



# Sustainability Progress Report

## Message from the Vice President, Sustainability

**Welcome** to Avalon's 2019 Sustainability Report, where we once again review our sustainability progress and goals. These initiatives make our projects more cost effective and decrease risk - adding to shareholder value while protecting the environment and generating benefits for our Communities of Interest.

Avalon has created development models designed to initiate production at modest scales utilizing simplified process technology. This staged-development approach has economic benefits in terms of lower capital requirements and reduced investment risk, but also environmental benefits through a much smaller operational footprint that also facilitates progressive site remediation through the life of the operation. In addition, the lower initial capital requirements create real opportunities for local Communities of Interest to become significant equity partners in the projects.

Within this section, I am pleased to provide a progress report on some of the work accomplished at Avalon's three advanced projects throughout the fiscal year.

### SEPARATION RAPIDS LITHIUM

The market for lithium minerals to serve the glass and ceramics industry is experiencing supply shortages, particularly for petalite: the principal lithium mineral contained in the Separation Rapids resource and in Avalon's nearby [Snowbank Pegmatite discovery](#). This has created new opportunities to attract development partners that are interested in Avalon's petalite product. Accordingly, Avalon began to make plans for the extraction of a 5,000 tonne bulk sample for trial processing in order to recover larger quantities of

petalite product for customer evaluation and process flowsheet optimization.

Accomplishments in the reporting period (September 1, 2018 - August 31, 2019) include:

- Avalon completed packer testing (a technique in which an inflatable bladder is used to isolate different regions of a borehole for measuring water flow through the rock) and ground water re-sampling at the Separation Rapids site, all without incident. The preliminary packer testing of the rock permeability between the English River and the proposed pit at Separation Rapids indicated that the rock was tight and little pit water inflow would be anticipated at this location. We will complete additional packer testing during the detailed pit geotechnical design process.
- We received the final report on the Environmental and Social Impact Assessment baseline validation report. The 2007 data has been validated and, other than environmental studies associated with the Fisheries Act, is now completed at the Separation Rapids site.
- Avalon met with Hydro One (electricity transmission and distribution utility serving Ontario) to review the initial hydro line route to site, and to discuss alternate hydro line route assessments. Throughout the process, Avalon discussed the power line route with local Indigenous groups to ensure they are aware of the proposed work.



## NECHALACHO RARE EARTH ELEMENTS

This year, Avalon signed an Agreement Sheet with Cheetah Resources Pty Ltd. (Cheetah) under which Cheetah will acquire ownership of the near-surface rare earth resources at the Nechalacho property for a total cash consideration of \$5 million. Cheetah intends to pursue the small scale development model conceived for the T-Zone by Avalon. This involves the use of similar ore-sorting technology to that being tested at East Kemptville to recover a rare earth mineral concentrate without the use of water for shipping elsewhere for final treatment.

Avalon managed the FY2019 work programs financed by Cheetah to our usual high levels of health and safety standards. Work included:

- Updating the Nechalacho emergency response plan;
- Restoring various communication modes for the Thor Lake camp, including a satellite internet system that had the merit of ease of installation by non-expert operators;
- Completing a risk assessment on the bulk sample extraction; and
- Completing a field program with no incidents at site, with the objectives of sampling for lithium and high grade rare earths in the T-Zone and for high grade, near surface rare earths in the Tardiff Lakes area.

Given that the Nechalacho camp had not been used in several years, Avalon made significant effort to rehabilitate the existing facilities. There were two positive inspections by the GNWT Land Use Inspector,



Avalon completed a field program with no incidents at the Nechalacho site, with the objectives of sampling for lithium and high grade rare earths in the T-Zone and for high grade, near surface rare earths in the Tardiff Lakes area.

and Avalon completed minor recommendations for improvements in a timely manner.

Following engagement with key Communities of Interest, Avalon obtained two year extensions of the early works Land Use Permit and Water License issued by the Mackenzie Valley Land and Water Board in February 2019. These are valid until April 2021 and May 2021 respectively. Avalon also obtained a new Exploration Land Use Permit in June (that will remain valid until June 2023) that among other things, allows for the extension of the existing airport to improve safety.

