2016 Sustainability Report

Minerals for Transitioning Economies

AVALON
ADVANCED MATERIALS INC.

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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", "believes" "expects", "is expected", "scheduled", "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 our 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 CorporationCompany, 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. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. 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 Corporation'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

Welcome to Avalon's 2016 Sustainability Report. This is the fifth year that we have produced a sustainability report in accordance to the Global Reporting Initiative (GRI) guidelines and the sixth year we have reported on the Company's overall sustainability performance. To our knowledge, Avalon is still the only Canadian junior mineral developer consistently producing an annual GRI-compliant Sustainability Report.

This year's theme is "Minerals for Transitioning Economies" to reflect the important role of the critical materials that Avalon seeks to produce for the disruptive technologies that are enabling the rapid global transition to clean energy.

Policy initiatives from governments around the world have accelerated the shift toward the widespread use of renewable energy and electric vehicle technology. The key has been the evolution of low-cost, high efficiency energy storage solutions to make these technologies economical and accessible to the average consumer. That day has arrived, with the lithium ion rechargeable battery having finally achieved the performance required to facilitate widespread commercial adoption in a variety of product applications.

However, significant challenges remain before these batteries can become a global energy storage solution. Central to these challenges is the availability of the critical materials needed to make them: notably lithium, as well as cobalt and graphite. The supply chains needed for these materials has yet to fully evolve. While the in-the-ground resources exist in many parts of the world, bringing a new supply to market can take time.

Avalon has an advantage with our advanced lithium development project at Separation Rapids near Kenora, Ontario, which we have held for 20 years. Because of all the previous work conducted, we believe the project can be brought to production relatively quickly. The development can be done in a sustainable way by maximizing the use of locally-sourced clean hydro-power, reducing the environmental footprint of mining and creating benefits for local communities.

Lithium is not the only critical material that Avalon seeks to produce which is becoming essential for new technology. For example, tin and indium (found at Avalon's East Kemptville Tin-Indium Project) are metals which are vital to modern electronic devices and are used in some solar panel photo-voltaics. Finally, rare earths (found at the Nechalacho Project) will eventually play a greater role in electric motor efficiency and many other new technologies.

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

For example, at the East Kemptville site, a past-producing tin mine that closed abruptly and prematurely in 1992, we are looking at a re-development model involving reclaiming valuable minerals from waste materials stored on site that are an ongoing source of acid rock drainage. This will create an economically-viable long term environmental remediation solution leading ultimately to fully reclaiming the site, while maximizing the original resource potential to contribute to the local economy.

Avalon pursues sustainability in all areas of our business and actively promotes improved mineral industry practice with investors, potential partners and government. In this report, we also describe the work done behind the scenes at the Company - from an update from the metallurgical department to the many outreach initiatives Avalon management is involved in.

I remain convinced that sustainability adds value to our business. Avalon is unwavering in our commitment to provide leadership in the junior resource sector toward a more sustainable future in the Canadian mineral industry.

Sincerely,

Donald S. Bubar

Message from the Vice President, Sustainability

Welcome to Avalon's fifth sustainability report! We remain proud of our leadership in sustainability reporting in the exploration and development sector. I am proud that Avalon has once again received recognition from Corporate Knights Magazine as one of its Future 40 Responsible Corporate Leaders in Canada 2016. This is our second consecutive year to receive this recognition.

Meeting this five year mark of sustainability reporting is a significant milestone for a junior mineral developer. As such, I took the time to look back at our first GRI-compliant report. In it, Avalon pledged to provide the policy framework, practices and procedures, and transparent reporting necessary to improve our sustainability performance and enhance our current reputation as a socially responsible small to mid-cap company. As Avalon has advanced its diverse critical materials portfolio, sustainable management of material issues continues to evolve within the Company.

There were some exciting global developments this past year. The new Canadian Federal Government has formally recognized the Métis Nation and promised an era of improved relationships with Indigenous governments. We at Avalon are proud of our record of developing relationships and trust with our Aboriginal and Métis partners at all of our project sites. In recent years, this has led to signed Accommodation Agreements and Memorandums of Understanding with four Aboriginal governments at three of our projects.

It is worth noting that following years of negotiation, Avalon signed an agreement with the Northwest Territory Métis Nation in early 2014, well before the Federal Government's recognition of the Métis. It is this kind of ongoing effort and leadership that bodes well for future mutually beneficial relationships with our Aboriginal and Métis partners and support at all our projects.

Another significant development on the world stage was the Paris Agreement subsequently ratified by the Federal Government of Canada, along with over one hundred other countries around the world. The Paris Agreement's central aim is to strengthen the global response to the threat of climate change. This will mean significant reductions in greenhouse gas (GHG) emissions. This is an important external development for Avalon, as our proposed projects have the potential to supply the growing demand for specialty metals that are absolutely critical to the development of the clean technologies that will help the world meet this target. This includes providing the lithium chemicals needed for energy storage (Separation Rapids Lithium Project), tin and indium for modern electronics (East Kemptville Tin-Indium Project) and rare earth elements needed for solar panels, wind turbines, modern electronics and electric/hybrid cars (Nechalacho Project). We are excited about these possibilities which are exemplified in this year's report theme of "Minerals for Transitioning Economies."

As we progress, we will strive to ensure that our projects are energy efficient and protective of the environment. To this end, this year we made significant advances in the development of technologies for the production of lithium products, over standard technologies previously considered. In the current project plan, this includes potentially improving our energy and water use efficiencies/tonne of product by 40% and 61% respectively, reducing our potential waste production by over 133,000 tonnes/year, reducing our potential reagent use by 77% (108,800 tonnes/year), reducing potential indirect sulphur dioxide emissions by 78 tonnes per year, all of which could lead to a reduction of over 29,000 tonnes/year of GHG over standard technologies previously considered. These initiatives have the potential to make our projects more cost effective and easier to permit, contributing to shareholder value.

I would like to thank everyone who contributed to this Sustainability Report and hope readers enjoy the document. As always, we welcome your comments anytime.

Sincerely,

Mark Wiseman

A Note from the Vice President, Sales & Marketing

During the past year, I have had the good fortune to attend and speak at a number of conferences and meet with dozens of companies in Canada, the US, Europe, South America and Asia. While discussing metals markets with my colleagues, there are several stand-out elements of the greatest interest, largely those that have the most concern around supply. Whether it is lithium-rich petalite for the glass and ceramics industry, tin for electronics and catalysts, lithium chemicals for energy storage devices or other rare metals and advanced materials, Avalon remains unique positioned to respond to supply/demand imbalances in the burgeoning technology metals sector.

Recently I have observed, much more than in years past, that potential end users of Avalon's future products are placing a greater importance on reliable, clean supply chains. Avalon's commitment to corporate social responsibility is seen as a positive and differentiating quality, one that aligns with the expectations of a growing number of companies. Prospective customers with whom I have met both want and expect Avalon to retain its commitment and reputation for potential product quality, environmental stewardship, and support of local Communities of Interest.

For example, companies which are or planning to produce electric vehicles take specific pride in the low emission level of their products. As such, these companies want to ensure that the raw and processed materials which make their vehicles effective, such as lithium chemicals, are also produced with minimal impact on the environment, thereby ensuring the end product of a sustainable supply chain from the extraction of raw materials to consumer products. Avalon is positioned to be a supplier of advanced materials made with a minimal impact on the area in which we will operate.

As far as I know, Avalon is the only junior mineral developer to produce an annual GRI-compliant sustainability report, in which impacts on the environment and the use of the Company's energies are reported. This is data that large companies with whom we do business want and care about. Our ability to readily provide this information is a benefit to Avalon, and one that will increasingly mean more as we advance our projects through the various study and permitting phases.

Avalon's sustainability performance complements the Company's conversation on quality, costs, logistics, philosophy and strategic fit with potential customers and strategic partners. Our dedication to sustainability positions us in a leadership role within the technology minerals sector and differentiates Avalon from its competitors.

Sincerly,

Pierre Neatby

Pierre Neatby

GOVERNANCE

At Avalon's Annual & Special Meeting in February 2016, President & CEO Don Bubar welcomed Jane Pagel to the Board as "an experienced executive from the environmental field, with a broad background in both industry and government, including leadership roles in energy, clean tech and sustainability organizations."

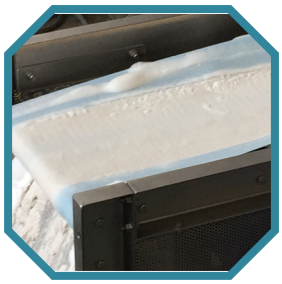
Stories in Sustainability

About Avalon

Avalon Advanced Materials Inc. is a Canadian mineral development company with a primary focus on the rare metals and minerals, headquartered in Toronto, Ontario, Canada. Avalon specializes in niche market metals and minerals with growing demand in new technology, such as lithium and tin.

6
Years of Sustainability Reporting

2
Accommodation Agreements signed



0
FY2016 Environmental Incidents

3
Advanced Stage Projects

15
Employees

0
FY2016 Health & Safety Incidents

255
Managements' Combined Years of Experience

0
FY2016 Human Rights Incidents

Separation Rapids Lithium Project

Location	Acquired	Project Phase
70 km north Kenora, ON	1996	PEA

The Separation Rapids deposit is one of the largest “complex-type” lithium pegmatite deposits in the world, unusual in its enrichment in the rare lithium mineral petalite. The petalite found at the Separation Rapids deposit contains very low levels of impurities, also offering potential for a high purity lithium chemical product at a relatively low-cost, to serve the needs of lithium ion re-chargeable battery manufacturers.

In 2014-2015, Avalon re-activated the project after receiving expressions of interest in its potential petalite product from several international glass manufacturers. Petalite is the preferred lithium mineral feedstock for certain specialty glass-ceramic products and preferred for its consistently low impurity levels. Concurrently, Avalon is investigating how its petalite can be used to produce high purity lithium chemicals for the battery industry relatively inexpensively compared to other existing alternative lithium source materials. A positive Preliminary Economic Assessment was completed in September 2016.

Metals & Minerals

Lithium Hydroxide
Lithium Carbonate
energy storage

Petalite
glass-ceramics

Feldspar
paint filler
glass-ceramics

High Purity Silica
semi-conductors
telecommunications
microelectronics

Tantalum
electronics

The Separation Rapids deposit as seen in the 1990’s.

Investigating Clean Power Opportunities at Separation Rapids

Avalon's Separation Rapids Lithium Project is an excellent opportunity to demonstrate the high priority Avalon places on sustainable development. The project is, by its very nature, a 'green' project, focused primarily on the production of lithium hydroxide, required for rechargeable batteries that will support development of electric vehicles, equipment and solar/wind power generation. These are critical to the global reduction of greenhouse gases.

Avalon is now evaluating how energy will be supplied to the potential mine and concentrator at the project site, to be located about 70 kilometres north of Kenora, Ontario, Canada. Current design estimates indicate that approximately five megawatts of power will be required at the mine and concentrator site.

Within the project plan, Avalon is striving to provide enhanced benefits to local Communities of Interest, including First Nation and Métis communities. A few options for powering the site are discussed below.

Connecting to the Existing Power Grid

- A transmission line could be built to meet Avalon's power requirements.
- As grid power in Ontario is largely generated by either nuclear or hydro, this option would meet Avalon's environmental objective of low GHG emissions.
- Avalon investigated the possibility of assisting in the establishment of a business owned by the Wabaseemoong Independent Nations to operate the powerline, creating additional social benefits. While a workable solution, the key disadvantages are the high cost and the potential benefits are limited to the life of the mine.

Generate Hydropower Locally

- The English River is the major source of hydropower in the area. Initial investigations have identified several possible sites near the project site with the potential to provide some or all of the power required.
- Discussions with the Wabaseemoong Independent Nations have indicated there would be interest on their part in developing a run-of-river power generation project and potential partners have been identified that could assist in realizing the project. Investment required could be recovered over the life of the mining project, after which a power line could be built to connect the site to the local power grid to provide ongoing, permanent benefits of revenue and jobs.

Utilize Local Biomass Businesses

- There are at least two forestry related operations in the Kenora area that are creating significant volumes of biomass waste material. This material could be trucked the 70 kilometres to the future mine site and used to power its operations.
- Again, there is an opportunity to establish a business with the Wabaseemoong Independent Nations community. Equipment could be relocated later to a site that would allow easy access into the grid to sell power providing a profitable business for as long as the forestry activities continue in the area.

Avalon President & CEO, Don Bubar, stands in front of the Whitedog Generating Station on the English River in June 2016

All of these options will continue to be evaluated as the Separation Rapids Project moves forward. In addition to meeting the project's power needs, there is excellent potential in the area to establish local business opportunities that will provide environmental, economic and social benefits to the community for the long term.

Safety Considerations at Separation Rapids

Avalon's Separation Rapids lithium deposit is readily accessible from Kenora, Ontario, Canada by road and water. Because the property can be accessed by the general public, the ongoing hazard awareness program at the site focuses on advising visitors that there are potential dangers to be aware of: locked gates, shoreline hazards and falling hazards on top of the main deposit.

Avalon Road, a private road maintained by Avalon, branches off from East Tourist Lake (ETL) Road towards the project site, allowing for road access directly to the deposit. In 2010, the ETL Road was deemed an abandoned forestry road.

In October 2015, Avalon took responsibility to repair the ETL Road to Avalon's project site and re-install the culverts. These repairs were required to facilitate easier and safer access to the site by workers, and trucks or heavier equipment, in preparation for transporting ore samples for analysis and processing, and to allow access for equipment for future drill programs.

The ETL Road is currently a dry weather road, and further maintenance is planned to put a topping on the road to make it more useable in wet conditions, as well as to allow access by heavier vehicles.

