Quest Rare Minerals Ltd.

QUEST PRODUCES 98.4% PURITY HEAVY RARE EARTH PLUS YTTRIUM CONCENTRATE FROM AN IMPROVED PROCESS FLOWSHEET

Toronto, September 4, 2014 - Quest Rare Minerals Ltd. (TSX; NYSE MKT: QRM) announced today greatly improved production of a high purity rare earth and yttrium oxide concentrate from its new and substantially improved process flowsheet outlined in the April PEA press release for the Strange Lake Project.

The mixed rare earth oxide was produced as part of Quest's ongoing metallurgical testing program at SGS Mineral Services – Lakefield site (SGS), and represents the successful completion of the majority of the bench scale testing for the improved process.

Presented in Table 1 below is the analysis of the mixed oxide from SGS. The analysis was confirmed by a highly reputed third party laboratory, Activation Laboratories Ltd. The mixed oxide **contained 98.4% total rare earth oxide (TREO), of which approximately 37% is heavy rare earth oxide (HREO)**. HREO content is a function of the HREO distribution in the mineral sample that was fed through the process. According to the Quest's production plan, higher HREO content mineralized material will be processed in the first 23 years of production, **with about 45% HREO** expected in the final product mix.

Table 1 – Composition of the mixed rare earth oxide produced in recent process testing (SGS Analysis)

Oxide	La_2O_3	CeO_2	Pr_6O_{11}	Nd_2O_3	Sm_2O_3	Eu_2O_3	Gd_2O_3	Tb_4O_7	Dy_2O_3
Analysis	13.20%	30.62%	3.33%	12.00%	1.95%	0.14%	2.70%	0.55%	3.64%

Oxide	Ho_2O_3	Er_2O_3	Tm_2O_3	Yb_2O_3	Lu_2O_3	Y_2O_3	TREO*	LREO**	HREO***
Analysis	0.78%	2.34%	0.33%	1.82%	0.24%	24.80%	98.40%	61.10%	37.30%

(*) - Total Rare Earth Oxides (TREO+Y) include: La_2O_3, CeO_2, Pr_6O_{11}, Nd_2O_3, Sm_2O_3, Eu_2O_3, Gd_2O_3, Tb_4O_7, Dy_2O_3, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_2O_3 and Y_2O_3.

(**) - Heavy Rare Earth Oxides (HREO+Y) include: Eu_2O_3, Gd_2O_3, Tb_4O_7, Dy_2O_3, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_2O_3 and Y_2O_3.

(***) - Light Rare Earth Oxides (LREO) include: La_2O_3, CeO_2, Pr_6O_{11}, Nd_2O_3 and Sm_2O_3.

"Quest's metallurgical team has been extremely successful in producing a high-purity concentrate, extremely low in critical impurities such as iron and aluminum. The production of this concentrate demonstrates the simplicity with which Strange Lake material can be processed into separation plant feed-stock with a highly desirable rare earth distribution," said Quest President & CEO Peter Cashin. "I congratulate our development team on a well-executed and successful program."

Quest's integrated Strange Lake project will fill a critical market gap in heavy rare earths. Demand for rare earth elements will continue to grow as they are used in a wide range of modern technologies, many with strong growth potential. These include e-mobility automotive, wind power and advanced lighting systems.

The supply is heavily concentrated in China, particularly for the light rare earths. China is implementing a well-defined rare earth strategy, particularly through industry consolidation into six State Owned Enterprises. China is focused on supplying its internal rare earth requirements for end products for export as well as its growing domestic consumer market.

The Chinese view is that exporting rare earths in raw form is not critical to their rare earth strategy. Consequently, non-Chinese customers are expressing a strategic interest in new sources of supply to fill their growing rare earth demand and, equally important, to provide supply security and supply chain transparency. Due to the high cost of developing new sources, the most robust projects are ones such as Quest's integrated Strange Lake deposit. The operation has the potential to supply critical rare earth elements over the long-term because of the size of the deposit, the mineralization style as well as its location in a mining-friendly, geopolitically stable region. Rare earth buyers are increasingly recognizing that Quest is one of the lead projects poised for production through the Corporation's intensive product marketing and development efforts. Quest is currently working with potential customers and partners to realize the best opportunities for advancing the Strange Lake project to production.

Process Summary

The substantially improved process flowsheet developed and tested at SGS to produce the mixed rare earth oxide concentrate, which will form the feed to the rare earth separation plant, included the following simple process steps:

- Beneficiation (flotation), which reduced the mass of material treated by approximately 50%, and results in smaller process plant footprint at Bécancour and reduced energy requirements when compared to the 2013 PFS flowsheet

- Selective sulphation roasting and leaching, which targets recovery of REE+Y to solution, with minimum recovery of impurity elements, including Al, Fe, and Zr (they mostly remain in residue). The selective sulphation process greatly reduces acid consumption and drastically improves the quality of the leach solution, leading to reduced operating costs and allows for a simplified process flowsheet

- Impurity removal, which precipitates residual impurities from the leach solution

- Crude concentrate precipitation, which precipitates REE+Y from the leach solution

- Final mixed concentrate production, which includes re-leach of the crude concentrate and final purification steps before producing a high purity mixed rare earth concentrate

Beneficiation

The beneficiation process is a simple flotation circuit that operates at close to ambient temperature, and uses commercially available chemicals. Approximately 50% of mass can be rejected **with rare earth recoveries of about 90%**. The opportunity to raise waste rock mass rejection and potentially further decrease the size of the Bécancour Process Plant, as well as lower the logistics costs associated with transportation of flotation concentrate is currently under evaluation.

