

Labrador's Rare Earth

Exploration companies capitalizing on the region's potential
and international appeal

by Julianne Philpott

Junior mining exploration companies are quickly realizing that the presence of rare earth elements (REEs) is not so 'rare' in the region of Labrador.

Peter Dimmell, Vice President of Exploration for Silver Spruce Resources Inc., a junior exploration company headquartered in Nova Scotia with rare earth element (REE) properties in Labrador (Pope's Hill, RWM and the Straits), learned firsthand to expect the unexpected in the mining industry when in 2006, Silver Spruce began exploring for uranium using scintillometers (sophisticated Geiger counters) to detect radioactivity along the Trans Labrador Highway (TLH).

After detecting radioactivity in the Pope's Hill area, the company then analyzed the samples of the radioactive rock to find that most of the radioactivity was associated with thorium, a naturally occurring radioactive chemical element that is often associated with rare earth elements.

"We didn't have much interest in the area at the time since we were looking for uranium, and high thorium (Th) values aren't good when uranium is the target," says Dimmell. "We analyzed the radioactive samples and got three significant REE values, up to 8 per cent total rare earth elements (TREEs)."

Rare earth elements are a group of 17 metallic elements consisting of the lanthanide series on the periodic table including the element yttrium (Y) and are subdivided into light rare earth elements (LREE) and heavy rare earth elements (HREE), LREEs being the more common of the two. Despite the name, REEs are relatively plentiful and not so rare, but are expensive and difficult to extract.

Dimmell explained that after discovering the REE values in the rocks in the Pope's Hill area, Silver Spruce Resources essentially let the samples sit, as there was no significant interest in REEs at that time.

But the samples did not sit for long. With China controlling approximately 97 per cent of the market and supply in the world, and new production planned in the regions of Canada, the United States, South Africa and Australia, prices took off in late 2009 and early 2010 as China began cutting back on its exports. What is now the Pope's Hill project site (located on the Trans Labrador Highway approximately 100 km from Happy Valley-Goose Bay) showed excellent potential for REEs.

Silver Spruce staked the original property and carried out one day of follow-up in the fall of 2010 to find that the average TREE value of 31 samples taken on the property was almost 6 per cent TREE plus yttrium (TREE+y) which is typically a common accessory, with a high value of 24 per cent. The company then staked approximately 2,000 claims with some in a joint venture with Great West Minerals Group, a Saskatchewan-based integrated REE explorer and producer.

Regional work for the company currently consists of first pass prospecting and stream sediment geochemistry, followed in July with an airborne radiometric, magnetic and VLF-EM (very low frequency electromagnetic) survey. Dimmell added that “other detailed work such as ground geophysics, line cutting, prospecting and geological mapping will be carried out on the Pope’s Hill original property and the MRT property.”

As other companies have come to realize, Central Labrador is not the only area in the region that is rich in resources.

According to the 2003 Geological Survey of Newfoundland and Labrador, the Central Mineral Belt of southern Labrador hosts numerous copper, uranium and rare earth element showings (Cu, U and REE respectively) and prospects including the Michelin uranium deposit.

Search Minerals Inc., through its wholly-owned subsidiary, Alterra Resources Inc., controls 58 licenses in the Labrador area, specifically three parcels of land in southeast Labrador. One site is located on the northern shore of St. Lewis Inlet from St. Lewis (Fox Harbour) northwest towards Port Hope Simpson, another is on the southern shore of St. Lewis Inlet from Battle Harbour to the St. Lewis River, and the third area stretches from Barge Bay to Henley Harbour in the Straits.

“Most of our work is detailed work on mineralized areas that we discovered last year,” said Miller. “In those areas, we are carrying out prospecting, detailed mapping, channel sampling and diamond drilling.”

Headquartered in Vancouver, B.C., Search Minerals’ exploration team is led by Vice President of Exploration Dr. Randy Miller, one of the world’s foremost rare earth geologists who is currently responsible for directing the company’s exploration programs taking place in southern Labrador.

“Search Minerals was invited to view the Port Hope Simpson property by the prospector group, B and A Minerals, who had originally staked some of this area,” said Miller. “We realized that the area had some potential for REEs, so we made an agreement with B and A Minerals to acquire the property.”

Promising samples found in an area stretching from Battle Harbour, Mary’s Harbour and Port Hope Simpson resulted in the stake of more than 3,700 claims over a 926 square kilometer area, a number of claims purchased from local prospectors and the province.

Search Minerals contracted Aeroquest Surveys of Mississauga, Ontario, to carry out an airborne magnetometer and radiometric survey spanning an area of over 5,000 kilometers, and radioactivity was measured using the Aeroquest Gamma Ray Spectrometer (AGRS) system, a system consisting of downward and upward looking crystals for monitoring non-geological sources and automatic peak detection to ensure stability and a high-quality product.

The presence of REEs in various products and everyday consumer goods is also not so rare. Most common uses include polishing agent for glass, televisions, lasers, Blackberry and iPhones, light bulbs, batteries, magnets and even water purification products, as well as wind generators, computer equipment, electric cars, and as a catalyst in self-cleaning ovens.

Another exploration company, Montreal-based Quest Rare Minerals Inc., is focused on the identification and discovery of new world-class rare earth elements with several current projects exhibiting high potential. Quest Mineral's Strange Lake Rare Earth Project is located 220 km northeast of Schefferville and 125 km west of the Voisey Bay Nickel-Copper-Cobalt Mine. Initially discovered by the Iron Ore Company of Canada (IOC) and covering an area of 54,000 hectares, exploration is focused around the Strange Lake REE deposit.

On June 8, and in partnership with Search Minerals Inc., Quest announced its results from a drilling program carried out on its Alterra Strange Lake, Labrador option property to evaluate surface REE occurrences that were discovered during exploration in the summer of 2010.

In the news release, Quest's President and CEO Peter Cashin stated, "Our Alterra Option Property drilling has now confirmed Quest's belief that significant new areas of rare earth mineralization remain to be discovered within the host Strange Lake Granite... Three additional new mineralized areas remain to be drill tested and will be the focus of our future efforts to identify additional high-grade deposits."

Much more than half of the costs associated with exploring REE properties surrounds transportation to remote locations where many sites are located. Fortunately for exploration companies in Labrador, many of the project sites in the region are easy accessible by road and are located near the Trans Labrador Highway (TLH).

"The advantage of [the properties in Labrador] compared to other areas is that it is road accessible, with most locations sitting only two or three kilometers from the TLH," says Dimmell.

For Search Minerals, all portions of the Port Hope Simpson belt are within 10 kilometers of a local transportation network including highways, logging roads, airstrips and ports.

In terms of job creation, it's no surprise that many opportunities exist for Labradorians both in the short and long-term, especially given the increase in demand for minerals in international markets.

"In the short term, provision of supplies for a small field party, helicopter services, rental of accommodations and vehicles will provide work for Labradorians," Dimmell said. "If something significant is found, then advanced exploration such as drilling and other services, as well as potentially a semi-permanent camp will be required from Labrador."

Miller added that Search Minerals has hired 16 to 20 local workers to help in the field, at the company's base in Port Hope Simpson, and that drill contractor have hired additional local helpers. He also noted that all groceries, gas, lumber and other items are purchased locally.

Certainly if findings were significant for Silver Spruce, Search Minerals, Quest and other exploration companies with projects in Labrador, the construction and infrastructure requirements would be substantial, with significant economic spinoffs for the local and regional economy.

If you have any questions or comments regarding the article, please contact the LNCC at www.chamberlabrador.com or phone (709) 896-8787.