA; however, no serious project flaws were identified. The MNO were invited to participate in the ongoing permitting process.

A preliminary meeting was held on August 17, 2017 with the leadership of the Ochiichagwe' Babigo' Ining Ojibway Nation to introduce them to the Separations Rapids Project.

Avalon would like to thank the MNDM, as we received a drilling permit in a relatively short time earlier this year, as well as receiving support for the multi-ministry meeting. The short timeline was achieved in large part due to successful engagement with the WIN and MNO in advance of the permit application submission and ongoing communications.

## East Kemptville Tin-Indium Project Activities

Avalon is a diversified metals and minerals company with several projects advancing in different stages. At the East Kemptville Project in Yarmouth County, Nova Scotia, we continue to assess the feasibility of a staged-development approach to process the low grade stockpiles on site and begin environmental remediation. You can read more about the project on Avalon's website at AvalonAM.com/projects/east_kemptville/.

Following a meeting with the Nova Scotia Natural Resources Minister at the PDAC Convention in March 2017, Avalon prepared a draft project overview for discussions with the Nova Scotia government with respect to obtaining a Special Lease and permits for the site. Recent updated project models will require a revision on this, following the completion of updated mine plans. We will then be able to investigate the available permitting options for the shortest possible time line. Due to the low risk location and small project size, it is not anticipated that the CEAA process will apply.

This past year, Avalon developed a closure strategy for our new small scale development model and completed an analysis of the waste generation schedule and volumes. I am pleased that the new development model:

- has only two types of tailing, rather than the three we reported on last year;
- places all tailing and waste rock containing sulfides underwater to prevent acid mine drainage formation;
- utilizes the existing tailing management areas and pits for waste management, negating the need for any new land disturbance, which also significantly reduces up front

*Avalon's Separation Rapids deposit with safety fence around pit*

capital costs;
- includes the generation of a clean tailing cover to isolate the existing acid generating tailing (from historic mining operations), eliminating acid mine drainage from it and reducing the facility risk;
- processes and removes the low grade stockpile, eliminating it as a source of acid mine drainage;
- recycles virtually all process water from the pits or tailing management area; and
- plans for low GHG emissions, due to small, simple operating facilities with low reagent requirements and short waste and ore haulage distances from already developed pits and surface stockpiles.

## Nechalacho Rare Earth Elements Project Activities

Finally, I would like to update you on the work done during the year at the Nechalacho Project at Thor Lake, NWT (AvalonAM.com/nechalacho/nechalacho_overview/). Avalon completed a small camp cleanup program that took one week and employed some First Nations labour. Avalon repaired damaged tents/buildings and generally cleaned up the camp site at Thor Lake. A positive response was received from the Land Use Inspector and is available online at AvalonAM.com/nechalacho/land_use_inspection_reports/.

Avalon conducted a lithium geology program simultaneously, with 50 geological samples collected that were being analyzed for lithium content at year end.

The Company continues to support the NWT Government with comments on ongoing development of regulation and Caribou Range Plans.

Although limited work was completed at Nechalacho in FY2017, Avalon continues to monitor the rare earth elements market for indications to renew project development.

## Mining can be sustainable

**Avalon's advanced exploration sites amount to a total disturbance of <0.03% of the land staked**

Mining continues to suffer from the sins of its past, and many aspects of mining are misunderstood. For example, recent reports have mistakenly stated that a staked claim equates to an equal amount of environmental disturbance. Nothing could be further from the truth. A staked claim is simply a portion of land held either by a prospector or company. Staking claims allows for early exploration on the land; however, only about 1 in 1,000 exploration plays becomes a mine!

Early exploration has virtually no impact - geologists walk across the land looking for signs of a future ore body. Once there are indications of a find, more advanced exploration starts, such as drilling or trenching. Avalon's records show that that roads and drill pads at advanced exploration sites amount to a total disturbance of less than 0.03 percent of the land staked. Avalon's exploration strategy is such that the area disturbed is easily and readily rehabilitated.

Prospectors must stake large land areas to ensure they have the total ore body covered at a time when they know almost nothing about the geology of the find. They also must have control of sufficient land for potential future road access, airstrips, infrastructure, the mine, processing facilities, and tailing and waste rock management areas. Initially, they do not know how large these will be, where the conditions are safe for their construction, where there may be areas that need to be protected and where critical habitat exists that must be avoided.

Even once one of those 1 in a 1,000 exploration plays becomes a mine, it will still only impact a small

*After two years, drill pads and temporary camp roads at Avalon's Nechalacho Project naturally rehabilitates to their original state.*

Visitor walking the path between the dock and core racks at the Separation Rapids Project

percentage of the total staked land; for example, the anticipated land disturbed prior to rehabilitation at closure for Avalon's Separation Rapids Project is estimated at only 5% of the claim area staked. During the large diamond rush of the early 1990s in the Slave Geological Provinces of the NWT and Nunavut, from the approximate 15 million hectares staked, only five mines have been developed with a total footprint of less than 0.032% of the staked claims.

Some food for thought: Based on Natural Resources Canada statistics, did you know that each year approximately three times more land is permanently deforested by municipal development, public road construction and recreation than by mining? Permanent forest access roads alone consume about 50% more land annually than mining. Long story short, modern exploration and mining can contribute positively to local development, jobs and the economy with limited, short term impacts to the environment.

## Thank you for your support

By reporting on Avalon's sustainability practices, we demonstrate the benefits to our business. A safe site has more efficient and productive employees, with no downtime related to accidents. An environmentally sound site has faster and cost effective permitting, lower rehabilitation requirements and avoids costly environmental cleanups. Proactive community relations garner support for projects and avoid delays due to community dissatisfaction. A solid risk management program supports all levels of the organization and can better identify opportunities. We believe that sustainable projects are simply better managed projects which provide benefits and positive returns to all our COI.

Thank you to Avalon's Board of Directors, Sustainability Advisory Committee and the sustainability reporting team for continuing to produce and support this quality documentation of the path to cleantech materials production.

Sincerely,

Mark Wiseman

# FY2017 Goal Performance Summary

The following table summarizes Avalon's performance in reaching its FY2017 goals.

● Achieved ◐ Ongoing ○ Not achieved

| FY2017 Sustainability Goal | Status | Comments |
|---|---|---|
| **Health and Safety** | | |
| Zero fatalities | ● | Avalon completed risk assessment training/retraining for the Separation Rapids Project's geology team members and completed a risk assessment for the project's spring drilling program.<br><br>Avalon also completed a Separation Rapids' Emergency Response Plan in March 2017.<br><br>Risk assessments and advanced planning help mitigate potential fatalities, harm and accidents. |
| Zero harm | ● | See above. |
| Zero lost time accidents | ● | See above. |
| Zero medical aid accidents | ○ | There was one contractor accident in April 2017. A member of the drilling crew at the Separation Rapids Project incurred a neck muscle injury that required a doctor visit. He returned to his regular shift on light duty the next day. While Avalon's FY2017 lost time injury frequency is 0.0, the medical aid and total recordable injury frequency rates are 5.0. This is well above the known industry standard, due to the low number of hours worked during FY2017 on project sites. |
| Improve sustainability initiatives around corporate office space | ● | Avalon joined a coffee pod recycling program in FY2017: a service which recycles used coffee pods through a specialized recycling stream. Coffee grounds are composted and plastics are made into plastic lumber to be used for decking, benches and playgrounds. As of June 30, 2017, Avalon's Toronto office had diverted 72.5 lbs. of waste from the landfill. |

| FY2017 Sustainability Goal | Status | Comments |
|---|---|---|
| **Environment** | | |
| Complete Project Description for Separation Rapids Project, per the Canadian Environmental Assessment Act (subject to financing) | ● | Avalon completed a draft Project Description in March 2017 and the document was sent to key regulators. See VP, Sustainability's message on page 7 for more information. Environmental work has also been summarized within the September 2016 Preliminary Economic Assessment, filed on SEDAR and EDGAR. |
| Submit Separation Rapids Project Environmental and Social Impact Assessment by end of 2017 (subject to financing) | ◐ | Avalon completed the first phase of the environmental baseline validation study in June 2017. The full Environmental and Social Impact Assessment (ESIA) cannot be completed until final process and project decisions are made. |
| Complete Due Diligence at the East Kemptville Project | ● | Avalon completed its Due Diligence of the East Kemptville Project. No fatal flaws were identified. Avalon is currently awaiting a coarse tailing pile stability validation study from the surface rights owner. |
| Participate in Environment Canada's Chemical Management Plan development under the Canadian Environmental Protection Act | ● | Avalon continues to participate, through MAC, in the development of Chemical Management Plans that may impact Avalon projects. The government timeline for the development of key plans is normally five years. |
| Complete two Company environmental policies | ● | Biodiversity and Energy and GHG Management policies were completed and were undergoing final review as at FY2017 yearend. Subsequent to this Report, these policies were finalized without change. |
| Complete preliminary economic analysis of at least one alternative energy source for supply of power to the Separation Rapids site | ● | In September 2016, an engineering firm completed a final report on the run-of-river study at the Separation Rapids Project. The report indicated that a run-of-river power station on the English River near the mine site is feasible. A two metre high dam or weir would have the capability to provide all of the power needed at the mine site for 80% or more of the year and, in addition, would be able to sell up to 5 MWs of power into the grid for a major portion of the year. Results of the study have been provided to the local First Nation and other interested parties in an effort to obtain support for further development of this opportunity. |

| FY2017 Sustainability Goal | Status | Comments |
|---|---|---|
| Monitor proposed and actual regulatory changes in all jurisdictions in which Avalon operates and respond to changes material to Avalon either independently or through industry associations, and adapt applicable environmental strategies as appropriate | ● | Avalon provided support to MAC submissions, and/or submitted comments directly on proposed changes or additions to the CEAA, Metal Mining Effluent Regulations, SARA Recovery Strategies, Caribou Range Plans, Government of NWT Air Quality Regulations, NWT Guidelines for Treatment of Soils Contaminated by Hydrocarbon, Fisheries Act, several federal and NWT Energy and GHG initiatives and the NWT Guideline on Mixing Zones.<br><br>Avalon completed extensive work to reduce energy and GHG emissions at its planned mining projects. See VP, Sustainability's message on page 8 for more information. |
| Identify viable by-products from Separation Rapids ore body to decrease waste product and project environmental footprint: develop footprint for Preliminary Economic Assessment and engagement purposes | ● | Avalon remains active in the search of viable by-products from the Separation Rapids ore body. In FY2017, Avalon completed testwork to produce marketable feldspar and lepidolite concentrate, which may be sold as a product to interested parties or possibly processed to lithium hydroxide. More testwork will need to be conducted to identify the processes required to make lithium hydroxide from lepidolite concentrate and other lithium mica by-products (magnetic concentrate).<br><br>Avalon produced and utilized a site environmental footprint in local COI engagement. |
| Conduct metallurgical testwork to confirm the viability of small scale stockpile project model at East Kemptville Project, which would process and remove acid-generating stockpile currently on site | ● | During FY2017, Avalon conducted a number of testwork programs to confirm the viability of the small scale stockpile project model at the East Kemptville Project, using mostly conventional gravity separation techniques. |

## People and Communities

| | | |
|---|---|---|
| Provide technical support to Aboriginal COI to identify potential local business opportunities and support their long term development where appropriate | ● | In FY2017, the Company's sustainability questionnaire was provided to several local businesses to inform them of its contract requirements. Discussions on opportunities for long term local benefits included run-of-river power development, potential for other clean energy supplies and opportunities associated with mine closure, including wild rice aquaculture. Avalon also offered to assist in establishing local mercury analysis capability. |

| FY2017 Sustainability Goal | Status | Comments |
|---|---|---|
| Maximize utilization of existing workforce and talent pool to minimize external costs | ● | With an experienced and diverse management team and support staff in house, Avalon continues to advance its projects with in house expertise wherever possible to save on time and costs. Examples include the development of the East Kemptville closure strategy and economic models for projects.<br><br>Professional-level staff are often trained in new areas to provide technical, geological or health and safety support for projects. |

