



28 October 2021



Neometals
All the right elements

QUARTERLY ACTIVITIES REPORT

For the quarter ended 30 September 2021

HIGHLIGHTS

CORPORATE

- Successful demerger, in-specie share distribution to Neometals shareholders (\$26M based on capital raising price) and listing of Widgie Nickel Ltd, which raised \$24M via underwritten entitlement issue to advance the Mt Edwards nickel assets
- Cash balance A\$83.5 million, receivables and investments of A\$38.7 million and no debt; and
- Preparations ongoing for Neometals dual listing on AIM market of the London Stock Exchange.

CORE DEVELOPMENT ACTIVITIES

Lithium-ion Battery (“LIB”) Recycling Project (50% NMT via Primobius GmbH, an incorporated JV with SMS group GmbH)

- Recycling demonstration plant - shredding and beneficiation circuit successfully commissioned;
- Recycling demonstration plant - hydrometallurgical refining circuit constructed and commenced commissioning (successfully commissioned post quarter end);
- Demonstration trials will provide key inputs for engineering cost and feasibility study for first 20,000tpa operation;
- Strong commercial pipeline with potential for multiple plant rollouts as principal in Europe, North American and Asia with partners and existing licences; and
- Investment decision made to increase throughput of existing Primobius demonstration plant to allow commercial shredding disposal operations from Q1 2021. Procurement and construction activities commenced for the same.

Vanadium Recovery Project (“VRP”) (earning into 50:50 JV with Critical Metals Ltd)

- VRP process successfully demonstrated at scale in 24-day continuous pilot trials;
- Exceptional product purities and strong vanadium recoveries support board decision to commence feasibility study activities for the first vanadium recovery plant in Pori, Finland, completion expected in June 2022; and
- MoU between Neometals’ partner, Critical Metals, and H2 Green Steel for a potential second, larger vanadium recovery plant in Sweden;

Barrambie Titanium and Vanadium Project (“Barrambie”) (100% NMT)

- Preparation of Barrambie mixed gravity concentrate sample for Jiuxing commercial smelting trials in China;
- Leading mining service providers progressing due diligence to provide “Build-Own-Operate” proposals for the development of Barrambie on a capital-light basis; and
- Pre-feasibility study advanced on Australian mining and beneficiation operation with Chinese refining activities.

COMPANY OVERVIEW

Neometals innovatively develops opportunities in minerals and advanced materials essential for a sustainable future. With a focus on the energy storage megatrend, the strategy focuses on de-risking and developing long life projects with strong partners and integrating down the value chain to increase margins and return value to shareholders.

Neometals has three core projects that support the global transition to clean energy and span the battery value chain:

Recycling and Resource Recovery:

- Lithium-ion Battery Recycling – a proprietary process for recovering nickel, cobalt and other valuable materials from spent and scrap lithium batteries. Showcase demonstration plant trials targeted for DecQ 2021 with 50:50 JV partner SMS group. Targeting a development decision in Mar Q 2022; and
- Vanadium Recovery – sole funding evaluation studies to form a 50:50 joint venture with Critical Metals Ltd to recover high-purity vanadium pentoxide from processing by-products (“Slag”) from leading Scandinavian steelmaker SSAB. Underpinned by a 10-year Slag supply agreement, Neometals is targeting an investment decision to develop a 200,000tpa processing plant in DecQ 2022.

Upstream Industrial Minerals:

- Barrambie Titanium and Vanadium Project - one of the world's highest-grade hard-rock titanium-vanadium deposits, working towards a development decision in 2022 with potential operating JV partner IMUMR and potential cornerstone product off-taker, Jiuxing Titanium Materials Co.



Figure 1 – Location map of Neometals’ Core Projects

CORE PROJECTS



Lithium Battery Recycling Project

(Neometals 100%, SMS earning into 50% through Primobius GmbH incorporated JV)

Neometals has developed a sustainable process flowsheet targeting the recovery of battery materials contained in production scrap and end-of-life lithium-ion batteries (LIBs) that might otherwise be disposed of in land fill or processed in high-emission pyrometallurgical recovery circuits. Neometals’ process flowsheet (“**LIB Recycling Technology**”) targets the recovery of valuable materials from consumer electronic batteries (devices with lithium cobalt oxide (LCO) cathodes), and nickel-rich EV and stationary storage battery chemistries (lithium-nickel-manganese-cobalt (NMC) cathodes). The LIB Recycling Technology is designed to recover cobalt, nickel, lithium, copper, iron, aluminium, carbon and manganese into saleable products that can be reused in the battery supply chain.

A pilot trial (“**Pilot**”) at SGS Lakefield, Canada in 2019/20 successfully produced cathode-grade nickel and cobalt sulphate products which collectively represent approximately 80% of the value of the basket of products recovered. A demonstration scale trial is targeted for Q42021 which will generate data for the Company’s Feasibility Study.

