GREENLAND
MINERALS AND ENERGY LTD

Company Announcement, Thursday 5th December, 2013

Technical Update

Kvanefjeld Project: Process Engineering Design for Refining Circuit Complete

In 2013, Greenland Minerals and Energy Limited ('GMEL' or 'the Company') has placed much of the technical focus on advancing the refinery stage of the Kvanefjeld Project (rare earth elements, uranium, zinc). This follows on from the completion of testwork for the concentrator (beneficiation) circuit in 2012.

The Company recently finalised a series of large-scale, continuous testwork programs to advance the hydrometallurgical refinery circuit for Kvanefjeld. This stage is designed to extract REEs and uranium from mineral concentrates, and produce marketable products. Importantly, this completes the *process engineering design* for the Kvanefjeld Feasibility Study. The metallurgical flowsheets for both the mineral concentrator and the refinery have now been finalised.

The concentrator circuit was successfully piloted in November 2012, achieving stready operation and excellent metallurgical results. Continuous testwork has now been completed on the refining of the mineral concentrates produced from this pilot plant work.

The next stage in the metallurgical development involves reducing the risk (demonstrating the effectiveness) of the refinery flowsheet with continuous pilot plant testwork.

The Kvanefjeld Refining Circuit

The refinery circuit for Kvanefjeld consists of an atmospheric leaching stage that utilises simple mechanical equipment. This differs from refinery circuits that have been common in rare earth production, which require complex, high-temperature 'mineral cracking' processes in order for REEs to be leachable owing to the highly refractory nature of common rare earth ore minerals. As process development has advanced on the Kvanefjeld Project, it has confirmed that the unique value minerals at Kvanefjeld are readily leachable under gentler conditions with a simpler metallurgical process.

The refinery circuit utilises simple equipment and elegant chemistry that:

1) effectively leaches both REEs and uranium from the mineral concentrate with a sulphuric acid leach under atmostpheric conditions;

2) creates a natural division between the steps to the recovery of REE and uranium; and

3) allows for the effective management of impurities in the leach stream.

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The uranium is recovered from the leach solution using conventional solvent extraction technology which is applied in most uranium mines in the world, and is, therefore, of low technical risk. The rare earths are then recovered in a conventional manner to produce a mixed rare earth carbonate.

Key Outcomes of Recent Testwork

The final phase of recent testwork involved a weak acid leach test conducted over 100 hours on 20kg's of mineral concentrate from Kvanefjeld. The main aims of this test program were to confirm the ability to control impurities in the leach and prove that rare earths could selectively be separated from the majority of impurities.

- One impurity of specific concern was silica, as the key ore minerals at Kvanefjeld are phospho-silicate minerals, and the management of silica is essential to an effective leaching process. The management of silica in the leach process remains a challenge for many proposed REE producing operations that are dealing with silicate minerals; most of which involve significantly lower-grade minerals than steenstrupine; the dominant REE and uranium bearing mineral at Kvanefjeld. Importantly, the 100 hour leach test has confirmed that silica can be effectively managed throughout the leach process on the REE-U mineral concentrates from Kvanefjeld.

- The testwork program also demonstrated that high extractions of rare earth elements and uranium can be readily achieved with the weak acid leaching stage only, owing to the non-refractory nature of the value minerals. A pregnant leach solution containing uranium can be produced which is free of solids providing a suitable feed to uranium solvent extraction. This is achieved using an optimised combination of flocculating chemicals and standard thickeners. Rare earth elements are also effectively leached from the minerals, but then react to form sulphate salts that remain with the residue, thereby creating a clean separation from the uranium via liquid-solid separation.

GMEL previously outlined in a company announcement (October 1st, 2013) that it has confirmed the effective management of radionuclides in the refining process, ensuring the generation of clean RE concentrates that are well under the threshold levels required by separation facilities.

Summary and Key Highlights of the Kvanefjeld Process Route

Of emerging rare earth producing operations, Kvanefjeld is the most advanced that is able to utilise a simple atmospheric leach process that presents a simpler, lower technical risk path to commercial rare earth production. Most other projects involve highly refractory minerals that require more complex processing routes, which serve to increase their commissioning time and reduce their scalability. Key testwork programs have confirmed the effectiveness of the process route in managing all impurities; in particular silica, and radionuclides.