Branching off from the ETL Road, the Avalon Road is now gated and locked with "No Trespassing" signs posted, although this does not prevent access to the site by persons on ATVs or snowmobiles. Avalon installed proper signage along the road, updating quarry permit hazard signs and marking and barricading the bulk sample pits on site in order to ensure anyone on the site is aware of potential dangers. In addition, Avalon conducts regular road inspections to ensure that the Avalon Road and the ETL Road remain in relatively good condition for safe travel.

The project site can also be accessed by the English River system. Avalon built a dock during the late 1990's drill program on the shore of its mining lease. The dock is used occasionally to provide access for site visitors coming in by boat. Avalon installed one metre tall delineator posts along the dock to warn snowmobilers that the dock may be obscured by snow in the winter months, as well as indicate where the trail comes off the river onto land.

Avalon installed a secure protective barrier around the pit itself in 2015, indicating a potential hazard to anyone on site. The blast rock that was surrounding the pit was also pushed back into the pit to allow easier egress, should someone venture beyond the barrier into the pit.

Avalon continues to monitor areas around the project site that may be hazardous, and ensures that there are safety measures and proper signage in place to protect those travelling on the property and on the ETL and Avalon Roads. In this way, Avalon protects the local community and Company staff from potentially hazardous situations.

Innovative Metallurgical Processes

Avalon is currently developing technologies to be incorporated into the recovery flowsheets for the project to not only improve its economics, but significantly reduce the overall environmental footprint of the Separation Rapids Project. The technologies under investigation include:

- use of ore sorting to remove waste rock at the start of the flotation plant;
- use of fluidized bed roasting instead of a rotary kiln to save on energy requirements and improve process efficiencies; and
- use of membrane electrodialysis to minimize reagent consumption in the hydrometallurgical plant.

Ore Sorting - Sensors to Reject Waste from Ore

One significant metallurgical breakthrough is the use of optical ore sorters to reduce waste and energy consumption at the planned flotation plant. This technology employs cameras, sensors and computer algorithms to detect waste in crushed ore and removes it using concentrated blasts of compressed air.

At the Separation Rapids deposit, petalite and feldspar occurs as a light pink or white colour, while the predominant waste material, amphibolite, is a very dark grey rock. The optical ore sorter will be programed to correctly identify and discard this darker rock and other waste minerals, which can make up to 20% of the pre-sorted crushed ore that will be brought in to feed the flotation plant.

Crushed ore from the Separation Rapids deposit after it has been optically sorted. The "cleaned" ore is shown on the left. The discarded waste material shown on the right is noticeably darker and more brightly coloured.

By placing the optical ore sorter system at the frontend of the flotation plant, the waste material will be discarded from the crushed ore before being processed. With only "cleaned" ore to process, the flotation plant will be smaller, and significant energy and water savings can be achieved in subsequent crushing, milling and flotation circuits. It is estimated that the incorporation of optical ore sorting into the Separation Rapids flowsheet could potentially reduce energy consumption by up to 2.1 million kWh/year, or enough energy to power 180 homes. Additionally, lower reagent volumes would be required, resulting in reduced effluent treatment requirements.

Fluidized Bed Roasting instead of a Rotary Kiln

Before lithium can be recovered from the petalite, it will undergo a decrepitation (baking) process which uses high temperatures (up to 1,100°C) to convert the lithium to a more reactive and extractable form. Large rotary kilns are typically used in comparable spodumene (another lithium mineral) operations. Rotary kilns are a less efficient process for Avalon's purposes; they do not completely burn the fuel provided and often emit large amounts of dust particles, NOx, and SOx into the air. In its flowsheet, Avalon is investigating replacing the rotary kiln with a Fluidized Bed Roaster (FBR): a relatively newer technology, to perform the decrepitation process.

Compared to the traditional rotary kilns, an FBR can save up to 40% of the energy relative to a kiln, equal

SUSTAINABILITY: CORPORATE KNIGHTS

Corporate Knights 2016 FUTURE 40 Responsible Corporate Leaders in Canada

Avalon placed among Corporate Knights' 2016 Future 40 Responsible Corporate Leaders in Canada, from a shortlist of 107 eligible small and mid-cap organizations. This is the second consecutive year Avalon has ranked as a Future Responsible Corporate Leader.

to 41.8 million kWh/year or enough energy to power over 3,600 homes a year. Utilizing a FBR would have a smaller environmental footprint, as the feed will not need to be preheated in the roaster.

Finally, it is expected that the lithium conversion rate will be higher using a FBR, with greater lithium recoveries overall achieved in the hydro-metallurgical plant as a result of easier and better temperature control in the FBR.

Membrane Electrodialysis: Reducing, Regenerating and Reusing

Membranes (such as those used in reverse osmosis) have been in use since the 1950's as a means to separate ions from one another in numerous industrial applications; for example, the production of fresh water from sea water. Avalon is looking to utilize this technology for the production of lithium hydroxide. The technology uses specialized plastic membranes and electrical charge to separate particles in a solution.

Conventional lithium hydroxide production contains several steps that require high amounts of reagents and create large volumes of solid waste. Lithium hydroxide is typically made by first producing an intermediate product - lithium carbonate - from a lithium sulphate solution generated from raw materials such as spodumene concentrates or lithium brines. This process however also generates large volumes of calcium sulphate which will need to be disposed of.

The carbonate will then be converted into lithium hydroxide by re-dissolving the carbonate in large amounts of concentrated sulphuric acid, after which a strong base (sodium hydroxide) will be added to make a lithium hydroxide precipitate which is removed by filtration. Both sulphuric acid and sodium hydroxide are hazardous substances that need careful handling and pose a danger to both the environment and people during transportation and handling.

By using membrane electrodialysis in the laboratory tests, Avalon is able to make lithium hydroxide directly from a lithium sulphate solution in a simplified flowsheet without the need to produce an intermediate carbonate product. This process also recovers sulphuric acid which can be recycled to the beginning of the hydrometallurgical process. Regenerating the sulphuric acid greatly reduces the overall acid consumption from 43,000 Tonnes Per Annum (TPA) (19,000 tonnes less of H_2SO_4, and 24,000 tonnes less H_2SO_4 re-dissolve) to 5,800 TPA and also decreases the need for both calcium hydroxide and sodium carbonate from 20,000 TPA to 0. This will reduce local risk by requiring much less reagents to be transported to the plant.

Reagents	Old* (TPA)	New** (TPA)
H_2SO_4	19,000	-
H_2SO_4 re-dissolve	24,000	5,800
$Ca(OH)_2$	20,500	-
Na_2CO_3	20,000	-
NaOH	-	51
Total	83,500	5,851

** Previous process for lithium hydroxide production*
*** New process for lithium hydroxide production using electrodialysis*

The table above shows the dramatic reduction in reagent consumption at the planned hydrometallurgical plant, from 83,500 to 5,851 TPA, with the expected new changes in the process.

The use of electrodialysis membranes requires fewer raw materials to be consumed and less waste to be generated overall throughout the Separation Rapids Project flowsheet. In the previous scenario, up to 33,000 TPA of sodium sulphate waste could have been generated at the hydrometallurgical plant. However, with the inclusion of membranes in the flowsheet, no sodium sulphate waste would be produced and 100% of this material will be eliminated from the tailings management area.

Sorting and Separating Sustainably

Through the use of the above technologies, Avalon is developing a streamlined, efficient and sustainable process to produce a petalite concentrate that can be fed into a lithium hydroxide manufacturing facility to supply the battery and energy storage industries. The reuse of recovered by-products from these new technologies in the flowsheet will fully maximize the potential of the Separation Rapids Project while minimizing waste generation and energy use.

Energy Efficiency at Separation Rapids

Mining, by its nature, is an energy intensive industry. Energy will be a significant component of the operating costs at Avalon's future operations, and as such, Avalon is making every effort to minimize planned energy use in order to reduce future operating costs and improve return on investment for the Company's shareholders. Energy efficiency in project design, process selection, reagent reduction, water and reagent recycling, waste reduction and other initiatives have the additional benefit of reducing the direct or indirect generation of greenhouse gases (GHG) that contribute to climate change. At the Separation Rapids Project, Avalon plans to implement a number of initiatives which could potentially reduce energy use over that of the original standard technologies evaluated:

The sustainable use of the ore body (maximizing recovery of products) could be increased by a factor of

3

Through successful metallurgical process development, reagent use would decrease

77%

or 109,000 tonnes/year

Decreased reagent use would decrease GHG production for reagent transport alone by

24,000

tonnes/year

Waste from the concentrator would decrease by

44%

or 356,000 tonnes/year

Through recycling & other synergies, water use / tonne of product would decrease by

60%

Indirect sulphur dioxide emissions from sulphuric acid generation would be down by

86%

tonnes/year

Diversion of waste rock by ore sorting would reduce ore feed to the concentrator by

138,000

tonnes/year

Diversion of waste rock by ore sorting would reduce energy requirements in the concentrator by approx.

6.8

million kWh/year

Total energy use in the concentrator and known energy changes in the hydrometallurgical plant could lead to a decrease of

40%

tonnes/year

An Interview with Wabaseemoong Independent Nations

Wabaseemoong Independent Nations Band Member Marvin McDonald installs barricades at the Separation Rapids Lithium Project

Avalon is proud of its commitment to First Nation governments and organizations local to the Company's project sites, including practices of early engagement. Strong community support de-risks Avalon's projects and assists in meeting permitting and outreach deadlines.

Avalon signed a Memorandum of Understanding with the Wabaseemoong Independent Nations in 1999 to develop the Separation Rapids Project in a spirit of collaboration and mutual respect. In the fiscal year 2016, Avalon explored potential economic opportunities for the Wabaseemoong Independent Nations with a third party developer.

In order to introduce Avalon's other Communities of Interest to the Wabaseemoong Independent Nations, Avalon conducted an interview with Band Member Mr. Marvin Lee McDonald.

Tell us about the history of the Whitedog, One Man Lake, and Swan Lake.

Wabaseemoong Independent Nations is comprised of the existing community of Whitedog and the now-relocated communities of One Man Lake and Swan Lake. Wabaseemoong's Traditional Lands cover an area of 6,720 square km.

How long have the communities/ settlements been there?

These communities have existed for hundreds of years. The community members lived off the land and their traditional lifestyles included hunting, fishing and trapping. The community of Whitedog has been in existence for the longest time. The residents of One Man Lake were relocated to Whitedog in the 1950s as a result of the flooding of the river system for the construction of the Whitedog Falls and Caribou Falls generating stations. The residents of Swan Lake then relocated to Whitedog to gain better access to schools and other facilities.

What is the population?

There are currently about 2,000 community members registered with the Band, but only about 1,200 live in the community. Many members now live and work outside of the community.

What is the council or leadership like?

Wabaseemoong Independent Nations is governed by a Chief and four Councillors. All positions are elected and elections are held every two years. The most recent election was held in April 2015, and Chief John

OUTREACH: LOCAL SCHOOLS

Avalon's President & CEO, Don Bubar, was asked to speak at the Whitedog School Graduation Ceremonies in June 2016.

Paishk was re-elected for a second term. In many cases, we turn to the Elders of the community for additional guidance and direction.

What facilities do you have?

The community of Whitedog has a school, daycare, a new health centre and a recreation complex, which also houses the Band office. There is a new church on site, but it is not in full use yet.

What businesses are the Wabaseemoong involved in?

Some of the community members work as fishing guides for the local lodges or are active trappers. Others may work outside of the community with some of the contractors in the region. Currently, there are some convenience stores within the community that provide employment opportunities. The only other employers are the Band office and the school.

I coordinate an annual wild rice harvesting camp in early September, involving Elders and youth from the community. Some community members are also involved with aquatic studies, most recently to assess the state of the sturgeon population in the area.

How would you describe the community's values? What are you proud of?

The community places a high value on healthcare, education, economic development and employment.

The community is proud of its youth, who are furthering their education and establishing themselves in careers. Although they may not all return to the community after their education is complete, it is important that they have taken the steps to get that education.

What are the most important issues facing the community?

The most important issues facing the community relate to education, employment and economic development, especially for the youth. The youth are the future of our community.

The Chief and Council, with their advisors, continue to look for economic development opportunities to bring a source of employment within the community, rather than having its members drive many kilometres for jobs and work.

How do you envision the community developing or changing over the next 10 years?

Many of us remain optimistic about the future. We see our youth becoming more educated and seeking careers in many fields, but many are focused on resource development. A recent job fair in the community showed our youth the opportunities that are available. We see more potential for economic development as well.

With the potential for new logging and forestry operations in the area, as well as potential resource development (such as Avalon), what opportunities and challenges do you see when working with these industries?

We see employment opportunities coming along with this resource development. However, we have noticed that some jobs, such as in forestry, are no longer as labour intensive as they were before, because they are being done with more modern equipment. This modern equipment requires trained operators. It is important that we have access to the training for these modern jobs to take full advantage of new opportunities in forestry or resource development.

How should extractive businesses approach local and Aboriginal groups in the area? What are some of the Wabaseemoong's concerns with companies moving into the area to extract resources?

It is important to understand that our community should be involved at the very earliest stages of planned projects, so that we can participate. We need to see where the opportunities and challenges exist. We need to see what the benefits are to our community and its members. We need to have agreements in place so that we can better understand the benefits, as well as becoming partners in the project.

OUTREACH: DISCUSSIONS WITH WIN

Avalon's Separation Rapids Project is located within the Wabaseemoong Independent Nations (WIN)'s stewardship area. Building on the Memorandum of Understanding that Avalon has signed with the WIN, Avalon continued discussions during the year. Discussions ranged from project status to Avalon's potential to aid in their development of an economic development strategy and business opportunities.

