



NORTHERN NEIGHBORS

Compiled by Shane Lasley



SHANE LASLEY

Drilling in the Main Peak deposit at Tetlin turned up some impressive intercepts of high-grade gold such as this core from a 17.3-meter intercept that averaged 21.77 grams per metric ton gold. This, however, pales in comparison to the 38.9 meters of 51.62 g/t gold tapped in the North Peak-Connector zone this year.

With 39 meters of 1.66 oz./t gold, Tetlin drilling continues to impress

Contango Ore Inc. Aug. 16 provided another round of drill results from the second phase of 2016 drilling at the Tetlin project near the crossroads town of Tok in eastern Alaska. The results, from 13 holes drilled in the North Peak and Connector zones, include the best intercept ever encountered at Tetlin when you consider the very high gold grade encountered over long lengths. TET16210, the last hole of the 2016 phase-1 program, carried out during the winter months, tested an idea that the North Peak zone and Peak deposit may be two parts of a continuous band of skarn mineralization. Drilled about 200 meters southeast of North Peak and 200 meters northeast of Peak, TET16210 cut two mineralized intercepts, including 43.96 meters averaging 3.28 g/t gold, 30.6 g/t silver and 0.402 percent copper. "The Connector hole (TET 16210) was originally drilled in an attempt to test a geologic model indicating the Main Peak zone may connect to North Peak," explained Contango Ore CEO Brad Juneau. "The new core holes show that gold mineralization is present from the Connector hole to North Peak, and hole TET16235 in this newly delineated area has the highest amount of gold grade (times) thickness drilled to date." Drilled about 150 meters northwest of the Connector discovery hole, TET16235 cut three gold-rich intercepts, including 38.88 meters averaging 51.62 grams per metric ton gold from a depth of 14.5 meters. Most of the 13 holes reported have multiple intercepts of high-grade gold in this area. TET16237, drilled about 70 meters north of 235, cut five gold intercepts, including 14.19 meters averaging 45.33 g/t gold from a depth of 9.75 meters. The exploration at Tetlin is being conducted by Peak Gold LLC, a joint venture between Contango Ore and Royal Gold Inc. This year's US\$11 million program is being funded by Royal Gold, which also manages the JV. Peak Gold is awaiting assays from another 20 holes drilled during the phase-2 program and Juneau said drilling is slated to continue through September. "Following completion of our 2016 exploration program, we expect to analyze the results and produce a resource update for the Tetlin project by next spring," the Contango Ore CEO added.

Coventry advances northeast expansion of Caribou Dome

Coventry Resources Ltd. Aug. 17 provided an update on its exploration of the high-grade Caribou Dome copper project in Southcentral Alaska. The company said mechanical issues it experienced with one of the two drills on site have been resolved, and nine holes were completed for 3,934 meters. This includes four holes drilled since the end of July that all cut copper mineralization. Coventry is very encouraged by two zones of copper-rich massive sulfide mineraliza-

see **NEWS NUGGETS** page 11

TECHNOLOGY

Mission accomplished

Isolation of dysprosium marks successful end to Ucore's SuperLig-One pilot

By SHANE LASLEY

Mining News

Many were skeptical of Ucore Rare Metals Inc.'s claims that it had identified a technology that would revolutionize the way the notoriously tightly interlocked rare earth elements are separated. Less than two years later, however, the mineral explorer turned innovator has quieted some of this doubt by separating the most critical rare earth – dysprosium – from a solution derived from its Bokan Mountain REE project in Southeast Alaska.

Ucore achieved this feat with the help of Utah-based IBC Advanced Technologies Inc., a world leader in molecular recognition technology, a means of isolating a targeted material by binding with ions based on multiple parameters such as size, chemistry, and geometry.

This process is considered to be quicker and less complicated than the methods traditionally used to coax apart REE.

Ucore and IBC teamed up to build SuperLig-One, a pilot plant that employs the highly-selective MRT process to isolate rare earth elements suspended in a leach solution created while putting together a process flow-sheet for extracting the rare earths from the Dotson Ridge deposit at Bokan Mountain.

In the final phase of the trial run of SuperLig-One, the pilot plant produced 99.99 percent pure dysprosium from the solution.

"The isolation of Dy (dysprosium) at an advanced pilot scale has ... been one of mission-critical objectives of SuperLig-One since the early-blueprint phase nine short months ago, and we're excited to complete this mission in such a concentrated time frame," said Ucore President and CEO Jim McKenzie.

Dysprosium prize

Since a REE-laden solution from Bokan Mountain was first pumped through SuperLig-One, the pilot plant has earned high marks in terms of purity and recoveries.

"The MRT (molecular recognition technology) platform has consistently outperformed traditional REE separation methodologies, including solvent extraction, ion exchange, and precipitation, based on critical metrics such as efficiency, recovery, and near-quantitative levels of purity," McKenzie touted.

The process to extract pure dysprosium involved five stages:

- Separating the suite of rare earths contained in the pregnant leach solution from non-REE elements such as iron, thorium, uranium, zinc, copper, nickel, titanium, zirconium, and other trace base metals;
- Extracting the first rare earth by separating scandium from the other rare earths in the solution;
- Dividing the heavy rare earths, samarium to lutetium, and light REE, lanthanum to neodymium plus yttrium;
- Dividing the heavy rare earths into two subgroups, samarium-dysprosium and holmium-lutetium; and



UCORE RARE METALS INC.

Ligands, such as the ones in these bottles, are molecules or ions that bond to metals. The SuperLig-One pilot plant uses ligands designed specifically to bind with the desired rare earth elements suspended in a solution derived from the Bokan Mountain deposit in Southeast Alaska.

- Finally, the extraction of nearly pure dysprosium.

Ucore said one of the amazing things is that through each step of the process, more than 99 percent purity for the groups, subgroups and individual rare earths was achieved at each stage; and nearly 100 percent of the REE were retained and available for the next stage. This means that virtually none of the rare earths were lost and the recovered rare earths are exceptionally pure.

Scandium, the first individual rare earth SuperLig-One extracted from Bokan Mountain feedstock, is a highly valued component of advanced aluminum alloys. Its electrical and heat-stabilizing qualities also make it a desired ingredient in the production of solid oxide fuel cells.

The big prize, however, is the separation of dysprosium.

"The recovery of near-quantitative purities of dysprosium at industrial scale, solely using American feedstock, and without the use of chemically-intensive SX technologies, are significant firsts for the industry," said McKenzie.

According to a 2011 study by the U.S. Department of Energy, dysprosium is deemed the most critical of all elements in terms of its importance to clean energy and supply risk.

"This metal is deployed extensively in United States military, high technology and clean energy sectors, with 100 percent of the product currently originating from China," the Ucore CEO said.

In fact, four rare earths – dysprosium, europium, terbium and yttrium – topped the list of DOE's five most critical and supply risky elements.

see **PILOT PLANT** page 9