

Technology Metals Report (01.19.2024): Rainbow Rare Earths Discovery, Middle East Critical Minerals Chess Play, and ANSTO Invests in Critical Minerals Research

written by Tracy Weslosky | January 19, 2024

Key highlights in this Technology Metals Report include significant developments such as Rainbow Rare Earths Limited's discovery in South Africa, China's unveiling of the new heavy rare earth mineral Bayanoboite-Y, and the Australian Nuclear Science and Technology Organisation (ANSTO)'s \$13.9 million funding for critical minerals research.

Fluctuations in Rare Earth Prices: Understanding the Dynamics

written by Tracy Weslosky | January 19, 2024

Rare earth elements, a crucial component in our modern technological world, have seen dramatic price fluctuations in recent months. I sat down with Alastair Neill, a Director for the Critical Minerals Institute (CMI), to get a better

understanding of these market dynamics.

Tom Drivas on Appia's Alces Lake Rare Earths Project with world-class grades

written by InvestorNews | January 19, 2024

"Appia is concentrating on the Alces Lake Project...It has world-class grades. We see grades up to 49-50% rare earths and a quarter of that is critical rare earths like neodymium and praseodymium." States Tom Drivas, CEO, President and Director of [Appia Energy Corp.](#) (CSE: API | OTCQB: APAAF), in an interview with InvestorIntel's Alastair Neill at [PDAC](#) 2020.

Tom went on to say that the Alces Lake Project has up to 80% monazite right on the surface making it the highest grade deposit in North America in terms of monazite and in terms of rare earths one of the highest grades in the world. The company is currently working with Saskatchewan Research Council (SRC) to advance the project into the next level in terms of processing.

To access the complete interview, [click here](#)

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The U.S. Rare Earths Supply Chain Challenge – Part 4

written by InvestorNews | January 19, 2024

In an ongoing series on how to solve the U.S. rare earths supply chain challenge, 3 Sr Editors from InvestorIntel and well-known Rare Earths Consultants debate on what are the skills needed to create a rare earths supply chain in North America.

Participants include Tracy Weslosky, InvestorIntel's Sr Editor, Publisher and Rare Earths Consultant; Jack Lifton, InvestorIntel's Sr Editor, Host and Rare Earths Advisor; and Alastair Neill, InvestorIntel's Sr Editor and Rare Earths Expert.

Alastair started by saying that there is no facility in the US to convert rare earth alloys to magnets. Jack continued by saying that "the US Department of Defence doesn't want any rare earth permanent magnet from China. The only thing they will accept from China is the raw material which the Chinese do not export. They want extraction, separation, metal making and alloy and magnet making done either in the US or in NATO or SEATO ally countries."

Alastair concluded the discussion by saying, "To achieve this goal it is going to take a couple of different skill sets. It is one set of skills to get something out of the ground and turn it into a separated oxide. That is completely different from metalization and alloy production and then getting into assembly. So you will need three special types of industries that need to be managed. That is where you have to have someone

with a vision to be able to bring that type of team together to be able to manage such a diverse set of skills.”

- To access the complete discussion, [click here](#)
 - To access Part 1 of this rare earths series, [click here](#)
 - To access Part 2 of this rare earths series, [click here](#)
 - To access Part 3 of this rare earths series, [click here](#)
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The U.S. Rare Earths Supply Chain Challenge – Part 3

written by InvestorNews | January 19, 2024

In an ongoing series on how to solve the U.S. rare earths supply chain challenge, 3 Sr Editors from InvestorIntel and well-known Rare Earths Consultants begin the debate on what are the challenges in creating a rare earths supply chain in North America.

Participants include Tracy Weslosky, InvestorIntel’s Sr Editor, Publisher and Rare Earths Consultant; Jack Lifton, InvestorIntel’s Sr Editor, Host and Rare Earths Advisor; and Alastair Neill, InvestorIntel’s Sr Editor and Rare Earths Expert.