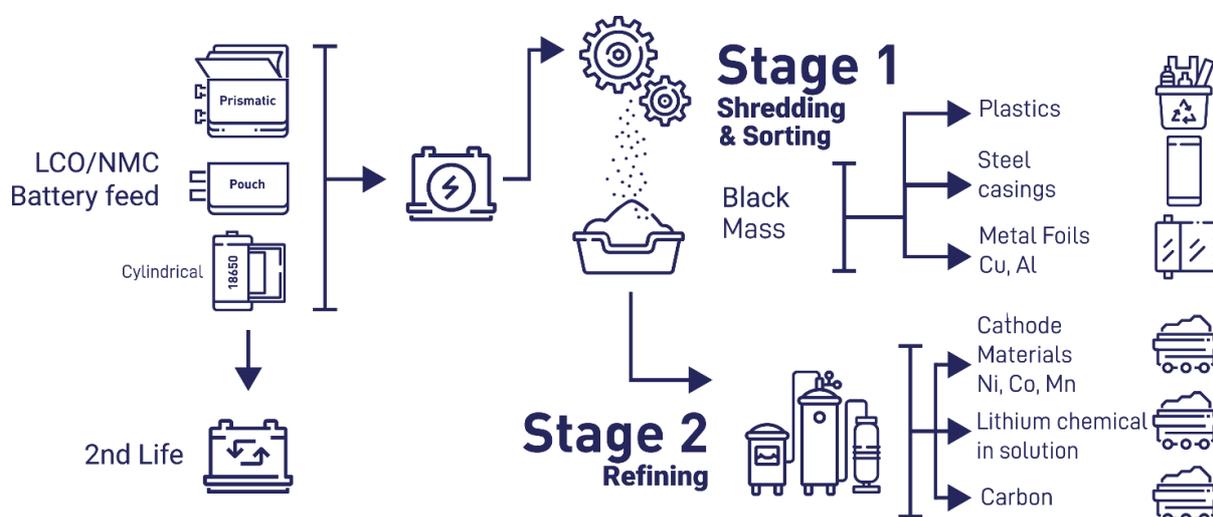


Figure 2 - High level flowsheet showing the materials generated from ‘Shredding and Beneficiation’ and ‘Refining’ stages of the LIB Recycling Technology

The LIB Recycling Technology, comprises two stages:

1. Shredding and beneficiation to physically separate components and remove metal casings, electrode foils and plastics from the active materials (“**Shredding and Beneficiation Circuit**”); and
2. Leaching, purification and precipitation to produce predominantly refined chemical products via the hydrometallurgical processing facility (“**Refining Circuit**”).

JV with SMS

Neometals entered into an incorporated 50:50 joint venture (“**JV**”) with SMS group GmbH (“**SMS group**”), called Primobius GmbH (“**Primobius**”). Primobius was incorporated to co-fund and complete final stage evaluation activities and to consider commercialisation of the LIB Recycling Technology.

Any positive financial investment decisions to construct commercial plants, will involve Neometals contributing its share of funding, technical and commercial know-how to the JV. SMS will be responsible for the engineering design and cost studies in addition to its share of funding. SMS has the right of first offer to provide engineering, construction, operation and maintenance of each recycling plant Primobius undertakes. SMS will also, on a best endeavours basis, procure debt financing for no less than 50% of the capital expenditure (for full details refer to Neometals ASX announcement entitled “*Neometals and SMS create Lithium Battery Recycling JV*” released on 3rd August 2020).

Project Development Progress

During the quarter, Primobius made strong progress towards validating and commercialising its sustainable LIB Recycling Technology.

Demonstration Plant (“DP”)

The DP will serve as a showcase for validating earlier pilot plant results and will generate evaluation products for potential customers, partners and off-takers. The fully-integrated continuous DP trials constitute the main evaluation activity required for the JV shareholders to consider an investment decision relating to construction of a 20ktpa commercial recycling plant. Significant progress was made during the quarter with commissioning of the Shredding and Beneficiation Circuit, construction of the Refining Circuit and commencing commissioning activities for the Refining Circuit. Commissioning of the Refining Circuit has been completed post the end of the quarter.

The DP is located in a dedicated building within the SMS group engineering competence centre in Hilchenbach. LIB feedstocks for the 1tpd DP trial have been secured from electric vehicle and energy storage system manufacturers. The DP will provide an opportunity for potential partners to verify Primobius’ capability to safely, sustainably and ethically dispose of hazardous LIBs.



Figure 3 - Shredder feeding into Primary Classification Circuit (foreground - red) removes and bags plastics and Cu/Al metal foils

The Shredding and Beneficiation Circuit was successfully operating at design capacity during commissioning, significantly de-risking the proprietary processing flowsheet. Black mass that was produced during the commissioning phase was set aside as leach feed for the Refining Circuit commissioning phase. Subsequent to the end of the quarter, the leaching, purification and recovery equipment for the Refinery Circuit were successfully commissioned and recovered individual sulphate solutions of copper, manganese, cobalt, nickel and lithium. The circuits are now operationally ready for the trials.

Battery feed volumes for the DP have been secured from evaluation partners.