## Outreach and Engagement

| FY2017 Sustainability Goal | Status | Comments |
|---|---|---|
| Facilitate communication between MAC and PDAC; specifically, to provide updates to PDAC on applicable MAC and regulatory initiatives related to engagement, the Species at Rick Act, the Canadian Environmental Assessment Agency, the Canadian Environmental Protection Act and Chemical Management Plans, Environmental Emergency Regulation and others as they develop | ● | Through the efforts of Avalon's VP, Sustainability, Avalon increased communication between MAC and the PDAC on a number of issues, including: proposed land withdrawal for parks; energy legislation; the SARA; potential changes to the CEAA; and changes to the federal Emergency Regulation. Note at this time, Chemical Management Plans will not significantly impact on exploration and development, but can have a potentially significant impact on future operations.<br><br>In FY2017, Avalon aided the International Organization for Standardization (ISO), an international standard-setting body, by reviewing draft standards, drafting a discussion paper on rare earth element traceability, and helping secure international participation.<br><br>Avalon delivered a NATO lecture series in Montreal at which 50 delegates from across Canada participated.<br><br>See page 27 for more information. |
| Identify and obtain government and industry support for project initiatives | ● | In January 2017, Avalon joined the Canadian Urban Transit Research & Innovation Consortium (CUTRIC). CUTRIC's objective is to support industry-academic collaborations in the development of the next generation of low carbon technologies for Canadian transit and transportation systems.<br><br>CUTRIC has included Avalon's Separation Rapids Phase 1 Demonstration Plant as part of their fundraising request to the federal government's "Low Carbon Smart Mobility Supercluster" initiative.<br><br>In FY2017, Avalon helped coordinate the foundation of the Ontario Cleantech Materials Group (OCMG), which seeks to garner support for emerging supply chains and anchor the domestic manufacturing of advanced materials, including downstream cleantech components and end-products, within Ontario. The OCMG formally met with the Ontario Ministry of Economic Development and Growth |

| FY2017 Sustainability Goal | Status | Comments |
|---|---|---|
| | | to seek support for the financing of pilot and demonstration plants for raw materials, such as lithium, cobalt and graphite: the building blocks of lithium-ion batteries. The OCMG has grown to 19 members and is actively advocating for the sector with both federal and provincial governments.<br><br>Avalon also continues to be an active member of the Canadian Rare Earth Elements Network. |
| **Governance and Economics** | | |
| Reach out to socially responsible financial community to promote Avalon's sustainability performance | ● | Avalon continues to seek out socially responsible investors (SRIs) and green funds that may be attracted to the Company due to its focus on sustainability as a strategic advantage. Avalon's President and CEO continues to make this a priority, although there has been little uptake by investors due to the Company's market capitalization being too low to meet the investors' criteria. |
| 100% compliance with all applicable legal requirements | ● | No known instances of non-compliance with regulatory requirements. |
| **Sustainability Performance and Reporting** | | |
| Produce FY2017 Sustainability Report | ● | Completed. |
| Formalize the management system to ensure appropriate use of the sustainability questionnaire for screening new contracts | ● | In FY2017, Avalon updated and streamlined its sustainability questionnaire used to screen sustainability performance of potential contractors. The updated questionnaire is easier to complete and responses will be clearer for Avalon to evaluate. A guidance document for when to use the sustainability questionnaire was also developed as a tool to assist management when evaluating potential contractors. |
| **Marketing** | | |
| Promote Avalon's sustainability leadership and associated advantages in ongoing efforts to acquire strategic partners, investment or other support for Avalon's projects | ● | Focus on sustainability continues to be a positively received story in discussions with governments whom have major policy focuses on cleantech supply chain development and resource efficiency in the production processes. See the President's message on page 4 for more information. Avalon's investor relations directives continue to include promotion of the advantages of sustainability to SRIs. |

# FY2018 Goals

The following near term sustainability goals have been set by Avalon's management. Progress on reaching these goals will be reported in Avalon's FY2018 Sustainability Report.

## Health and Safety

Zero fatalities

Zero harm

Zero lost time accidents

Zero medical aid accidents

Establish formal recycling area(s) for office waste

Identify and train health, safety and environment committee person to replace member who has relocated

## Environment

Complete the comparison of the spring and fall 2017 baseline data collection with the 2007 Separation Rapids Project ESIA report; determine if additional work is required in consultation with regulators and other interested stakeholders

Complete initial packer testing and ground water at Separation Rapids Project to provide baseline data for the ESIA

Identify viable by-products from Separation Rapids lepidolite to decrease waste product and project environmental footprint; update the footprint for economic, environmental and engagement purposes (financing depending)

Complete additional leachate studies and initiate humidity cell studies for waste materials at Separation Rapids; advance or modify disposal strategies based on these results

Create waste rock lithochemistry block models for Separation Rapids and East Kemptville deposits that enable enhanced design of waste rock handling for mine planning (financing pending)

Identify the optimal permitting strategy and time lines in discussion with regulators for the East Kemptville Project

In the event that a one year permitting timeline for the East Kemptville Project is identified, complete a formal site closure plan suitable for the approval of a Mining Lease (or Special Lease) to meet a key requirements for transfer of the surface rights to Avalon

Assess the potential to work cooperatively with the NWT Government, Lutsel K'e Dene First Nations and others to develop an access road to the Nechalacho Project; should there be support for this road, assess the economic benefits to the Nechalacho Project

Monitor proposed and actual regulatory changes in all jurisdictions in which Avalon operates and respond to changes material to Avalon either independently or through industry associations, and adapt applicable environmental strategies as appropriate

## People and Communities

Develop protocols for ongoing engagement and Agreement negotiation for all financed projects

Maintain and, where possible, increase local community engagement, especially in Northwestern Ontario

Maximize utilization of existing workforce and talent pool to minimize external costs

## Outreach and Engagement

Facilitate communication between MAC and PDAC; specifically, to provide updates to PDAC on applicable MAC and regulatory initiatives as they develop

Continue to run successful course on “Exploration Health and Safety” at PDAC Convention 2018

Organize inaugural course on “Environmental Management in Exploration Safety” at PDAC Convention 2018

## Governance and Economics

Reach out to socially responsible financial community to promote Avalon's sustainability performance

100% compliance with all applicable legal requirements

## Sustainability Performance and Reporting

Produce FY2018 Sustainability Report

## Marketing

Promote Avalon's sustainability leadership and associated advantages in ongoing efforts to acquire strategic partners, investment or other support for Avalon's projects

# Long Term Goals

Avalon also tracks its progress towards achieving its long term or multiyear goals.

| Long Term Goal | FY2017 Progress |
|---|---|
| **Health and Safety** | |
| Complete the procedures and systems to support the Avalon Health, Safety and Environmental (HSE) management plan to achieve a TSM AAA rating prior to the start of construction | Avalon has updated Emergency Response Plans for all its active projects. The sustainability questionnaire was updated and a guideline for its use written in FY2017. Avalon also reviewed contractor (driller) HSE management plans for compliance with Avalon's HSE management plan. |
| **Environment** | |
| Complete the procedures and systems to support the Avalon HSE management plan to achieve TSM AA rating for all environmental indicators prior to the start of construction | Avalon prepared Biodiversity and Energy and GHG management policies in FY2017 and closure strategies for the Separation Rapids and East Kemptville projects. Tailing management studies were also completed for both sites. Avalon collected additional environmental baseline data to permit future performance monitoring. |
| Analyze alternative energy sources including wind, solar, biomass, and run-of-river hydro power for supply of power to Avalon's project sites, initially focusing on the Separation Rapids Project, to reduce power costs and continuously improve the project's GHG footprint | In September 2016, an engineering firm completed a final report on the Separation Rapids Project, indicating that a run-of-river power station is feasible. Wood biomass systems were evaluated and deemed impractical; however, additional work on solar and wind generation is proposed. |
| Develop technologies that would improve performance and reduce costs at all Avalon projects providing a more sustainable future for the Company | Avalon is in talks with innovative technology developers, especially in the areas of membrane separation, to reduce the number of steps in its process chains. Avalon has also been in talks with equipment providers to obtain the latest technologies to reduce future operating costs. |
| **People and Communities** | |
| Engagement with Aboriginal governments and organizations at projects appropriate to level of project activity, with the objective of achieving Agreements prior to operations | See VP, Sustainability's message on page 8 for more information. |

| Long Term Goal | FY2017 Progress |
|---|---|
| **Outreach and Engagement** | |
| Continue to advocate for better industry sustainability practices and increased public awareness about the minerals/metals sector through industry associations | In 2005, after being President of the PDAC from 2002 to 2004, Avalon's VP, Exploration, Bill Mercer, established the PDAC Health and Safety Committee. The objective was to enable the national exploration industry as a whole to improve its health and safety performance. As chair of the committee, Bill gives frequent presentations to exploration audiences. For example, in FY2017, Bill spoke to the PDAC and Association for Mineral Exploration BC regarding the lessons learnt from the National Survey of Exploration Health and Safety. The survey conducted a safety performance of the national mineral exploration industry in Canada. In periods of increased exploration activity, the mineral exploration industry has had a relatively high frequency of incidents and far too high a rate of fatalities. Leading indicators show that not all companies have a strong safety culture. Bill related cause and effect to the audience at this event. |
| Support Canada's leadership by advancing materials research through collaboration with universities, government and industry | In January 2017, Avalon joined CUTRIC with the objective to support industry-academic collaborations in the development of the next generation of technologies for Canadian transit and transportation systems. These advancements help drive forward innovation in transportation across Canada, leading to job growth and economic development. They also lead to innovative solutions to decrease fuel consumption, reduce GHG emissions, avoid wasted assets and eliminate redundancies in operations.<br><br>A major tenet of the OCMG, which Avalon established in 2017, is a focus on collaboration between industry and academic institutions. The group has four leading Ontario universities as members and numerous potential areas of collaboration that could benefit Avalon's operations have been identified, with a plan to pursue these as the Separations Rapids Project advances. |
| **Governance and Economics** | |
| Diversity of governance will be an ongoing consideration at Avalon | On April 7, 2017 Avalon was pleased to announce the appointment of Patricia Mohr to the Company's Board of Directors. Patricia is the former Vice President, Economics and Commodity Market Specialist at Scotiabank's Executive Offices in Toronto. She developed the Scotiabank Commodity Price Index: the first Index designed to measure price trends for Canadian commodities in export markets. |

| Long Term Goal | FY2017 Progress |
|---|---|
| Create shareholder value through the development and operation of one or more projects in a sustainable and profitable manner | See Avalon's Annual Information Form available publically on SEDAR and EDGAR. |

## Sustainability Performance and Reporting

| | |
|---|---|
| Investigate options for electronically tracking sustainability performance (dependent on projects' advancement); develop and implement these systems prior to operations | Avalon staff attended lectures regarding the electrification of underground mines and additional leading edge developments to monitor and optimize mine operating systems while improving safety, as well as their potential application in sustainability areas. At yearend, Avalon was in discussion with researchers regarding the potential to utilize DNA scans to economically and more comprehensively perform benthic studies for environmental monitoring. |
| Identify and engage local contractors who can provide services that contribute to the longer term sustainability of projects | Avalon engaged a local contractor to complete packer testing and ground water analysis at the Separation Rapids Project. Avalon utilized innovative biogeochemical (vegetative) sampling techniques to identify new exploration targets at the project. However, as no projects were financed, little additional work was completed in this area. |
| Develop or formalize HSE management systems and externally audit such systems during construction; integrate financial and sustainability reporting, once audits demonstrate compatibility with financial systems | Avalon prepared Biodiversity and Energy and GHG management policies to guide future management system development. Closure strategies for the Separation Rapids and East Kemptville projects were prepared and additional work to enable full closure plan development was identified. Avalon also completed tailing management studies and preliminary designs for both sites, for which more detailed management systems can be developed. The Company collected additional environmental baseline data to permit future performance monitoring. |

