ASX: MRD

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Selectro™ Recovers 96% Vanadium from Titanomagnetite

Third successful feed type expands Selectro™ commercial potential

Highlights

- **Mount Ridley's patent-pending Selectro™ Process has recovered 96% vanadium** from a titanomagnetite sample in the Company's second third-party feed test, alongside 49% titanium and 78% iron.
- **Selectro™ leached vanadium and iron preferentially in the first stage**, leaving a titanium-rich residue grading 21.5% TiO_2, up from 14.2% TiO_2 in the head sample.
- **A second Selectro™ stage on this residue lifted titanium recovery more than fivefold**, from 9% to 48%, with titanium leaching preferentially over iron, which the Company attributes to the removal of solution loading constraints present in the first stage.
- The two-stage **Selectro™ Process achieved these recoveries without the high temperature salt roast used in conventional titanomagnetite processing**, designed to recover vanadium only.
- **Titanomagnetite joins Grass Patch and bauxite as the third feed type processed by Selectro™**, further expanding the addressable market for Selectro™ licensing.
- Titanomagnetite also broadens the range of feeds available for demonstration as the Company advances the design of its Selectro™ demonstration plant.
- **Titanium links directly back to Grass Patch scandium**, with premium titanium-scandium alloys being assessed alongside aluminium-scandium alloys under the Company's CSIRO Kick-Start program.
- A **larger scale bauxite test is being progressed** with the aim of demonstrating the full mine to metal pathway, with the titanomagnetite result supporting engagement with vanadium and titanium producers.

Mount Ridley Mines Limited (ASX: **MRD**, OTC: **MRDMF**) ("**Mount Ridley**" or "the **Company**") is pleased to report results from the second third-party feed test of its wholly owned and patent-pending Selectro™ Process, completed on a titanomagnetite sample supplied by an external third party.

Titanomagnetite is the host mineral for the majority of global vanadium production.[1] The test was designed to determine whether Selectro™ could recover vanadium and titanium together from this feed, rather than vanadium in isolation as is the case in conventional processing routes.

Titanomagnetite Test Results

The test was run as a two-stage Selectro™ leach. Selectro™ chemistry can be tuned to preferentially recover different metals depending on the feed and the metals targeted. In the first stage, vanadium and iron were taken into solution preferentially over titanium, leaving a titanium-rich residue with the TiO_2 grade increasing from 14.2% in the head sample to 21.5% in the first stage residue. Selective leaching has been a consistent feature of Selectro™ across the Company's testwork, with the reagent targeting scandium and rare earths in Grass Patch clays and gallium, aluminium and iron in bauxite.

The Company considers solution loading to be the key constraint on titanium recovery in the first stage, with the solution becoming heavily loaded with iron and vanadium. The titanium-rich residue

then underwent a second Selectro™ leach stage using fresh solution. Titanium leached preferentially over iron in this stage, lifting overall titanium recovery more than fivefold and recovering additional vanadium and iron. The Company believes there is scope to increase titanium recovery further through refinement of the second stage conditions.

The titanomagnetite sample returned a head grade of 1.30% V_2O_5, 14.2% TiO_2 and 52.3% Fe. Combined recoveries across both stages were 95.5% vanadium, 48.6% titanium and 77.6% iron. Recoveries were calculated using the residue versus head assay method, consistent with the method applied to the Company's bauxite test.

Mount Ridley Managing Director & CEO, Mr Allister Caird commented:

"Building on the strong results achieved from bauxite, this result is further evidence that Selectro™ is a processing platform with application well beyond Grass Patch. Titanomagnetite is the world's primary source of vanadium but it has historically been processed for vanadium alone. Recovering 96% of the vanadium from the sample while also bringing titanium and iron into solution shows Selectro™ has the potential to unlock more value from this feed, which could improve the economics of titanomagnetite projects.

Just as encouraging is the way Selectro™ worked through the sample, taking vanadium and iron first and titanium second, with titanium recovery lifting more than fivefold in the second stage, which essentially acts as a proxy for separation. Titanium also gives us another link back to our own project, with titanium-scandium alloys among the premium next generation materials being assessed in our CSIRO program."