East Kemptville Tin-Indium Project

Location
Yarmouth, Nova Scotia

Acquired
2006

Project Phase
Advanced Development

East Kemptville was an operating tin mine from 1985-1992 and was North America's only large primary tin producer, before closing in 1992 due to a collapse in tin prices after the international cartel was disbanded. Increasing global demand for tin and limited tin supplies have resulted in strengthening tin prices, creating an opportunity to consider redeveloping the tin-indium resource at East Kemptville. In 2015, Avalon carried out a $1.3 million work program consisting of further diamond drilling, metallurgical and environmental studies. Economic studies are now being prepared by Avalon to determine the best model to move the project forward.

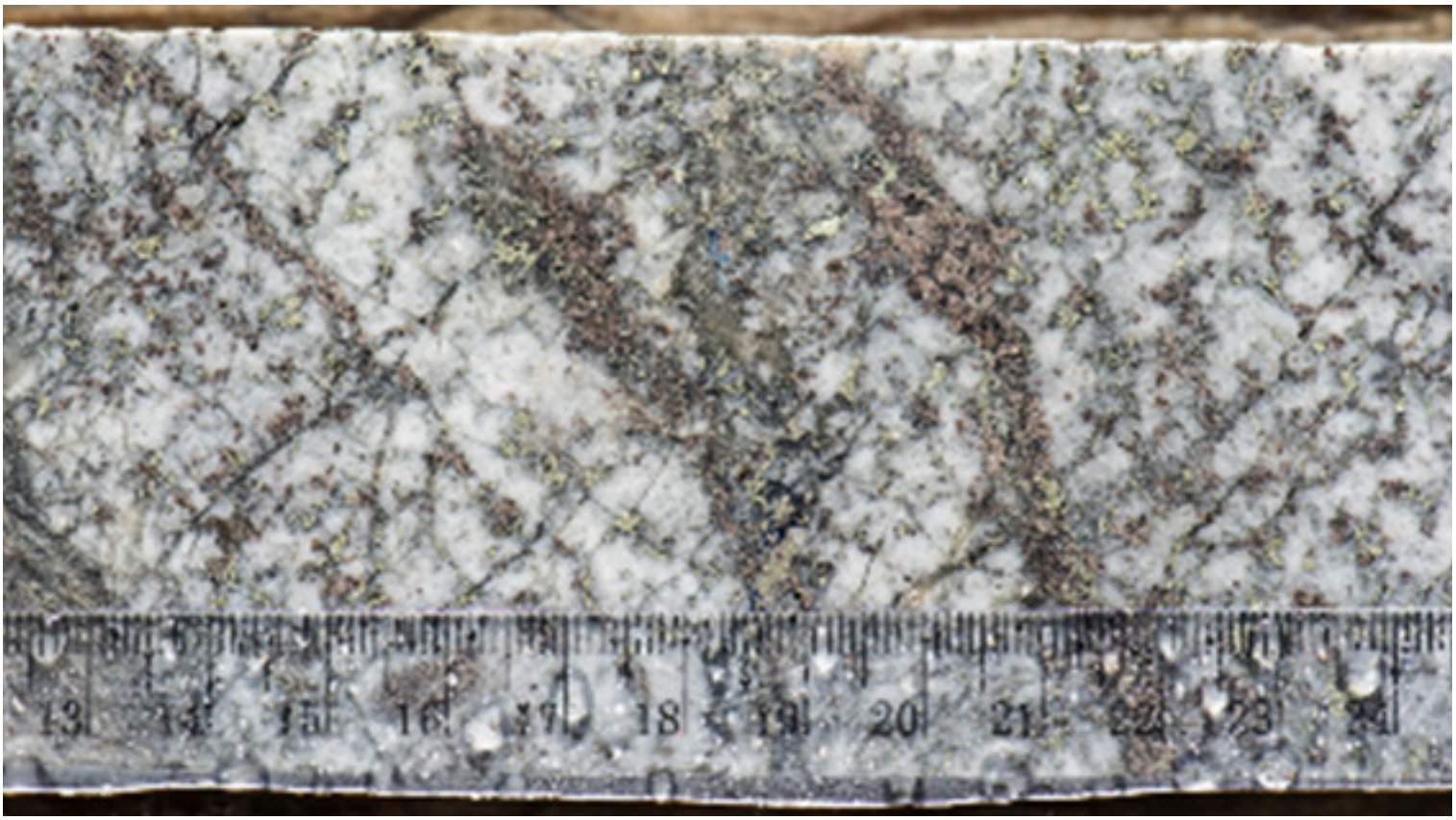
Metals

Tin
electronic solders

Zinc
galvanizing
diecasting
rubber manufacturing

Copper
electrical equipment

Indium
electronics



Quartz vein in the Main Zone with cassiterite (tin oxide, pale purple-brown colour) and sphalerite (indium bearing zinc sulphide, dark to black colour)

East Kemptville Environmental Opportunities

While the previous East Kemptville mine was in operation between 1985 and 1992, approximately 19 million tonnes of sulphide tailings and 10 million tonnes of waste rock were deposited on the site's surface. While the tailing pile has been sloped and revegetated, the tailings continue to generate acid mine drainage and remain as an environmental liability on site, along with acid generating waste rock. Ongoing water treatment has effectively managed the acid and metal-bearing runoff from these sources; however, ongoing treatment will be required for many years before acceptable water quality is reached.

Avalon is committed to minimizing short and long term environmental risk and liability at all its project sites. The potential reopening of the East Kemptville mine allows Avalon the opportunity to eliminate the existing long term acid mine drainage situation. Avalon has developed an innovative tailing and waste rock management strategy based on early metallurgical testing of the East Kemptville ore body.

Within the new metallurgical process tested, three types of tailings will potentially be produced at the future East Kemptville mine site:

Coarse Clean Tailing

- Based on the densities recovered from metallurgical testwork, Avalon plans to store all coarse clean tailing (78% of total) in the existing tailings management facility (TMF).
- Nearing the end of the mine life, coarse clean tailing could be used to cover, slope and revegetated the TMF.

Fine Clean Tailing

- The fine clean tailing (10% of total) can be used as a low permeability cover for progressive reclamation of the existing TMF liability. The benefits of this potential low permeability cover are twofold: water infiltration will be reduced during operations, thereby lowering the long term risk of the existing dams, while the existing TMF liability will be isolated from water flow post closure, negating the need for long term treatment.

Acid Generating Tailing

- Currently, Avalon plans to deposit all acid generating tailing (12% of total) into the TMF sub-aqueously (under water). The water covering can block oxygen and prevent acid drainage. After the existing TMF is full, the mined out Baby Pit could be used for additional sub-aqueous tailing storage.

Acid Generating Waste Rock

- In addition to tailing waste from the processing facilities, 45 million tonnes of waste rock would be produced during the mining of the open pits. For the purposes of this model, Avalon has conservatively assumed all of the new waste rock produced will be acid generating.

Avalon has identified a location southwest of the existing pits and TMF where new acid generating waste rock from the open pits could be placed in a sub-aqueous setting. A small dam will be constructed to progressively flood this waste rock as it is deposited into this facility, preventing the risk of acid mine drainage. A new wetland will be created at the end of the mine's life, and runoff will not require ongoing treatment.

The final liability on site is the historic acid generating waste rock from the original mining activity. If necessary upon closure (in the event that they are still producing acid mine drainage), any remaining small waste rock dumps from the original mine could be placed sub-aqueously in the mined out Main Zone Pit, permanently stopping acid mine drainage.

PROJECT DEVELOPMENT: WELLS

Avalon received approval for an additional groundwater well at the East Kemptville Tin-Indium Project and the wells were installed. Sampling of both new wells occurred in November 2015, demonstrating acceptable ground water quality, and eliminating a concern regarding a potential groundwater plume of concern.

Avalon believes this strategy will mitigate both existing and future tailing and waste rock liability at the East Kemptville site and post closure perpetual treatment of water will not be required. This plan also provides flexibility for an increase in ore or custom ore milling in an environmentally responsible manner.

Also under assessment is the potential to re-start operations by initially processing only the low grade ore stockpile as a stand-alone first step. The stockpile would be processed for tin only, which minimizes reagent use. On this basis, no new waste rock will be generated and a new waste rock storage facility will not be required. The existing tailing management facility will easily accommodate all the tailings generated.

Reducing Risk to Water Supply: A simple solution

Avalon commenced a drilling program at the East Kemptville Project in July 2015. The drilling program was designed to collect metallurgical sample material from the previously-mined Main and Baby Zones, as well as test other known mineralized zones to delineate additional economic resources for a potential feasibility study. The drilling program was completed in November 2015 with a total of 4,514 metres in 22 holes.

During this drilling program, Avalon faced an unusual environmental challenge. Water for some of the drill holes had to be pumped in a high pressure hose from the water body, across a ditch containing treated water, and back again in a hose to the original water source.

No water from the hose supplying drill water could be lost into the ditch of treated water. To avoid this, Avalon designed a method to doubly contain the water to and from the drill while it crossed over the ditch.

Avalon put multiple levels of water security in place – top quality high pressure hose, contained in secondary containment, and draining naturally downhill – to ensure that no untoward events could cause issues in the treated water ditch. Acting sustainably does not have to be expensive or complex, sometimes it is a simple fix.

A high pressure hose, contained in secondary containment, and draining naturally downhill, ensured that treated water was not contaminated during drilling at the East Kemptville Project.

Outreach

Avalon Donates "Moon Rocks" for NASA Research

The Warren Township Project near Timmins, Ontario

Avalon's Warren Township Anorthosite Project is an industrial minerals development opportunity located 100 km west of Timmins, Ontario, Canada in the Porcupine Mining Division. Anorthosite is an unusual mafic igneous intrusive rock, consisting of greater than 90% plagioclase mineral, also known as calcium feldspar. Geologists call the intrusion containing the anorthosite (which contains the calcium feldspar mineral) at Warren Township the "Shawmere Anorthosite Complex." The Shawmere Complex is believed to be among the oldest anorthosite intrusions recorded on earth, forming more than 2.8 billion years ago!

Interestingly, anorthosites are not confined to the Earth. The Moon is made of rock that falls into two broad categories: those in the lunar highlands and those found in the maria. The lunar maria refers to flat areas of rock on the Moon that were originally believed to be seas (Latin "maria"). The material in the highlands is composed of three groups: magnesian, alkali and anorthosite. Anorthosites are the oldest rocks on the Earth's Moon. They appear to have formed when feldspar crystallized and floated to the top of a lunar magma ocean that surrounded the Moon soon after it formed, over four billion years ago. In fact, the Moon's highlands' unusual composition is remarkably similar to the rock at Avalon's Warren Township property.

The rock is so similar that researchers in Washington State, USA are using Avalon's Warren Township anorthosite to create a Lunar Surface Research Lab, where the anorthosite will be used "as the root stock for creating lunar highland regolith simulant." In July 2016, 40 tonnes of crushed Warren Township anorthosite was trucked to St. Martin's University, Lacey, Washington State so researchers there, in association with Off Planet Research LLC., can study a wide range of issues, including lunar weathering, remote sensing of the moon's surface, machine mobility prediction and other technologies related to lunar colonization and in-situ resource utilization. The laboratory will be available free to student researchers that could benefit, and will be available for use by government and commercial players.

It is a surprising event when rocks from one of Avalon's properties are utilized in scientific research into the origin, geology and material properties of the Moon. Avalon is proud to contribute to such research initiatives.

Calcium feldspar, the mineral that dominates anorthosite, has applications as raw material in certain glass and ceramic applications, notably certain types of fibreglass and ceramic tile formulations. As a component of batch feed, calcium feldspar has the important advantages of lowering the melting temperature and energy demand of the glass batch, thereby reducing energy intensity and greenhouse gas footprint. Other potential applications of calcium feldspar include: as a refractive lining in aluminum reduction cells; raw material for rock wool manufacture; filler for certain molding compounds and specialty paper products; slag conditioner in ferrosilicon and silicon metal manufacture; and dimension or ornamental stone. The market continues to grow with new emerging applications, such as composites for wind turbine blades.

For further information:

- https://airandspace.si.edu/exhibitions/apollo-to-the-moon/online/science/lunar-rocks.cfm
- www.sandatlas.org
- www.offplaentresearch.com
- www.facebook.com/StMartinLunarResearch

Avalon PDAC Health and Safety Course

Strong health and safety performance is a critical part of operating sustainably. It is generally recognized that mineral exploration activities are high risk; however, in general, the exploration industry lags behind the rest of the mining industry in the development of robust health and safety management systems. To help rectify this, Avalon's Vice President, Exploration, Bill Mercer, with support from Vice President, Sustainability, Mark Wiseman, has been running a one day health and safety course at the Prospectors and Developers Association of Canada (PDAC) Conference in Toronto each March since 2012.

Bill assembled a group of industry professionals, including experts from backgrounds such as helicopter operations, drilling safety and safety management. The presentations at the health and safety course cover an array of topics, from how to report and analyze accidents after they occur, the importance of training, risk assessment, procedures and other key tools for the prevention of accidents.

In part through education, Bill is encouraging the exploration industry to improve its safety reporting. Furthermore, with support from Mark and PDAC staff, Bill's Health and Safety Committee is gradually improving health and safety reporting by attempting to shift from the reporting of lagging (i.e., after the fact) indicators, such as Lost Time Injury Frequency, to reporting of leading indicators, such use of risk assessments, audits and inspections as part of a systematic use of health and safety systems that prevent accidents. Through education and reporting, the Health and Safety Committee is driving overall improvement of safety management systems and along with it, improving safety performance.

It is particularly satisfying when there is a clear positive outcome from teaching such a course. Recently, it was learnt that a major international drilling company, as a result of senior managers attending the course, completely revamped its accident investigation process globally. This demonstrates benefit to the industry as a whole.