Figure 4 - LIB pouch cells in the feed hopper to the primary shredder

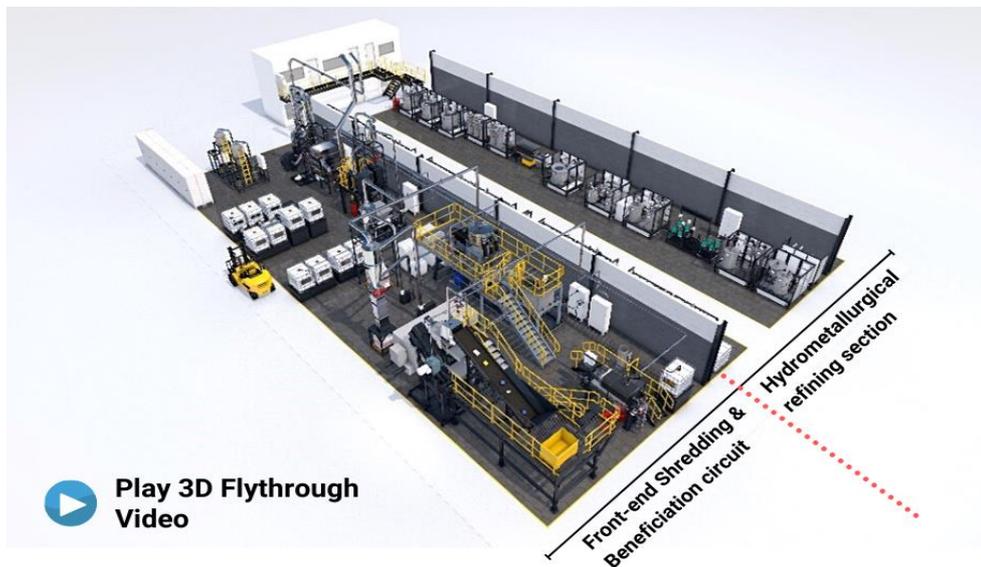


Figure 5 – 3D rendering showing DP footprint with the Front-end Shredding and Beneficiation circuit on the left side and the Back-end Hydrometallurgical Refining circuit in the right-hand adjoining hall.

Watch 3D Flythrough Video: www.neometals.com.au/primobius-demo-plant/

Evaluation Studies

During the quarter, Neometals continued preparations for its AACE Class 3 Engineering Cost (“ECS”) and Feasibility Study (“FS”) that will incorporate the data and learnings from the DP trials. Outcomes from the FS will inform the Primobius evaluation processes for what has evolved into multiple potential projects that are being advanced in parallel. One of these projects includes Primobius’ first commercial-scale recycling plant with ~20,000tpa recycling capacity.

Commercial Activities

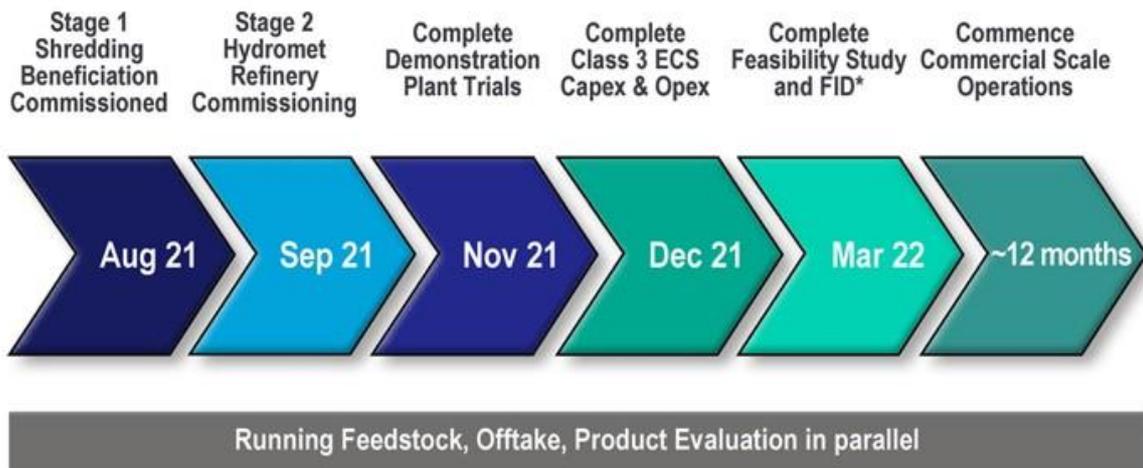
In parallel with DP activities, Primobius is advancing feedstock supply and product offtake relationships with multiple industry participants (including Stelco Inc. and Itochu Corporation under memorandums of understanding to evaluate potential future LIB recycling joint ventures).

During the quarter, Neometals and SMS agreed to fund Primobius to enable commercial operations with disposal services to commence in Q1 2022. Specifically, Primobius intends to modify the existing DP in Hilchenbach Germany to increase operational throughput capacity to a nominal 10tpd battery feed (“**10tpd Shredder Plant**”). Primobius has applied to increase the capacity permitted under its operating licence and anticipates issue of the new expanded licence in Q4 2021. The 10tpd Shredder Plant will generate early revenue from the sale of intermediate active materials (“**Black Mass**”) and demonstrate to the market Primobius’ operational capabilities in the field of safe, disposal of lithium-ion battery production scrap, warranty returns and end-of-life arisings.

The decision to fast-track commercial shredding operations demonstrates Primobius commitment to become the leading provider of sustainable recycling solutions as and when required, the need in Europe is immediate.. The opportunity to build and showcase operational capabilities will further de-risk and enhance the business case for the proposed Primobius 50tpd (~20,000tpa) integrated (Shredding and Hydrometallurgical Refining) LIB recycling operation in Germany.

Primobius is in advanced commercial negotiations with a number of counterparties to secure feed in the form of production scrap and end of life LIBs and to secure product offtake arrangements. These negotiations include opportunities to provide recycling services, joint venture operations and supply plants to existing and potential licencees.

Neometals was also delighted that Primobius was recognised during the quarter through its finalist nomination for the 14th German Sustainability Award 2022. Awards are given to companies that include sustainability in their business model and make effective transformational contributions with innovative products and services, high ecological standards in production, or special social commitment in their value chain. Neometals and Primobius await the final decisions.



* Subject to NMT and JV Board Approval.