Significance of the Result

The leach sequence is significant beyond the headline recoveries. With vanadium and iron reporting preferentially to the first stage and titanium to the second, the two Selectro™ stages act as a proxy for separation, with each stage producing a solution enriched in different metals. If this behaviour is driven by solution loading as the Company interprets, there is potential to control the split between stages through optimisation.

Conventional titanomagnetite processing typically relies on a high temperature salt roast to liberate vanadium ahead of leaching, with titanium and iron reporting to the roasted residue.[2] Recovering titanium from that residue requires a separate processing route. The two-stage Selectro™ approach uses the same chemistry in both stages and avoids the roasting step entirely, which the Company considers has the potential to reduce both the cost and complexity of processing titanomagnetite. These potential benefits will be assessed as testwork progresses.

Vanadium and the Energy Storage Opportunity

Vanadium redox flow batteries (VRFBs) are emerging as a leading technology for long duration, grid scale energy storage. Unlike lithium-ion batteries, VRFBs store energy in a liquid vanadium electrolyte, are non-flammable and can operate for decades with minimal loss of capacity.[3,4] At end of life the vanadium electrolyte can be recovered and reused, retaining its value through multiple battery lifecycles.[4]

The vanadium electrolyte represents a significant share of VRFB system cost, making secure and competitively priced vanadium supply central to the growth of the technology.[4] Global supply is highly concentrated, with China accounting for around three quarters of estimated 2025 world vanadium production according to the US Geological Survey, largely as a co-product of steelmaking.[5]

Governments are increasingly backing VRFBs as part of the shift to long duration energy storage. The Australian Renewable Energy Agency (ARENA) provided A$5.7 million toward Australia's first utility-scale vanadium flow battery in South Australia, citing the emerging requirement for longer duration storage identified by the Australian Energy Market Operator and the Australian Government.[6] ARENA is also leading the A$500 million Battery Breakthrough Initiative, a key part of the Australian

Government's National Battery Strategy, which is supporting the manufacture of battery materials and components in Australia.[7]

In Queensland, the State Government has completed major construction of the Queensland Resources Common User Facility in Townsville, with its foundation customer using the facility to validate vanadium production processes as part of an integrated supply chain through to flow battery electrolyte.[8]

The relatively high and volatile price of vanadium, driven by highly concentrated supply, has historically constrained the financing and widespread deployment of VRFBs.[9,10] Selectro™ has the potential to address this constraint directly by recovering titanium and iron alongside vanadium, creating opportunities for additional co-product value that conventional processing typically leaves in the residue and potentially reducing the cost of primary vanadium production outside the dominant supply jurisdictions.

With industry and government support for VRFBs building, Mount Ridley sees Selectro™ potentially playing an integral role in delivering the secure, stable vanadium supply the technology needs to scale.

Titanium and the Link to Scandium

Titanium is valued for its strength, low weight and corrosion resistance and is used extensively in aerospace, defence, medical and chemical processing applications, with titanium dioxide pigment its largest end use by volume.[11]

Scandium is emerging as a high value alloying addition to titanium, where research has shown it can refine grain structure and improve strength, including at elevated temperatures.[12] Given the price and performance of both metals, titanium-scandium alloys sit at the premium end of the next generation advanced materials market for aerospace and defence applications. Mount Ridley sees the early stage of titanium-scandium alloy development as a clear opportunity for an early mover with secure access to scandium supply.

This creates a direct link between the titanomagnetite result and the Company's Grass Patch Project, which hosts a 946.1Mt Inferred scandium Mineral Resource containing 47,357t of scandium. The Company's CSIRO Kick-Start program with Lab22 is assessing scandium alloys for additive manufacturing, with titanium-scandium alloys included in its existing scope alongside aluminium-scandium alloys.

Selectro™ Results to Date

Selectro™ has now been applied to three distinct feed types, each with a different mineralogy and metal suite. Recoveries achieved to date are summarised in Table 1.