Avalon's VP, Exploration, Bill Mercer, speaks at his PDAC Health and Safety course in March 2016

In addition, under Bill's leadership, with the support of health and safety industry professionals such as Mark Wiseman, PDAC produced E3Plus: a recognized "How To" manual to assist exploration companies in improving in all areas of sustainability.

Strong health and safety performance contributes to efficient and better planned work sites, less down time due to accidents and maintenance issues and improved employee morale. As a recognized sustainability leader in Canada, Avalon has a role to play in assisting the industry improve health and safety performance; Bill and Mark's contributions to the PDAC health and safety course is one component of Avalon's strategy. The course has historically had an attendance of about 20 to 30 persons, and receives highly positive reviews from participants. Bill and Mark will continue to lead this initiative into 2017.

OUTREACH: MINING ASSOCIATION OF CANADA

In its fiscal year 2016, Avalon agreed to participate in the Mining Association of Canada's Chemical Management Plan (CMP) task force on zinc, as well as continued to contribute to the rare earth elements task force. In March and October 2016, Avalon participated in the Mining Association of Canada's Community of Interest Panel, representing exploration and development. This committee consisted of NGO, Aboriginal, environmental, government, union and community leaders and is a mechanism for the mining industry to obtain recommendations to grow Canadian leadership in sustainability.

University Outreach

Avalon contributes to the development of university education in the mining industry through involvement with students from the undergraduate level, capstone projects in engineering, BSc theses in geology and graduate student research. Avalon provides support primarily through financial sponsorship, in kind donations, access to Company data, project sites and access to Avalon staff expertise.

The research projects that students are involved in, with support from their professors who are experts in their fields, contribute directly towards tackling technical challenges at Avalon's projects. The research is focused on real world questions, where knowledge and innovation can be combined to reach practical, business oriented solutions but at the same time helping answer fundamental science questions. In the fiscal year 2016, Avalon assisted two graduate students working on theses relating to the East Kemptville Project.

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, under the supervision of Professor Iain Samson.

The economic potential of indium at the East Kemptville Project was poorly recognized prior to 2008. Avalon's re-investigation of the deposit has indicated that indium has the potential for being a high revenue-generating by-product for the future re-development of the East Kemptville mine. Initial work completed by Avalon determined indium is hosted in several minerals, with the primary host being sphalerite which has exceptionally high levels of the element.

Jason's research will focus on expanding this work and characterizing the distribution of indium and other important trace elements such as germanium among the various minerals, assessing the processes that controlled the indium enrichment and characterizing the spatial variation of indium within the deposit.

An understanding of these controls will help improve Avalon's understanding of the mineralogical domains that control indium and can aid with the metallurgical process development necessary for the extraction of indium as a by-product.

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. Luke is being supervised by Professor Dan Kontak at Laurentian and Professor Brendan Murphy at Saint Francis Xavier University.

The evolution of mineralization at East Kemptville involved deep-seated activity of highly evolved magmatic-hydrothermal fluids that became focused along a structural zone during the waning stages of an orogenic event. This PhD study aims to provide a full understanding of 1) the character and evolution of the deposit-forming fluids that have led to variable styles of mineralization at the project and 2) the structural evolution in the area. Studying the main structure hosting the mineralization will provide better understanding to the origin of the East Kemptville deposits, help define the extent and geometry of ore zones and contribute to regional exploration models for similar style deposits in the region.

An increased global demand for tin may see the East Kemptville deposit become a valuable asset for Avalon. Avalon's understanding of the deposit is aided by these geological studies, which the Company is proud to support.

OUTREACH: NATURAL RESOURCES CANADA

At the request of Natural Resources Canada (NRCAN), Avalon contributed to NRCAN's Mining and Metals Sectors' "compendium of good practices in community engagement and readiness," summarizing the positive work done in this area at the Nechalacho Project in the Northwest Territories, Canada.

Avalon's Outreach Extends beyond Borders

Avalon continues to derive significant benefits from collaboratively working with industry, policy and academic leaders. Avalon staff and advisors participate on committees, present and review journal papers, direct research and development (R&D), convene conferences, and prepare and deliver lecture series at conferences and universities. These initiatives have reinforced Avalon's reputation for leadership and expertise in advanced materials, both nationally and internationally.

More recently, Avalon has been presented with the opportunity to influence the development of international technical standards to include clear environmental considerations. Outreach is often a cost effective platform to advance Avalon's goals and objectives.

Canadian Rare Earth Elements Network (CREEN)

Avalon played a leadership role in establishing CREEN in October 2013, together with prospective rare earth producers, universities, commercial labs, consultants and the Canadian federal government. Since its inception, CREEN's primary mission is to establish Canada as a significant supplier of processed rare earth materials for global supply chains. CREEN's active lobbying was instrumental in securing a $16 million federal R&D funding commitment to pursue solutions for rare earth processing.

Avalon's Market Development & Energy Advisor, Ian London, currently serves as CREEN's Chair. Under the CREEN banner, other employees participate on CREEN steering and technical committees. Through CREEN, Avalon has broadened and strengthened its relationships in the global sector and gained access to technical knowledge and solutions.

Conference of Metallurgists (COM)16/ International Mineral Processing Congress (IMPC)16 Rare Earth Symposium

Since being invited by the Metallurgical Society of Canada (MetSoc) to organize and chair the inaugural REE Symposium in September 2012, Avalon continues to be active with the internationally-recognized technical symposium. The papers presented cover a broad range of subject areas from mineralogy through separation, environment, recycling and advances in major project developments.

Discussions are now shifting to broaden the scope of future REE Symposia, shifting the focus to 'Energy or Technology Materials': lithium, rare earths, tin, indium, gallium, graphite, scandium and others, in response to new supply/ demand issues and supply chains associated with new technologies.

International Organization for Standards (ISO) TC298 REE Standards

The ISO is an independent, non-governmental organization that brings together experts to share knowledge and develop voluntary, consensus-based, market relevant international standards that support innovation and provide solutions to global challenges. In early 2015, the ISO established a Technical Committee to establish standards for rare earth elements. Per international protocol, Canada established its Mirror Committee in May 2016, with the responsibility to establish consensus on the Canadian positions and represent Canada at all formal meetings. By invitation, Bill Mercer and Ian London are members of the twelve person Canadian Mirror Committee.

Canada's participation is intended to ensure Canadian norms and practices are recognized and incorporated into international standards, particularly promoting mainstream best practices across the full lifecycle of production that ensures health, safety and environmental standards are paramount. It should also facilitate global markets that are trusted by regulators and industry, thereby reducing barriers for international trade and project finance, as well as assist in the increasing the competitiveness of Canadian projects.

North Atlantic Treaty Organization (NATO) REE Research Lecture Series (RLS)

NATO has a growing interest in critical materials and their supply chains, and recognizes the need to mitigate the changing supply chain security dimensions. NATO launched a lecture series intended to broadly inform and educate students, researchers, policymakers and defense leaders about rare earth supply chains, science and engineering.

Again by invitation by NATO through CREEN, Avalon's Bill Mercer, Ian London and Chris Wildman have begun preparing papers as members of a team of international specialists.

PERMITTING: EXPLORATION

Avalon applied to extend its Exploration Permit in May 2016 at the Nechalacho Project in the Northwest Territories, Canada. Avalon provided updated information to local Aboriginal governments and organizations, key contractors and communities potentially impacted by future project activities. No negative comments have been received to date, with positive feedback received from some local mayors and contractors. The application was approved without any changes in conditions.

OUTREACH: MNO

Avalon spoke to representatives of the Métis Nation of Ontario (MNO) to begin discussions around the Separation Rapids Project near Kenora, Ontario, Canada. In parallel with this engagement, Avalon also prepared presentation materials for broad discussions with all Aboriginal governments and organizations, local communities and government agencies. A discussion regarding the project has been scheduled for later in 2016, when the project description is more clearly defined, but still in advance of the formal initiation of the permitting process.

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 brief explanation 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 rare 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 Communities of Interest.

Avalon's management of Company economics, which concerns both internal and external stakeholders, are governed by the Company's compliance policies (which includes a Code of Business Conduct and Ethics, a Disclosure Policy, an Insider Trading Policy and a Whistleblower Protection Policy, the Charter of the Audit Committee and the Mandates of each of the Board of Directors, the Chair of the Board and the Chief Executive Officer). All of these policies are available on the Corporate Governance section of the Company website.

Health & Safety

Health and Safety (HS) is a core Company value. Avalon's Corporate Values states that "We will never cause harm to people in the pursuit of production and profits or in the conduct of our business." In support of the Sustainability Policy, a Health, Safety and Environmental management plan has been developed that details HS requirements for all of Avalon's sites. Contractor HS systems and performance are assessed against Avalon's standards prior to engaging them. HS performance is valued by Avalon's Communities of Interest 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 and, more specifically, management. Through HS leadership, management promotes a strong HS culture and sets clear HS objectives to measure the performance of employees and contractors. Avalon ensures the workforce has the proper tools, training and resources to work safely in full compliance with all HS regulations. HS performance is reported on at all levels of the organization, including the Board of Directors. In addition to the strong focus on HS at project sites, an office health and safety committee holds meetings and performs regular inspections to meet safety requirements at Avalon's head office in Toronto.

Local Communities

Avalon's Sustainability Policy clearly establishes that it is committed to building strong relationships with all of the Company's Communities of Interest, including local communities. Collaborative activities allow the Company to make meaningful contributions to the communities where it operates.

Avalon recognizes the importance of earning trust and developing relationships based on mutual respect and cooperation. This engagement action often means that concerns are addressed before they become critical issues that could potentially disrupt business. This approach has shown that early engagement assists in avoiding and overcoming misunderstandings.

Water

Protecting the environment and actively 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 Communities of Interest, including the management of water. Avalon strives to position itself as a sustainable business and embeds environmental protection measures throughout all aspects of a project's lifecycle. The Company's activities comply with all applicable laws. Avalon engages in meaningful and transparent consultation with Communities of Interest in communities where it operates to inform them of its activities and adapts its plans where appropriate based on feedback received. This compliance, coupled with consultation, ensures Avalon's performance surpasses expectations and helps the Company earn its social license to operate. Strong environmental performance, including water management, helps Avalon earn a critically important social license to operate through:

- earning support from Communities of Interest;
- ensuring timely approval of environmental authorizations;
- protecting a valuable resource;
- reducing costs associated with environmental clean-up, regulatory action and permit delays;
- minimizing capital and operating costs of environmental management;
- facilitating the acquisition and retention of employees; and
- improving profitability and competitiveness by minimizing waste generation and energy use.

Avalon's Material Aspects

Biodiversity

Mining is widely perceived to have negative impacts on biodiversity on or near project sites. Regulations now require that any significant impact to biodiversity be minimized and mitigated. 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.

While Avalon has yet to develop a specific Biodiversity Policy, the Sustainability Policy clearly identifies the preservation and protection of the long term health, function and viability of the natural environment as a key objective. Among the many environmental objectives, it specifically identifies preventing the loss of biodiversity and ecosystem function due to the Company's operations.

To achieve this, the focus is on prevention of impacts to biodiversity. Prior to construction, extensive environmental baseline studies and an Environmental Impact Assessment are completed for all projects. This information is utilized in project design to minimize or mitigate potential impacts. This can include, but is not limited to, site selection and location of site infrastructure, the design of water treatment and air management facilities, minimizing the site environmental footprint and traffic, noise and light controls. This is further supported by a range of environmental management plans as appropriate for the project. This can include a Wildlife and Wildlife Habitat Protection Plan, a Wildlife Effects Monitoring Plan, an Aquatic Effects Monitoring Plan, an Air Quality Management Plan, a Waste Management Plan, an Emergency Response Plan, a Waste Rock Management Plan, a Surveillance Network Program, a Water Management Plan, a Tailing Management Plan and an Erosion and Sediment Control Plan or equivalent. All plans include early warning triggers of potential impacts that require appropriate responses.

Closure Planning

Canada requires that appropriate financial assurance for the rehabilitation of project sites are 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. These costs and impacts are material to the success of a project.

Avalon's Sustainability Policy states that the preservation and protection of the long term health, function and viability of the natural environment is a key objective. Avalon adopts leading environmental practices and standards throughout all stages of the mining lifecycle, including closure planning.

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 negates 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 is in place for all sites where appropriate, including the Separation Rapids Lithium Project. Avalon had filed financial assurance for the East Kemptville Tin-Indium Project exploration drilling program, but this money has already been returned to Avalon due to the effective rehabilitation work successfully completed.

Compliance, Emissions, Effluents & Waste

Avalon's Sustainability Policy commits Avalon to meet industry leading standards for the management of the environment. The policy also makes specific reference to minimizing greenhouse gas (GHG) emissions and continuously improving the Company's environmental performance for all emissions, effluents and waste. Emissions prevention and controls are an important component of environmental compliance with regulations. Emissions can result from both process and energy production and must meet regulatory requirements for the protection of the environment and human health.

Good environmental performance promotes good relationships with regulators and helps to obtain access to land and timely approvals. It contributes to strong relationships with Aboriginal governments and communities and garners support for projects.

Effluent and waste management is subject to extensive federal, provincial and territorial regulations and are key to the project permitting process. Avalon is committed to proactively managing and mitigating potential impacts to the environment resulting from its activities. To this end, 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 and commits to meet or surpass the regulatory requirements of both.

Avalon develops waste management plans for all current work and future operations in an effort to minimize waste production, optimize recycling and/or re-use of waste which contributes to improved project economics.

Avalon's environmental management plan outlines the many requirements that help achieve compliance, ranging from the development of an environmental culture, roles and responsibilities, training, annual targets and objectives, measurement, reporting and commitments to continuous improvement. These are supported by procedures to guide how compliance is to be met.