Figure 6 - LIB Recycling Indicative Timeline



**Vanadium Recovery Project (“VRP”)
(Earning into 50:50 Joint Venture)**

Neometals is exploring opportunities to commercially apply its sustainable proprietary vanadium recovery processing flowsheet on stockpiles of vanadium bearing steel manufacturing by-product. The project team is currently pursuing two distinct partnership opportunities in Scandinavia and has ambitions to build a pipeline of suitable feedstock sources to increase future production:

1. VRP 1 (SSAB feedstocks, Pori – Finland location); and
2. VRP 2 (H2GS feedstock, Boden – Sweden location).

The VRP offers a compelling business case for Neometals which is underpinned by:

- Access to very high-grade vanadium feedstocks without upstream mining costs/risk;
- Potentially robust economics (VRP1 pre-feasibility study (“PFS”) outcomes highlighted a first quartile position on the cost curve (for full details refer to ASX announcement entitled “Vanadium Recovery Project – Outstanding PFS Results” released on 4th May 2021);
- Processing flowsheet utilises conventional equipment at atmospheric pressure and mild temperatures; and
- Likely very low or net zero greenhouse gas footprint given:
 - a. the absence of mining and a processing route requiring the use and potential capture CO₂; and
 - b. potentially saleable carbonate by-product which sequesters CO₂;

The two current opportunities are outlined in further below:

VRP 1 (SSAB)

Neometals and unlisted Scandinavian-focused explorer, Critical Metals Ltd (“Critical”), are jointly evaluating the feasibility of recovering high-purity vanadium pentoxide (V₂O₅) from high-grade vanadium-bearing steel by-product (“Slag”) in Scandinavia. Under the formal collaboration agreement between the parties, Neometals is to fund and manage the evaluation activities, up to consideration of an investment decision. A positive investment decision will lead to a 50:50 incorporated JV with Critical.

Critical has executed a conditional agreement (“Slag Supply Agreement”) with SSAB EMEA AB and SSAB Europe Oy, subsidiaries of SSAB (“SSAB”), a steel producer that operates steel mills in Scandinavia (for full details refer to Neometals ASX announcement entitled “High-Grade Vanadium Recycling Agreement” released on 6th April 2020). Slag is a by-product of SSAB’s steel making operations. The Slag Supply Agreement is for 2 million tonnes of Slag and provides a secure basis for the evaluation of an operation capable of processing 200,000 tonnes of Slag per annum without the need to build a mine and concentrator like existing primary producers.

Critical is responsible for advancing government and environmental approvals for the VRP and managing the SSAB and H2GS relationships.

VRP 2 (H2GS)

During the quarter, Neometals announced its collaboration partner in the VRP, Critical (via its wholly owned subsidiary, Recycling Industries Scandinavia AB (“RISAB”)), entered into a non-binding memorandum of understanding with H2 Green Steel AB (“H2GS”) (“H2GS MoU”). The H2GS MoU outlines an evaluation framework on a potential new source of vanadium bearing Slag that could underpin a second, larger vanadium production operation (“VRP2”) capable of processing 400,000tpa of Slag. The H2GS MoU also outlined key commercial terms for a potential Slag supply agreement.

H2GS is a limited liability Swedish company planning a fully integrated and automated green steel plant to be located at Boden in Northern Sweden (located 35km from Luleå). This opportunity compliments the existing agreement between Neometals and Critical for planned vanadium production in Finland to recycle Slag generated by SSAB (“VRP1”). The H2GS MoU is a significant opportunity as it represents another potential source of valuable feed and highlights the growth profile for application of the sustainable Neometals Vanadium Recovery Process.

