

# **LKAB** - an international high-tech minerals group

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## **LKAB prestudies on apatite and rare earth metals**

LKAB's tailings ponds in Kiruna and Malmberget contain large quantities of apatite and rare earth elements. Rare earth elements are bound in the phosphate mineral apatite, which is considered an impurity in iron ore.

"Prices and demand for both apatite and rare earth metals are rising. We are now investigating whether a production facility for apatite concentrate and rare earth metals can be profitable," says Per-Erik Lindvall, Senior Vice President Technology & Business Development, LKAB.

An internal prestudy will determine the conditions for recovery of apatite and rare earth elements from tailings in LKAB's ponds.

Test drilling results indicate the occurrence of 15 different rare earth elements in the apatite. Rare earth metals are strategically important and necessary for the manufacture of, for example, electronics components, motors, glass and automobiles, and as alloying materials in steelmaking.

China accounts for 97 percent of global production, and there is an impending shortage.

LKAB has commissioned Luleå University of Technology (LTU) to test various methods for recovering rare earth elements from apatite concentrate. The technical results from LTU are expected to be forthcoming this summer, while LKAB's knowledge acquisition and evaluation will continue well into next year.

Subsequently, project planning, cost analyses, the decision-making process, application for environmental permits and other preliminaries will commence. A possible production start-up will not take place until 2015 at the earliest.

"Estimates show that there is enough apatite in the Kiruna tailings pond for production of 400,000 tonnes of concentrate per year over a 14-year period. This represents a considerable contribution to European production of commercial fertilizer. There is a comparable amount of the material in Malmberget.

"The apatite concentrate contains as much as 0.5 percent of various rare earth elements. That represents a significant addition to the market for rare earth metals and to LKAB's production," says Per-Erik Lindvall, Senior Vice President Technology & Business Development, LKAB.

*A complete version of the article, additional information and images are available at [www.lkab.com/swedish/](http://www.lkab.com/swedish/) don't hesitate to ask for further translation.*

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