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# **A Rare Opportunity**

## ***Ucore Rare Metals* Tackles a U.S. Supply Crisis in the Green Energy & High-Technology Metals Sector**

by Mark MacDonald

On a rainy and windswept inlet in Southeast Alaska is a foreboding granite intrusion that the locals sometimes refer to simply as the “Rock”. The location is Bokan Mountain, near the head of Kendrick Bay on South Prince of Wales Island; an area known as much for its Pacific Northwest scenery as it is for its prodigious annual rainfall. “Bokan is located about as far south in Alaska as you can go without stepping into Canada,” says Jim McKenzie, President and CEO of **Ucore Rare Metals** (OTC:UURAF; TSX.V:UCU), the sole owner of U.S. based Rare Earth One, LLC. “So, the area has fairly mild weather year-round; an excellent feature for any mining operation. But it ranks up there with Seattle for the highest annual rain counts in the U.S. Best to take your rubber boots when you venture to Bokan.”

The Bokan project is the unlikely centre of an emerging white-hot political debate on some of the scarcest, most valuable and most sought after metals known to man – metals that are available in this area of Alaska and very few other locations in the Western world. Known by the somewhat mysterious sounding name of the **Heavy Rare Earth Elements**, they’re a group of metals of critical strategic importance to the U.S. They’re so critical, in fact, that a Senate committee was recently convened to investigate the threatened supply of these irreplaceable “Technology Metals”, and the progressive cutback of Rare Earth exports from China, the dominant supplier of these materials to the U.S. and most of the world.

So, what exactly are these obscure hi-tech metals that we can’t seem to live without? “They’re a unique group of metals set off from the periodic table, since they share unique characteristics unlike any other elemental group,” says Dr. Anthony Mariano, a Massachusetts based expert in rare earth mineralogy. “Those characteristics – such as thermal properties and super conductivity – have made them absolutely essential to high tech and green technology applications in the modern world.” With such unpronounceable names as Europium, Gadolinium, Terbium and Dysprosium, they’re an unusual combination of the seemingly exotic and the absolutely indispensable, and they’re

central to the ongoing competitive viability of U.S.-based technology in the 21<sup>st</sup> century.

“Much of what we consider to be the military, high tech and industrial complex in the U.S. today would grind to a standstill without the Rare Earths,” says McKenzie. “China currently has a near monopoly on this product, and an announcement in 2009 indicating a staged withdrawal of these metals from world markets has created a flurry of investment interest.” That announcement served as a sort of warning shot from China to the West, and the race was on to find secure near term replacement sources in the U.S.

The Chinese announcement also triggered a phenomenon that some junior resource pundits are calling “Rare Earth Mania”, bringing into focus companies like Ucore, with the largest historical deposit of Heavy Rare Earths on U.S. soil at its Bokan Mountain location. In turn, the Bokan project is one of very few contenders capable of meeting a rapidly approaching supply gap, as China shuts down Rare Earth supplies to the U.S. over the next 36 – 60 months.

“Unbelievably, much of what we consider to be the essential technologies of today, from lap tops to cell phones to medical devices and much more, would be unworkable without the heavy rare earths”, says Mariano. “What’s more, the majority of green technologies touted as alternatives to fossil fuels, such as wind turbines, electric vehicles and even solar generators, would be largely ineffective without the inclusion of HREE’s. They’re the absolute lifeblood of high technology and green technology today.”

## **A Lost Art and a Critical Science**

The U.S. is the world’s largest consumer of Rare Earths Elements (or “REE’s”). Up until 25 years ago, Uncle Sam was also solidly the world’s largest producer of these materials, with a virtual lock on the art and science of Rare Earth production. But the Chinese changed the equation in 1980’s and 90’s, flooding the market with inexpensive REE’s and essentially driving the U.S. out of the tech metals business. The result was the unavoidable closure of the leading U.S.-based Rare Earth mine at Mountain Pass, California. In the resulting fallout, America also saw the drain of Rare Earth processing capabilities and know-how to the East, such as General Motor’s Magnaquench operating unit, now owned and operated by Chinese concerns.

Such was the case for the past quarter century, with globalization flourishing and China continuing to all but monopolize a field once considered a U.S. birthright. But in 2009, the Rare Earth industry again took an unexpected turn. In August of that year, as part of its Five Year Plan, China announced that it would no longer serve as the world’s sole supplier of these strategic metals. The exponential

growth in Rare Earth demand, China said, had created a situation whereby they were simply running out of these critical resources, and could conceivably exhaust specific reserves in as little as 15 years at the current rates of global consumption.

With that announcement, Beijing offered an olive branch to the West, but one with a distinctive barb. Yes, China would be cutting back on Rare Earth exports in the near term. However, U.S.-based manufacturers could ensure long term access to these crucial materials simply by relocating their manufacturing facilities to China. As might be expected, this suggestion was greeted with more than a little political resistance in the States. Soon after, a lobby effort took hold to reignite the once mighty Rare Earth industry in the U.S.