Employment

Avalon strongly believes that its employees are fundamental and critical to its success. Avalon's company values identify key characteristics required of its employees and the Sustainability Policy further commits that Avalon will treat its employees with respect and create a workplace where employees are valued, engaged and committed to succeed. This 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 seeks to provide competitive benefits and salaries to attract and retain qualified and competent employees and provides training in an effort to develop them.

Energy

Avalon's niche market metal and mineral products are essential to the clean technology industry, including energy storage and electric vehicles. Markets and customers are growing ever more cautious of maintaining sustainable supply chains. Recent climate change regulatory initiatives related to GHG management and potential carbon tax or cap and trade programs could have a material impact on operating costs, such that management of GHG production now has an increased importance.

Energy will be a significant component of the operating costs at Avalon operations (as with all mining operations), and as such, Avalon is making every effort to minimize energy use to reduce operating costs and improve project economics. In addition, as Avalon's markets will be, in large part, the clean technology industry, sustainability leadership is considered a key success factor for Avalon. Energy efficiency in project design, process selection, reagent reduction, water and reagent recycling, waste reduction and other initiatives have the additional benefit of reducing the direct or indirect generation of GHGs that contribute to climate change. These initiatives will also significantly improve project economics and return on investment for shareholders. It will create benefits such as employment and contracts to local and Aboriginal communities while supplying the world with the essential raw materials it needs for disruptive technologies.

To this end, and while at an early stage in its development, Avalon monitors and publicly reports its energy and GHG production as per the Mining Association of Canada's guidelines and GRI suggested Indicators. It researches opportunities to include energy efficiency and energy use reductions in its operations. This includes opportunities to reduce reagent transport and use through reagent recycling or regeneration, optimizes energy intensive operations, such as crushing and grinding and minimizes water use and thus the energy required to pump and treat at all stages of its operations.

Outreach

Avalon's management team invests time and resources conducting academic, industry and government outreach. The Company derives significant benefits through these collaborative projects. Avalon staff and advisors participate on a number of program steering, technical and organizing committees, present and review journal papers, direct collaborative R&D, convene conferences and prepare and deliver lecture series. These initiatives reinforce Avalon's reputation for leadership and expertise in advanced materials, both nationally and internationally, as well as provided access to students for future employment. More recently, opportunities have been presented to influence the development of international technical standards (that include clear environmental considerations). These initiatives have provide material, cost effective platforms to advance Avalon's goals and objectives.

Procurement

Strong procurement practices are critically important to exploration and development companies, especially during project construction. 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. Responsibilities and requirements are further delineated with the Authorization and Procurement Policy and supporting procedures that ensure all regulatory and Company requirements (including internal control requirements) and commitments are met with respect to all stages of procurement, including quotations, authorizations, approvals and payments.

For contracts meeting certain thresholds, multiple bids are required, and appropriate management personnel are assigned to evaluate the contractors bid in order to select the best contractor for the job based on a range of criteria. These 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.

FY2016 Goal Performance Summary

The following table summarizes Avalon's performance in reaching its FY2016 goals.

Sustainability Goal	Status	Comments
Health and Safety		
Zero Fatalities	Achieved	There was little activity at Avalon's project sites in FY2016 beyond the completion of a drilling program and environmental work at the East Kemptville Project in November 2015 with no safety incidents.
Zero Harm	Achieved	See comment above.
Zero Lost Time Accidents	Achieved	See comment above.
Zero Medical Aid Accidents	Achieved	See comment above.
Environment		
Complete project description for East Kemptville Project (subject to financing and securing full site tenure)	Not applicable	While there was significant advancement in project environmental plans, such as completing tailing and waste rock management strategies, Avalon has not yet secured full surface tenure for the East Kemptville property.
Submit East Kemptville Environmental and Social Impact Assessment by end of 2016 (subject to financing and land acquisition)	Not applicable	Avalon is evaluating an innovative project re-development alternative that involves re-processing acid generating waste materials to recover tin while eliminating associated historical environmental liabilities, to be completed in early 2017.
Participate in Environment Canada's Chemical Management Plan (CMP) development under the Canadian Environmental Protection Act	Achieved	On behalf of the Company, Avalon's VP, Sustainability participated and continues to participate in the ongoing development of CMPs for the rare earth elements (REE), thalium, tin and zinc. In part due to Avalon's input, some REEs have been removed as elements of concern.
People and Communities		
Continue engagement with Aboriginal and local governments at the Separation Rapids, East Kemptville and Nechalacho projects	Achieved	Avalon remains active in its engagement with Aboriginal communities and governments at each of its active projects, at a level commensurate with the activity and stage of project development. Most of the engagement conducted in FY2016 was with the Wabaseemoong Independent Nations at Avalon's Separation Rapids Project in northwestern Ontario. See Table 3 on page 51 for further information.

Sustainability Goal	Status	Comments
Create business opportunities for Aboriginal partners	Ongoing	In FY2016, Avalon began exploring clean power options for the future Separation Rapids mine site, including models that would create business partnerships and ongoing benefits for the local Wabaseemoong Independent Nations. See page 9 for more information.
Continue to advocate for better industry Corporate Social Responsibility (CSR) practices and increased public awareness about the minerals/metals sector through industry associations	Achieved	Avalon's President & CEO continues to advocate for better mineral industry practice and is encouraging socially responsible investors to support industry leaders in CSR best practice. VP, Sustainability Mark Wiseman works on three Mining Association of Canada (MAC) committees and on the Prospectors and Developers Association of Canada Sustainability Committee, as examples of ongoing efforts.
Increase outreach to research institutions for opportunities to collaborate on R&D initiatives towards improved environmental management and remediation techniques	Achieved	Avalon continued to be an active member and co-founder of the Canadian Rare Earth Elements Network and has reached out to numerous academic institutions, including McGill and Dalhousie University, to create partnerships and funding opportunities.
Continue to maximize utilization of existing workforce and talent pool to minimize costs	Achieved	With a strong management team in house, Avalon continues to advance its projects with in house expertise to save on time and costs.
Governance and Economics		
Create a more gender diverse Board of Directors	Ongoing	Jane Pagel was nominated to Avalon's Board of Directors in February 2016; however, diversity will be an ongoing consideration at Avalon.
Continue to investigate technological advancements to optimize economic sustainability of Avalon's projects	Achieved	Avalon's advancements included: reduced potential energy, water, reagents and waste production, and an increased potential product suite from the Separation Rapids lithium deposit (See page 11); also, developing a closure strategy for the East Kemptville Project that optimized future waste utilization (see page 17).
100% compliance with all applicable legal requirements	Achieved	No known instances of non-compliance with regulatory requirements.
Sustainability and Reporting		
Produce FY2016 Sustainability Report	Achieved	Completed.

FY2017 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 FY2017 Sustainability Report.

Health and Safety

Zero Fatalities
Zero Harm
Zero Lost Time Accidents
Zero Medical Aid Accidents
Improve sustainability initiatives around corporate office space

Environment

Complete project description for Separation Rapids Lithium Project, per the Canadian Environmental Assessment Act (subject to financing)
Submit Separation Rapids Project Environmental and Social Impact Assessment by end of 2017 (subject to financing)
Complete Due Diligence at the East Kemptville Tin-Indium Project
Participate in Environment Canada's Chemical Management Plan development under the Canadian Environmental Protection Act
Complete two Company environmental policies; e.g., Biodiversity and Climate Change and Energy
Complete preliminary economic analysis of at least one alternative energy source for supply of power to the Separation Rapids site
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
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
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

People and Communities

Provide technical support to Aboriginal Communities of Interest to identify potential local business opportunities and support their long term development where appropriate

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

Outreach and Engagement

Facilitate communication between Mining Association of Canada (MAC) (through work on Communities of Interest panel and Science and Environment Committees) and Prospectors and Developers Association of Canada (PDAC) (through work on CSR Committee); 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 CMPs, Environmental Emergency Regulation and others as they develop

Identify and obtain government, supplier and industry support for sustainability initiatives

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 FY2017 Sustainability Report

Formalize the management system to ensure appropriate use of the Sustainability Questionnaire for screening new contracts

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. Note that with the re-focus to Avalon's Separation Rapids and East Kemptville Projects, some Company long term goals have been adapted since they were listed in Avalon's 2015 Sustainability Report.

Long Term Goal	Progress to Date
Health and Safety	
Complete the procedures and systems to support the Avalon Health, Safety and Environmental (HSE) management plan to achieve a AAA Towards Sustainable Mining (TSM) rating prior to the start of construction.	Avalon met all its safety targets this fiscal year, with zero accidents. The Company advanced its contractor pre-screening system with an updated sustainability audit to help ensure competent contractors. Avalon achieved an AA rating for Biodiversity reporting.
Environment	
Complete the procedures and systems to support the Avalon HSE management plan to achieve TMS AA rating for all environmental indicators prior to the start of construction.	Avalon participated in industry association meetings and attended conferences to ensure the Company is aware of state of the art environmental practices.
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. Achieve a TSM AA energy rating prior to construction.	Avalon initiated assessments of several energy options for the Separation Rapids Project ranging from direct connection to local hydro-electric power, use of locally available waste biomass and assessed nearby run-of-river power supply options.
evelopment of technologies that would improve performance and reduce costs on all Avalon projects providing a more sustainable future for the Company.	Avalon developed several process alternatives that reduced potential product energy intensities/tonne product produced by 40% at the Separation Rapids Project. Avalon assessed a more streamlined process option for tin recoveries at the East Kemptville Project that are ongoing and will utilize less energy.
People and Communities	
Engagement with Aboriginal and local governments at the Nechalacho, East Kemptville, and Separation Rapids Projects appropriate to level of project activity with the objective of achieving accommodation agreements prior to operations.	Avalon has engaged with all seven Aboriginal governments associated with the Nechalacho Project, which contributed to the successful renewal of the project's exploration permit. The Company has also held several meetings with the Wabaseemoong Independent Nations at the Separation Rapids Project for project updates and discussions regarding economic development options. Discussions were also initiated with the Métis Nation of Ontario. Finally, Avalon provided an East Kemptville Project update to the Acadia First Nation. These meetings help to contribute to developing trust that will form the foundation of the ongoing relationships. See Table 3 on page 51.

Long Term Goal	Progress to Date
Outreach and Engagement	
Continue to advocate for better industry Corporate Social Responsibility (CSR) practices and increased public awareness about the minerals/metals sector through industry associations.	Avalon participated on numerous industry associations, PDAC committees, presentations and panel discussions at PDAC, MAC committees, government round tables, universities lectures and others. Avalon contributed advice and experience to the industry while also learning about and keeping abreast of new regulation and funding opportunities.
Support Canada's leadership by advancing materials research through collaboration with universities, governments and industry.	Avalon continued its participation in the Canadian Rare Earth Elements Network (CREEN) to advance rare earth and other mineral process and environmental research. CREEN contributed research and information beneficial to Avalon projects. Avalon also supported Master and PhD students in FY2016. See page 21.
Governance and Economics	
Diversity of governance will be an ongoing consideration at Avalon.	See page 6.
Sustainability Performance and Reporting	
Investigate options for electronically tracking sustainability performance (dependent on projects' advancement), develop and implement these systems prior to operations.	Avalon attended conferences and talks to obtain updates on leading IT practices and ongoing developments in this area. No system development was required given project status this fiscal year.
Identify and engage local contractors who can provide services that contribute to the longer term sustainability of projects.	Avalon updated its Sustainability Questionnaire and began to implement its use to pre-screen for contractors with acceptable or leading sustainability practices.
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.	The Sustainability Questionnaire and emergency response plan were revised and updated. No progress was made this fiscal year to integrate the financial and sustainability reports.
Establish standards, practices and procedures as required to support the Sustainability Policy.	Reviews and updates to the Alcohol and Drug Policy were made and safety practices updated for site specific work.
Ensure systems are in place for the Sustainability Questionnaire to be utilized for all contracts. Develop a simpler system and guidelines for implementing monitoring for small contracts with low sustainability risk. Continue to monitor and promote sustainability amongst Avalon contractors and suppliers and support, where appropriate, small local contractors to meet Avalon HSE requirements.	Avalon updated its Sustainability Questionnaire and began to implement its use to pre-screen for contractors with acceptable or leading sustainability practices and hired only contractors that meet minimum standards.
Promote the value of sustainability-driven junior mineral development companies to the investment community.	Avalon's President & CEO continues to promote the value of acting sustainably. In FY2016, investor relations firms specializing in targeting socially responsible investors were communicated with for potential engagement in FY2017.

Towards Sustainable Mining Self-Assessment

Avalon annually reports on the Mining Association of Canada's (MAC) *Towards Sustainable Mining* (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 fiscal year 2016 (FY2016) performance in reaching TSM's performance indicators, as well as fiscal year 2017 (FY2017) targets and action plans. Note 'Indigenous' is used in the table below to refer to Aboriginal and Métis governments and organizations, as that is MAC's preferred terminology.

