

# Rare-earth mining company celebrates 'groundbreaking'

Andrew Edwards, Los Angeles Newspaper Group, 4-21-11

MOUNTAIN PASS - Minerals firm Molycorp continued its high-publicity surge into the rare-earth metals trade on Wednesday when the company celebrated the renewal of mining operations at its Mojave Desert mine and \$781 million "Project Phoenix" investment.

The project is a gambit that executives and politicians alike said will give the United States a foothold in the marketplace for a set of valuable natural elements with myriad strategic and consumer applications.

"Molycorp is back. We're going to be a meaningful rare-earth metals supplier in the United States," Molycorp chief executive Mark A. Smith said at the conclusion of Wednesday's event.

Although Molycorp called the day's gathering a "groundbreaking" event, the firm actually resumed its Mountain Pass operations in December. The company brought the mine back into operation after environmental problems - including wastewater spills resulting in contaminated water flowing into the desert - led to the mine's shutdown in 2002.

On Wednesday, massive off-highway trucks carried tons of "overburden" material away from the open-pit mine where Molycorp executives plan to expand their operations.

Truck drivers delivered the overburden, materials lacking in precious rare-earth ore, to pads where construction crews are set to build a new power plant and ore separation facilities. The planned expansion is part of Molycorp's "mine to magnets" strategy, which Smith said will involve American facilities in all phases of the work to dig rare-earth minerals from the desert and develop commercially viable components.

Earlier this week, the company announced its \$17.5 million purchase of Santoku America, a processing firm with facilities in Arizona.

Molycorp, which has its corporate offices in Greenwood Village, Colo., also has purchased a 90 percent interest in Estonian processor A.S. Silmet and is working toward solidifying a partnership with Hitachi Metals, a Tokyo-based firm that produces magnets for automakers.

Molycorp executives say they will ultimately be able to expand mine output from 3,000 to 4,000 tons to 40,000 tons in mid-2013.

The Mountain Pass mine is North America's only source for the rare-earth elements, 17 materials including the lanthanide series of elements. The metals have a wide variety of uses in such diverse applications as smart phones, wind power generation and warfare.

The rare-earth element neodymium can be combined with iron and boron to craft magnets employed to generate power for electric vehicles or in massive wind turbines. Another rare-earth metal, samarium, can be alloyed with cobalt to create another magnet used for defense applications, Smith said.

Whether rare-earth minerals are devoted to civilian or military use, the world depends on China for the valuable materials. The vast majority - as much as 97 percent, according to Molycorp - are sourced from Chinese mines.

Beijing has reduced its export quota since 2005, according to data cited in a 2010 U.S. Department of Energy report. Within that document, the "Critical Minerals Strategy," the agency concludes that the nation faces critical supply risks in the short term for deliveries of five rare-earth minerals, including the neodymium needed for automotive and wind power applications.

Current shortages in other materials are hurting companies needing them for their products, Smith said.

"We're being contacted by Fortune 100 companies who are worried about where they are going to get the next pound of lanthanum, next pound of cerium," he said.

Lanthanum is needed to refine fuels, Smith said. Cerium's industrial applications include glass polishing.

The United States' need for foreign oil is at present a more publicized problem than the nation's dependence on foreign-sourced rare-earth minerals, but political officials who participated in Wednesday's event fretted over the possibility of relying on China - a potential rival - for defense hardware.

Assemblyman and former U.S. Marine Corps infantry officer Paul Cook, R-Yucaipa, said depending on China is a "scary, scary scenario."

U.S. Rep. Jerry Lewis, California Assembly members Mike Morrell and Norma Torres and San Bernardino County Supervisors Janice Rutherford and Brad Mitzelfelt also traveled to Mountain Pass on Wednesday to praise Molycorp's progress, worry over the nation's dependence on China for rare-earth minerals and express hope that the reactivated mine will stimulate domestic technology production.

"If you have problems with your county permits, show `em this," said Mitzelfelt after he and Rutherford presented Molycorp with a county resolution in honor of the company.

### **Rare-earth technology**

Molycorp's mine in Mountain Pass is North America's only source for rare-earth materials, a set of 17 elements used in high technology. Applications for rare-earth products include:

The element neodymium is used to manufacture magnets necessary for the miniaturization of commercial products including smartphones. Neodymium iron boron magnets are also used to manufacture electric and hybrid vehicle propulsion systems as well as wind power turbines.

Samarium is combined with cobalt to manufacture magnets employed to power the motors controlling the fins guiding smart bombs' flight paths.

Lanthanum has applications within the oil refining industry and battery production.

Europium is vital for the manufacturing of color television screens and computer monitors.