Finally, Avalon initiated work with the Yellowknives Dene First Nation (YKDFN) to access the National Trades Corridors Fund for a road and energy corridor from the Ingram trail to near the Nechalacho site. Avalon supported the YKDFN's Expression of Interest submission; however, the rest of the matching funds were unavailable. Avalon did have positive discussions with the government, who assured Avalon that a road and energy corridor along a similar route is still under consideration. Though this submission was ultimately unsuccessful, Avalon is pleased to have worked collaboratively with the YKDFN and the YKDFN-affiliated Det'on Cho Corporation. A road and energy corridor would result in significant reductions in Nechalacho capital and operating costs. It would improve safety and reduce energy and GHG production, as well as open up the area along the corridor for other potential mining, tourism, forestry and fishing. Road access also improves the safety of travel to the community by the people of Lutsel K'e and allows for shift scheduling, which is more flexible for workers with family obligations in their communities.

## LILYPAD CESIUM

The Lilypad Project is another critical mineral resource with unusual enrichment in the rare cesium mineral pollucite. Cesium demand is growing, but with very limited global supplies. Located near the well-known Ring-of-Fire district in Ontario, Avalon's Lilypad Project may soon benefit from improved access into the area and growing interest among local First Nations in supporting more economic development in the area.

Following the election of new leadership there in 2019, communications resumed with the Eabametoong First Nation at the nearby community of Fort Hope. All claims are in good standing and Avalon plans to resume field work there in 2020.



Core samples from Avalon's Lilypad Project. These pegmatites are host to cesium-tantalum mineralization, seen in the light grey/purple lepidolite and also the pink tourmaline and sky-blue albite.

## UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

This year, Avalon has integrated the United Nations 17 Sustainable Development Goals (SDGs) into our sustainability reporting. 17 SDGs were set by the UN in 2015 and are the world's shared plan to end extreme poverty, reduce inequality and protect the planet by 2030. You can read more about the UN SDGs at: [www.UNFoundation.org](http://www.UNFoundation.org).

Governments worldwide have already agreed to the SDG goals, now businesses also need to step up. Avalon used the SDG Compass, developed by the Global Reporting Initiative, UN Global Compact and World Business Council for Sustainable Development, to align our sustainability progress and goals with the SDGs. This will measure and manage our own small contribution towards these lofty global goals. Please see this Report's United Nations SDG section starting on [page 25](#) for more information.

## THANK YOU

As always, thank you to our audience for continuing to support Avalon as we strive to lead the mineral exploration and development industry to higher standards of health and safety, sustainability and environmental stewardship. As well, my personal thanks to Avalon's Board of Directors, members of the Sustainability Advisory Committee and the sustainability reporting team for continuing to produce and support this quality documentation of the path to critical mineral production.

Sincerely,



Mark Wiseman

## HEALTH & SAFETY

Company representatives continue to lead the one day health and safety course at the Prospectors and Developers Association of Canada (PDAC) conference in Toronto since Avalon initiated the course in 2012. Strong health and safety performance contributes to efficient work sites, less down time due to accidents and improved employee morale and productivity. I am pleased to report that Avalon had no accidents in FY2019 and that all accident and injury rates remained at 0.0 for the year.

## ENERGY & CLIMATE CHANGE

As a member of the Mining Association of Canada (MAC)'s Science and Environmental Committees and Community of Interest Panel, Avalon is kept informed about tailings management best practices, ongoing regulatory initiatives (including those associated with climate change) and NGOs' concerns. In FY2019, Avalon participated in a multi-stakeholder committee, representing the exploration industry, which is preparing a guidance document for climate change risk assessment. Evaluating such risks is becoming increasingly important in the investment and insurance industry and is anticipated to represent industry best practice.

Avalon is leading the development of an education program regarding exploration, including environmental impacts, financing and engagement, which will potentially have a wide range of applications including schools, regulators, NGOs and MAC's Community of Interest Panel. The information demonstrates the small scale and low impact of exploration; educates on exploration financing; and discusses sustainability best practice and benefits.