## Marketing

| | |
|---|---|
| Promote the value of sustainability-driven mineral development companies to the investment community | Avalon continues to seek out SRIs and green funds that may be attracted to the Company due to its focus on sustainability as a strategic advantage. Avalon's President and CEO continues to make this a priority.<br><br>The feedback from SRIs has all been positive in terms of the responsible approach Avalon is taking to project development; however, many SRI are restricted from investing in "micro-cap" companies, so Avalon will need to achieve a higher market capitalization to attract significant investment capital from SRIs. |

# *Towards Sustainable Mining* Self-Assessment

Avalon annually reports on MAC's TSM guiding protocols. The guidance that is provided assists all mining companies in measuring and improving their performance in six key areas of operational performance. The following is a self-assessment of Avalon's FY2017 performance in reaching TSM's performance indicators, as well as FY2018 targets and action plans. Note 'Indigenous' is used in the table below to refer to First Nation and Métis governments and organizations, as that is MAC's preferred terminology.

| TSM Performance Indicator | FY2018 Target | FY2018 Action Plan | FY2017 Actual | FY2017 Goal | FY2017 Action Taken | FY2016 Actual | FY2015 Actual |
|---|---|---|---|---|---|---|---|
| **Aboriginal and Community Outreach** | | | | | | | |
| Communities of Interest (COI) Identification | AA | Identify COI at new drilling sites (pending budget and project decisions); update procedure for identification of COI | AA | AA | Avalon developed a formal procedure for identifying COI. | AA | AA |
| Effective COI Engagement and Dialogue | AA | Engage with WIN and MNO at the Separation Rapids Project and Acadia First Nation at the East Kemptville Project (pending budget and project decisions); initiate discussions at new projects if appropriate | AA | AA | Avalon engaged with WIN Chief and Council frequently throughout FY2017; held preliminary discussions with other Indigenous peoples; and hosted a Valued Components workshop with the MNO. See Disclosure 102-43 on page 32, as well as VP, Sustainability message on page 8 for more information. Furthermore, Avalon's budget was increased for future engagement in FY2017. | AA | AA |
| COI Response Mechanism | AAA | In consultation with appropriate COI, develop a formal process for continued engagement with Indigenous peoples at advancing projects | AAA | A | In consideration of the Avalon engagement logs, Code of Business Conduct and Ethics and the Whistleblower policy, formal processes exist to permit responses to COI complaints and concerns. | A | A |

| TSM Performance Indicator | FY2018 Target | FY2018 Action Plan | FY2017 Actual | FY2017 Goal | FY2017 Action Taken | FY2016 Actual | FY2015 Actual |
|---|---|---|---|---|---|---|---|
| Reporting | AA | Complete 2018 Sustainability Report | AA | AA | 2017 Sustainability Report has been completed. Avalon assisted the PDAC in developing a GHG reporting system for the mineral exploration and development industry. See VP, Sustainability message on page 7 for more information. | AA | AA |
| **Energy and GHG Emissions Management** | | | | | | | |
| Energy use and greenhouse gas emissions management systems | A | Continue to investigate options for reducing energy and GHG footprint, pending financing | A | B | Avalon prepared an Energy and GHG Policy and investigated new mineral production opportunities at the Separation Rapids Project which could improve energy efficiency. See page 50 for more information. The Company also discussed potential clean energy initiative partnerships with the WIN. See page 12 for more information. | B | B |
| Energy use and greenhouse gas emissions reporting systems | A | Expand energy reporting to additional projects (pending financing); continue to support PDAC in energy initiatives; participate in MAC Climate Change Working Group and comment on legislation as appropriate | A | B | Avalon updated its induction training to include energy awareness in FY2017, and assisted the PDAC in developing systems for industry GHG measurement. See page 7 for more information. | B | B |
| Energy and greenhouse gas emissions performance targets | B | Continue to assess impact and cost of regulation on GHG/energy reporting; utilize efficiency targets when in production | B | C | See page 37 for FY2017 energy and GHG performance. Avalon participated in MAC and PDAC energy initiatives. See page 7 for more information. | C | C |
| **Biodiversity Conservation Management** | | | | | | | |
| Corporate biodiversity conservation commitment, accountability and communications | A | Continue to advance environmental baseline studies for financed projects; develop biodiversity management plans for species of importance as required | A | A | A Biodiversity Policy was written in FY2017. Avalon also advanced the environmental baseline study for the Separation Rapids Project. | A | A |

| TSM Performance Indicator | FY2018 Target | FY2018 Action Plan | FY2017 Actual | FY2017 Goal | FY2017 Action Taken | FY2016 Actual | FY2015 Actual |
|---|---|---|---|---|---|---|---|
| Facility-level biodiversity conservation planning and implementation | A | Continue to advance biodiversity management plans for financed projects in consultation with regulators, Indigenous peoples and COI | A | A | Avalon advanced baseline environmental work at the Separation Rapids Project and modified the East Kemptville Project overview to no longer disturb new land. The Company also identified sites for tailing and waste rock to avoid fish habitat. See VP, Sustainability message on page 7 for more information. | A | A |
| Biodiversity conservation reporting | AA | Complete 2017 Sustainability Report; monitor biodiversity management plans and targets | AA | AA | The 2017 Sustainability Report has been completed and reviewed internally by the Vice President, Sustainability. | AA | AA |
| **Crisis Management Planning** | | | | | | | |
| Crisis management and communications preparedness | Comp. | Review and amend Emergency Response Plans as required for potential new project areas | Comp. | Comp. | Avalon updated the Separation Rapids Project Emergency Response Plan, and developed a risk assessment and Emergency Response Plan for the Mount Douglas property, New Brunswick. (Claims in New Brunswick have since been dropped by the Company.) | Comp. | Comp. |
| Review | Comp. | Create, review and update Emergency Response Plans at all active and new sites | Comp. | Comp. | Avalon completed reviews and updates of Emergency Response Plans at all sites that were active in FY2017. | Comp. | Comp. |
| Training | Comp. | Complete a desktop crisis simulation, pending financing | Comp. | Comp. | Risk assessment and training was completed for all contractors and employees at work sites. | Comp. | Comp. |
| **Safety and Health** | | | | | | | |
| Commitments and accountability | A | Continue to review and assign operational HSE responsibilities at active project sites | A | A | Avalon continued to monitor HSE regulations and best practices. | A | A |

| TSM Performance Indicator | FY2018 Target | FY2018 Action Plan | FY2017 Actual | FY2017 Goal | FY2017 Action Taken | FY2016 Actual | FY2015 Actual |
|---|---|---|---|---|---|---|---|
| Planning and implementation | A | Conduct risk assessments and prepare safety management plans for new projects as appropriate | A | A | Avalon completed a risk assessment for the Mount Douglas property. The Company also completed a risk assessment and safety plan at the Separation Rapids Project, as well as updated the safety program and training procedure. | A | A |
| Training, behaviour and culture | AA | Train all personnel as appropriate for site work | AA | AA | The Company completed training for both Separation Rapids and Mount Douglas field work. | AA | AA |
| Monitoring and reporting | A | Continue to report leading and lagging indicators at material projects | A | A | Monitoring and reporting is ongoing at Avalon. | A | A |
| Performance | AA | Target 0 recordable injuries | AA | AA | Avalon had one medical aid incident in FY2017, but met its targets in three out of the last four years. See VP, Sustainability message on page 7 for more information. | AA | AA |

# GRI Index

## GRI 102: General Disclosures 2016

### Organizational Profile

| | | |
|---|---|---|
| Name of organization | 102-01 | Avalon Advanced Materials Inc. (Avalon or the Company) |
| Activities, brands, products, and services | 102-02 | Avalon is a mineral resource exploration and development company that owns five projects across Canada, all potential sources of critical materials for sustainable technologies. |
| Location of headquarters | 102-03 | Toronto, Ontario, Canada. |
| Locations of Operations | 102-04 | Canada. |
| Ownership and legal form | 102-05 | Avalon is a Canadian corporation continued under the Canadian Business Corporations Act. It is a publicly-traded company with common shares listed on the Toronto Stock Exchange, on the OTCQX Best Market in New York and on the Frankfurt Stock Exchange in Germany. Avalon has three wholly-owned subsidiaries: Nolava Minerals Inc., 8110131 Canada Inc. and Avalon Rare Metals Ltd. |
| Markets Served | 102-06 | As none of Avalon's projects are currently in production, the Company does not yet serve any market with a product or service. Avalon is primarily targeting the cleantech sector, where new demand is being created for elements such as lithium. |
| Scale of the Organization | 102-07 | See Avalon's 2017 Year End Financial Statements available publicly on SEDAR and EDGAR. |
| Information on employees and other workers | 102-08 | Avalon has 11 permanent, full time employees (three female, eight male) and two female permanent, part time employees. The permanent workforce is based in Toronto, Ontario, Canada. Avalon employs contracted individuals in some corporate roles, as well as project site roles as needed. |
| Supply Chain | 102-09 | Avalon purchases goods and services to develop the properties the Company owns. It does not currently sell any products or services. |
| Significant changes to the organization and its supply chain | 102-10 | No significant changes during FY2017 in Avalon's ownership, scale or supply chain. All claims in New Brunswick were dropped subsequent to the reporting period (September 1, 2016 – August 31, 2017). |

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| Precautionary Principle or approach | 102-11 | Avalon applies the precautionary approach in its management of environmental risk. This approach reflects the need to take prudent action in the face of potentially serious risk without having to await the completion of further scientific research for confirmation. The precautionary approach incorporates a cost benefit analysis to ensure that the lack of full scientific certainty is not used as a reason for postponing cost effective measures to prevent environmental degradation. |
| External Initiatives | 102-12 | Avalon has publicly subscribed to the principles and practices of the PDAC's *e3 Plus: A Framework for Responsible Exploration* and MAC's TSM framework. |
| Membership of associations | 102-13 | See table below |

Membership of associations — 102-13

| Association | Involvement/Membership Level |
|---|---|
| Association for Mineral Exploration British Columbia | Member; Health and Safety Committee Member |
| Association of Professional Geoscientists of Nova Scotia | Member |
| Association of Professional Geoscientists of Ontario | Member |
| Canadian Diamond Drilling Association | Member |
| Canadian Rare Earth Elements Network | Founding Member; Executive Committee Member |
| Canadian Rare Earth R&D Initiative | Steering Committee Member; Environmental Committee Member; Physical Separation Committee Member; Leaching and Separation Committee Member; Research & Development Initiative Steering Committee |
| Canadian Urban Transit Research & Innovation Consortium | Member |
| International Standards Organization (ISO) TC298 Canadian Mirror Committee | Committee Member |
| ITRI (International Tin Research Institute) | Member - Explorers and Developers Group |
| Metallurgical Society of Canada Extraction 2018 Symposium | Organizing Committee Member |
| Mining Association of Canada | Member of the Board; Environmental Committee Member; Science Committee Member; Community of Interest Panel |
| NATO Advanced Vehicle Technology Panel to organize Rare Earth Lecture Series | Member |
| Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists | Member |
| NWT & Nunavut Chamber of Mines | Member of the Board |
| Ontario Cleantech Materials Group | Lead and founding Member |
| Prospectors and Developers Association of Canada | Health and Safety Committee Chair; Aboriginal Affairs Committee Member; Convention Planning Member; Securities Member; Sustainability Committee Member; Geoscience Committee Member; Awards Committee Member |

Note this information refers to memberships maintained at the organizational level. In addition, Avalon supports Don Bubar's participation on the Mineral Industry Advisory Board to the Northwest Territories Minister of Industry, Tourism and Investment; his participation in the Advisory Board to the Faculty of Science of McGill University and as a Director of Mining Matters.

