Frontier Rare Earths Provides Update on Zandkopsdrift Prefeasibility Study and Corporate Developments

May 8, 2014 (Source: CNW) – In advance of the annual general meeting of shareholders to be held today in Luxembourg, Frontier Rare Earths Limited (TSX: FRO) (US:FREFF) ("Frontier" or the "Company") is pleased to provide an update on the prefeasibility study (the "PFS") being carried out at its Zandkopsdrift rare earth element project in South Africa ("Zandkopsdrift") and on other corporate developments.

"We are encouraged by the good progress being made on the PFS for our Zandkopsdrift rare earths project," said James Kenny, CEO for Frontier Rare Earths. "We look forward to announcing the results of the PFS later in 2014, and believe that this, backed by our strong balance sheet and partnership with Korea Resources Corporation, makes the Company well positioned to reach its objective of being among the lowest cost new producers of high purity separated rare earths outside China."

Zandkopsdrift is being developed by Frontier in partnership with Korea Resources Corporation ("Kores"), the wholly-owned mining and natural resource investment arm of the South Korean Government. Zandkopsdrift is expected to be one of the first new major producers of high purity separated rare earth oxides outside China and, significantly, to become one of the largest producers of high demand critical rare earth oxides, which comprise dysprosium, terbium, europium, neodymium and yttrium in individual separated, high purity form.

Highlights:

- **Prefeasibility Study Update**
  - Metallurgical test work conducted in Q4 2013 and Q1 2014 has confirmed a number of process improvements to the PFS flow sheet that are expected to have a significant positive impact on capital and operating cost estimates.
  - A revised flow sheet has now been finalised for the PFS incorporating these improvements.
  - Remaining engineering design work for the PFS scheduled to commence in Q2 2014.
  - Potential for low-cost production of a manganese sulphate by-product, which could generate significant additional revenue, being evaluated for inclusion in the PFS.
  - PFS results expected to be announced in Q4 2014.
- **Financial Position**
  - Working capital position remains strong with $32M cash and no debt.
  - Kores funding 10% of all ongoing Zandkopsdrift project evaluation and development costs.
- **New Project Development**
  - The Company continues to identify and selectively develop a portfolio of new projects in Africa. Commodities of specific interest include graphite, tungsten and phosphate.

Prefeasibility Study Update

In Q4 2013 the Company reported that good progress had been made on the various studies that are required for the PFS (the "PFS Studies"), which cover all aspects of the proposed Zandkopsdrift development, including design of the Zandkopsdrift Processing Plant and Saldanha Separation Plant, power, water, roads, tailings, mining, reagent supply, logistics and environmental management. The Company indicated that a review of the PFS Studies had identified several areas

where potential engineering design and process improvements could be made that could have a significant positive impact on the capital and operating cost estimates for the PFS and that further test work would be undertaken in Q4 2013 and Q1 2014 in order to validate these improvements.

PFS Flow Sheet

The Company is pleased to report that this test work has now been completed and has been successful in confirming a number of the proposed engineering design and process improvements. As a result, a number of changes have been made to the PFS flow sheets, which are expected to have a significant positive impact on the current capital and operating cost estimates for the PFS. The revised flow sheet for the Zandkopsdrift Processing Plant, which has now been finalised for the PFS, comprises the following:

1. A front-end crushing and milling circuit. The selected milling technology produces a sharply defined particle size distribution, with downstream handling benefits.
2. An impurity pre-leach circuit, which provides a significant mass reduction with low rare earth losses, and a consequent reduction in both capital and operating costs of the cracking and other downstream processes.
3. An acid contacting circuit in which concentrated sulphuric acid is mixed with the feed material to produce a free flowing feed for the cracking circuit.
4. A cracking circuit in which the prepared feed is baked at elevated temperatures, which decomposes the rare earth minerals, recovers sulphur as SO_2 and SO_3, which is returned to the sulphuric acid plant, and stabilizes many of the impurities, which prevents them from leaching with the rare earths in the water leach circuit.
5. A water leach circuit, in which the calcine is water leached to produce a pregnant leach solution (“PLS”) containing rare earth elements (“REEs”) and residual un-

stabilized impurities.

6. An impurity removal circuit in which the PLS is purified by removal of the residual un-stabilized impurities through precipitation and filtration.
7. A REE precipitation circuit in which the REEs are precipitated from the purified PLS as a mixed rare earth product that is suitable for processing through a conventional solvent extraction separation plant.
8. A final stage of waste neutralization and disposal to the tailings storage facility on site.

The remaining engineering design work for the PFS is scheduled to commence in this quarter and this work is expected to be completed and the results of the PFS announced in Q4 2014.

Manganese Sulphate By-product

The metallurgical test work recently completed by the Company has also identified an opportunity for the production of potentially significant quantities of manganese sulphate as a by-product at Zandkopsdrift. Test work on waste streams produced by the impurity pre-leach circuit test work, of which manganese is one of the principal constituents, has indicated that a simple, low cost, evaporation and crystallization process can produce a manganese sulphate product.