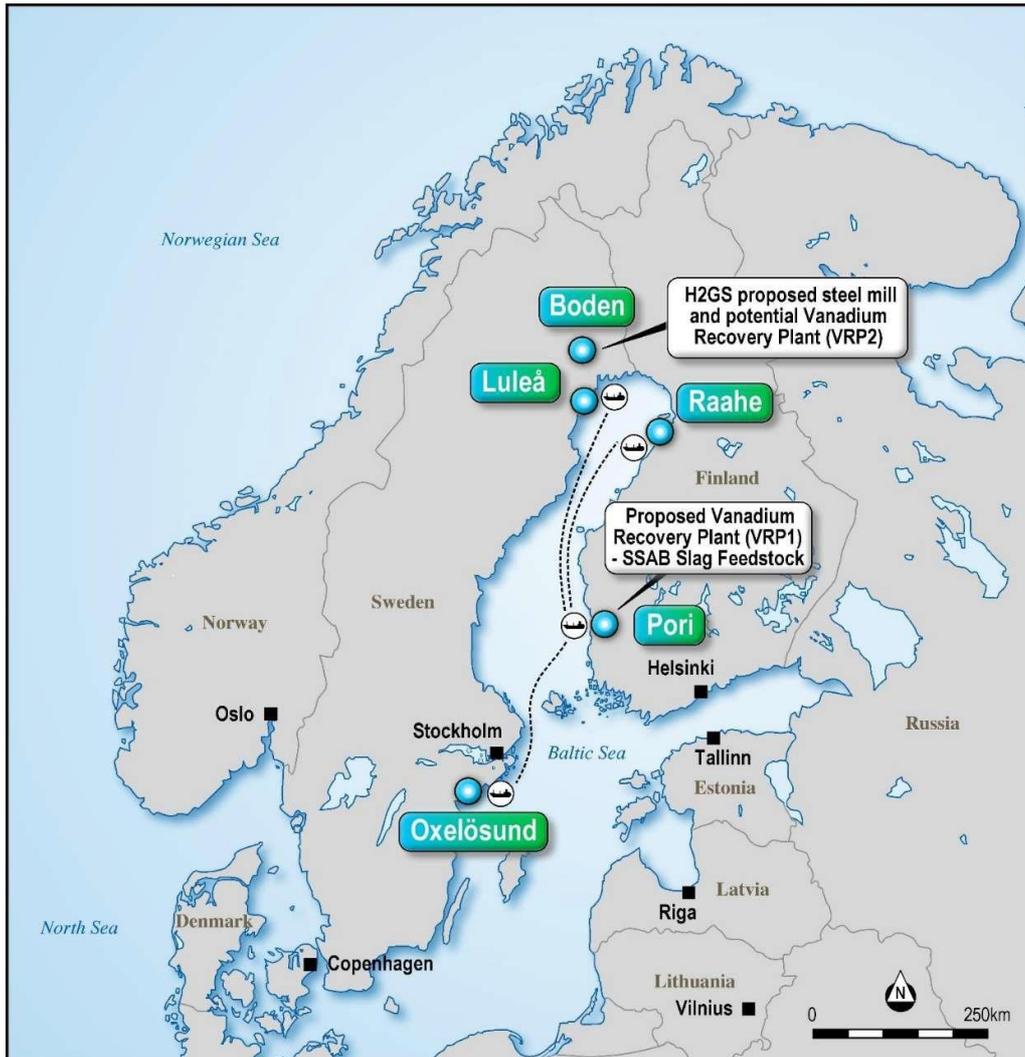


Figure 7 - Map showing potential Vanadium Recovery Plants (Pori (SSAB Feed) and Bodén (H2GS Feed)) and SSAB Slag stockpiles

Key terms of the H2GS MoU include:

- Non-binding, non-exclusive, memorandum of understanding under which the parties will collaborate, share information and enter into good faith discussions regarding the potential H2GS Slag Supply Agreement.
- The supply period will begin upon the commencement of commercial production of H2GS’s planned steel operations (currently scheduled for 2024).
- The indicative volume of Slag that H2GS foresees having available from its steel operations during the proposed 10-year supply term is approximately 4 million tonnes of Slag.
- Prices for Slag are variable depending on the V grade and prevailing FeV80 vanadium price, with adjustments against a reference grade of 2.2% V (3.92% V₂O₅) for each shipment.
- H2GS is in the process of securing environmental approvals and permits for its proposed steel operations, after which more detailed due diligence and negotiations will proceed.
- The H2GS MoU is effective until a binding H2GS Slag Supply Agreement is executed, or the H2GS MoU is terminated by the parties by mutual agreement.

Project Development Progress

Evaluation Studies

Being the most advanced opportunity, current financial evaluation studies for the VRP use cost and revenue assumptions for VRP 1. With successful outcomes from the H2GS MoU, separate studies will assess the economic viability of VRP2.

During the June 2021 quarter, Neometals completed its AACE Class 4 PFS (“**VRP1 PFS**”). The VRP1 PFS was completed with assistance from leading consulting engineers Hatch Pty Ltd. The outcomes of the PFS highlighted robust economic margins with a first quartile position on the operating cost curve for a 200,000tpa processing operations at the Tahkoluoto Port, in Pori in Finland (for further details on the PFS, including assumptions, please refer to the Company’s ASX announcement entitled “Vanadium Recovery Project – Outstanding PFS Results released on 4th May 2021”).

Given the positive results from the VRP1 PFS, Neometals decided to fund a pilot plant trial (“**Pilot**”) with data being used in a Class 3 AACE Feasibility Study (“**VRP1 FS**”). Neometals has been progressing VRP1 PFS reviews with independent engineering groups as well as working on scope with a number of potential VRP1 FS vendors. A decision on ‘award’ is imminent.



Figure 8 - Aerial schematic showing location for the proposed VRF processing plant at Tahkoluoto port, Pori, Finland Pilot Plant

Piloting

A 1:1000 scale VRP1 Pilot trial (feed rate 25kg/hr) began in June to recover vanadium from steel making by-product and the trial was successfully concluded in August. The trials processed approximately 14 tonnes of vanadium-bearing steel by-product (“**Slag**”) over 24 days from 3 SSAB Scandinavian steel mills. Results confirmed excellent vanadium chemical product purity (consistently higher than 99.5% V₂O₅) and strong recoveries (maximum recoveries exceeded 75% during steady state).

Neometals is pleased to report the Pilot was constructed, commissioned and operated continuously through three trials (one for each source of SSAB Slag) without any safety incidents or process challenges. The VRP1 Pilot confirmed, at a 25 times higher throughput rate, the earlier mini-pilot plant results (for further details see Neometals announcement titled “Vanadium Recovery – Mini-Pilot Results and Award of PFS” dated 4th November 2020). Of particular importance was the increase in vanadium concentrations achieved during the Pilot which offers potential operating and capital cost savings in the product recovery stages of the process.



Figures 9 – 19 - Selected images of the Pilot;
 Row 1 (Figures 9 – 11, left-right): the ball mill, the leach feed tanks, the integrated leach and regrind circuit
 Row 2 (Figures 12 – 14, left-right): the leach residue filter, the leach residue filter cake and the solvent extraction circuit
 Row 3 (Figures 15 – 19, left-right): the leach feed conditioning filter, the process water evaporator, the desilication filter, the AMV filter and an example batch of AMV filter cake.

Commercial

Neometals made encouraging progress on its VRP commercial program with the H2GS MoU being a highlight. The VRP1 Pilot has significantly de-risked the project enabling the acceleration of commercial offtake and reagent sourcing discussions as well as approvals processes for the nearer term development of VRP1 at the Port of Pori, Finland. Courtesy of the VRP1 Pilot, the Company has larger samples for product evaluation and offtake discussions and the growth potential for application of the Neometals’ VRP flowsheet on larger volumes of stockpiled steel production Slag is becoming increasingly evident.