TSM Performance Indicator	FY2017 Target	FY2017 Action Plan	FY2016 Actual	FY2016 Action Taken	FY2016 Target	FY2015 Actual	FY2014 Actual
Aboriginal and Community Outreach							
Communities of Interest (COI) Identification	AA	Identify legitimate COI at new drilling sites, pending budget and project decisions	AA	Identified that the Métis Nation of Ontario (MNO) will be engaged, with along with the Wabaseemoong Independent Nations (WIN) at the Separation Rapids Project; project plans in Nova Scotia put on ho d in FY2016	AA	AA	AA
COI Engagement and Dialogue	AA	Pending budget and project decisions, engage with WIN and MNO at the Separation Rapids Project and Acadia First Nation at the East Kemptville Project; initiate discussions at new projects if appropriate	AA	Separation Rapids Project advancement took priority in FY2016, where discussions advanced with two Indigenous governments. Avalon also engaged with COI in the NWT regarding the Exploration Permit renewal.	AA	AA	AA
COI Response Mechanism	A	Advance development of formal process for continued engagement with appropriate Indigenous peoples where projects are advancing	A	Separation Rapids Project advancement took priority in FY2016, where discussions advanced with two Indigenous governments	A	A	AA
Reporting	AA	Complete 2017 Sustainability Report	AA	Prepared 2016 Sustainability Report	AA	AA	AA

TSM Performance Indicator	FY2017 Target	FY2017 Action Plan	FY2016 Actual	FY2016 Action Taken	FY2016 Target	FY2015 Actual	FY2014 Actual
Biodiversity Conservation Management							
Corporate biodiversity conservation policy, accountability and communications	A	Develop formal Biodiversity Policy to support biodiversity commitments in Sustainability Policy; advance baseline and Environmental and Social Impact Assessment (ESIA) work for financed projects	A	Contract in place for biodiversity work at East Kemptville Project put on hold pending project financing; gap analysis for ESIA, including biodiversity, completed at Separation Rapids Project	A	A	B
Facility-level biodiversity conservation planning and implementation	A	Continue biodiversity work at East Kemptville and Separation Rapids Projects, pending financing; initiate work on other projects if appropriate	A	The contract for ESIA and biodiversity work was initiated, but put on hold pending project financing; a biodiversity/ESIA gap analysis was completed in preparation for work (pending financing) at Separation Rapids Project	A	A	A
Biodiversity conservation reporting	AA	Complete 2017 Sustainability Report	AA	2016 Sustainability Report completed	AA	AA	A
Crisis Management and Communications Planning							
Preparedness	Complete	Review and amend Emergency Response Plans as required and develop plans for potential new project areas	Complete	Emergency response plan updated at East Kemptville Project	Complete	Complete	Completed
Review	Yes	Create/review and update emergency response plans at all active and new sites	Yes	Review of Crisis Management Plan completed and active Emergency Response Plans updated	Yes	Yes	Yes
Training	Yes	Train all personnel as appropriate related to any changes or updates to existing plans	Yes	Updated and trained East Kemptville Project personnel	Yes	Yes	Yes
Energy Use and GHG Emissions Management							
Energy use management systems	B	Continue to investigate options for clean energy at Separation Rapids Project	B	Energy measurement continued during drilling at East Kemptville Project; clean energy options investigated for Separation Rapids Project	B	B	B
Energy use reporting systems	B	Expand energy reporting to additional projects, pending financing	B	No material work completed at Separation Rapids; Avalon tracks and reports Scope 1-3 emissions	B	B	B

TSM Performance Indicator	FY2017 Target	FY2017 Action Plan	FY2016 Actual	FY2016 Action Taken	FY2016 Target	FY2015 Actual	FY2014 Actual
Energy intensity performance targets	C	Efficiency targets will be utilized when production is initiated	C	No additional action planned for present project status; Avalon tracks Scope 1-3 emissions	C	C	C
GHG emissions management systems	B	Submit information on monitoring and regulatory issues to the Prospectors and Developers Association of Canada (PDAC); will continue to monitor and comment on developing regulation	B	No material energy use at Separation Rapids Project; monitored and commented on pending greenhouse gas regulations; R&D identified significant energy reductions for process work at the Separation Rapids Project, see page 11	B	B	C
GHG reporting systems	B	Add energy management to Separation Rapids Project and other projects if material work completed and report in 2017 Sustainability Report	B	No material energy use at Separation Rapids Project; provided GHG emission monitoring information to PDAC	B	B	B
GHG intensity performance targets	C	Include energy intensity targets related to production when producing		No product, thus no production intensity targets	C	C	C

Health and Safety (HS)

HS Policy, commitment and accountability	A	Continue to monitor regulation and industry for best practices	A	Monitored HS regulatory changes; provided HS Management System training at PDAC conference	A	A	A
Planning, implementation and operation	A	Conduct risk assessments and prepare safety management plans for new projects as appropriate	A	Drilling from barge at East Kemptville site not initiated; completed risk assessments and prepared safety management plans for East Kemptville special projects	A	A	A
Training, behaviour and culture	AA	Train all personnel as appropriate for new project or new work activities/sites	AA	Barge drilling not completed; staff trained for other special projects	AA	AA	AA
Monitoring and reporting	A	Continue to report leading and lagging indicators at material projects	A	Completed reporting of indicators as appropriate	A	A	A
Performance	AA	No recordable accidents	AA	No recordable accidents	AA	AA	AA
Tailings Management	N/A	Finalize East Kemptville Project tailing study and due diligence; assess tailing management options for East Kemptville and Separation Rapids Projects	N/A	Industry and regulatory monitoring continued; due diligence of East Kemptville Project and external study of East Kemptville Tailing Management Facility (TMF) largely completed at year end; prepared conceptual TMF for Separation Rapids Project	N/A	N/A	N/A

GRI Index

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
Strategy and Analysis		
G4-01	CEO Statement	See President's Message.
G4-02	VP, Sustainability Statement	See VP, Sustainability Message.
Organizational Profile		
G4-03	Organization Name	Avalon Advanced Materials Inc. (the Company.) Note the Company changed its name from Avalon Rare Metals Inc. in February 2016.
G4-04	Primary Brands, Products, Services	Avalon is a mineral resource exploration and development company that owns six projects across Canada, all potential sources of critical materials for sustainable technologies.
G4-05	Headquarters Location	Toronto, Ontario, Canada.
G4-06	Locations of Operations	Canada.
G4-07	Legal Form	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.
G4-08	Markets Served	As none of Avalon's projects are currently in production, the Company does not yet serve any market with a product or service, but is targeting the clean tech sector where new demand is being created for elements such as lithium.
G4-09	Scale of Organization	See Avalon's 2016 Year End Financial Statements available publicly on SEDAR and EDGAR.
G4-10	Employee Metrics	As of the 2016 fiscal year end (FY2016), Avalon has 14 permanent, full time employees (four female, ten male) and one female part time employee. The entire permanent workforce is based in Toronto, Ontario, Canada. Avalon employs contracted individuals in some corporate roles, as well as project site roles as needed.
G4-11	Collective Bargaining	None.
G4-12	Description of Supply Chain	Avalon purchases goods and services to develop the properties Avalon owns and does not currently sell any products or services.
G4-13	Significant Changes during Period	No significant changes during FY2016 in Avalon's ownership, scale or supply chain.

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
G4-14	Precautionary Approach	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.
G4-15	External Initiatives	Avalon has publicly subscribed to the principles and practices of the Prospectors and Developers Association of Canada's e3 Plus and the Mining Association of Canada's Towards Sustainable Mining framework.
G4-16	Memberships	See Table 1 on page 48.
G4-17	Entities Covered in Financial Statements	See Avalon's 2016 Year End Financial Statements available publicly on SEDAR and EDGAR. All entities covered. One change to note: Avalon Rare Metals Processing LLC was dissolved in March 2016.

Identified Material Aspects and Boundaries

G4-DMA	Generic Disclosures on Management Approach	See Avalon's 2016 Year End Financial Statements with Management Discussion and Analysis available publicly on SEDAR and EDGAR.
G4-18	Defining Report Content	See 'Defining Report Content, Materiality, and Boundaries' on page 49.
G4-19	Material Aspects	See 'Defining Report Content, Materiality, and Boundaries' on page 49.
G4-20	Aspect Boundary - Internal	See Table 2 on page 49.
G4-21	Aspect Boundary - External	See Table 2 on page 49.
G4-22	Restatements	There have been no restatements of publicly released material during FY2016.
G4-23	Changes in Scope and Boundary	See 'Defining Report Content, Materiality, and Boundaries' on page 49.

Stakeholder Engagement

G4-24	Stakeholders	See 'Defining Report Content, Materiality, and Boundaries' on page 49.
G4-25	Identification of Stakeholders	See 'Defining Report Content, Materiality, and Boundaries' on page 49.
G4-26	Stakeholder Engagement	See Table 3 on page 51.
G4-27	Stakeholder Topics and Concerns	See 'Engagement and Communications with Communities of Interest' on page 50.

Report Profile

G4-28	Reporting Period	September 1, 2015 to August 31, 2016 (FY2016).
G4-29	Date of Prior Report	November 30, 2015.

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
G4-30	Reporting Cycle	Annual.
G4-31	Company Contact	Avalon's VP, Sustainability, Mark Wiseman, can be reached at sustainability@AvalonAM.com or +1-416-364-4938.
G4-32	In Accordance Option Chosen	The Report has been prepared within the framework of the Global Reporting Initiative, version G4 and self-assessed as Core.
Assurance		
G4-33	External Assurance	This Report has not been externally assured.
Governance		
G4-34	Governance Structure	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: About - Directors and Committees.
G4-35	Delegation of Authority	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. Policies are found on Avalon's website at About – Governance.
G4-36	Executive Level Positions	The President and CEO 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, risk management program 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.
G4-37	Stakeholder Consultation with Highest Governing Body	Avalon's Board of Directors is updated by the management team on relevant developments. Communities of Interest may contact the appropriate manager for consultation, most frequently through the VP, Exploration, VP, Sustainability, CEO or IR Manager. The Chair of the Board is accessible to Community of Interests' outreach on concerns.
G4-38	Composition of Highest Governance Body	For further information, see Avalon's website: About - Directors and Committees.
G4-39	Chair of highest Governance Body	Mr. Brian MacEachen is non-executive Chair of Avalon's Board of Directors.
G4-40	Nomination Process for Highest Governance Body	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 CEO.

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
G4-41	Process for Conflicts of Interest	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.
G4-42	Role in Development and Approval of Company Values, Strategy, Policies and Goals	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.
G4-43	Development and Enhancement of Knowledge	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, 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.
G4-44	Highest Governance Performance Evaluation	The Board of Directors conducted a self-assessment, including sustainability, during 2015 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 are planned to be conducted in the future that will include performance in respect to governance of economic, environmental and social topics. No assessments were conducted in the FY2016.
G4-45	Identification & Management of Risk	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 practice includes a formal process to identify, evaluate, rank, mitigate, monitor and assign responsibility for all types of risks facing the Company including economic, reputational, external, design, construction, operational, environmental and closure related risks. High level and moderate risks must be regularly monitored and mitigated to within acceptable levels. 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. No training was necessary in FY2016 due to level of project activity at site. A Crisis Management Plan has also been developed in support of serious site emergencies and others with potential to have major impacts on the Company.
G4-46	Risk Management Effectiveness Review	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 and are reviewed by 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 project status or phase.
G4-47	Review Frequency	Risk is always at the forefront of Directors' minds as they are making decisions regarding capital expenditures, finance, political initiatives, safety and environment. Avalon's VP, Sustainability, and CEO communicate risk profiles to the Board as needed throughout the year.

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
G4-48	Highest Sustainability Position to Review Report	The VP, Sustainability, and the Sustainability Advisory Committee (which includes a member of the Board of Directors) review the Sustainability Report.
G4-49	Communicating Critical Concerns	During Board meetings, the Board of Directors receive regular input from Avalon's management team with regard to health and safety, 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.
G4-50	Nature & Number of Critical Concerns	There were no critical concerns to Avalon over the course of FY2016.
G4-51	Remuneration Policies for Highest Governance Body & Senior Executives	As the mining industry has significant mobility and high competition for experienced executives, the Compensation, Governance and Nominating (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 its executive officers, including the 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. New employees are attracted to this potential remuneration as they foresee a lasting future with Avalon. 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 2016 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.
G4-52	Process to Determine Remuneration	Senior Executive compensation is governed through the approval of the CGN 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.
G4-53	Stakeholder Views on Remuneration	Remuneration at Avalon follows the prevailing conditions of the market. The issue of remuneration was not raised as an issue in FY2016 at the Company's Annual General Meeting.

Ethics and Integrity

G4-56	Company Values, Principles, Standards and Norms	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.
G4-57	Internal/External Advice Mechanisms Regarding Integrity	In addition to the suite of governance policies, including the Company's Code of Business Conduct and Ethics, Avalon employs both in house and external legal counsel to advise on ethical and lawful behaviour matters. Avalon's in house counsel is part of the Avalon management team and is engaged on Avalon's day to day business activities.

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
G4-58	Internal/External Reporting Mechanisms Regarding Integrity	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.

Economics

G4-EC1	Direct economic value generated and distributed	See Table 4 on page 51.
G4-EC3	Coverage of the organization's defined benefit plan obligations	Avalon has no defined benefits plan.
G4-EC4	Financial assistance received from government	In FY2016, Avalon received $95,000 under the Mineral Incentive Program from the Province of Nova Scotia, to support Avalon's 2015 drilling program at its East Kemptville Tin-Indium Project. Avalon also received a total of $36,000 under the New Brunswick Junior Mining Assisstance Program from the Province of New Brunswick in support of Avalon's exploration programs at its Miramichi Tin and Mount Douglas Tin Projects.
G4-EC7	Development and impact of infrastructure investments and services supported	There were no infrastructure developments, services or investments supported by Avalon during FY2016.
G4-EC9	Proportion of spending on local suppliers at significant locations of operation	See Tables 5, 6, 7 on pages 51/52.

Environmental

G4-EN03	Energy consumption within the organization	Avalon consumed 788.1 gigajoules (GJ) internally over FY2016. See Table 8 on page 52 for year over year comparisons.
G4-EN04	Energy consumption outside of the organization	Avalon consumed 535.2 GJ externally over FY2016. See Table 8 on page 52 for year over year comparisons.
G4-EN06	Reduction of energy consumption	The primary energy consumers are drill campaigns and executive travel. Avalon has successfully reduced drill camp energy use with more efficient use of camp supply planes, battery energy storage, solar panels and more efficient heaters, but has yet to find opportunities to reduce drill energy consumption.
G4-EN08	Total water withdrawal by source	Avalon withdrew approximately 1,395,765 litres of water from the Baby Pit on the East Kemptville Tin-Indium Property in Nova Scotia. This was for diamond drilling purposes. See Table 9 on page 52 for more information.
G4-EN09	Water sources significantly affected by withdrawal of water	No water sources were significantly affected by water withdrawal. Approximately 1.16% of the water within the Baby Pit was withdrawn; this allows for ample time for the water level to equilibrate with the water table. During drilling operations pH and dissolved solids were monitored continuously in order to detect any significant changes as they occurred.