Hydrometallurgy

Quest's improved hydrometallurgical process can produce a high purity mixed rare earth oxide without technically complex, risky and costly solvent extraction circuits. The key process step in the new process is the selective thermal sulphation process. By careful control of key process parameters, the recovery of REE to solution can be maximized while Al, Fe, Zr and other impurities are rendered insoluble, and the acid level of the leach solution is minimized. High levels of acid and impurities in solution represent a major technical and economic challenge for many projects. By leaving the impurities behind in the leached residue and minimizing free acid in the leach solution, the flowsheet is dramatically simplified – with reductions in acid consumption, neutralizing agent consumption, process plant footprint, energy consumption and the quantity and quality of residue for disposal. Also of note is the fact that silica in Quest's minerals is not attacked by sulphuric acid, resulting in straightforward liquid solid separation steps.

REE recovery from flotation concentrate to leach solution **is approximately 87%** in the new process.

Following sulphation and water leaching, the remaining process steps are primarily simple precipitation and filtration stages using off the shelf equipment and relatively low cost reagents. Impurities are selectively precipitated from solution with minimal REE losses. A crude rare earth concentrate is produced by precipitation. The crude concentrate is then purified to produce the final mixed rare earth concentrate feed to the separation plant.

The final precipitation of the high purity mixed rare earth concentrate uses oxalic acid, which precipitates the rare earths as oxalates. The mixed rare earth oxalate is calcined to produce the high purity oxide. Options to further improve the purity of the mixed rare earth concentrate are being evaluated.

Ongoing and Future Metallurgical Programs

Quest is continuing to optimize the process flow sheet and evaluate opportunities for improvement in the beneficiation and hydrometallurgical processing stages. Ongoing and further metallurgical work includes the following:

- Continued evaluation of sensor-based ore sorting (radiometric, photometric) at Helmholtz Institute in Freiberg, Germany (evaluating potential of sensor based ore sorting as the first step in mass reduction)
- Optimization of the flotation circuit and evaluation of reduced mass pull (which may further decrease the size of the Bécancour, Québec processing plant, and offer potential reductions in CAPEX and OPEX)
- Mini-pilot plant operation of the hydrometallurgical circuit at SGS to confirm results of bench scale program and optimize operating parameters
- Beneficiation piloting (for sensor based sorting and or flotation circuits)
- Full scale integrated piloting

About Quest

Quest Rare Minerals Ltd. ("Quest") is an integrated Canadian-based development company focused on the advancement of its flagship Strange Lake property (rare earth-zirconium-niobium) in northeastern Québec and the construction of a processing facility in Bécancour, Québec. Quest is publicly listed on the TSX and NYSE MKT as "QRM" and is led by a highly-experienced management and technical team with a proven track record. Quest believes that its Strange Lake project has the potential to become an important long-term supplier of rare earth

elements (REE). In addition, Quest has announced the discovery of an important new area of REE and scandium mineralization on its Misery Lake project, approximately 120 km south of the Strange Lake project in northeastern Québec. Quest continues to pursue high-value technology metal project opportunities throughout North America.

Forward-Looking Statements

This news release contains statements that may constitute "forward-looking information" or "forward-looking statements" within the meaning of applicable Canadian and U.S. securities legislation. Forward-looking information and statements may include, among others, statements regarding the future plans, costs, objectives or performance of Quest, or the assumptions underlying any of the foregoing. In this news release, words such as "may", "would", "could", "will", "likely", "believe", "expect", "anticipate", "intend", "plan", "estimate" and similar words and the negative form thereof are used to identify forward-looking statements. Forward-looking statements should not be read as guarantees of future performance or results, and will not necessarily be accurate indications of whether, or the times at or by which, such future performance will be achieved. No assurance can be given that any events anticipated by the forward-looking information will transpire or occur, including the development of the Strange Lake Rare Earth Project, or if any of them do so, what benefits Quest will derive. Forward-looking statements and information are based on information available at the time and/or management's good-faith belief with respect to future events and are subject to known or unknown risks, uncertainties, assumptions and other unpredictable factors, many of which are beyond Quest's control. These risks, uncertainties and assumptions include, but are not limited to, those described under "Risk Factors" in Quest's annual information form dated January 24, 2014, and under the heading "Risk Factors" in Quest's Management's Discussion and Analysis for the fiscal year ended October 31, 2013, both of which are available on SEDAR at www.sedar.com and on EDGAR at www.sec.gov, and could cause actual events or results to differ materially from those projected in any forward-looking statements. Quest does not intend, nor does Quest undertake any obligation, to update or revise any forward-looking information or statements contained in this news release to reflect subsequent information, events or circumstances or otherwise, except if required by applicable laws.

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