

ASX Release / 21 October 2026

Selectro™ Returns 95% Gallium Recovery from Bauxite

Gallium, aluminium and iron all recovered above 90% in a single bauxite leach

Highlights

- Mount Ridley's wholly owned and patent-pending Selectro™ Process has recovered 95% of the gallium from ASQ's Darling Range bauxite composite.
- 95% gallium recovery compared with approximately 70% extracted into the liquor in the conventional Bayer process¹
- Gallium (95%), aluminium (92%) and iron (97%) all recovered in a single leach at below 100°C.
- The leach left a silica-rich residue in place of red mud, with more than 90% of the silica remaining in the residue
- China produces approximately 99% of the world's primary gallium while the United States has no domestic primary production
- China's export ban on the United States is suspended until 27 November 2026, but licensing controls and the ban on supply to United States military users remain in place, with shipments to the United States negligible^{2,3}
- Demand for gallium nitride power semiconductors is forecast to grow at 35% a year to US\$3.5 billion by 2031, driven by AI data centres, electric vehicles and industrial systems⁴
- Selectro™ offers a potential alternative to the Bayer process, recovering more of the value contained in bauxite while leaving a cleaner residue
- With gallium, aluminium and iron all recovered above 90%, the Company's focus now turns to the separation and purification stage

Mount Ridley Mines Limited (ASX: MRD, OTC: MRDMF) ("Mount Ridley" or "the Company") is pleased to report gallium results from its first third-party test of the Selectro™ Process, on a composite bauxite sample supplied by Australian Silica Quartz Group Ltd (ASX: ASQ) ("ASQ") from its Darling Range bauxite project in Western Australia.

Gallium results were pending at the time of the Company's announcement of 15 October 2026, which reported aluminium recovery of 92% and iron recovery of 97% from the same test.⁵ Gallium recovery of 95% has now been confirmed, with gallium, aluminium and iron recovered together in a single leach.

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

"Our gallium result completes the bauxite picture and brings us full circle back to our focus on critical minerals. Bauxite is the world's main source of gallium, but recovering it through conventional refining requires dedicated circuits that are costly to build. Projects such as the Wagerup gallium plant have elicited strong government support.

"We have long held the view that technology is the most effective way to deliver a new source of gallium supply. We believe Selectro™ shows strong potential here, a position further strengthened by



the clean, silica-rich residue left in place of red mud and strong recoveries of aluminium at 92% and iron at 97%.

"This result builds on the strong recoveries achieved from our own critical minerals basket at Grass Patch and has prompted us to turn our immediate attention to separation and purification pathways for both bauxite and Grass Patch feeds."

Gallium Results

The gallium results relate to the same Selectro™ test reported on 15 October 2026, carried out on a composite prepared from 16 vacuum drill samples taken from four drill holes across the Athena and Ceres prospects of ASQ's Darling Range bauxite project. Gallium was measured by ICP-MS, a more sensitive assay method required for the low concentrations of gallium present in bauxite. Recoveries are reported as metal extracted to solution, calculated from solution assays and calculated head grade.

Table 1: Selectro™ first pass bauxite test results

Element	Composite head grade	Selectro™ recovery
Gallium (Ga)	80 ppm	94.9%
Aluminium (as Al ₂ O ₃)	41.9%	91.9%
Iron (as Fe ₂ O ₃)	13.6%	96.7%

Gallium recovery closely matches aluminium recovery, consistent with gallium being hosted largely within the gibbsite that makes up most of the alumina in Darling Range bauxite.

The Company believes that the molecular tuning of the Selectro™ reagent chemistry for bauxite feed has contributed to the improved gallium recovery achieved relative to earlier testwork on its Grass Patch feed. This highlights the adaptability of the underlying Selectro™ chemistry across different mineral feedstocks, with the Company continuing to investigate opportunities to further optimise reagent formulations and metal recoveries.

Gallium in the Bayer Process

Primary gallium is recovered almost entirely as a by-product of alumina refining. In the Bayer process, approximately 70% of the gallium in bauxite is extracted into the caustic liquor during digestion, with the remaining 30% reporting to the bauxite residue, or red mud.¹ Gallium in the liquor can only be recovered where a refinery operates a dedicated recovery circuit.

Selectro™ recovered 95% of the gallium into solution in a single leach alongside the aluminium and iron, without generating red mud.

Gallium Market and Supply Security

Gallium is a critical semiconductor material. In the form of gallium arsenide (GaAs) and gallium nitride (GaN), it is used to manufacture integrated circuits and optoelectronic devices, which account for 73% and 26% of gallium consumption in the United States respectively.² GaAs and GaN devices operate at higher frequencies, power levels and temperatures than conventional silicon, making them essential in defence radar and electronic warfare systems, 5G and satellite communications and LEDs and laser diodes. Gallium nitride is also increasingly used in power electronics for electric vehicles and AI data centres. The United States Geological Survey notes that in many defence applications there are no effective substitutes for GaAs and GaN-based integrated circuits.²

Demand for gallium-based semiconductors is growing strongly. Industry analyst Yole Group forecasts the power GaN device market to grow at a compound annual rate of 35% to US\$3.5 billion by 2031, driven by AI data centres, electric vehicles and industrial systems.⁴