Permitting and Approvals

Permitting activities are being managed by Critical and its local team of consultants. The initial ‘Environmental Impact Assessment’ program has been submitted to the Finnish regulators with feedback expected Q1 2022. The separate ‘Environmental Permit’ is currently being prepared and is expected to be submitted during the December 2021 quarter. Neometals provides ongoing support to Critical as it relates to environmental permitting activities.

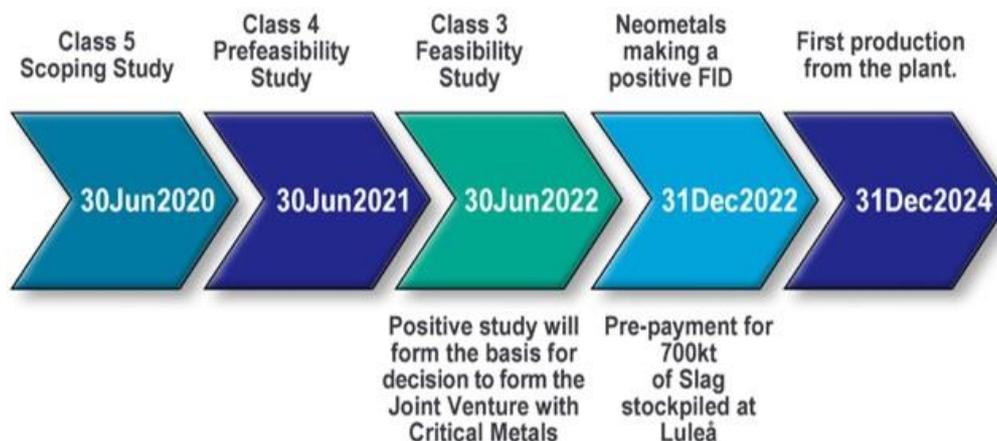


Figure 20 - VRP Indicative Timeline



Barrambie Titanium/Vanadium Project
(Neometals 100%)

The Barrambie Vanadium and Titanium Project in Western Australia (“Barrambie”) is one of the largest vanadiferous-titanomagnetite (“VTM”) Mineral Resources globally (280.1Mt at 9.18% TiO₂ and 0.44% V₂O₅)*, containing the world’s second highest-grade hard rock titanium Mineral Resource (53.6Mt at 21.17% TiO₂ and 0.63% V₂O₅)* and high-grade vanadium resource (64.9Mt at 0.82% V₂O₅ and 16.9% TiO₂) subsets (referred to as the Eastern and Central Bands respectively) based on the latest Neometals 2018 Mineral Resource Estimate (*for full details refer to ASX announcement entitled “Updated Barrambie Mineral Resource Estimate” released on 17 April 2018 and Table 1 below).

Table 1 – Barrambie Mineral Resource Estimate, April 2018

Global Resource as at 17 April 2018 ¹			
	Tonnes (M)	TiO ₂ (%)	V ₂ O ₅ (%)
Indicated	187.1	9.61	0.46
Inferred	93.0	8.31	0.40
Total	280.1	9.18	0.44

High Grade V ₂ O ₅ Resource (at 0.5% V ₂ O ₅ cut-off) ²			
	Tonnes (M)	TiO ₂ (%)	V ₂ O ₅ (%)
Indicated	49.0	16.93	0.82
Inferred	15.9	16.81	0.81
Total	64.9	16.90	0.82

High TiO ₂ Resource (14% TiO ₂ cut-off) ²			
	Tonnes (M)	TiO ₂ (%)	V ₂ O ₅ (%)
Indicated	39.3	21.18	0.65
Inferred	14.3	21.15	0.58
Total	53.6	21.17	0.63

Refer to Neometals ASX release dated 17 April 2018 titled “Updated Mineral Resource Estimate”

¹ Based on Cut-off grades of ≥0% TiO₂ or ≥2% V₂O₅

² The high-grade titanium and vanadium figures are a sub-set of the total Mineral Resource. These figures are not additive and are reporting the same block model volume but using different cut-off grades

Barrambie is located approximately 80km north-west of Sandstone in Western Australia and the Mineral Resource is secured under a granted mining lease. Neometals has a granted mining proposal to extract approximately 1.2Mtpa of ore and has Ministerial Approval to construct a 3.2Mtpa processing plant.

In October 2019, Neometals entered a memorandum of understanding with Chinese research organisation, IMUMR, to jointly evaluate the development of Barrambie (“**IMUMR MoU**”). Notwithstanding that the IMUMR MoU outlines a potential pathway towards a 50:50 operating joint venture to bring Barrambie into production (*for full details refer to ASX announcement entitled “MoU for JV to develop Barrambie” released on 4th October 2019*), it should be noted that IMUMR has a Chinese national mandate that includes development of upstream supply chains for industries of strategic relevance to China. Specifically, IMUMR will have the right, subject to Neometals approval, to assign its interests under the MoU to a commercial Chinese chemical processing partner.

In addition to the relationship with IMUMR, Neometals also has a memorandum of understanding with Jiuxing Titanium Materials (Liaoning) Co. Ltd (“**Jiuxing MoU**”) (“**Jiuxing**”) (*for full details refer to ASX announcement entitled “Barrambie - MOU for Cornerstone Concentrate Offtake” released on 16th April 2021*). Jiuxing is one of the leading chloride-grade titanium slag producers and is the largest in north-eastern China. Importantly, the Jiuxing MoU builds on, and complements, the existing IMUMR MoU.