## Strategy

| | | |
|---|---|---|
| Statement from senior decision-maker | 102-14 | See Message from the President and CEO on page 1. |
| Key impacts, risks, and opportunities | 102-15 | See Message from the VP, Sustainability on page 5. |

## Ethics and Integrity

| | | |
|---|---|---|
| Values, principles, standards, and norms of behavior | 102-16 | Avalon will create shareholder value and community prosperity through the development of scalable businesses that will deliver quality critical materials to customers, while remaining committed to the principles of sustainable practices, effective partnerships and high performance in all aspects of its operations and business practices. See Avalon's website at About - Overview and About - Governance for more information. |
| Mechanisms for advice and concerns about ethics | 102-17 | The Whistleblower Protection Policy establishes procedures for managing complaints received regarding accounting, internal accounting controls, auditing matters or violations of the Company's Code of Business Conduct and Ethics. All good faith reports of suspected violations will be treated fairly and without reprisals. Investigations will be conducted into all allegations of inappropriate behaviour. The Whistleblower Protection Policy provides contact persons independent of management for those who wish to file a report. The Whistleblower Protection Policy is found on Avalon's website at About - Governance. When an operating mine is in place, Avalon will look at employing appropriate external mechanisms for reporting concerns. |

## Governance

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| Governance structure | 102-18 | Avalon is a widely held public company that is overseen by its Board of Directors and managed by its senior management team. For further information, see Avalon's website at About - Directors and Committees. |
| Delegating authority | 102-19 | During Board meetings, the Board of Directors receives regular input from Avalon's management team with regard to economic, environmental, community and risk management concerns, both internal and external. These are held at least four times a year or at such times as are necessary depending on the urgency of the concern. When required, the Directors take action on this input by providing direction to senior management or through amendments, if necessary, to the Company's policies. Current policies are found on Avalon's website at About – Governance. |

| | | |
|---|---|---|
| Executive-level responsibility for economic, environmental, and social topics | 102-20 | The President and CEO, Don Bubar, is the primary contact for informing the Board of Directors of any concerns. Reporting to the President, Avalon has also appointed Jim Andersen, Chief Financial Officer and VP, Finance; Dave Marsh, SVP, Metallurgy and Technology Development; and Mark Wiseman, VP, Sustainability, to be responsible for the day to day management of economic, environmental, safety, process development, risk management programs and social topics and provide a quarterly update to the Board of Directors on these matters. Bill Mercer, VP, Exploration, also periodically reports to the President and Board of Directors on field project environment, health and safety, environmental geological operations and community relations matters raised during the course of field activities. |
| Consulting stakeholders on economic, environmental, and social topics | 102-21 | Avalon's Board of Directors is updated by the management team on relevant developments. Avalon management regularly engages with its COI in order to provide project updates and obtain feedback. As well, COI may contact the appropriate manager for consultation, most frequently through the VP, Exploration, VP, Sustainability, President or Manager, Investor Relations. The Chair of the Board is accessible to COI outreach on concerns. |
| Composition of the highest governance body and its committees | 102-22 | See Avalon's website at About - Directors and Committees. |
| Chair of the highest governance body | 102-23 | Mr. Brian MacEachen is non-executive Chair of Avalon's Board of Directors. |
| Nominating and selecting the highest governance body | 102-24 | The responsibility of nominating an individual as a Director of the Company falls under the Compensation, Governance and Nominating (CGN) Committee. In making its recommendations, the CGN Committee will consider the candidates': competencies and skills (including experience in economic, environmental or social topics); ability to devote sufficient time and resources; diversity; and compliance with the requirements of the applicable securities regulatory authorities. The CGN Committee periodically reviews the size and composition of the Board and Board Committees and reviews recommendations from the President. |
| Conflicts of interest | 102-25 | The Board of Directors conducts periodic reviews of the Company's Code of Business Conduct and Ethics, which all Directors and employees are subject. Additionally, Directors are bound by the rules of the Canada Business Corporations Act. The Act obliges Directors to disclose material interest in any transaction or arrangement that the Board is contemplating. Directors who have divulged such an interest are prohibited from participating in the analysis or voting on the disclosed transaction. |
| Role of highest governance body in setting purpose, values, and strategy | 102-26 | Avalon's Vision, Mission and Values statement received Board Approval in 2013. Revisions to this and other corporate policies require Board approval. Each year, senior management and the Board review the Company's sustainability goals in the annual Sustainability Report. |

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|---|---|---|
| Collective knowledge of highest governance body | 102-27 | During Board meetings, the Board of Directors receives regular input from Avalon's management team with regard to health and safety, economic, environmental, community and risk management concerns. These are held at least four times a year or at such times as are necessary depending on the urgency of the concern. |
| Evaluating the highest governance body's performance | 102-28 | The Board of Directors conducted a self-assessment, including sustainability, during FY2015 with respect to overall effectiveness and performance. The evaluation was conducted and reviewed internally. There were no specific actions that came from or were identified from the self-assessment. Similar assessments that will include performance in respect to governance of economic, environmental and social topics are planned to be conducted in the future. No assessments were conducted during FY2017. |
| Identifying and managing economic, environmental, and social impacts | 102-29 | Avalon continuously works at imbedding risk management practices throughout the organization, from periodic reporting of high level risks to the Board of Directors through to daily risk assessments with front line employees. Avalon's risk management practices include a formal process to identify, evaluate, rank, mitigate, monitor and assign responsibility for all types of risks facing the Company. High level and moderate risks must be regularly monitored and mitigated to within acceptable levels.<br><br>Emergency preparedness is a component of risk management. Avalon has developed site specific Emergency Response Plans to deal with emergencies that could impact its business, including a response and notification procedure to ensure action plans are put into place and information is disseminated in an efficient and reliable manner. These plans are updated at a minimum of every three years or whenever there is a significant change in scope of work at a site. Emergency training and response simulations have been conducted in the past. A general Crisis Management Plan has also been developed in support of serious site emergencies and others material risks with potential to impact on the Company. See the VP, Sustainability's message on page 8 for more information. |
| Effectiveness of risk management processes | 102-30 | VP, Sustainability, and VP, Finance, have day to day responsibility for management of economic, health and safety, environmental and social risks. Health and safety responsibility is assigned at all levels within the Company as part of the HSE Management Plan. Material, high level risks are periodically reported to the Board of Directors at their request, or on the recommendation of management to ensure that risk management systems are in place and operating to manage these risks to acceptable levels. Increased scrutiny occurs when there is a significant change in a project's status or phase. |
| Review of economic, environmental, and social topics | 102-31 | Risk is always at the forefront of Directors' minds as they are making decisions regarding capital expenditures, finance, political initiatives, health and safety and environment. Avalon's VP, Sustainability, and President and CEO communicate risk profiles to the Board of Directors as needed throughout the year. |
| Highest governance body's role in Sustainability Reporting | 102-32 | The VP, Sustainability, and the Sustainability Advisory Committee (which includes a member of the Board of Directors) review the annual Sustainability Report. |

| | | |
|---|---|---|
| Communicating critical concerns | 102-33 | During Board meetings, the Board of Directors receives regular input from Avalon's management team with regard to health and safety, economic, environmental, community and risk management concerns. These are held at least four times a year or at such times as are necessary depending on the urgency of the concern. When required, the Directors take action on this input by providing direction to senior management or through amendments, if necessary, to the Company's policies. |
| Nature and total number of critical concerns | 102-34 | Avalon did not experience any health and safety, environmental, community or financial critical concerns over the course of the FY2017. Mechanism for addressing critical concerns is as described in Disclosures 102-30 and 102-31 on page 30, and Avalon's Whistleblower Protection Policy. |
| Remuneration policies | 102-35 | Avalon's CGN Committee aims to evaluate and maintain fair and reasonable levels of compensation that are competitive to attract and retain experienced and talented management. Compensation to Avalon's executive officers, including the President and CEO, has three components: base salary, cash bonuses and long term incentive in the form of stock options. 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. The long term incentive plan uses stock options to align employees' performance with the continued growth of the Company. Employee options, in general, are vested at 25% per year over four years starting on their first anniversary date. Options are granted annually to reflect prevailing market conditions. The Board and affiliated Board committee members receive remuneration for acting as Directors and/or fees for attending meetings. See also Avalon's 2017 Year End Financial Statements with Management Discussion and Analysis publicly available on SEDAR and EDGAR, or Avalon's annual Information Circular available on Avalon's website at Investors - Regulatory Filings. |
| Process for determining remuneration | 102-36 | Senior executive compensation is governed through the approval of the Compensation, Governance and Nominating Committee. Compensation of non-executive employees is determined by management and is based on market conditions, values and individual performance. Avalon currently does not rely on remuneration consultants to establish compensation levels, but has utilized external salary surveys to determine market values. |
| Stakeholders' involvement in remuneration | 102-37 | Remuneration at Avalon follows the prevailing conditions of the market. The issue of remuneration was not raised at the Company's Annual General Meeting in February 2017. |

## Stakeholder Engagement

| | | |
|---|---|---|
| List of stakeholder groups | 102-40 | See 'Defining Report Content, Materiality, and Boundaries' on page 49 of Avalon's 2016 Sustainability Report. |
| Collective bargaining Agreements | 102-41 | None. |

**Identifying and selecting stakeholders** — 102-42

See 'Defining Report Content, Materiality, and Boundaries' on page 49 of Avalon's 2016 Sustainability Report.

**Approach to stakeholder engagement** — 102-43

As reflected in the table below, Avalon regularly conducts COI engagement at a level commensurate with project activity. Avalon formalized its COI identification process in FY2017. See the VP, Sustainability's message on page 7 for more information.

Avalon welcomes comments and questions regarding its annual Sustainability Reports, and all sustainable initiatives undertaken by the Company throughout the year. Engagement is part of the way Avalon conducts business and is not undertaken specifically as part of the report preparation process.