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
G4-EN10	Percentage and total volume of water recycled and reused	It is estimated that 80% of the water removed from the Baby Pit was returned in the normal course of drilling. The remaining 20%, which was not returned, was due to water loss while drilling. Net of evaporation, this water returns to the local groundwater system via rock fractures, as does some of the water from the Baby Pit.
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	The East Kemptville Project, located in Nova Scotia, Canada is located adjacent to the Tobeatic Wilderness Area on the northern boundary of the property.
G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	None. At this time, Avalon has no material construction, manufacturing plants, mines or transportation infrastructure that have potential to have significant impacts on biodiversity in protected areas and areas of high biodiversity value outside protected areas.
GR-EN13	Habitats protected or restored	Please refer to G4-MM01.
G4-EN14	Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	There were no IUCN "Red List" species identified living on site during the SARA study at the Separation Rapids Lithium Project. Additional work may be required, pending a decision on a potential power line route. A preliminary SARA study has been initiated at the East Kemptville Tin-Indium Project, but is on hold pending project processing decisions. At the Nechalacho Project, in addition to the potential for a number of 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." It is noted that effort and participation is also ongoing with respect to the Bathurst Caribou herd and associated Range Plan development. Avalon participates with MAC regarding input to applicable ECCC species recovery plans.
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	Avalon generated total Scope 1 Emissions of 46.54 Tonnes of CO_2e. See Table 8 on page 52 for year over year comparisons.
G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	Avalon generated total Scope 2 Emissions of 7.65 Tonnes of CO_2e. See Table 8 on page 52 for year over year comparisons.
G4-EN17	Other indirect greenhouse gas (GHG) emissions (Scope 3)	Avalon generated total Scope 3 Emissions of 39.55 Tonnes of CO_2e. See Table 8 on page 52 for year over year comparisons.
G4-EN19	Reduction of greenhouse gas (GHG) emissions	Avalon generated 40.39 Tonnes less CO_2e in FY2016 vs. FY2015. This was primarily due to a decrease in executive travel and less drilling.
G4-EN20	Emissions of ozone-depleting substances (ODS)	Avalon currently does not measure the release of ODS, as these are not a material component of the company's emissions at this time.

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
G4-EN21	NOX, SOX, and other significant air emissions	NO_x 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 NO_x t calculated separately, then converted to CO_2e. SOX is not a material component of the Company's emissions at this time.
G4-EN22	Total water discharge by quality and destination	See EN-10 above.
G4-EN23	Total weight of waste by type and disposal method	See Table 11 on page 53 for breakdown of waste type and year over year comparison.
G4-EN24	Total number and volume of significant spills	Avalon had no significant spills during the course of FY2016.
G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	None.
G4-EN32	Percentage of new suppliers that were screened using environmental criteria	In September 2015, Avalon updated and finalized its Sustainability Questionnaire, which is to be included as a component in all Requests for Proposals sent out by Avalon; however, it has been noted that the Questionnaire is too detailed for small suppliers, and a formal process to determine and ensure what contracts require the use of this screening system needs to be implemented.
G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	There were no grievances regarding environmental impacts filed during the course of FY2016.

Human Rights

G4-HR02	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	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.
G4-HR03	Total number of incidents of discrimination and corrective actions taken	Avalon had no incidents of discrimination at any of its work sites over the course of FY2016.
G4-HR10	Percentage of new suppliers that were screened using human rights criteria	Avalon's Sustainability Questionnaire includes human rights criteria, and the Company has successfully initiated its use on a number of contracts; however, it has been noted that the Questionnaire is too detailed for small suppliers, and a formal process to determine and ensure what contracts require the use of this screening system needs to be implemented.

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
G4-HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	Avalon had no human rights grievances filed over the course of FY2016.

Labour Practices and Decent Work

G4-LA01	Total number and rates of new employee hires and employee turnover by age group, gender and region	No fulltime employees were hired during the reporting period.
G4-LA02	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	All full time and permanent part time employees of Avalon receive full benefits from the Company. Fixed term, temporary employees do not.
G4-LA03	Return to work and retention rates after parental leave, by gender	Avalon has currently had 100% of those taking parental leave return to the Company upon their leave completion. Avalon currently has one female employee on parental leave who is expected to return to work in early 2017.
G4-LA05	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	100% of Avalon full time and permanent part time employees are covered by formal joint management-worker health and safety committees.
G4-LA06	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	Avalon had no injuries, occupational diseases, lost days or absenteeism due to workplace injury, or any fatalities on any of its work sites over FY2016. See Table 12 on page 53 for a year over year comparison of Avalon's Safety Metrics.
G4-LA09	Average hours of training per year per employee by gender, and by employee category	See Tables 13 and 14 on page 54 for a full breakdown of Employee Training Metrics. Note that one male employee had 104 hours of professional development, while another male employee had 80. This has the effect of skewing the data for the male metrics for a small company.
G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	100% of permanent employees take part in an annual performance review, conducted by their direct supervisor, Department Head, or Board of Directors as determined by the employment category.
G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	See Tables 15 and 16 and Chart 1 on pages 54/55 for full breakdown of Board of Directors, and employee gender, age group, by employee category. Note that in Chart 1, Donald Bubar is counted twice, as both President & CEO of the Company, and as a member of the Board of Directors.

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
G4-LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	Avalon received no grievances as pertains to labour practices, via either formal or informal mechanisms.

Society

G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	Zero. Avalon is committed to proactively meeting with its local Communities of Interest at each of its active project sites. During FY2016, Avalon's level of engagement with Communities of Interest was commensurate with the level of activity occurring at each project. Community engagement and information exchanges occurred throughout FY2016 in respect of 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. A social and environmental impact assessment document for the East Kemptville Project is presently on hold pending process decisions. As indicated previously, Avalon has completed its impacts assessment for Nechalacho and has developed draft community engagement plans for review and comment and signed two agreements (see page 10 and 24 of Avalon's 2014 Sustainability Report). Avalon engaged on the renewal of the Nechalacho exploration permit in FY2016.
G4-SO2	Operations with significant actual and potential negative impacts on local communities	Zero. Given that only low impact exploration activities have taken place at Avalon's projects, there have been no known negative significant impacts from Avalon's activities on local communities. Prior to development proceeding, each project undergoes a rigorous environmental assessment process to evaluate the potential environmental and social impacts and mitigation measures. To be approved, the assessment and evaluation process must determine that the project would result in no significant adverse effects.
G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	Avalon had no significant fines, nor any non-monetary sanctions levied against the organization in FY2016.

Mining and Metals Supplement

G4-MM01	Amount Of Land (Owned Or Leased, And Managed For Production Activities Or Extractive Use) Disturbed Or Rehabilitated	Avalon maintains an inventory of all land claims and land disturbed and rehabilitated in each year. As a result of the acquisition through option agreements of the Mount Douglas and Mascarene properties, both in southern New Brunswick, there was a net increase of 1,975 hectares of Mineral Claims. This was offset by the release of the 4,338 hectare Miramichi claims for a net decrease of 2,363 hectares. During FY2016, only minor changes in areas disturbed and rehabilitated were made. Since last reported in Avalon's 2013 Sustainability Report: at the Nechalacho Project, a fire break was installed to protect the drill core storage, due to the extreme fire risk in the summer of 2014, while the area where trees were removed in 2014 for early construction activity has been deemed rehabilitated. This is due to the intentional lack of soil disturbance during the cutting of the large trees only, without the use of heavy equipment. With the lack of soil and undercover disturbance, natural rehabilitation since then is now well advanced and no additional rehabilitation will be required. Overall, this resulted in a net decrease in disturbed area of 2.5 hectares. At East Kemptville, the 0.29 hectares disturbed in FY2014 have been rehabilitated, and an additional 0.54 hectares disturbed in the FY2015/16 have been revegetated. All areas at East Kemptville were considered sufficiently rehabilitated that the Government of Nova Scotia returned the financial assurance relating to potential disturbance during drilling activities.

Standard Disclosure	Standard Disclosure Title	2016 Reference/Comments
G4-MM02	The Number And Percentage Of Total Sites Identified As Requiring Biodiversity Management Plans According To Stated Criteria, And The Number (Percentage) Of Those Sites With Plans In Place	See 'Biodiversity Management' on page 55.
G4-MM03	Total Amounts Of Overburden, Rock, Tailings, And Sludges And Their Associated Risks	Avalon has not produced any material waste quantities at any of its project sites. Avalon has not yet acquired any surface rights at any of our sites such that any other historical wastes in the vicinity of these projects are not the responsibility of Avalon. Drill cuttings at the East Kemptville property were disposed of at site in an area approved by the land owner for such disposal.
G4-MM05	Total Number Of Operations Taking Place In Or Adjacent To Indigenous Peoples' Territories; Formal Agreements	Zero. Avalon has no operations, but has three advanced projects near Indigenous Peoples. Avalon has signed formal agreements with the Deninu K'ue First Nation and the Northwest Territory Métis Nation, and advanced agreements with others in the NWT. Avalon has an MOU with the Wabaseemoong Independent Nations and initiated discussion with the Métis Nation of Ontario at the Kenora site, and initiated discussions with the Acadia First Nation near the East Kemptville site.
G4-MM06	Number And Description Of Significant Disputes Relating To Land Use, Customary Rights Of Local Communities And Indigenous Peoples	Avalon had no minor, nor significant disputes relating to land use, customary rights of local communities, or Indigenous people.
G4-MM07	The Extent To Which Grievance Mechanisms Were Used To Resolve Disputes Relating To Land Use, Customary Rights Of Local Communities And Indigenous Peoples	Avalon had no land use grievances reported in FY2016, therefore, grievance mechanisms were not used to resolve non-existent disputes.
G4-MM10	Number And Percentage Of Operations With Closure Plans	100% of Avalon's three active 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 all projects. Please see the FY2016 Year End Financial statements for details of the financial provisions.

GRI Data & Commentary

Table 1. Organization Memberships

Association	Involvement/Membership Level
Association for Mineral Exploration British Columbia	Health and Safety Committee Member
Canadian Diamond Drilling Association	Member
Canadian Rare Earth Elements Network	Founding Member Executive Committee Member
Mineralogical Association of Canada	Councillor
Mining Association of Canada	Member of the Board Environmental Committee Member Science Committee Member Northern Affairs Committee Member
NWT & Nunavut Chamber of Mines	Member of the Board
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
Metallurgical Society of Canada Rare Earth Element Symposium	Organizing Committee Member
ITRI (International Tin Research Institute)	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
International Standards Organization (ISO) TC298 Canadian Mirror Committee	Committee Member
Association of Professional Geoscientists of Nova Scotia	Member
Northwest Territories Association of Professional Engineers and Geoscientists	Member

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

Defining Report Content, Materiality, and Boundaries

Avalon's materiality assessments inform the Company's disclosure strategy, sustainability report design and Communities of Interest (COI) communications. In preparation to transition to the Global Reporting Initiative (GRI)'s G4 global reporting standards in 2014, Avalon conducted an internal materiality assessment, including identifying Avalon's key COI. In 2016, Avalon determined it was appropriate to re-conduct the internal materiality assessment, including re-assessing key COI.

Avalon appointed a multidisciplinary sustainability report working group composed of management and non-management level employees to lead the initiative, compile relevant information and conduct the materiality assessment. The sustainability report working group identified the Company's COI and the aspects that are most important to them (and the Company) in terms of their wider economic, environmental and social impacts. This review was aided by feedback received though Avalon's various engagement efforts, previous Avalon sustainability reports and Avalon's risk assessments.

This information was reviewed and discussed with senior management for completeness, and to assess the materiality ranking of each of the identified aspects, including changes since 2014.

The output of this process identified thirteen aspects as having the highest priority and materiality to the Company's objectives, organized into two tiers of Most Material and Material.

This sustainability report covers the Company's progress in all of these aspects, with greater emphasis placed on those that are most material and have highest priority to Avalon and the Company's COI. In alphabetical order:

Most Material Aspects:

- Economic Performance
- Health & Safety
- Local Communities
- Water

Material Aspects:

- Biodiversity
- Closure Planning
- Compliance
- Effluents & Waste
- Emissions
- Employment
- Energy
- Outreach
- Procurement Practices

Please see page 24 to view Avalon's discussion of management's approach to these Aspects.

The term "Communities of Interest" collectively refers to all of the groups identified below. The issues and concerns of Avalon's COI were considered when Avalon developed the Company's sustainability report content. In 2016, Avalon determined these groups are key to the Company's success and are most impacted by Avalon's activities, in alphabetical order:

- Aboriginal Governments & Organizations
- Academia & Industry Associations
- Employees & Contractors
- End use Customers & Potential Partners
- Government
- Investors & Financial Institutions
- Local Communities
- Non Profit Organizations
- Regulators

Table 2. Material Aspects by Boundary and COI Impacted

Aspect	Boundary	COI Potentially Impacted
Economics	Both	All
Water	Both	Local Communities
		Aboriginal Governments & Organizations
		Government & NGOs
		Investors & Financial Institutions
		Employees & Contractors
		Regulators
Health & Safety	Both	Employees & Contractors
		Local Communities
		Aboriginal Governments & Organizations
		Governments & NGOs
		Investors & Financial Institutions
		End use Customers & Potential Partners
Local Communities	External	Employees & Contractors
		Local Communities
		Aboriginal Governments & Organizations
		Governments & NGOs

Engagement and Communications with Communities of Interest

Due to the rapid pace of development and the active participation of Avalon's Manager, Investor Relations, Ron Malashewski (who lives near the project), the largest proportion of engagement and communication activity during FY2016 was at the Separation Rapids Project. Avalon's engagement at the East Kemptville Project remained similar to 2015 levels, due largely to the fact that the metallurgical and engineering option evaluations were ongoing at year end. Thus, the final development model was not finalized for the East Kemptville Project, upon which to base significant additional communications. Communications and engagement at the Nechalacho Project continued to decrease, focusing on the renewal of the exploration permit and some regulatory changes.

