## Auxico Resources is making a splash in the rare earths world by shipping monazite from the DRC

written by Raj Shah | October 7, 2022

Auxico Resources Canada Inc. (CSE: AUAG) is a new entrant into the rare earth supply chain story. This year they have made 4 shipments of monazite sands concentrate from the Democratic Republic of Congo (DRC) totaling 720 tonnes of concentrate for a combined value of US\$3.8 million. Auxico keeps 15% of this amount or US\$570k and the balance going to Central American Nickel (CAN). Pierre Gauthier, a Montreal businessman, is the Chairman of Central American Nickel and Executive Director of Auxico Resources. Auxico has signed a sales agency agreement with CAN and according to their website the offtake agreement is for 5 years for a minimum amount of 18,000 tonnes of concentrate, or about 300 tonnes per month (TPM), and has a target of 1,000 TPM. The recent sale was analyzed to have approximately 60% total rare earth oxides (TREO) which is good and a Neodymium (Nd) level of 14.95% and Praseodymium (Pr) of 3.4%, which is higher than Mt. Pass levels.

Looking at the prices of Neodymium and Praseodymium from July, the sales price received is around 30% of the contained value of Nd and Pr, which is in the typical range paid by the Chinese for concentrate. No destination is indicated but China would be the logical destination. The only other places would be <u>Energy Fuels</u> <u>Inc.</u> (NYSE American: UUUU | TSX: EFR) in the USA which can handle monazite or possibly <u>Neo Performance Materials Inc.</u> (TSX: NEO) plant in Estonia. In the future, the Saskatchewan Research Council could also be a client once their pilot plant is completed. Since the middle of the year prices for Nd and Pr have dropped around 40%, so revenues per tonne should drop accordingly to around \$4,000 per tonne. Their goal is to reach 1,000 TPM by year end, which would generate total revenues of \$4 million/month or \$600K USD for Auxico as its monthly 15% share.

Two recent additions to Auxico are noteworthy. Frederick Kozak became President after having been President at <u>Appia Rare</u> <u>Earths & Uranium Corp.</u> (CSE: API | OTCQX: APAAF). He replaces Pierre Gauthier who had been Chairman and CEO. Also added to the board was <u>Melissa Sanderson</u>, a leader in ethically sustainable growth and previously served as a senior diplomat, including as Charge d'Affaires of the US Embassy in Kinshasa, DRC, so she brings on the ground experience to Auxico as it deals with ethically sourcing concentrate from North Kivu, DRC cooperatives. Melissa sits on the Board of the <u>Critical Minerals</u> <u>Institute</u>.

Auxico is also involved in projects in South America. Of note is the Massangana tin tailings project. In June of this year, Auxico announced an agreement with Cooperativa Estanifera de Mineradores da Amazoñia Legal Ltda. ("CEMAL") concerning the production of tin, niobium and rare earths from the Massangana tailings estimated to contain 30,000,000 tonnes in the State of Rondoñia, Brazil. As some of you know I am a fan of tailings as a source of critical minerals as the heavy lifting has already been done to get the material out of the ground. This deposit has 30 million tonnes of tailings. A study done by the German Mineral Resources Agency and the Geological Survey of Brazil indicates that three types of products could be generated from the tin tailings: (A) a monazite concentrate; (B) a columbite Concentrate; and, (C) a cassiterite concentrate. According to their press release the following concentrates can be produced: The TREO level in the tailings is better than some greenfield mines being promoted currently.

As noted in Auxico's June press release a feasibility study is to be done to process 3 million tonnes per year which would give a project life of 10 years. The objective of this project is to produce 135,000 tonnes of monazite concentrate per year, 19,500 tonnes of cassiterite concentrate (tin), and 45,000 tonnes of columbite concentrate (50% niobium + 5% tantalum). If the monazite concentrate is 37% as noted above, this would produce 50,000 TPY of TREO, which is significant as this would be around 25% of the current world production, which I estimate at 175-200,000 TPY. The tin output would be around 10,000 TPY in a market which in 2019 was estimated at 310,000 tonnes, so it will not have a large impact in the market. The columbite would generate over 22,000 tonnes in a market which last year Statistica estimated at 75,000 tonnes. The largest Niobium producer is CBMM which is also based in Brazil.

Auxico uses a separation and recovery technology called Ultrasound Assisted Extraction (UAEx), which has been proven successful at recovering rare earths as well as other critical minerals.

Overall, Auxico has a lot to watch on multiple fronts.