This year, Avalon tracked engagement between the Company and MAC, as a large amount of time and effort was spent engaging MAC to facilitate communication with the PDAC.

| | Multiple Project | | Nechalacho, NWT | | | East Kemptville, NS | | | Separation Rapids, ON | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2017 | 2016 | 2017 | 2016 | 2015 | 2017 | 2016 | 2015 | 2017 | 2016 | 2015 |
| Total Non- Aboriginal | 53 | 55 | 51 | 78 | 267 | 55 | 105 | 97 | 196 | 361 | 372 |
| Contacts | 29 | 46 | 39 | 62 | 169 | 46 | 88 | 55 | 138 | 259 | 117 |
| Engagements | 24 | 9 | 12 | 16 | 98 | 9 | 17 | 42 | 58 | 102 | 255 |
| Government/Regulators | 5 | 9 | 38 | 36 | 249 | 27 | 64 | 80 | 194 | 356 | 369 |
| Other | 42 | 44 | 13 | 34 | 17 | 27 | 35 | 10 | 1 | 1 | 0 |
| NGOs | 6 | 2 | 0 | 8 | 1 | 1 | 6 | 7 | 1 | 4 | 3 |
| Total Aboriginal | 2 | 21 | 4 | 3 | 34 | 2 | 7 | 7 | 213 | 261 | 210 |
| Contacts | 2 | 20 | 4 | 3 | 27 | 1 | 6 | 7 | 192 | 193 | 81 |
| Engagements | 0 | 1 | 0 | 0 | 7 | 1 | 1 | 0 | 21 | 68 | 129 |
| Aboriginal Governments and Organizations | 1 | 5 | 0 | 1 | 30 | 2 | 0 | 2 | 159 | 187 | 118 |
| Aboriginal Business | 0 | 16 | 3 | 2 | 4 | 0 | 7 | 5 | 52 | 74 | 92 |
| Aboriginal Other (new this Report) | 1 | NA | 1 | NA | NA | 0 | NA | NA | 2 | NA | NA |
| Aboriginal Rights Violations | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Key topics and concerns raised | 102-44 | **Separation Rapids Lithium Project (Ontario)**<br>Due to the rapid pace of development and the active participation of Avalon's Manager, Investor Relations, Ron Malashewski (who is local to the project), the largest proportion of engagement and communication activity during the reporting period was at the Separation Rapids Project.<br><br>The main engagement activities at Avalon's Separation Rapids Project were:<br>• project updates on environmental baseline information, permitting and development options that have the potential to impact the environment (this included a Valued Components Workshop with the MNO and a similar meeting with the Chief and Council of the WIN);<br>• discussing possible partnerships and business opportunities with the MNO and WIN;<br>• regular update meetings with the Kenora mayor, city officials and economic development personnel;<br>• regular updates to the federal and provincial representatives via meetings, calls and news releases;<br>• several meetings with regulators, including site visits, and a full day project update workshop to discuss project options and the permitting process; and<br>• participation in MNO and WIN cultural events.<br><br>**East Kemptville Tin-Indium Project (Nova Scotia)**<br>Avalon's engagement at the East Kemptville Project was reduced relative to 2016 levels.<br><br>Due to the additional work required to assess project options, a final model was not available for the extensive engagement originally anticipated in Avalon's 2016 Sustainability Report. Assuming a positive development model and funding support, engagement activity is expected to ramp up significantly in 2018.<br><br>The main engagement activities at Avalon's East Kemptville Project in FY2017 focused on:<br>• teleconferences held with the Tusket River Environmental Protection Association executive to discuss project developments as they related to environment;<br>• contact with the Acadia First Nation community to provide project updates;<br>• periodic meetings with Nova Scotia COI related to site environmental studies and project updates;<br>• discussions and site visits with university professors and students working on the East Kemptville ore body; and<br>• periodic updates with members of the federal and provincial members of parliament and staff.<br><br>**Nechalacho Rare Earth Elements Project (Northwest Territories)**<br>Communications and engagement at the Nechalacho Project continued to decrease in FY2017, focusing on the renewal of the exploration permit and some regulatory changes. Avalon continued to monitor the Caribou Management Plan development and commented on several regulatory initiatives. Preparations to renew the camp and exploration permit in 2018, which will require additional engagement, were initiated at year end. |
|---|---|---|

**Multiple Project Engagement**
Activities such as invited attendance at federal round tables on energy, mining, Indigenous rights or discussions related to federal legislation apply to all of Avalon projects. As such, the category of Multiple Project Engagement was developed in 2016. This year, a total of 57 communications were of this nature, and reflect Avalon's leadership and reputation on issues of national significance in the exploration and development sector.

**Engagement with Industry Associations and Regulators**
Avalon conducted significant engagement with federal and provincial governments on a range of regulatory initiatives with the potential to impact Avalon projects. This included submissions directly from the Company or included with MAC responses. See the VP, Sustainability's message on page 7 and 2017 Goals on page 14 for examples of engagement.

## Reporting Practice

| | | |
|---|---|---|
| Entities included in the consolidated financial statements | 102-45 | See Avalon's 2017 Year End Financial Statements available publicly on SEDAR and EDGAR. This Sustainability Report does not cover inactive or non-material entities that may be mentioned within the Company's Financial Statements. |
| Defining report content and topic Boundaries | 102-46 | See 'Defining Report Content, Materiality, and Boundaries' on page 49 of Avalon's 2016 Sustainability Report. |
| List of material topics | 102-47 | See 'Defining Report Content, Materiality, and Boundaries' on page 49 of Avalon's 2016 Sustainability Report. |
| Restatements of information | 102-48 | There have been no restatements of Avalon's previous Sustainability Reports. On October 8, 2016, Avalon did issue a clarification of its September 27, 2016 News Release. This clarification can be found on Avalon's website at News & Media – News Releases – October 25, 2016 "Avalon Clarifies Disclosure Contained in September 27, 2016 News Release." |
| Changes in Scope and Boundary | 102-49 | See 'Defining Report Content, Materiality, and Boundaries' on page 49 of Avalon's 2016 Sustainability Report. |
| Reporting period | 102-50 | September 1, 2016 to August 31, 2017 (Avalon's 2017 fiscal year). |
| Date of most recent report | 102-51 | November 30, 2016. |
| Reporting cycle | 102-52 | Annual. |

| | | |
|---|---|---|
| Contact point for questions regarding the report | 102-53 | Avalon's VP, Sustainability, Mark Wiseman, can be reached at sustainability@AvalonAM.com or +1-416-364-4938. |
| Claims of reporting in accordance with the GRI Standards | 102-54 | This Report has been prepared in accordance with the GRI Standards: Core option. |
| GRI content index | 102-55 | This complete GRI Index begins on page 26. |
| External assurance | 102-56 | This Report has not been externally assured. At this time, there is a low level of risk in the information presented herein and the fundamental systems used to gather data. As Avalon's projects progress and the Company grows in size and resources, the formal reporting systems will be externally assured. |

## GRI 103: Management Approach 2016

| | | |
|---|---|---|
| Explanation of the material topic and its Boundary; management approach; evaluation of the management approach | 103-01<br>103-02<br>103-03 | See Disclosures on Management Approach on page 46. |

## GRI 201: Economic Performance 2016

Direct economic value generated and distributed — 201-01

| Economic Value Generated and Distributed (IFRS) | FY2017 | FY2016 | FY2015 |
|---|---|---|---|
| Revenue | - | - | - |
| Interest | $28,211 | $35,160 | $66,014 |
| Expenses | $3,703,000 | $3,990,945 | $3,589,977 |
| Loss from Operations | -$3,674,789 | -$3,955,785 | -$3,523,963 |
| Deferred Income Tax Recoveries | $317,468 | $416,140 | $347,589 |
| Net Loss for the Year | -$3,357,321 | -$3,539,645 | -$3,176,374 |

| | | |
|---|---|---|
| Defined benefit plan obligations and other retirement plans | 201-03 | Avalon has no defined benefits plan. |

| | | |
|---|---|---|
| Financial assistance received from government | 201-04 | Avalon received $66,487 in financial assistance from various governments in FY2017. Note the funding from the NOHFC discussed on page 4 was not yet received in FY2017. |

## GRI 203: Indirect Economic Impacts 2016

| | | |
|---|---|---|
| Infrastructure investments and services supported | 203-01 | There were no infrastructure developments, services or investments supported by Avalon during FY2017. |

## GRI 204: Procurement Practices 2016

| | |
|---|---|
| Proportion of spending on local suppliers | 204-01 |

Separation Rapids Expenditures by Vendor Group

| | FY2017 | | FY2016 | | FY2015 | |
|---|---|---|---|---|---|---|
| Aboriginal Vendors | 1% | $18,710 | 0% | $2,289 | 3% | $12,277 |
| Local Vendors | 24% | $355,030 | 22% | $296,919 | 43% | $154,759 |
| Other Vendors | 75% | $1,106,089 | 78% | $1,048,489 | 54% | $193,096 |
| TOTAL | | $1,479,829 | | $1,347,697 | | $360,132 |

East Kemptville Expenditures by Vendor Group

| | FY2017 | | FY2016 | | FY2015 | |
|---|---|---|---|---|---|---|
| Aboriginal Vendors | 0% | $0 | 0% | $0 | 2% | $18,000 |
| Local Vendors | 41% | $35,966 | 22% | $273,059 | 34% | $321,700 |
| Other Vendors | 59% | $51,923 | 78% | $995,275 | 64% | $611,102 |
| TOTAL | | $87,889 | | $1,268,334 | | $950,802 |

Nechalacho Expenditures by Vendor Group

| | FY2017 | | FY2016 | | FY2015 | |
|---|---|---|---|---|---|---|
| Aboriginal Vendors | 11% | $14,413 | 0% | $245 | 3% | $36,628 |
| Local Vendors | 41% | $51,187 | 30% | $58,883 | 20% | $232,115 |
| Other Vendors | 48% | $60,086 | 70% | $140,122 | 76% | $868,488 |
| TOTAL | | $125,686 | | $199,250 | | $1,137,231 |

## GRI 302: Energy 2016

| | | |
|---|---|---|
| Energy consumption within the organization | 302-01 | Avalon consumed 1368.77 gigajoules (GJ) internally over FY2017. See table below for year-over-year comparison. |
| Energy consumption outside of the organization | 302-02 | Avalon consumed 455.29 GJ externally over FY2017. See table below for year-over-year comparison. |

| Energy Use (GJ) | | | | |
|---|---|---|---|---|
| | 2017 | 2016 | 2015 | 2014 |
| Internal | 1368.77 | 788.1 | 730 | 4125.8 |
| External | 455.29 | 535.2 | 1248.3 | 1995.4 |

| | | |
|---|---|---|
| Reduction of energy consumption | 302-04 | Avalon's energy consumption varies mainly due to the equipment used, length of and conditions during drill campaigns and changes in the frequency and destination of executive travel. |

## GRI 303: Water 2016

| | | |
|---|---|---|
| Water withdrawal by source | 303-01 | Avalon withdrew approximately 1,741,364 litres at the Mount Douglas drill sites during winter 2016, and 755,189 litres during the spring 2017 Separation Rapids' drill campaign. Both sources of water were surface water, i.e. local streams and rivers. |
| Water sources significantly affected by withdrawal of water | 303-02 | No water sources were significantly affected by water withdrawal. |
| Water recycled and reused | 303-03 | It is estimated that greater than 80% of water removed for drilling purposes is returned to its source. The remaining less than 20% not returned is due to normal water loss during the drilling process. Net of evaporation, this water returns to the local groundwater system via rock fractures. |

## GRI 304: Biodiversity 2016

| | | |
|---|---|---|
| Operational sites in, or adjacent to, protected areas and areas of high biodiversity value | 304-01 | The East Kemptville Project is located adjacent to the Tobeatic Wilderness Area in Nova Scotia, on the northern boundary of the property. Avalon's other project sites are not located in or near protected or high biodiversity value areas. |

| | | |
|---|---|---|
| Significant impacts of activities, products, and services on biodiversity | 304-02 | At this time, Avalon has no material construction, manufacturing plants, mines or transportation infrastructure that have the potential to have significant impacts on biodiversity in protected areas or areas of high biodiversity outside protected areas.<br><br>The East Kemptville Project is separated from the Tobeatic Wilderness Area by the provincial Highway 203 and the Tusket River. No impacts have been identified due to historic or existing operations. |
| Habitats protected or restored | 304-03 | See Disclosure G4-MM01. |
| IUCN Red List species and national conservation list species with habitats in areas affected by operations | 304-04 | There were no International Union for Conservation of Nature (IUCN) Red List species identified living on site during the SARA study at the Separation Rapids Project; however, additional work may be required pending a decision on the potential power line route.<br><br>Avalon initiated a preliminary SARA study at the brownfields East Kemptville Project, but this is on hold pending project processing decisions.<br><br>At the Nechalacho Project, in addition to the potential for several rare plant species, the following IUCN Red List or simply “listed” animal species were ‘rarely’ identified near the mine site: Rusty Blackbird (Vulnerable); Olive-sided Flycatcher (Near Threatened); and Wolverine, Common Nighthawk, Short-Eared Owl, Peregrine Falcon and Horned Grebe (all Least Concern). Given the mobility of these species, the small project footprint and planned monitoring and mitigation measures, impact is assessed as “highly unlikely.” Effort and participation is ongoing with respect to the Bathurst Caribou herd and associated Range Plan development. Avalon participates with the MAC regarding input to applicable Environment and Climate Change Canada species recovery plans. |