Separation Rapids Lithium Project

The main engagement activities at Avalon's Ontario Separation Rapids Project focused on:

- Regular update meetings with the Kenora mayor, city officials and economic development personnel;
- Regular updates to the Federal and Provincial representatives via meetings, calls and news releases;
- Several meetings with regulators, including site visits, to update them on the project and discuss the permitting process;
- Meetings with the Wabaseemoong Independent Nations were held on a wide variety of topics ranging from project updates, economic development and potential business opportunities. Early discussions were also held with the Métis Nation of Ontario; and
- A discussion around education, ranging from the Avalon CEO addressing the local Wabaseemoong Independent Nations' school graduation class to discussions with Seven Generations Education Institute: a local accredited institution with programs that can be adapted to work in the mining resource sector.

Additional development work is anticipated in 2017. Pending a decision to move forward, a project description will be prepared to initiate more detailed engagement and to initiate the permitting process.

East Kemptville Tin-Indium Project

The following were the areas of communication for the East Kemptville Project in Nova Scotia:

- Meetings were held with the Tusket River Environmental Protection Association executive to discuss project developments as they related to environment;
- Contact with the Mi'kmaq community related to the ongoing core box business for the drilling program as well as providing project updates;
- Periodic meetings with Nova Scotia Communities of Interest related to site environmental studies;
- Discussions and site visits with university professors and students working on the East Kemptville ore body; and
- Regular updates with members of the Federal and Provincial political and regulatory staff.

Due to the additional work required to assess project options in order to develop an optimal project development model, a final model was not available for the extensive engagement originally anticipated. However, assuming a positive development model and funding support, engagement activity is expected to ramp up significantly in FY2017. An effort to improve the engagement reporting of local employees is also expected to improve engagement documentation in FY2017.

Nechalacho Project

Due to the low level of activity on the Nechalacho Project, engagement activities continued to decrease in FY2016. Avalon continued to monitor the Caribou Management Plan development and commented on several regulatory initiatives. The majority of the discussions in FY2016 were related to the successful renewal of the Nechalacho site Exploration Permit.

Multiple Project Engagement

This year, a new category of reporting was added. It was noted that often engagement activities are not specific to a single project. Activities such as invited attendance at Federal Round Tables on energy, mining, Indigenous Rights or discussions related to requested comments on Federal legislation will apply to all Avalon projects. As such, the category of Multiple Project Engagement was developed. This year, a total of 228 communications were of this nature, and reflect Avalon's leadership and reputation on issues of national significance.

Table 3. Engagement & Communications by COI and Project

	Multiple Project	Nechalacho, NWT			East Kemptville, NS			Separation Rapids, ON		
	2016	2016	2015	2014	2016	2015	2014	2016	2015	2014
Total Non- Aboriginal	55	78	267	468	105	97	75	361	372	89
Contacts (Non-Aboriginal)	46	62	169	298	88	55	75	259	117	74
Engagement (Non- Aboriginal)	9	16	98	170	17	42	0	102	255	15
Government/Regulators	9	36	249	345	64	80	28	356	369	89
Other	44	34	17	62	35	10	41	1	0	0
NGOs	2	8	1	61	6	7	6	4	3	0
Total Aboriginal	21	3	34	550	7	7	7	261	210	58
Contacts (Aboriginal)	20	3	27	466	6	7	7	193	81	43
Engagement (Aboriginal)	1	0	7	84	1	0	0	68	129	15
Aboriginal Government and Organizations	5	1	30	498	0	2	7	187	118	58
Aboriginal Business	16	2	4	52	7	5	0	74	92	0
Aboriginal Rights Violations	0	0	0	0	0	0	0	0	0	0

Table 4. Economic Value Generated and Distributed

Economic Value Generated & Distributed	FY2016	FY2015	FY2014	FY2013	FY2012
Revenue (Interest)	$35,160	$66,014	$88,075	$374,281	$1,105,731
Expenses	$3,990,945	$3,589,977	$5,934,427	$11,573,445	$12,257,925
Loss from Operations	-$3,955,785	-$3,523,963	-$5,846,352	-$11,199,164	-$11,152,194
Deferred Income Tax Recoveries	$416,140	$347,589	$115,771	$0	$0
Net Loss for the Year	-$3,539,645	-$3,176,374	-$5,730,581	-$11,199,164	-$11,152,194

Table 5. Expenditures by Vendor Group - Separation Rapids Project

	FY2016		FY2015		FY2014	
Aboriginal Vendors	0%	$2,289	3%	$12,277	2.6%	$10,641
Local Vendors	22%	$296,919	43%	$154,759	19.8%	$80,815
Other Vendors	78%	$1,048,489	54%	$193,096	77.6%	$315,711
Total		$1,347,697		$360,132		$407,167

Table 6. Expenditures by Vendor Group - East Kemptville Project

	FY2016		FY2015		FY2014	
Aboriginal Vendors	0%	$ -	2%	$18,000	0%	$ -
Local Vendors	22%	$273,059	34%	$321,700	80%	$229,787
Other Vendors	78%	$995,275	64%	$611,102	20%	$57,732
Total		$1,268,334		$950,802		$287,519

The bulk of the 2016 expenditure was for drilling activity completed by a qualified sustainable contractor from outside Nova Scotia.

Table 7. Expenditures by Vendor Group - Nechalacho Project

	FY2016		FY2015		FY2014		FY2013		FY2012	
Aboriginal Vendors	0%	$245	3%	$36,628	4%	$290,187	6%	$999,426	7%	$2,123,233
Local Vendors	30%	$58,883	20%	$232,115	7%	$522,655	4%	$610,138	6%	$1,819,914
Other Vendors	70%	$140,122	76%	$868,488	89%	$6,527,102	90%	$14,724,326	87%	$26,388,749
Total		$199,250		$1,137,231		$7,339,944		$16,333,890		$30,331,895

Table 8: Company Energy Consumption (GJ)

	2016	2015	2014
Internal	788.1	730	4125.8
External	535.2	1248.3	1995.4

Avalon has defined Internal energy consumption as the energy associated with Scope 1 and Scope 2 Greenhouse Gas Emissions: energy sources that are either owned or controlled by the Company, as well as purchased electricity. External Energy consumption is the energy associated with Scope 3 Greenhouse Gas Emissions: generated from sources not owned or controlled by the Company (for example, executive travel). Scopes are as defined by the Greenhouse Gas Protocol, managed by the World Business Council for Sustainable Development and the World Resources Institute. Further information can be found here: http://www.ghgprotocol.org/about-ghgp

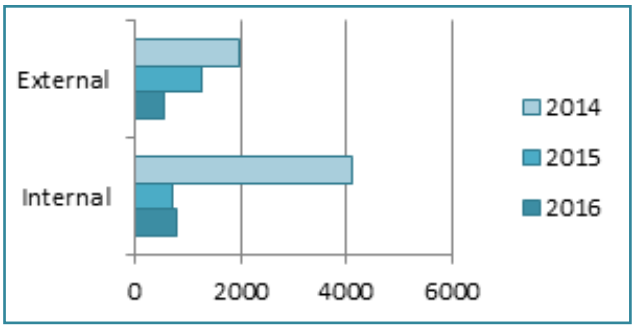


Table 9: Water Use at East Kemptville Drill Program

Year	Water Consumed	Metres Drilled	Litres of Water/ Metre Drilled	Source
2016	1,395,765	3,110	448.8	Baby Pit
2015	1,200,000	1,806	664.45	Baby Pit
2014	492,000	984	500	Baby Pit

Table 10. Greenhouse Gas Emissions (Tonnes CO_2e)

	2016	2015	2014
Scope 1	46.54	38.94	284.1
Scope 2	7.65	9.08	9.33
Scope 3	39.55	86.11	138.9
Totals	93.74	134.13	432.33

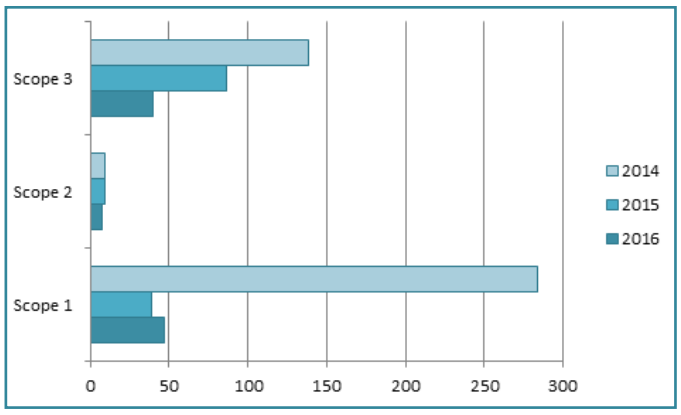


Table 11. Weight of Waste by Disposal Method in Tonnes

	2016	2015	2014
Compost	0.46	0.01	0.01
Reuse	0	14.03	0.55
Incinerated	0	3	1.5
Landfill	26.97	15.94	4.76
Recycle	2.89	30.71	4.28
Total	30.32	63.69	11.1

Table 12. Safety Performance (Frequencies per 200,000 hours worked)

	Lost Time Injury Frequency	Medical Aid Injury Frequencies	Total Recordable Frequency	Severity Frequency	Lost Time Injuries	Medical Aid Injuries	Total Recordable Injuries	Total Hours	Lost or Light Duty Days
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. There has not been a medical aid, or lost time incident involving an Avalon employee since 2012.

Table 13. Executive vs. Professional Employee Professional Development

	Cost	Time (hours)	Average Cost/ Employee
Executive – 7 Employees	$1,400	268	$200
Professional – 8 Employees	$1,284	167	$161
All Employees	$2,684	435	$179

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

Table 14. Female vs. Male Employee Professional Development

	Female – 5 Employees	Male – 10 Employees	Average Female	Average Male
Cost	$2,484	$200	$497	$20
Time (hours)	58.5	368.5	11.7	36.85

Table 15. Gender Breakdown of Board of Directors

	Board of Directors	Board of Directors
BoD - Male	5	83%
BoD - Female	1	17%

Chart 1. Age Distribution of Avalon Board, Employees

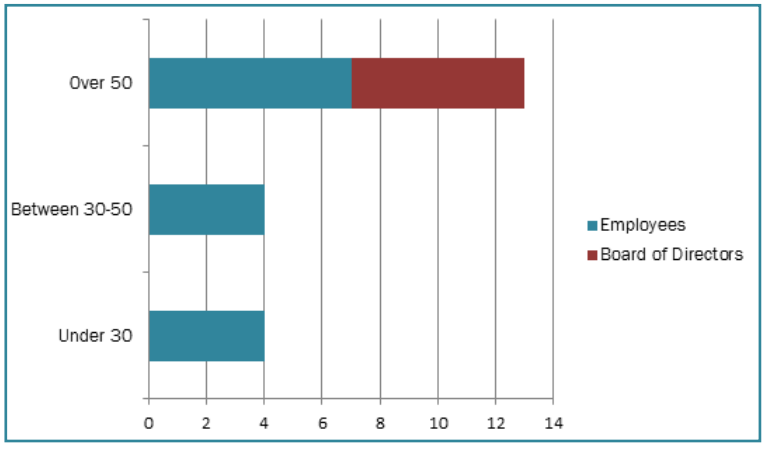


Table 16. Employee Age and Gender by Employment Category

	< 30 Female	30 - 50 Female	> 50 Female	< 30 Male	30 - 50 Male	> 50 Male
Professional	2	1	1	2	1	0
Executive	0	1	0	0	1	6
Total	2	2	1	2	2	6

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

Biodiversity Management

All three project sites with significant past or ongoing Avalon 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 stage of development, impacts to biodiversity are not significant.

At the Separation Rapids site, while not adjacent to areas of high biodiversity value, a SARA assessment has been completed. No species of concern were identified living at site. Additional assessment may be required pending a decision on electric power supply lines. An environmental baseline study has been completed and a closure plan filed 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 environmental and social impact assessment will be completed, including a BMP, prior to operations.

The East Kemptville site, located adjacent to the Tobeatic Wilderness Area (TWA), is a former mine site with existing waste rock and low grade ore stockpiles and a tailing management facility that generate acid mine drainage. The tailing management and water treatment facility has continued to operate since the site closure in the mid-1980s. As part of the evaluation regarding potential re-development of the site, an Environmental and Social Impact Assessment was initiated, but 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 the Mining Association of Canada - MAC Guiding Principles), a Species at Risk Act (SARA) assessment will be completed, and an environmental management plan will be developed.

Similarly, discussions with the local Mi'kmaq First Nations have been initiated. 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 TWA. Of note is that the TWA is upstream of East Kemptville, which significantly reduces potential risks. These plans will be in place prior to construction should the Project go ahead.

The Nechalacho Project is not adjacent to identified areas of high biodiversity value and does not have a formal Biodiversity Management Plan (BMP). It does, however, have in place a number of management plans as required by regulation for future permits that effectively comprise a BMP. These plans are available on the MVLWB public registry. The Project has been approved and discussions related to water license and land use permits are ongoing.

There are no significant environmental impacts at Avalon's other sites not discussed here.

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