The ability to beneficiate the Kvanefjeld ore with one technique (froth flotation) that delivers an upgrade of 10 times, ensures minimal reagent consumption during the refining, or hydrometallurgical leaching, stage.

The multi-element nature of the Kvanefjeld project provides additional revenue streams to strengthen the economics. Any improvements in the uranium market will stand to further strengthen Kvanefjeld's economic advantages over RE-only operations. The multi-element production profile allows GMEL to focus on the marketing of a cost-competitive, long term supply of critical rare earths, in addition to uranium oxide, zinc sulphide, and bulk light rare earths (cerium, lanthanum).

Greenland is a great jurisdiction to operate with a government that is focussed on working with foreign companies to initiate a new generation of mines, in order to drive the economy and sustain Greenland's increasing independence.

Yours faithfully,

Roderick McIllree

Managing Director

Greenland Minerals and Energy Ltd

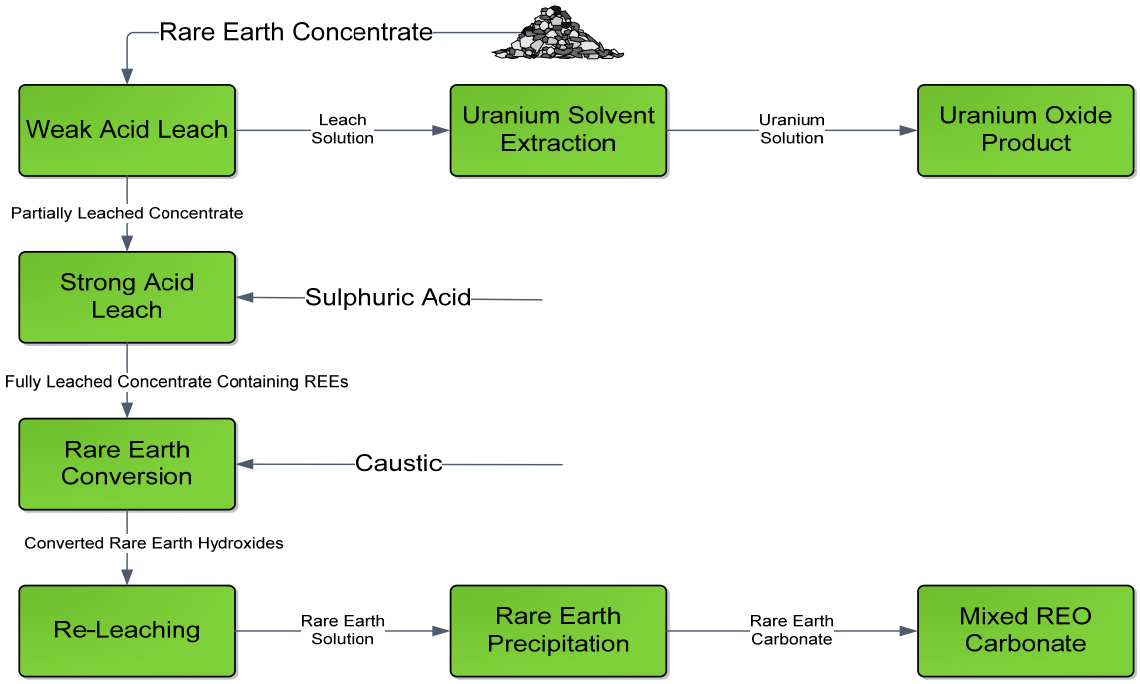

Figure 1. The simple mechanical equipment and the commerically proven recovery methods will result in a lower risk metallurgical flowsheet with faster ramp up to design production output.

Figure 2. Equipment set-up for the continuous 100 hour leach testwork.