Jack starts the debate with: “When you extract rare earths from ore you get a mixture of rare earths and other things that were in the ore that came out in the extract which is usually an acid. The first thing that you have to do is make a pregnant leach solution. What that means is that you put the metal values in the minerals into the solution. Then you separate out those

things that are not rare earths or rare earths that you don't really want for example cerium. Now that solution which is normally a hydrochloric acid extract goes into a separation system which in the US has only been a solvent extraction for light rare earths."

Alastair added "There are other companies looking at novel ways to separate rare earths in an environmentally friendly process to tackle this and compete with the Chinese. The benchmark is the Chinese separation cost which is about \$2.50 to \$3 a kilogram."

The experts panel also discussed some of the major problems in the North American rare earths supply chain. The panel discussed that the problem in the North American rare earths space is the absence of rare earth separation facility and metallization capability in North America.

- To access the complete discussion, [click here](#)
- To access Part 1 of this rare earths series, [click here](#)
- To access Part 2 of this rare earths series, [click here](#)

The U.S. Rare Earths Supply Chain Challenge – Part 2

written by InvestorNews | January 19, 2024

In an ongoing series on how to solve the U.S. rare earths supply chain challenge, 3 Sr Editors from InvestorIntel and well-known Rare Earths Consultants begin the debate on what is the actual formula to create a supply chain in North America.

Participants include Tracy Weslosky, InvestorIntel's Sr Editor, Publisher and Rare Earths Consultant; Jack Lifton, InvestorIntel's Sr Editor, Host and Rare Earths Advisor; and Alastair Neill, InvestorIntel's Sr Editor and Rare Earths Expert.

Alastair starts the debate with: "First of all the key is to find a deposit that has a reasonable cost structure and also reasonable content particularly the magnetic four – neodymium, praseodymium, terbium, and dysprosium because those will drive 85-90% of the revenue of any deposit. Then you have to be sure that you can convert that deposit into a concentrate and after that you have to be able to separate it into the oxides. When you talk about magnets you then have to go to the subsequent steps of conversion to metal and then into alloy before you can even get to the magnet manufacturing stage."

Jack added, "The first thing you do is ask the customer what he wants to buy. Then you can go upstream in the supply chain and find out what you need to do."

The experts panel also discussed the exploration and extraction plays in North America. Tracy said that some of the exploration plays in North America include [Avalon Advanced Materials Inc.](#) (TSX: AVL | OTCQB: AVLNF), [Search Minerals Inc.](#) (TSXV: SMY), Ucore Rare Metals, Imperial Mining Group, etc.

To access the complete discussion, [click here](#)

To access Part 1 of this rare earths series, [click here](#)

The U.S. Rare Earths Supply Chain Challenge – Part 1

written by InvestorNews | January 19, 2024

In an ongoing series on how to solve the U.S. rare earths supply chain challenge, 3 Sr Editors from InvestorIntel and well-known Rare Earths Consultants begin the debate on whether or not a rare earths supply chain can be built in the US.

Participants include Tracy Weslosky, InvestorIntel's Sr Editor, Publisher and Rare Earths Consultant; Jack Lifton, InvestorIntel's Sr Editor, Host and Rare Earths Advisor; and Alastair Neill, InvestorIntel's Sr Editor and Rare Earths Expert.

Jack Lifton starts the debate with: "Yes we can if the money is put forth and all of the skills necessary are there and even deposits are there. If you want to have the total rare earths that you need, for example, rare earth permanent magnets, you will need more than what is produced in the United States. You need to have Canadian content and Australian content. This is the base issue as the anchor of any supply chain is the raw material source. The issue here is money. No one in the United States, private or public, actually believes that the United States could produce rare earth permanent magnets competitively priced than those produced in China. I happen to believe we can."

In this debate the experts address some of the misinformation and myths in the rare earths industry including the cost of separating rare earths and that the rare earths business is a mining business. To access the complete discussion, [click here](#)