Manganese sulphate is used as a micronutrient in animal feed and in fertiliser and is also used as a chemical intermediate. Its high solubility in water makes it particularly desirable for the animal feed and fertiliser applications. Manganese sulphate is typically produced via a sulphuric acid leach of manganese ore, which is similar to the process used in the impurity pre-leach circuit at Zandkopsdrift.

The test work completed to date has resulted in the production of manganese sulphate that meets the specifications for animal feed and fertiliser applications. Additional test work is currently being undertaken by HPD Systems, a division of

Veolia Water Solutions & Technologies, a leader in evaporation and crystallization technologies. Based on the results of this test work, which is not expected to delay completion of the PFS, the PFS may also include provision for the production and sale of a manganese sulphate by-product which could potentially generate significant additional revenue streams for the Zandkopsdrift project.

Corporate Development

While Frontier's primary focus remains on the development of Zandkopsdrift, the Company has, as previously announced, identified and is currently evaluating other opportunities to expand its mineral project portfolio in South Africa, Mozambique, Uganda and elsewhere in Africa. These opportunities are considered to be highly prospective and to have the potential for significant value creation for Frontier at relatively low risk and cost, and cover a range of minerals including graphite, tungsten and phosphate. Good progress has been made in Mozambique in particular where, as previously announced, Frontier has acquired a 70% interest in a private company that holds three exploration licences that are considered highly prospective for graphite. The Company is currently evaluating the historical exploration data for these licences and expects to be able to provide an update on the potential of the licences and the Company's plans for them later in 2014.

The Company has stated that it does not believe that the trading price of the Company's shares on the Toronto Stock Exchange appropriately reflects the inherent value of the Company and its assets. As a result the Company has indicated that it intends to review alternatives that would allow it to maximise the potential long-term value for its shareholders, and will provide updates on developments in this regard as appropriate.

Cash Position and Working Capital Adequacy

The Company's working capital position remains strong with

approximately $32M in cash at end April 2014 and no debt. The Company remains fully funded through completion of both the PFS and the definitive feasibility study planned to be undertaken on Zandkopsdrift.

Kores Joint Venture

Kores holds a 10% interest in Zandkopsdrift and is responsible for a *pro-rata* share of on-going Zandkopsdrift project evaluation, development and operating costs. In addition to the $23.8M paid for its initial stake in Zandkopsdrift Kores has also provided additional funding of $1.6M to cover its 10% share of costs from July 2012 to December 2013. In addition, Kores is also currently providing other valuable inputs to Frontier including carrying out additional metallurgical test work on material from Zandkopsdrift at its facilities in Seoul at Kores' own cost.

Qualified Person

The technical information in this release has been approved by Dr. Stuart Smith BSc, PhD. who is a "Qualified Person" in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects.

About Frontier Rare Earths Limited (TSX: FRO US: FREFF)

Frontier Rare Earths Limited (www.frontierrareearths.com) is a mineral exploration and development company principally focused on the development of rare earths projects in Africa. Frontier's flagship asset is the Zandkopsdrift rare earth project, which is located in the Northern Cape Province of South Africa and is one of the largest, highest grade undeveloped rare earth deposits worldwide. Frontier has a direct 64% interest and an 85% economic interest in Zandkopsdrift following the acquisition by its strategic partner Korea Resources Corporation of an initial 10% interest in Zandkopsdrift. In March 2012 Frontier filed a Preliminary Economic Assessment ("PEA") on the Zandkopsdrift project prepared in accordance with National Instrument 43-101. The results of the PEA indicated that the proposed development of

the Zandkopsdrift Project is both technically feasible and economically robust with a low risk profile. In conjunction with the PEA a mineral resource estimate for Zandkopsdrift confirmed 42.5m tonnes at an average grade of 2.23% containing approximately 940,000 tonnes total rare earth oxides (applying a 1% cut-off) and with 78% of the mineral resource in the indicated category. Mineral resources that are not mineral reserves do not have demonstrated economic viability. Fiona Harper, Pr.Sci.Nat, was the independent qualified person from Venmyn Rand (Pty) Ltd. responsible for the PEA. For additional quality assurance program and the quality control measures applied, as well as other relevant technical information in respect of the Zandkopsdrift project, please refer to our technical report entitled “Amended Independent Technical Report on the Results of a Preliminary Economic Assessment of Frontier Rare Earths Limited’s Zandkopsdrift Rare Earths Project, Located in the Northern Cape Province Of South Africa”, dated March 30, 2012, which is available on SEDAR at www.sedar.com.

Frontier is listed on the main board of the Toronto Stock Exchange and currently has 89,562,781 shares outstanding. Frontier is well funded, with approximately $32 million in cash and no debt, and this strong cash position is expected to be sufficient to fully fund the completion of Prefeasibility and Definitive Feasibility Studies on Zandkopsdrift and work on Frontier’s other proposed exploration and development programs.