Feed	Selectro™ recoveries
Grass Patch clay (Mount Ridley)	Scandium 91.8%, HREE up to 86% (average 84%), LREE up to 81% (average 77%), gallium 41.5%
Darling Range bauxite (ASQ)	Gallium 94.9%, aluminium 91.9%, iron 96.7%
Titanomagnetite	Vanadium 95.5%, titanium 48.6%, iron 77.6%

Table 1: Selectro™ recoveries to date. Grass Patch recoveries are from the Company's most recent Grass Patch test, completed at half the reagent dose of earlier testwork.

Selectro™ Licensing and Demonstration Plant

Mount Ridley's strategy is to apply Selectro™ at Grass Patch while licensing the technology to third-party project owners. Each new feed type expands the addressable market for licensing, with titanomagnetite adding vanadium and titanium to the scandium, rare earth, gallium and aluminium applications already demonstrated.

The Company is in discussions with engineering groups on the design of a Selectro™ demonstration plant. With three feed types now tested, the demonstration plant has the potential to showcase Selectro™ performance on third-party feeds as well as Grass Patch material, broadening the opportunities to demonstrate the technology to prospective licensees and partners.

Next Steps

The strength of the results achieved across the first round of third-party feed testing has set a clear direction for the next phase of Selectro™ development, with the Company now focused on the following:

- Completing a larger scale Selectro™ bauxite test to demonstrate the separation and purification stages, with the aim of proving up the full mine to metal pathway for bauxite feed.
- Engaging with industry, including vanadium and titanium producers, to advance the Selectro™ Process as the Company progresses toward its demonstration plant.
- With the first round of third-party feed testing nearing completion, the Company will consider additional third-party feeds in CY2027 or on a case by case basis depending on the counterparty and the commercial value proposition.

This ASX announcement has been authorised for release by the Board of Mount Ridley Mines Ltd.

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Forward Statement

This news release contains "forward-looking information" within the meaning of applicable securities laws. Generally, any statements that are not historical facts may contain forward-looking information, and forward looking information can be identified by the use of forward-looking terminology such as "plans", "expects" or "does not expect", "is expected", "budget" "scheduled", "estimates", "forecasts", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or indicates that certain actions, events or results "may", "could", "would", "might" or "will be" taken, "occur" or "be achieved."

Forward-looking information is based on certain factors and assumptions management believes to be reasonable at the time such statements are made, including but not limited to, continued exploration activities, commodity prices, the estimation of initial and sustaining capital requirements, the estimation of labour costs, the estimation of mineral reserves and resources, assumptions with respect to currency fluctuations, the timing and amount of future exploration and development expenditures, receipt of required regulatory approvals, the availability of necessary financing for the project, permitting and such other assumptions and factors as set out herein.

Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking information, including but not limited to: risks related to changes in commodity prices; sources and cost of power and water for the Project; the estimation of initial capital requirements; the lack of historical operations; the estimation of labour costs; general global markets and economic conditions; risks associated with exploration of mineral deposits; the estimation of initial targeted mineral resource tonnage and grade for the project; risks associated with uninsurable risks arising during the course of exploration; risks associated with currency fluctuations; environmental risks; competition faced in securing experienced personnel; access to adequate infrastructure to support exploration activities; risks associated with changes in the mining regulatory regime governing the Company and the Project; completion of the environmental assessment process; risks related to regulatory and permitting delays; risks related to potential conflicts of interest; the reliance on key personnel; financing, capitalisation and liquidity risks including the risk

that the financing necessary to fund continued exploration and development activities at the project may not be available on satisfactory terms, or at all; the risk of potential dilution through the issuance of additional common shares of the Company; the risk of litigation.

