

# Medallion is developing untapped sources of rare earths.

Medallion is rethinking accepted rare-earth exploration and development strategies to achieve near-term, low-cost production of rare earths. Under the technical direction of Dr Bill Bird and leading thinkers in the rare-earth exploration industry, Medallion

**Developing new rare-earth mining operations is time consuming and expensive. There is a need to look at alternatives for near-term production outside of China.**

believes that monazite, a readily-available by-product of the heavy-mineral-sands-mining process, can be developed relatively inexpensively and quickly. Given the time-consuming and expensive processes of developing new rare-earth mining operations, there is a need to look at alternatives to near-term production outside of China.

Today's rare-earth exploration and development companies focus on the portfolio of hard-rock rare-earth

occurrences that were discovered in the mid-20th Century, before China's dominance. These occurrences generally require designing new and complex metallurgy, huge capital investments and many years to get to production.

## GLOBAL RARE-EARTH SUPPLY SHORTAGE

In 2010, the world of rare-earth elements changed dramatically. The media and popular investment newsletter writers introduced the public to rare earths with shocking stories of upcoming shortages and resulting industrial shutdowns. The exotic nature of these commodities and China's market-control policies led to a well-documented investment frenzy. This was in marked contrast to the previous 40 years, when few people paid much attention to rare earths.

Demand for rare earths is steadily increasing, with growing global consumer, energy-industry and national-security uses. At the same time, the world's main producer, China, has also become the main consumer, reducing its export supplies. Concern that a global industrial rare-earth crisis will again develop continues to drive intense interest in these critical metals by investors and industrial nations.



*"I believe Medallion's plan to produce rare-earth elements from heavy-mineral sands monazite is on the right track. Monazite's simple metallurgy is well-understood and large quantities of monazite are readily available. It also is important to remember that monazite is one of only two minerals that have ever economically produced rare-earth elements."*

**Dr. Tony Mariano, PhD Geology** - Specialist in the geology and mineralogy of rare earths.

Medallion Advisory Board Member and TMS2013 Lifetime Achievement Award Recipient.

Shares issued	59.8 million shares + 4.8 million options + 5.3 million warrants
Fully diluted	70 million shares
Market capitalization	approx. \$3 million
52 week high - low	\$0.225 - \$0.035



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Rethinking Rare Earths

## MONAZITE - AN UNTAPPED SOURCE OF RARE EARTHS

Monazite is a phosphate mineral containing 50% to 60% rare earths: and, it also is the world's original commercial rare-earth source. For over 100 years, monazite has been processed using well-understood metallurgical methods. The U.S. Geological Survey, in its annual commodity reports, regularly states that monazite is one of the world's most important available rare-earth resources. Monazite and bastnaesite (the main rare-earth mineral in Chinese production and at Molycorp's Mountain

Pass mine) are the only two rare-earth minerals to have ever successfully produced large commercial quantities of rare earths.

Today, with China restricting its rare-earth exports, monazite from heavy-mineral-sands operations may be one of the most economical sources of rare earths. Many of these heavy-mineral-sands mines have ore reserves in excess of one billion tonnes, which translates to 20-to-40 years of production.

## SOLUTIONS TO CRITICAL RARE-EARTH SUPPLY ISSUES

Three years ago, Medallion recognized that, with the possible exception of Molycorp and Australia's Lynas Corp, no company or rare-earth project could solve the most critical rare-earth-supply issues:

1. a near-term shortage of rare earths, and
2. a lack of low-cost, long-term production projects.

Solving these basic issues is the driving thrust of Medallion's monazite strategy. Rather than focusing on hard-rock mineral properties with complicated, expensive and untested metallurgy, Medallion is pursuing monazite purchase agreements and processing partnerships. Although Medallion considers that monazite production can be developed quickly and inexpensively, it is almost totally ignored by others.

### Conventional and Rare-Earth Project Exploration and Development Timeline



### Medallion Monazite By-Product Approach





**1 of only 2**  
minerals proven to  
economically produce REEs.

## BUILDING A SAFE FACILITY

Medallion is committed to following industry best-practices and accepted international environmental and safety standards. SENES Consultants Limited, worldwide specialist in environmental and nuclear sciences, investigated issues associated with Medallion's proposed rare-earth processing facility. It concluded that, with a modern safety-oriented design and correct operating procedures (including radiological protection at critical points to handle and sequester thorium), this facility will meet the highest of international safety and environmental standards. It anticipates no significant safety or environmental concerns.

In a recent UN-published report, authored by the IAEA, current knowledge and best-safety practices are outlined for rare-earth processing, including extraction of rare earths from monazite. With planned design and procedures this facility will meet the highest of international standards.

## MEDALLION INVESTMENT OPPORTUNITY

- Medallion is challenging the conventional hard-rock rare-earth exploration approach, which is time-consuming and expensive, to deliver near-term rare-earth supplies.
- Processing rare earths from the available mineral by-product monazite, using existing technology, is predicted to be lower cost and lower risk. This could significantly lower Medallion's costs compared to its peers generating free cash flow faster for future growth.
- The monazite strategy is well-adapted for jurisdictions within North America, those providing a skilled workforce, proximity to chemical re-agents, and a favourable transportation network. This approach may lessen the financial risk associated with investing in countries outside North America that may not enjoy the same geopolitical stability and tax incentives.



**Challenging the status quo.**



## PROJECTED LOWER CAPITAL AND OPERATING COSTS

Medallion expects that its monazite strategy will be profitable even when rare-earth prices are low. By exploiting a by-product mineral, the Company does not have the related expenses of exploration, drilling, construction of a mine, mining and concentrating the ore minerals. Capital and operating costs are expected to be much lower than the current exploration projects, which hope to mine difficult and complex hard-rock rare-earth occurrences.

## RECENT COMPANY PERFORMANCE 2012-2015

RARE-EARTH PROCESSING AND PRODUCTION	
✓	October 2014 Initiates lab-scale rare-earth monazite processing.
✓	November 2012 Completes initial technical plans for rare-earth extraction facility.
✓	April 2012 Hires experienced key personnel to secure feedstock and to manage finances and logistics.
✓	January 2012 Issues positive report by SENES Consultants on the radiological and environmental safety of large-scale, monazite-processing facility.
FINANCE	
✓	January 2015 Closes \$250,000 private placement.
✓	June 2014 Completes private placement for gross proceeds of \$700,000.
✓	July 2013 Exercise of \$.25 common-share warrants for gross proceeds of \$390,000.
✓	June 2013 Completes private placement for gross proceeds of \$400,000.

### Management & Board of Directors

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Chief Technical Advisor & Director

Thomas Arnould CA  
CFO & Corporate Secretary

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