## GRI 305: Emissions 2016

| | | |
|---|---|---|
| Direct (Scope 1) GHG emissions | 305-01 | Avalon generated total Scope 1 Emissions of 64.58 tonnes of $CO_2$e. See table below for year-over-year comparisons. |
| Energy indirect (Scope 2) emissions | 305-02 | Avalon generated total Scope 2 Emissions of 7.19 tonnes of $CO_2$e. See table below for year-over-year comparisons. |
| Other indirect (Scope 3) emissions | 305-03 | Avalon generated total Scope 3 Emissions of 33.43 tonnes of $CO_2$e. See table below for year-over-year comparisons. |

Greenhouse Gas Emissions (Tonnes $CO_2$e)

| | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|
| Scope 1 | 64.58 | 46.54 | 38.94 | 284.1 |
| Scope 2 | 7.19 | 7.65 | 9.08 | 9.33 |
| Scope 3 | 33.43 | 39.55 | 86.11 | 138.85 |

| | | |
|---|---|---|
| Reduction of GHG emissions | 305-05 | Avalon generated 10.4 tonnes more $CO_2e$ in FY2017 vs. FY2016. This was due to drilling during inclement weather in both New Brunswick and Northern Ontario, despite a decrease in executive travel. |
| Emissions of ozone-depleting substances (ODS) | 305-06 | Avalon currently does not measure the release of ODS, as these are not a material component of the Company's emissions at this time. |
| Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions | 305-07 | NOX are included in the $CO_2e$ totals for Scope 1, 2, and 3 emissions. Due to the factors used to convert units of energy/distance to $CO_2e$, only for some types of emissions are the NOX tonnes calculated separately, then converted to $CO_2e$. SOX is not a material component of the Company's emissions at this time. |

## GRI 306: Effluents and Waste 2016

| | | |
|---|---|---|
| Water discharge by quality and destination | 306-01 | See Disclosure 303-03. |
| Waste by type and disposal method | 306-02 | (see table below) |

Waste Streams (Tonnes)

| | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|
| Compost | 0.01 | 0.46 | 0.01 | 0.01 |
| Reuse | 0 | 0 | 14.03 | 0.55 |
| Incinerated | 0 | 0 | 3.00 | 1.50 |
| Landfill | 1.42 | 26.97 | 15.94 | 4.76 |
| Recycle | 1.17 | 2.89 | 30.71 | 4.28 |
| On-Site Storage | 11.40 | 0 | 0 | 0 |
| Total | 14.00 | 30.32 | 63.69 | 11.1 |

| | | |
|---|---|---|
| Significant spills | 306-03 | Avalon had no significant spills during the course of FY2017. |
| Water bodies affected by water discharges and/or runoff | 306-05 | None. |

## GRI 307: Environmental Compliance 2016

| | | |
|---|---|---|
| Non-compliance with environmental laws and regulations | 307-01 | There have been no instances of any non-compliance with laws and regulations in FY2017. |

## GRI 308: Supplier Environmental Assessment 2016

| | | |
|---|---|---|
| New suppliers that were screened using environmental criteria | 308-01 | In FY2017, Avalon modified its sustainability questionnaire used to evaluate contractors to make it less time consuming for contractors to complete while maintaining its comprehensiveness. Over the course of FY2018, Avalon will evaluate the effectiveness of this updated tool for screening contractors and their sustainability performance. |

## GRI 401: Employment 2016

| | | |
|---|---|---|
| New employee hires and employee turnover | 401-01 | No full time employees were hired during the reporting period. Overall employee turnover rate was 13%. |
| Benefits provided to full-time employees that are not provided to temporary or part-time employees | 401-02 | All full time and permanent part time employees of Avalon receive full benefits from the Company. Fixed term, temporary employees do not. |
| Parental leave | 401-03 | All full time and permanent part time employees of Avalon are entitled to parental leave as lawful in the province in Ontario, where the workforce resides. In FY2017, the one female employee on parental leave returned to work. |

## GRI 403: Occupational Health and Safety 2016

| | | |
|---|---|---|
| Workers representation in formal joint management–worker health and safety committees | 403-01 | 100% of Avalon full time and permanent part time employees are covered by formal joint management-worker health and safety committees. |

| Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities | 403-02 | Avalon had no lost time injuries, occupational diseases or absenteeism due to workplace injury, or any fatalities on any of its work sites over FY2017. One contractor medical aid injury occurred. See the VP, Sustainability message on page 7 for more information.<br><br>The table below provides a year over year comparison of Avalon's safety metrics (frequencies per 200,000 hours worked). |
|---|---|---|

| Fiscal Year | Lost Time Injury Frequency | Medical Aid Injury Frequency | Total Recordable Frequency | Severity Frequency | Lost Time Injuries | Medical Aid Injuries | Total Recordable Injuries | Total Hours | Lost or Light Duty Days |
|---|---|---|---|---|---|---|---|---|---|
| FY2017 | 0 | 5 | 5 | 18 | 0 | 1 | 1 | 43,268 | 4 |
| FY2016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39,473 | 0 |
| FY2015 | 0 | 5 | 5 | 0 | 0 | 1 | 1 | 43,072 | 0 |
| FY2014 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58,593 | 0 |
| FY2013 | 0 | 3 | 3 | 22 | 0 | 1 | 1 | 72,839 | 8 |
| FY2012 | 13 | 2 | 15 | 519 | 6 | 1 | 7 | 91,291 | 237 |

Note: Statistics include all employees and drill site contractors.

## GRI 404: Training and Education 2016

Average hours of training per year per employee — 404-01

| Category | Hours Total | Average Hours |
|---|---|---|
| Women | 98 | 19.6 |
| Men | 100 | 12.5 |
| Executive | 104 | 14.9 |
| Professional | 94 | 15.7 |

Executive employees are defined as the President, Vice Presidents and the Controller. All other employees are Professional level.

| Percentage of employees receiving regular performance and career development reviews | 404-03 | 100% of permanent employees take part in an annual performance review, conducted by their direct supervisor or Board of Directors as determined by the employment category. |
|---|---|---|

## GRI 405: Diversity and Equal Opportunity 2016

Diversity of governance bodies and employees

405-01

| Age and Gender of Avalon Employees | | | | | | |
|---|---|---|---|---|---|---|
| | < 30 Female | < 30 Male | 30 - 50 Female | 30 - 50 Male | > 50 Female | > 50 Male |
| Professional | 2 | 0 | 1 | 2 | 1 | 0 |
| Executive | 0 | 0 | 1 | 1 | 0 | 5 |
| Total | 2 | 0 | 2 | 3 | 1 | 5 |

| Age and Gender of Avalon Board of Directors | | |
|---|---|---|
| | % of Board | Age |
| Male - 4 | 66.6 | >50 |
| Female - 2 | 33.3 | >50 |

Executive employees are defined as the President, Vice Presidents and the Controller. All other employees are Professional level.

## GRI 406: Non-Discrimination

Incidents of discrimination

406-01

Avalon had no incidents of discrimination at any of its work sites over the course of FY2017.

## GRI 412: Humans Rights Assessment 2016

Employee training on human rights policies or procedures

412-02

Each year, every employee is required to sign a Policy Compliance Certificate. This states that the employee has read and agrees to abide by the Company's policies and procedures, and includes Avalon's Anti-Harassment, Bullying and Violence Policy.

## GRI 413: Local Communities 2016

| | | |
|---|---|---|
| Operations with local community engagement, impact assessments, and development programs | 413-01 | During FY2017, Avalon's level of engagement with COI was commensurate with project activity. Community engagement and information exchanges occurred throughout FY2017 in respect to the Separation Rapids and East Kemptville projects, though no formalized programs have yet been developed for these projects given Avalon's present low impact activities. Avalon completed a draft Project Description for the Separation Rapids Project in FY2017 and reviewed the document with local COI. The East Kemptville Project ESIA report is presently on hold pending process decisions, though environmental operating and closure strategies are well advanced for this brownfields site. As discussed in previous years, Avalon has completed an impacts assessment for Nechalacho; developed draft community engagement plans for review and comment; and signed two formal Agreements. Read more at Avalon's website – Nechalacho Project – Community Engagement. |
| Operations with significant actual and potential negative impacts on local communities | 413-02 | Given that only low impact exploration activities have taken place at Avalon's projects, there have been no known negative significant impacts to local communities from Avalon's activities. Prior to development proceeding, each project undergoes a rigorous environmental assessment process to evaluate the potential environmental and social impacts and to identify mitigation measures where necessary. Engagement on this is sought from impacted local communities, including Aboriginal communities and governments. To be approved, the assessment must determine that the project would result in no significant adverse effects. Avalon seeks out opportunities for both short and long term benefits to the local communities commensurate to project activity. |

## GRI 414: Supplier Social Assessment 2016

| | | |
|---|---|---|
| New suppliers that were screened using social criteria | 414-01 | In FY2017, Avalon modified its sustainability questionnaire used to evaluate contractors to make it less time consuming for contractors to complete while maintaining its comprehensiveness. Over the course of FY2018, Avalon will evaluate the effectiveness of this updated tool for screening contractors and their sustainability performance. |

## GRI 419: Socioeconomic Compliance 2016

| | | |
|---|---|---|
| Non-compliance with laws and regulations in the social and economic area | 419-01 | Avalon had no significant fines nor any non-monetary sanctions levied against the organization in FY2017. |

## G4 Mining and Metals Sector Disclosures 2013

**Amount Of Land (Owned Or Leased, And Managed For Production Activities Or Extractive Use) Disturbed Or Rehabilitated** — G4-MM01

Avalon maintains a current inventory of all lands claimed, disturbed and rehabilitated. 4.76 hectares (ha) were newly disturbed at Separation Rapids, Ontario, during the course of the drill campaign which occurred in the spring of 2017.

At the Mount Douglas grassroots exploration site (not included in table below), approximately 0.02 ha were disturbed during the course of the drilling program at the end of the calendar year 2016. Avalon terminated the option agreement for the Mount Douglas claims subsequent to FY2017, and the land has been deemed sufficiently rehabilitated by the New Brunswick Government.

Total land disturbed at all Avalon sites is 33.9 ha, less than 0.25% of lands claimed and leased.