Supply, however, remains highly concentrated. China accounts for approximately 99% of global primary low-purity gallium production.² China introduced export licensing for gallium in August 2023

and in December 2024 banned gallium exports to the United States, together with a prohibition on the export of dual-use items to United States military users.³ In November 2025 China suspended the United States export ban until 27 November 2026, but export licensing remains in place and the prohibition on supply to United States military users was not lifted.³

The United States has no domestic primary gallium production and is 100% reliant on imports.² The United States Geological Survey has estimated that a total Chinese ban on gallium and germanium exports could reduce United States GDP by US\$3.4 billion to US\$9 billion.⁶ With the current suspension due to expire on 27 November 2026 and its status beyond that date has not been confirmed, secure gallium supply, particularly for defence applications, remains a pressing concern for the United States and its allies.

Governments in Australia, Japan and the United States are supporting the development of alternative supply, including through the planned gallium production plant at Alcoa's Wagerup alumina refinery in the Darling Range.⁷ On this first test, Selectro™ recovered more of the gallium, aluminium and iron contained in the bauxite than the Bayer process, in a single leach that left a clean silica-rich residue in place of red mud. This positions Selectro™ as a potential alternative route to secure gallium supply outside China.

Next Steps

With strong recoveries now achieved for all of the major metals targeted in bauxite, the Company's focus now turns to the separation and purification of aluminium, iron and gallium from the leach solution. Next steps include:

- Separation and purification of the gallium from the Selectro™ leach solution.
- Results from the second Selectro™ bauxite test, currently underway as part of optimising the underlying Selectro™ chemistry for bauxite feed.
- Further third-party Selectro™ testing on a range of different feedstocks.
- Continued progress on the accelerated design and construction of a Selectro™ demonstration plant.

About the Selectro™ Process

The Selectro™ Process is Mount Ridley's wholly owned and patent-pending leach technology. It was initially designed to recover multiple critical minerals simultaneously from a single leach circuit, operating as a closed loop system with reagent recycling and a materially lower reagent cost profile than conventional hydrochloric acid leaching. On the Company's Grass Patch feed, Selectro™ has demonstrated high recoveries of scandium, heavy rare earth elements and gallium. Selectro™ has now also demonstrated its ability to recover aluminium, iron and gallium from a third-party bauxite feed, with further third-party testwork underway on a range of different feedstocks.

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

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4. Yole Group (2026), Power GaN 2026, as reported by Semiconductor Today, 20 August 2026.
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7. Alcoa Corporation, Final Investment Decision for Gallium Project in Western Australia, 14 July 2026.

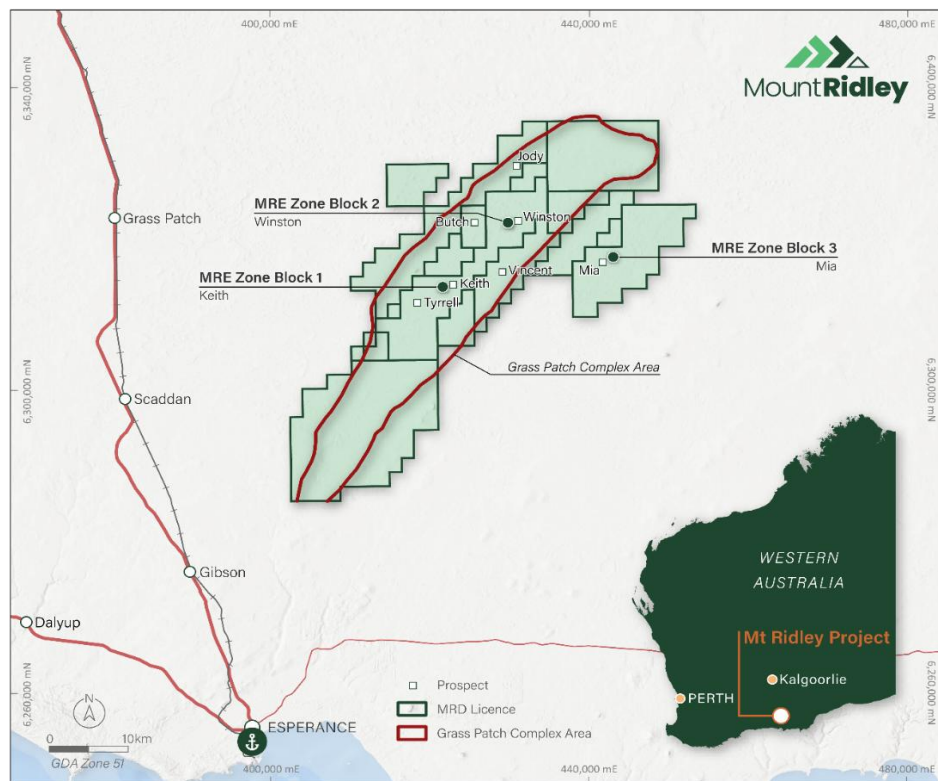
Forward Statement

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.



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 resourced 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.