Appia Rare Earths & Uranium by the numbers

written by | July 25, 2022

Appia Rare Earths & Uranium Corp. (CSE: API | OTCQX: APAAF) recently reported results from its 2021 drilling program and work completed this year on its Alces Lake property in Northern Saskatchewan. While results are still pending from the 34 holes drilled at the recently renamed site Magnet Ridge (formerly Augier), other areas returned values as high as 14.95% TREO over 0.66 metres. This is high compared to most deposits. As of early July Appia has drilled over 14,000 metres in 2022 and plans to drill up to 20,000 metres this year, which should provide them with valuable information on the Alces Lake deposit. Magnet ridge is interesting as Appia has reported it outcrops at surface with a strike length of about 300 metres and a width of 175 metres, and has been penetrated to over 100 metres deep.

The mineral hosting the rare earths at Alces Lake is monazite. Monazite is regularly processed in China to produce rare earths, so making a concentrate and separating the rare earths is an established technology. In several jurisdictions, this could be a problem as monazite is typically associated with the radioactive elements Thorium (Th) and Uranium(U). However, it comes down to the old paradigm, location, location, location. Being situated in Saskatchewan, Appia is in a jurisdiction that understands radioactive materials and that they can be properly handled and stored, and in the case of uranium can be a valuable resource. The other advantage for Appia being in Saskatchewan is that the Saskatchewan Research Council is building a pilot plant for rare earth separation over the next 2 years. This will give Appia the ability to test their material locally, which is a significant advantage.

A 2020 Appia presentation indicates Neodymium (Nd) oxide levels of 17.4% and Praseodymium (Pr) oxide of 5.4% which gives a combined total of just under 23%. This is close to the Lynas levels from its Mt. Weld deposit, which Roskill's Market Outlook 2015 indicates to be 23.8%. The Mountain Pass Mine, the deposit in California owned by MP Materials, has Nd+Pr levels at 16.3%. so they would have to process up to 50% more material to get the same revenue levels as Appia or Lynas. In addition, Appia's report shows added value in Terbium (Tb) and Dysprosium (Dy). Looking at recent pricing in Shanghai Metal Markets (SMM), the Nd/Pr holds 87.8% of the total value. Terbium and Dysprosium add another 0.3%. This assumes that all the elements are sold, which typically is impossible, especially the Cerium, which is over 49% of the total volume. However, there may be markets in North America and possibly Europe for Cerium and Lanthanum. Their current price in China is $1.22 and $1.15 per kg respectively and freight can be a high proportion of the total cost of the product outside of Asia.

One way to look at the value of the deposit is to see what potential revenue can be generated from the four main magnetic elements (Neodymium, Praseodymium, Terbium and Dysprosium). Assuming the long range plans would be to build a 20,000 TPY plant, which is similar to the previous Molycorp output and just below the Lynas present output of around 22,000 TPY, their projected revenues would be around US$500 million per year. This assumes 90% recoveries and revenues only from Nd+Pr. Any sales of Cerium and Lanthanum would be minimal but an added bonus.

In addition, Appia has properties in the Elliot Lake area in Ontario. This is in the right area code as from the mid-late 1950s to 1990 there were 10 mines producing Uranium. Again location, location, location. Given the push for electric vehicles and the corresponding increase in electrical demand, countries are going to review their long term needs including

Germany and China, and possibly India, and given alternative producing options nuclear is a cleaner way than coal or gas to produce electricity. Also given the current Russian situation more focus will come on nuclear and correspondingly Uranium. Thorium may also come into demand as it can reduce the operating temperature and thereby improve safety.

All things considered, Appia has an interesting opportunity and with the grades shown so far, and is poised to take the next steps to becoming a potential domestic producer of rare earths.

Jack Lifton with Geoff Atkins on Vital Metals' expected 2021 rare earths production start at Nechalacho

written by InvestorNews | July 25, 2022

The Technology Metals Show host Jack Lifton talks with Geoff Atkins, Managing Director of Vital Metals Limited (ASX: VML), about Vital Metals' planned production at its Nechalacho rare earths project in Canada. "In terms of the time frame, we are currently working on a schedule to commence production next year," Geoff said.

In the interview Geoff provided an update on Vital Metal's offtake agreements and business model. Vital Metals has a management team with experience in building and operating rare earth plants. He also explained what the company is doing to

ensure reduced capital cost and time to market.

To access the complete interview subscribe to the **Technology Metals Show** and get exclusive access to member-only content through this exclusive site. Or Log-In Here for the latest conversations, debates, updates and interviews with the leaders, thought leaders and investors focused on issues relating to sustainability in the critical materials sector.

For more information on the **Technology Metals Show** email us at info@technologymetals.com or reach us direct at +1 (416) 546-9233.

Geoff Atkins on Vital Metals' 2021 rare earths production and new extraction facility

written by InvestorNews | July 25, 2022

InvestorIntel's Tracy Weslosky speaks with Geoff Atkins, Managing Director of Vital Metals Limited (ASX: VML), about Vital Metals' Nechalacho rare earths project in Canada.

"Nechalacho is on track to be in production next year," Geoff said. "We are constructing an extraction facility with SRC [Saskatchewan Research Council] and that will take our product from Nechalacho and produce a mixed rare earth carbonate product."

Geoff went on to provide an update on Vital Metals' management team. "Our entire team has been involved in Lynas and some of

them have also been involved in Northern Minerals' Browns Range Project," he said. "We have 10-15 years' experience in building and operating rare earth plants."

Commenting on the competitive advantages of Vital Metals Geoff said, "The bottom line is about being low cost. From a capital cost perspective, we are looking at under AU$20 million to build this plant. The second is near term operation. We are going to be operation within 12 months."

To watch the complete interview, click here

Disclaimer: Vital Metals Limited is an advertorial member of InvestorIntel Corp.