Land Owned, Leased, Disturbed and Rehabilitated (FY2017)

| | Area Owned or Leased (ha) | Total Land Disturbed and Not Yet Rehabilitated: Open Balance | Total Newly Disturbed Land During Reporting Period | Total Land Newly Rehabilitated During Reporting Peroid | Total Land Disturbed and Not Yet Rehabilitated: Closing Balance |
|---|---|---|---|---|---|
| Nechalacho Mineral Leases, NWT | 4,249.00 | | | | |
| Nechalacho Mineral Claims, NWT | 1,869.00 | | | | |
| Total Nechalacho* | 6,118.00 | 22.68 | 0.00 | 0.00 | 22.68 |
| Separation Rapids Mineral Leases, ON | 421.00 | | | | |
| Separation Rapids Mineral Claims, ON | 2,448.00 | | | | |
| Total Separation Rapids** | 2,869.00 | 6.06 | 4.76 | 0.00 | 10.82 |
| Warren Township Mineral Claims | 728.00 | | | | |
| Warren Township Land Permitting | 688.00 | | | | |
| Total Warren Township | 1,416.00 | 0.30 | 0.00 | 0.00 | 0.30 |
| East Kemptville Special Licence | 1,165.50 | | | | |
| East Kemptville Mineral Claims | 2,962.00 | | | | |
| Total East Kemptville*** | 3,318.00 | 0.00 | 0.00 | 0.00 | 0.00 |

** It is anticipated that much of the exploration disturbance is rehabilitated, but inspection is required to confirm this.*

*** Separation Rapids disturbance decreased due to success of historical rehabilitation and more accurate recent mapping of impacted areas.*

**** There is significant surface disturbance from historical mining operations at the site that remains the responsibility of the surface rights owner.*

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| The Number And Percentage Of Sites Requiring Biodiversity Management Plans and Percentage Of Those Sites With Plans In Place | G4-MM02 | All three of Avalon's project sites with significant past or ongoing activities have financially assured rehabilitation plans in place to mitigate potential disturbance-related impacts to biodiversity. Given the low level of impact at all sites at their present stages of development, impacts to biodiversity are not significant.<br><br>At the Separation Rapids Project, while not adjacent to areas of high biodiversity value, Avalon has completed a SARA assessment. No species of concern were identified living at site. Additional assessments may be required pending a decision regarding electric power supply lines. Avalon has completed an environmental baseline study and filed a closure plan with financial assurance for the existing advanced exploration activities. This plan ensures that the site is returned to pre-exploration status. There is little site environmental impact at this time, but a full ESIA will be completed, including a Biodiversity Management Plan (BMP), prior to operations. In FY2017, Avalon updated much of the environmental and social baseline data to validate historical data. Avalon also completed a draft Project Description and preliminary impact assessment and associate mitigation measures and reviewed these documents with its COI, including Aboriginal governments and government regulators.<br><br>The East Kemptville site is a former mine site with existing waste rock and low grade stockpiles and a tailing management facility that continues to generate acid mine drainage. The tailing management and water treatment facility has continued to operate since the site's closure in the mid-1980s. As part of the evaluation regarding potential re-development of the site, Avalon initiated an ESIA, but this is presently on hold pending project development plans. As part of this assessment and Avalon's commitment to minimize impacts to the environment and biodiversity (also a commitment under MAC Guiding Principles), a SARA assessment will be completed, and an environmental management plan will be developed. The proposed development includes a walk-away* closure strategy to replace the existing perpetual treatment strategy that eliminates the long term water treatment risk.<br><br>Similarly, Avalon has initiated discussions with the local Acadia First Nation in Nova Scotia. Future discussions will include the cultural significance of the site and a plan to mitigate potential impacts to biodiversity appropriate for this site and the Tobeatic Wilderness Area. The Area is upstream of East Kemptville, which significantly reduces potential risks. These plans will be in place prior to construction.<br><br>The Nechalacho Project is not adjacent to identified areas of high biodiversity value and does not have a formal BMP. It does, however, have in place a number of lands, wildlife and aquatic and other management plans as required by regulation for future permits that effectively comprise a BMP. These plans are available on the Mackenzie Valley Land and Water Board public registry. The project has been approved and discussions related to water license and land use permits are on hold pending a decision to move ahead with the project.<br><br>There are no significant environmental impacts at Avalon's other sites not discussed here.<br><br>**Walk-away closure: a closure strategy that requires no ongoing maintenance because the site has been fully rehabilitated and can be returned to the crown.* |

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|---|---|---|
| Total Amounts Of Overburden, Rock, Tailings, And Sludges And Their Associated Risks | G4-MM03 | 11.4 tonnes of Naturally Occurring Radioactive Materials waste from the Nechalacho Project was disposed of at a licensed facility in Melville, Saskatchewan. Aside from an immaterial amount of drill cuttings, Avalon only produced a small amount of waste at its Separation Rapids and Mount Douglas sites. Drill cuttings were free of environmental contaminants and were not collected. The drill pads were not located next to streams or lakes and the waste water with cuttings was pumped into natural depressions away from any natural watercourse. |
| Total Number Of Operations Taking Place In Or Adjacent To Indigenous Peoples' Territories, where there are formal Agreements | G4-MM05 | Avalon has no operations, but has three advanced projects near Aboriginal and Métis communities. At the Nechalacho Project, Avalon has signed formal Agreements with the Deninu K'ue First Nation, the Northwest Territory Métis Nation, and advanced Agreements with others. See Avalon's website at Projects – Nechalacho – Community Engagement for more information.<br><br>Avalon has an MOU with the WIN and initiated discussions with the MNO and Ochiichagwe' Babigo' Ining Ojibway Nation at the Separation Rapids Project in Northwestern Ontario, and with the Acadia First Nation near the East Kemptville Project in Nova Scotia. |
| Significant Disputes Relating To Land Use | G4-MM06 | Avalon had no minor or significant disputes relating to land use, customary rights of local communities, or Aboriginal and Métis people. |
| Grievance Mechanisms To Resolve Disputes Relating To Land Use | G4-MM07 | Avalon had no land use grievances reported in FY2017; therefore, grievance mechanisms were not used. |
| Number And Percentage Of Operations With Closure Plans | G4-MM07 | 100% of Avalon's three advanced projects have closure plans appropriate for the level of activity at those sites, including exploration activity clean-up and financial assurance. Avalon's VP, Exploration must sign off on all closure cost for projects. Avalon is currently developing a walk-away closure strategy for the existing and future East Kemptville Project to replace the perpetual water treatment strategy for existing tailing and waste rock liabilities. Please see Avalon's 2017 Year End Financial statements, available publically on SEDAR and EDGAR, for details of the financial provisions. |

# Disclosures on Management Approach

The Global Reporting Initiative provides guidance to reporting companies which includes Disclosures on Management Approach (DMAs): narrative information on how the company identifies, analyzes and responds to its material impacts. Avalon has provided a Disclosure for each of its 'Most Material' and 'Material' Aspects below, in alphabetical order in both categories.

Avalon's Most Material Aspects

## Economics

As a publicly owned mineral exploration and development company, Avalon is dedicated to creating long term shareholder value and community prosperity by becoming a diversified producer and marketer of technology metals and minerals with a strong focus on sustainability. Given the nature of the Company's operations, it is management's view that financial information related primarily to current liquidity, solvency and planned property expenditures is material to Avalon and a wide range of the Company's COI.

Avalon is in the development stage and as such, it does not generate sufficient internal cash flow to sustain its operations. Accordingly, in order to sustain its operations, Avalon raises funds from the capital markets and seeks strategic partners to develop individual projects.

In the past, Avalon has used a variety of types of equity placements, including an "at the market" issuance program, an "equity line" with an American institutional investor and traditional registered offerings. However, these types of offerings are often costly to implement and maintain, and the offering must be of sufficient size in order to be cost effective. The size of any equity offering is often limited by the company's market capitalization.

More recently, Avalon has raised funds through a variety of private placements, including one issuance of convertible preferred shares to a New York based asset management firm in early 2017 and several "flow-through" common share offerings. The Company utilizes flow-through common share offerings when it plans to incur the requisite eligible expenses during the required time frame. Usually a flow-through common share offering will provide a higher price per share and lower warrant coverage than a comparable traditional common share private placement.

Avalon evaluates its management approach in the context of the market, obtaining direct and indirect evidence from other companies in similar stages of development and with comparable mineral assets. Regular updates of metals prices and trends help guide where the Company focuses and prioritizes its ongoing project development efforts. Avalon keeps abreast of regulatory issues and regularly contributes to regulatory developments, either directly or through industry associations, that have potential material impacts on the Company's projects.

Avalon's management of Company economics, which concerns both internal and external stakeholders, are governed by the Company's compliance policies. All of these policies are available on the Corporate Governance section of the Company's website.

Avalon's system of internal control is designed primarily to help preserve and protect the Company's resources and provide reasonable assurance regarding the reliability of its external financial reporting, while allowing the Company to operate in a reasonably efficient and effective manner. Avalon prepares an annual budget which is reviewed and approved by the Board of Directors. The Board periodically reviews budget vs. actual results. Management reviews budget vs. actual results on a monthly and quarterly basis. The Company's annual and interim financial statements and related filings are reviewed and approved by the Board and are externally audited annually against American and Canadian standards.

Avalon attempts to conserve finances by utilizing in house expertise and minimizing the use of external consultants. Opportunities to reduce operating and capital costs in projects are a key priority, including reducing energy use and GHG production in an effort to avoid carbon tax and reduce operating costs. Strong relations with local COI, as well as good health and safety performance can also reduce costs to the Company.

## Health & Safety

Health and Safety (HS) is a core Company value. While safety is the responsibility of all employees and contractors, Avalon's VP, Sustainability has overall responsibility for HS management systems. Avalon's corporate values state that "We will never cause harm to people in the pursuit of production and profits or in the conduct of our business." The impacts of Avalon's HS performance occur both internally and externally.

Through HS leadership, management promotes a strong HS culture and sets clear HS annual targets (fatalities, harm, lost time and medical aid incidents) to measure the performance of employees and contractors. Avalon ensures the workforce has the proper resources to work safely in full compliance with all HS regulations. Performance is reported at all levels of the organization, including the Board of Directors. Avalon measures both leading and lagging indicators in order to measure HS performance and compares this performance against its internal targets and industry performance. When performance does not meet expectations, performance improvement strategies are developed and implemented.

In support of the Sustainability Policy, a HSE management plan and Emergency Response Plans have been developed that detail HS requirements for all of Avalon's project sites. Contractor HS systems and performance are assessed against Avalon's standards prior to engaging them.

In addition to the strong focus on HS at project sites, an office health and safety committee performs inspections to meet safety requirements at Avalon's head office in Toronto. Senior management regularly speaks and attends industry meetings and training sessions where best practices in safety are discussed.

HS performance is valued by Avalon's COI and fosters positive relations in the communities where Avalon operates. Strong HS performance prevents staff injuries, improves productivity and reduces delays and costs associated with accidents: this directly contributes to better business performance.

## Local Communities

Avalon's Sustainability Policy establishes that it is committed to the social and economic wellbeing of the Company's COI, including local communities. Avalon recognizes the value and benefit of transparently engaging with affected parties. Avalon is committed to being a responsible corporate citizen and contributing to the wellbeing of the communities associated with the Company's activities.

Avalon's engagement with local communities is guided by its Sustainability Policy and its adoption of the PDAC's *Principles for Responsible Exploration e3+* and MAC's TSM Guiding Principles.

Transparent and early engagement with local communities often means that concerns are addressed before they become critical issues that could potentially disrupt business or have adverse effects on communities. Early and ongoing engagement assists in avoiding and overcoming misunderstandings. The impact of Avalon's relationships and management of performance with local communities occur within the communities themselves.

Senior management shares the responsibility for maintaining strong relationships and engagement with local communities. Avalon's President, VP, Sustainability, VP, Exploration, Government Affairs Manager, Director, Communications and Manager, Investor Relations work collaboratively to ensure communities are kept informed of the Company's activities and strong relationships with local community representatives are maintained. Avalon also works with government, local authorities, non-governmental organizations and other interested parties to develop and provide support to initiatives of benefit to local communities.

Engagement with local communities has included written notifications, community meetings, site visits and workshops as required. Avalon representatives have made themselves available in media interviews and have published numerous news releases. Avalon also maintains a website with a wide variety of relevant information.

Avalon representatives have spent time in several local communities in order to provide information about projects and to address individual concerns in small group meetings.