The Jiuxing MoU* contemplates a path to a formal offtake agreement where Neometals supplies a mixed gravity concentrate or separate ilmenite and iron vanadium concentrate from Barrambie to Jiuxing. Specifically, the MoU outlines a product evaluation regime and contains the key commercial terms for a formal offtake agreement (i.e. pricing, volumes, price floor etc.), subject to product evaluation. Following satisfactory completion of testing and technical due diligence, the Jiuxing MoU contemplates the parties negotiating and entering into a binding formal offtake agreement for the supply of 800,000 dtpa of mixed gravity concentrate or 500,000 dtpa of ilmenite and 275,000 dtpa of iron-vanadium concentrate, on a take-or-pay basis for a period of 5 years from first production. If executed, it will potentially be the industry’s largest individual offtake agreement.

China has accelerated its transition from sulphate to chloride titanium pigment, so securing access to cleaner, higher grade chloride slag (intermediate product for pigment manufacture) is a strategic imperative to achieve its ambitions. Chloride titanium pigment production is significantly more environmentally friendly and sustainable.

The current business plan contemplates conventional open-cut mining, comminution and gravity concentration on site at Barrambie with a mixed titanium/vanadium/iron concentrate product being shipped to China for further processing.

Project Development Activities

Commercial

Neometals has advanced its Barrambie contractor engagement process, with leading service providers conducting due diligence to deliver proposals for the provision of a complete mine-to-port solution under a ‘build-own-operate’ style arrangement. Contractors have been engaged and are delivering a AACE Class 4 Engineering Cost Study (“**ECS**”) that will precede the Barrambie Pre-feasibility Study (“**PFS**”). The Barrambie PFS will consider a capital light Australian mining and beneficiation operation with Chinese refining activities. The Barrambie PFS exercise will form a large component of the due diligence required by the successful ‘build-own-operate’ partner.

Below is a schematic of the scope of the potential mining and onsite gravity concentrate operation at Barrambie for export to end-users in China. This development model was used successfully by Neometals and its partners to advance the Mt Marion Lithium Project in 2015, which is now the world’s second largest producer of spodumene (hard-rock lithium) concentrates (Neometals sold its final equity position in the project in 2019 and its offtake right in 2021).

**The Jiuxing MoU is a memorandum of understanding to allow Jiuxing to conduct large scale test work and negotiate a binding offtake agreement. There is no guarantee that any binding formal agreement will result from the cooperation under the Jiuxing MoU or that any binding formal agreement will reflect the key commercial terms set out in the MOU given that these arrangements are subject to the testing and evaluation work to be completed under the Jiuxing MOU. This Jiuxing MoU is effective for 18 months*

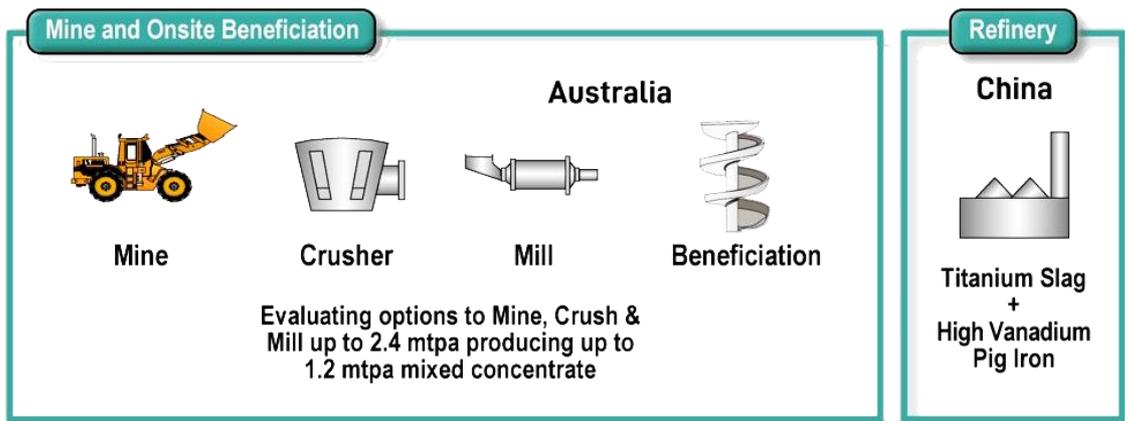


Figure 21 - Schematic of potential Barrambie development under a capital-light concentrate export operation

Metallurgical Trials

IMUMR conducted pilot trials (“Barrambie Pilot”) in the March 2021 quarter which proved that a simple Barrambie gravity concentrate could be roasted and separated into two ‘upgraded’ high-quality saleable products (ilmenite and iron/vanadium concentrates). This outcome represented a significant step forward in realising Neometals’ goal to develop Barrambie as a capital-light concentrate operation.

Irrespective of whether Neometals supplies its offtake partners with a mixed gravity concentrate or separate ilmenite and iron vanadium concentrates from Barrambie, the purchasers will likely target contained ilmenite in a smelting process to produce a chloride-grade titanium slag as well as an iron vanadium product. Titanium slag is an intermediate product used to feed the fast-growing demands of the Chinese chloride pigment market as it switches towards this more environmentally sustainable product which requires high quality titanium feedstocks. The vanadium-rich iron (magnetite) concentrate is targeted for blending by steelmakers to obtain vanadium and iron units.