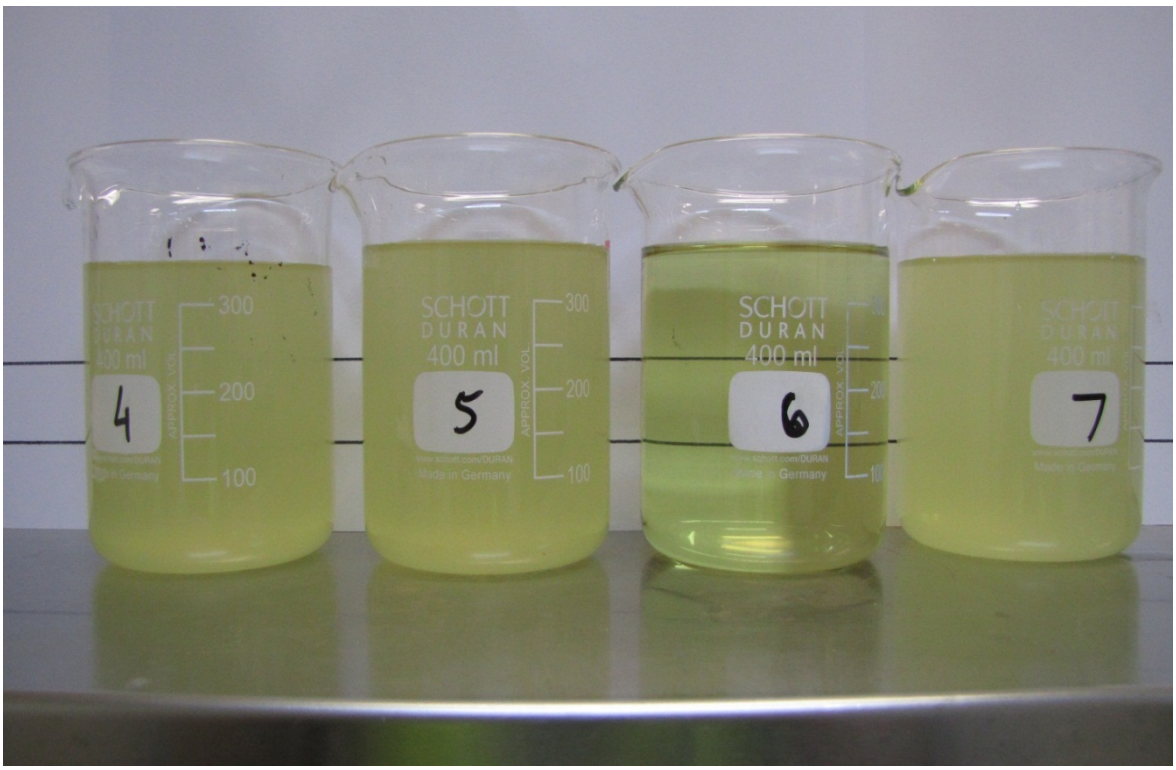

Figure 3. A selection of uranium-bearing pregnant leach solutions produced during the 100 hour run.

Figure 4. Solvent extraction phase disengagement testwork showing that the pregnant leach solution produced does not form third phases or 'cruds'. Phase disengagement time was fast regardless of continuity.

ABOUT GREENLAND MINERALS AND ENERGY LTD.

Greenland Minerals and Energy Ltd (ASX – GGG) is an exploration and development company focused on developing high-quality mineral projects in Greenland. The Company's flagship project is the 100% owned Kvanefjeld multi-element deposit (Rare Earth Elements, Uranium, Zinc), that is rapidly emerging as a premier specialty metals project. A comprehensive pre-feasibility study has demonstrated the potential for a large-scale, cost-competitive, multi-element mining operation. For further information on Greenland Minerals and Energy visit http://www.ggg.gl or contact:

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Greenland Minerals and Energy Ltd will continue to advance the Kvanefjeld project in a manner that is in accord with both Greenlandic Government and local community expectations, and looks forward to being part of continued stakeholder discussions on the social and economic benefits associated with the development of the Kvanefjeld Project.

The information in this report that relates to exploration targets, exploration results, geological interpretations, appropriateness of cut-off grades, and reasonable expectation of potential viability of quoted rare earth element, uranium, and zinc resources is based on information compiled by Mr Jeremy Whybrow. Mr Whybrow is a director of the Company and a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Whybrow has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined by the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Whybrow consents to the reporting of this information in the form and context in which it appears.

The geological model and geostatistical estimation for the Kvanefjeld, Sørensen and Zone 3 deposits were prepared by Robin Simpson of SRK Consulting. Mr Simpson is a Member of the Australian Institute of Geoscientists (AIG), and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined by the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Simpson consents to the reporting of information relating to the geological model and geostatistical estimation in the form and context in which it appears.