Avalon has committed to negotiate Agreements with affected Aboriginal governments and organizations that formalize business opportunities, employment and environmental considerations related to projects. To date, Avalon has signed Agreements with the Northwest Territory Métis Nation and the Deninu K'ue First Nation (NWT) and an MOU with the WIN (Ontario).

Avalon internally reports on human rights complaints and summarizes these monthly reports in its annual Sustainability Report. Engagement plans are made for all projects in advanced stages and an engagement log is maintained and analyzed annually for trends and concerns. Once a project moves ahead, in addition to the formal ongoing engagement plans, Avalon will develop metrics important to the local communities.

## Water

Protecting the environment by monitoring and managing the environmental impacts of its activities and potential activities are central to Avalon's core values and those of many of the Company's COI. Avalon strives to position itself as a sustainable business and embeds environmental protection measures throughout all aspects of a project's lifecycle, including the management of water. The impacts of this topic occur both internally and externally.

The Company's Sustainability Policy outlines Avalon's environmental management approach. Potential risks to water are identified as part of a risk management program and appropriate management strategies identified. Avalon's VP, Sustainability has overall responsibility for managing Avalon's activities that may impact water.

Avalon conducts environmental impact assessments for its advanced projects, collecting extensive baseline environmental data on water and aquatic species local to project sites. Results of monitoring are regularly reported to government regulators, local communities and are also summarized in Avalon's annual Sustainability Report. Performance against identified metrics is reported and where necessary, additional actions are taken.

Avalon is engineering its processing facilities to minimize water use and maximize recycling. In keeping with best practices, site specific and detailed management plans will be developed for each project location to monitor aquatic effects, site run off, spill contingency, waste management and other potential risks to water. These plans will require ongoing monitoring, reporting and continuous improvement.

Avalon's Material Aspects

## Biodiversity

Avalon recognizes that protecting biodiversity and maintaining ecosystem function is a key component of responsible mining. Failure to adequately manage biodiversity can cause costly delays in obtaining permits; can prevent new projects from starting; or cause substantial costs to mitigate impacts from existing projects or operations. The benefits of Avalon's biodiversity management practices can impact both internal and external sites. Avalon's VP, Sustainability has overall responsibility for managing Avalon's impacts on biodiversity at its sites.

As a member of the MAC, Avalon has committed to meet TSM biodiversity protocols. For each of its project sites, Avalon has implemented a Biodiversity Policy, with the preservation and protection of the natural environment as a key objective. The policy specifically identifies preventing the loss of biodiversity and ecosystem function at each stage of project development. Avalon also develops site specific biodiversity management plans (or equivalent) for all its future operations to comply with environmental regulations and to ensure protection of the air, water, soil, species and bio-connectivity.

Avalon conducts comprehensive environmental impact assessments for its advanced development projects and collects baseline environmental data, including SARA, to determine whether any of the surrounding ecosystems could be impacted by exploration and mining activities. It also provides a biodiversity baseline against which to measure performance to ensure no material impacts to site biodiversity. The Company endeavors to incorporate traditional knowledge where possible into these environmental studies.

Avalon transparently reports its biodiversity management performance to its COI. Where material, impacts (and/or activities taken to prevent impacts) are reported in the annual Sustainability Report, including performance against any identified biodiversity goal and objectives.

Finally, Avalon looks for opportunities to work collaboratively on animal specific wildlife planning and management workshops. This work contributes to scientific knowledge and biodiversity enhancements beyond the direct impacts of the Company's activities and future operations.

## Closure Planning

Canada requires that appropriate financial assurance for the rehabilitation of project sites is posted to a regulator prior to the start of construction and on an ongoing basis, as liabilities are developed; for example, in tailing ponds. Banks and investors require the cost of closure to be included as part of their economic evaluation of a project and their decisions on whether or not to invest. Closure costs and impacts are material to the success of a project. Due to the high costs of closure planning and potential legacy effects if not properly planned and executed, the impacts of closure planning potentially occur both internally and externally.

Avalon's Sustainability Policy states that the preservation and protection of the long term health of the natural environment is a key objective.

At Avalon, closure planning begins in the early mine site design stage. Extensive environmental baseline studies and an environmental impact assessment are completed prior to design and construction. This information is then built into the project design to prevent, minimize or mitigate the impact on the environment and to minimize the cost of closure. By planning early and designing appropriately, Avalon has been successful in identifying strategies that prevent long term impacts to the environment, which in turn will negate the need for long term environmental expenditures post closure.

Avalon has filed closure plans and appropriate financial assurance for the Nechalacho Project exploration and pre-construction phases and has estimated the required financial assurance for all future stages in the closure plan that has a minimal impact on project economics. A similar plan and assurance are in place at the Separation Rapids Project. Avalon had filed financial assurance for the East Kemptville Project exploration drilling program, but these funds have already been returned to Avalon due to the effective rehabilitation work successfully completed.

The success of closure planning is measured by reductions in financial assurance requirements and the acceptance of these plans by regulators and shareholders. Avalon believes that superior closure plans:

- permit progressive rehabilitation (rather than those that begin rehabilitation only upon the closure of operations);
- do not require extensive ongoing maintenance; and
- allow a productive reuse of the land, either by COI and/or by natural biota.

To date, all proposed Avalon project closure plans do not require extensive ongoing maintenance post closure and are anticipated to require relatively low levels of financial assurance.

## Compliance, Emissions, Effluents & Waste

Avalon is committed to proactively managing and mitigating potential impacts to the environment resulting from its activities. Avalon's Sustainability Policy commits Avalon to meet industry leading standards for the management of the environment. It makes specific reference to minimizing GHG emissions and continuously improving the Company's environmental performance for all emissions, effluents and waste. For example, reducing the quantity of waste by maximizing the recovery of minerals is a consistent strategy at Avalon.

Emissions, effluents and waste controls are an important component of environmental compliance with regulations. Avalon's environmental management plan outlines the many requirements that help achieve compliance, ranging from the development of an environmental culture; specific roles and responsibilities; training; annual targets and objectives; monitoring and reporting; and commitments to continuous improvement. These are all supported by procedures to guide how compliance is to be met.

Emissions, effluents and waste management are subject to extensive federal, provincial and territorial regulations and are key to the project permitting process. They contribute to quality relationships with Aboriginal governments and communities, garner support for projects and contribute to Avalon's social license to operate.

Avalon extensively tests the efficiency of its proposed treatment systems at the pilot plant stage to meet both water quality and biological protection objectives prior to construction. Avalon also develops waste management plans for all current work and future operations in an effort to minimize waste production, which contributes to improved project economics.

Avalon reports its compliance with environmental regulation monthly and summarizes its performance in the annual Sustainability Report. Any non-compliance is dealt with immediately. Environmental complaints, responses to complaints and other engagement related to the environment are maintained in an engagement log, also summarized in monthly reports and the annual Sustainability Report. Performance against the annual target of zero non-compliance events is also reported.

## Employment

Avalon strongly believes that its employees are fundamental and critical to its success. The Sustainability Policy commits that Avalon will treat its employees with respect and create a workplace where employees are valued, engaged and committed to succeed. This objective is supported by additional policies such as the Code of Business Conduct and Ethics, Disclosure, Anti-Harassment, Bullying & Violence Policy and Whistleblower Protection Policy.

Avalon commits to clearly communicating employee requirements and expectations in support of employee engagement, collaboration and accountability. Discrimination, harassment, violence and bullying are not tolerated.

Despite its relatively small permanent workforce, Avalon seeks to provide competitive benefits and salaries to attract and retain qualified employees, as well as to provide educational funding and training in an effort to develop them. At developing project sites, Avalon will endeavor to maximize local, Aboriginal and Métis employment opportunities.

Avalon tracks employee turnover and other employee statistics appropriate for the stage of development to identify employee trends and concerns that can aid in supporting employee and Company success. In the absence of a Human Resources Manager, responsibility for employment and human resources falls to the CFO.

Avalon commits to protecting the privacy of employee personal information in a legal and ethical manner. Avalon reports monthly on any human rights complaints and summarizes these results in the annual Sustainability Report, within the limitations of protecting personal information and the requirements of the policies identified above.

## Energy

Avalon specializes in critical metals and minerals with growing demand in cleantech, including energy storage and EVs. Such industries are growing ever more cautious of maintaining sustainable supply chains, making energy management, and sustainability generally, a strategic advantage to Avalon.

Energy will be a significant component of the operating costs at Avalon operations, as with all mining operations. Due to recent climate change regulatory initiatives related to GHG management and potential carbon tax and cap and trade programs, management of GHG production is now even more important for all mining operations.

Avalon is making every effort to minimize energy use to reduce operating costs and improve project economics. The Company researches opportunities to reduce reagent use and transport through recycling or regeneration; optimizing energy intensive operations, such as crushing and grinding; and minimizing water use (and energy required) to pump and treat water at all stages of its future operations. Each of Avalon's developed project sites is required to prepare an Energy and GHG Policy.

Avalon is a recognized leader in GHG management in the exploration and development industry. Avalon's system of GHG measurement assisted in the creation of the GHG reporting system prepared by the PDAC. Avalon is also regularly requested to speak on its energy efficiency initiatives in a variety of public mediums.

Though still in project development stage, Avalon monitors and publicly reports its energy and GHG production as per the MAC's guidelines and applicable GRI Disclosures.

Once production is initiated, metrics can be generated to promote further improvements in these areas.

## Outreach

Avalon specializes in metals and minerals for which there is limited to no production in North America. As a result, there is little to no knowledge about these materials by investors, banks, media, academia, regulators, the mining industry and public as a whole. Outreach to Avalon's COI, specifically on speciality materials such as lithium chemicals and the rare earth elements: educates the public and local communities to their importance; develops investor interest; facilitates easier permitting; and garners government support for these unique projects.

For these reasons, Avalon's management team invests time and resources conducting academic, industry, investor and government outreach. Avalon staff and advisors have participated on a number of program steering, technical and organizing committees; presented and reviewed journal papers; directly collaboratived on R&D; convened conferences; and prepared and delivered lecture series and training programs. These initiatives reinforce Avalon's reputation for leadership and expertise in advanced materials, both nationally and internationally, as well as provide access to a pipeline of students for future employment. More recently, opportunities have been presented to influence the development of international technical standards that include clear environmental considerations. Outreach initiatives have provided material, cost effective platforms to advance Avalon's goals and objectives.

While it is difficult to measure the effectiveness of this management approach, a number of benefits have already been achieved. For example, Avalon has hired recent university graduates that add value to the Company.

## Procurement

Strong procurement practices can reduce safety risks, reduce costs, prevent waste and reduce fraud risk.

Avalon's Sustainability Policy dictates requirements for ethical procurement behaviour. The Company's internal Authorization and Procurement Policy and supporting procedures ensure all regulatory and Company requirements (including internal controls) are met with respect to all stages of procurement.

For contracts meeting certain thresholds, multiple bids are required which appropriate management personnel are assigned to evaluate. Criteria can vary with the contract, but often include completeness of their bid document, health, safety, environment and community performance and systems, experience, personnel, equipment, methodology, schedule and cost.

Avalon utilizes a sustainability questionnaire as a screening tool to evaluate the sustainable practices of its potential contractors. The effectiveness of this tool is periodically evaluated by management. In 2017, this questionnaire was redrafted to ensure it remains a relevant evaluation technique that is straightforward for contractors to complete.

These initiatives protect the Company and ensure that a wide range of important performance metrics are understood and met, which reduce risk and add value. The success of these initiatives is demonstrated by effectively meeting all regulatory requirements in annual external financial audits.

AVALON
ADVANCED MATERIALS INC.
CRITICAL MATERIALS FOR A SUSTAINABLE FUTURE