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## Hastings Technology Metals buys 20 per cent of Neo Performance in strategic rare earths move

written by Raj Shah | October 7, 2022

Hastings Technology Metals Ltd. (ASX: HAS), an Australian junior mining company, has recently made some interesting moves in the rare earths space. Its major announcement on August 26th was that through an investment from Wyloo Metals in Hastings in the amount of A\$150 million, it was acquiring the majority of Oaktree Capital Management's shares in Neo Performance Materials <u>Inc.</u> (TSX: NEO). Oaktree acquired a controlling position in NEO in 2015 as it emerged from the bankruptcy of Molycorp. This will result in Hastings owning somewhere in the range of 20% of NEO on the same day that NEO announced a bought deal of C\$65 million, which would dilute the original 22.1% position Oaktree was selling. From their press release: "Hastings views the Acquisition as the first step in its Hastings 2.0 strategy, to create a fully-integrated mine-to- magnet supply chain business. Wyloo is supportive of this vision and Hastings is pleased to have the support of Wyloo as a strategic partner."

Wyloo Metals is a company owned by <u>Andrew "Twiggy" Forrest</u>, an Australian billionaire, who made his money selling iron ore from

Australia. Earlier this year Wyloo outbid BHP for Noront, whose deposit in the Ring of Fire, Northern Ontario is a high-grade nickel-copper-platinum-palladium deposit with a bid worth C\$616.9 million. This recent choice by Wyloo to invest in Hastings is another move in their aim "to develop and invest in the next generation of mines". Given the funds available from Wyloo is it possible Hastings will increase its position in NEO, given the <u>recent record profits</u> from NEO? They have said there is no plan to increase their holding.

On September 7th Hastings <u>announced</u> a A\$110 million two tranche placement with the goal to accelerate its rare earths deposit in Western Australia. In addition, they announced a nonunderwriting share purchase plan (SPP) to raise up to A\$10 million. The aim is to accelerate the rare earth deposit they are developing, which is known as the Yangibana deposit in Western Australia. The deposit had a JORC resource reported in 2019. There are seven areas <u>reported as shown in the chart</u> <u>below</u>:

Deposit	Tonnes	TRE0	$Nd_{2}O_{3}+Pr_{6}O_{11}$
		%	9 <sub>0</sub>
Bald Hill	4,405,000	1.02	0.41
Fraser's	638,000	1.61	0.68
Auer	728,000	1.12	0.41
Auer North	148,000	1.24	0.47
Yangibana	986,000	0.93	0.44
Yangibana West	1,478,000	1.23	0.34
Yangibana North	1,964,000	1.72	0.44
Total	10,345,000	1.22	0.43

The reported percentages of Neodymium(III) oxide (Nd2O3) and Praseodymium oxide (Pr6O11) are high compared to most other global deposits, which is intriguing, as these are the main revenue drivers in all deposits globally except for ionic clay deposits, like the ones in Southern China. What is challenging is the TREO (Total Rare Earth Oxides) grade averaging 1.22%, which will increase operating costs. By comparison, MP Materials' Mountain Pass mine in California is reported around 8%. However, Yangibana average Nd/Pr of 43% is about 3 times higher than Mountain Pass.

On February 21st of this year, Hastings <u>announced</u> an increase in the NPV of the Yangibana project of 84% to \$1,012 million and an IRR of 26%. When looking at Shanghai Metal Markets pricing in mid-February Neodymium oxide (Nd2O3) was \$190/kg USD and Praseodymium oxide (Pr6O11) was \$172/kg. Today those prices are \$91.11/kg or a 50% reduction.

Looking at Hastings' August and September presentations, their focus is not on separating the rare earths into single elements but view that as NEO's focus. Their stated plan is to produce 15,000 tonnes per year of a mixed rare earth carbonate, which typically is around 45-50% total rare earth oxides (TREO). This would generate 6,750-7,500 tonnes of TREO. This is over double the current capacity of NEO's plant in Estonia. Hastings has already committed 70% of their first 10 years' output to ThyssenKrupp and Skyrock, so this would leave 2,000-2,250 TPY for NEO. ThyssenKrupp will likely sell the material to China as it does for Rainbow Rare Earths. Skyrock is a part of the Baotou rare earth group, so the majority of the Yangibana deposit will end up in China, unless there is an out clause and NEO expands its non-Chinese capacity.

It will be interesting to see how this new relationship in the rare earths space develops. This is certainly not the end of the story.