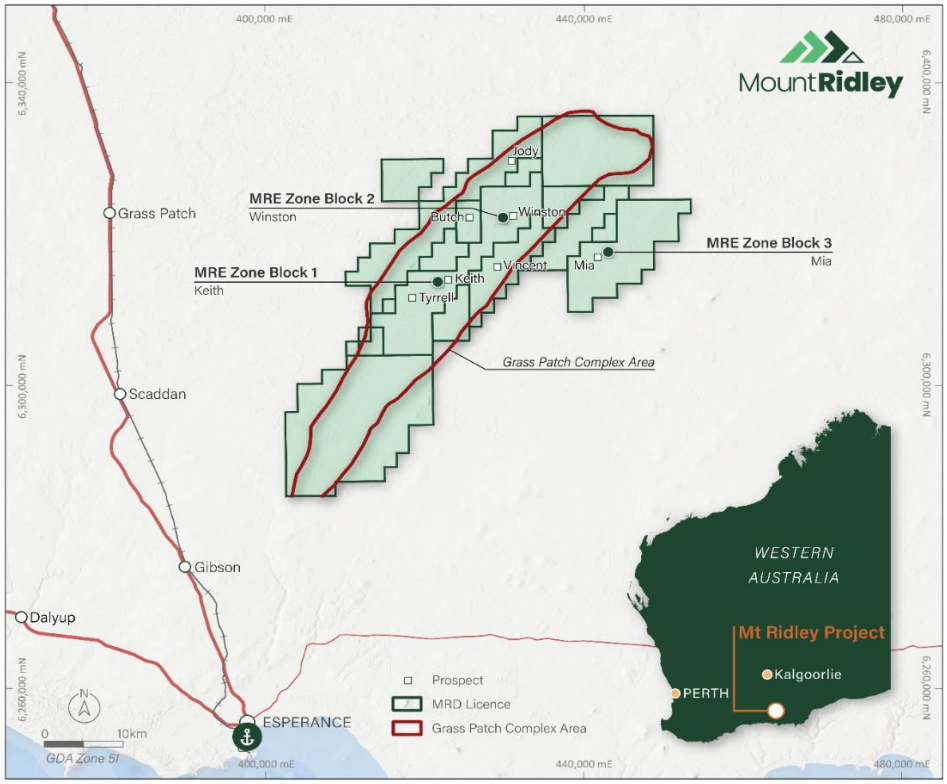
Although the Company has attempted to identify important factors that cause results not to be as anticipated, estimated or intended, there can be no assurance that such forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. Accordingly, readers should not place undue reliance on forward-looking information. Forward looking information is made as of the date of this announcement and the Company does not undertake to update or revise any forward-looking information this is included herein, except in accordance with applicable securities laws.

Previously Reported Information

The information in this announcement that relates to the Grass Patch scandium Mineral Resource Estimate and to previous Selectro™ testwork results is extracted from the Company's ASX announcements dated 26 August 2026, 17 September 2026 and 21 October 2026. The Company confirms that it is not aware of any new information or data that materially affects the information included in those announcements and, in the case of the Mineral Resource Estimate, that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed.

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Location of the Grass Patch Project 25km north of Esperance, Western Australia

About Mount Ridley Mines Ltd

Mount Ridley Mines Ltd is an Australian critical minerals explorer focused on the discovery and development of heavy rare earth elements, gallium and scandium across its wholly owned Mount Ridley and Weld Range projects in Western Australia. Complimentary to its upstream business, the Company is actively pursuing longer term downstream pathways aimed at enhancing value through processing and separation of critical minerals for supply into allied markets.

Grass Patch Project

The flagship Grass Patch Project is located approximately 25 kilometres north of the deep water port of Esperance and hosts defined heavy rare earth element, scandium and gallium resources identified through 70 000 metres of historical drilling. A majority of the project tenure is centred on the Grass Patch Complex, which is widely interpreted to be the primary source of the heavy rare earth enrichment identified across the project area.

The Grass Patch Project remains significantly underexplored relative to its scale and geological endowment. Multiple high priority walk up drill targets have been identified through historical drilling, geophysics and recent technical reviews. These targets are currently being assessed and prioritised with the intention of supporting future drilling programs planned for 2026.

Weld Range Project

The Company also holds the Weld Range Project in Western Australia, which provides additional exposure to large scale mineral systems within a well-established mining region. Together, the Mount Ridley and Weld Range projects position the Company as an emerging participant in the supply of critical minerals into allied markets.