In the nine or so months since then, the Rare Earth discussion in the U.S has taken on a life of its own. An industry-specific lobby group known as the Rare Earth Industry & Technology Association (or “REITA”) has been hard at work in Washington. Proposed legislation was recently tabled by Rep. Mike Coffman (R. Colorado) with a view to reinvigorating the U.S. high tech metals sector (introduced to the media as the proposed “RESTART” Act). The U.S. Departments of Defense and Energy have also weighed in on mushrooming Rare Earth politics, and agendas have been discussed to wean the U.S. off of its almost complete dependence on China as quickly as possible. In turn, the media has been alight with Rare Earth coverage, with no less than the New York Times and the Economist weighing in on the Rare Earth Crisis and its implications for the U.S., the world’s largest consumer of these technology metals.

## **The Bokan Initiative**

In the whirlwind of renewed Rare Earth interest, one of the largest historical resources of Rare Earths in the West, located at Mountain Pass, California, is being expedited to renewed production. The owner of that facility, Molycorp Minerals LLC, has received a great deal of press coverage, recently announcing a planned IPO to fuel the RESTART embers. But while Molycorp’s Mountain Pass has an abundance of a specific group known as the Light Rare Earths (or “LREE’s”), there remains a gaping hole in the supply equation for the U.S. That hole comes in the form of Heavy Rare Earths (or “HREE’s”).

Which brings us once again to Bokan Mountain in Alaska, and its very active owner, Ucore Rare Metals. “Not all Rare Earths are created equal”, says McKenzie. “HREE’s are significantly more scarce than the LREE’s. They’re also a great deal more valuable. While Molycorp has a lock on the largest historical LREE deposit in the States, Ucore has the counterpart with the largest historical HREE deposit. So, between these two companies, the U.S. has the potential for complete self sufficiency across the full spectrum of Rare Earths: both LREE’s and HREE’s.”

“The U.S. is moving quickly toward eliminating its dependence on non-domestic Rare Earth supplies,” continues McKenzie. “Taking Mountain Pass and Bokan into account, the U.S. has enough Rare Earth content on its own soil to furnish domestic needs for decades to come; and it’s available in the reasonably near term, and without the need to look beyond U.S. borders. Many consider Rare Earths to be the key component in green energy technologies and the driver behind the post-fossil fuel technology age. The U.S. has a window of opportunity to gain complete domestic sufficiency in a sector that China has long dominated, and control its own destiny in a critical area of growing global competition. So, the case for an independent mine-to-market Rare Earth industry in the States is gaining a great deal of momentum.”

## **The Alaskan Advantage**

So, what makes Ucore’s Bokan project so special, and why is it the answer to the United State’s HREE needs, we asked McKenzie. “Well, there’s a host of factors that set Bokan apart as the absolute near term go-to for Heavy Rare Earth the States,” says McKenzie. “Bokan is a prior producing mine, with much of the required infrastructure still intact – including broad area road networks and prospective ore staging sites. It’s got deep water access pretty well at mine-mouth, which means we can ship largely unprocessed ore anywhere in the world for a just few tens of dollars per ton.”

“It’s in an area that’s been set aside by the U.S. federal government specifically for sustainable resource development, with zero first nations issues,” continues McKenzie. “Bokan is in a temperate weather zone, with ease of access year-round. Importantly, it’s the largest historical, non 43-101 compliant estimated HREE deposit in the States.”

“But more important still is Bokan’s American location, from a political, competitive, and homeland security perspective. Simply put, it’s located on U.S. soil, which essentially eliminates the possibility that the States could wind up trading one foreign dependency for yet another. With enough HREE’s to furnish U.S. technology growth in its own back yard, in the near term and at low cost, the case for Bokan versus alternate non-domestic sources is strong, to say the least.”

McKenzie emphasizes that the State of Alaska has been proactive in getting Bokan back into production as a Heavy Rare Earth facility. In April, 2010, the Alaskan State Legislature and House of Representatives unanimously passed a Resolution that will expedite that process. Resolution 16 states that Alaska legislators will, to the full extent allowable by state law, remove all permitting hurdles required in activating Bokan project as a producing HREE mine. With this

sort of geopolitical support, Ucore believes that an HREE mine can be active in as little as 3-5 years, which is lightning speed by mining standards. Another drawing card is the growing demand for domestic Rare Earth production at a federal level, with Congress actively advancing this agenda.

Ucore is also quick to point out that Bokan is unique not only in the U.S., but on a world level as well. In addition to other HREE's, drill assays have indicated anomalously high levels of Terbium and Dysprosium. These are among the most valuable metals known to man, and considered by many to be the "miracle REE's", essential to everything from green technologies, to medical applications, to military and industrial uses. Their presence makes Bokan a rarity among Rare Earth deposits worldwide, the vast majority of which are skewed to the much less valuable LREE's. As a result, Ucore has opened dialogue with multiple end users in the U.S., at a state and federal level, including public and private operators. With demand escalating and supplies being rapidly cut off, McKenzie believes that Ucore Rare Metals couldn't be in a better strategic position, or at a better time.

## **Inventories & Essential Tools**

We say good bye to McKenzie as he assesses the inventory for Ucore's drill program at Bokan for the summer of 2010. On the docket are barge facilities and helicopter supplies, diamond drill bits and core boxes by the dozen. He confers with the key members of his executive team Harmen Keyser, Peter Manuel and Nick Vermeulen, just days before a military-like mobilization of crew and heavy equipment to Kendrick Bay near Bokan. The list seems complete, but he seems perplexed, like something essential has escaped the fine teeth of the inventory manifest. "Oh yes," says McKenzie, "almost forgot the two most important items for survival in Southeast Alaska ... a decent pair of Extratuf rubber boots."