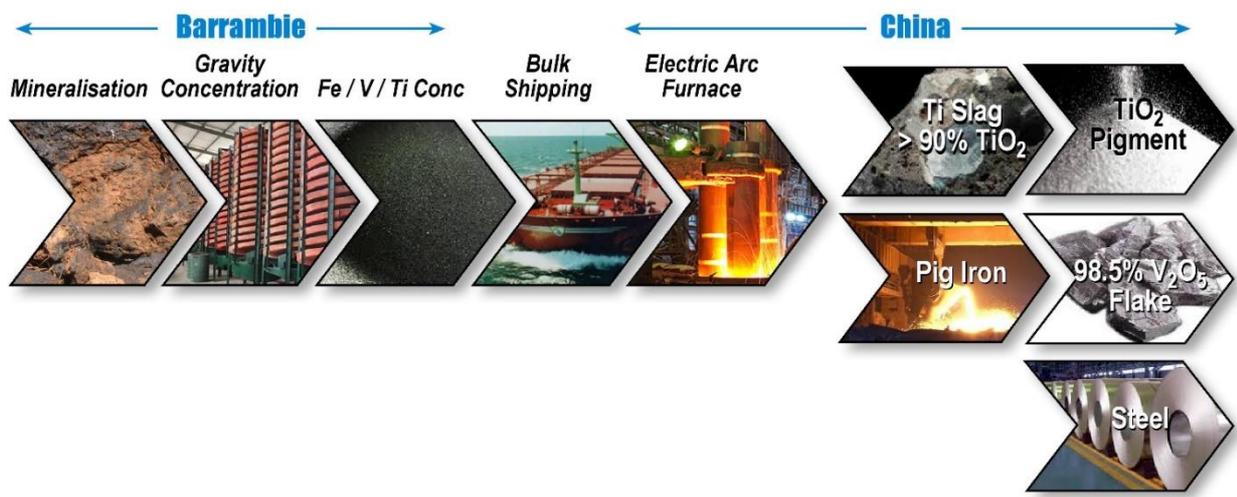


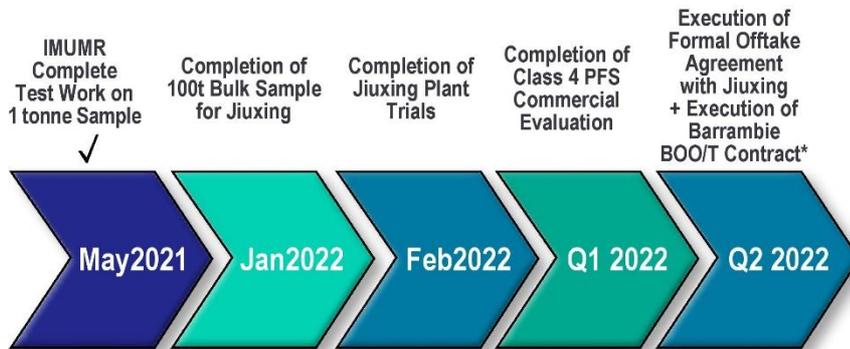
Figure 22– Image showing potential for downstream processing of a Barrambie mixed gravity concentrate by smelting into separate ilmenite (titanium) and vanadium rich magnetite (iron) products

Ilmenite and iron-vanadium concentrates from the Barrambie Pilot were used for evaluation purposes by Jiuxing and will be used for evaluation by other potential offtake parties for the balance of Barrambie production. In addition, Jiuxing has conducted smelting trials on blended mixed gravity concentrate samples from Barrambie (i.e. without further processing into individual titanium and iron/vanadium concentrates).

During the quarter, Neometals completed excavation of exploration costeans to obtain sufficient mineralization to process into 100t of mixed gravity concentrate bulk sample for Jiuxing. Crushing and grinding (communiton) of the mineralisation is underway in Western Australia and will be gravity beneficiated to prepare mixed concentrate samples for dispatch to China prior to the end of Q1 2022

Jiuxing will run validation trials on the material using its commercial titanium smelters as a final stage of offtake due diligence. The remaining concentrate will be used to advance evaluation by other potential third-party off-takers.

Indicative Project Timeline - Barrambie Mixed Gravity Concentrate Route



* Subject to successful Jiuxing trial, positive PFS and Board approval

Figure 23– Barrambie Indicative Timeline

Preparation for Operations

During the quarter, Neometals has been undertaking various hydrological activities at Barrambie. This has included:

- a calcrete aquifer assessment on the existing ore fields;
- preparations for additional water exploration (drilling) and storage; and
- liaison with pastoralists at Yarrabubba and Cogla Downs stations in relation to existing pastoralist and government bores, accommodation, and earthworks capabilities.



Figure 24– Dipping Production Bores at Barrambie



Lithium Refinery Project
(Neometals 100%)

During the quarter, the Indian lithium refinery MoU and ancillary co-operation agreement with Manikaran Power Ltd was terminated.

EXPLORATION PROJECTS



Mt Edwards Lithium and Nickel Project
(Neometals 100%)

Neometals announced its intention in July to demerge the Mt Edwards assets into a new dedicated Company, Widgie Nickel Limited (“**Widgie**”) (for full details refer to ASX announcement entitled “*Intention to Demerge Mt Edwards Nickel Project*” released on 1st July 2021). Neometals held an extraordinary general meeting on 18th August 2021 to approve an equal capital reduction in Neometals and in-specie distribution of Widgie shares. Widgie successfully raised \$24 million, before costs, via an underwritten entitlement offer at an issue price of \$0.20 cents per share and was admitted to the Australian Securities Exchange on 22nd September 2021.

Please see below for a link to the Widgie website for further details on the Company:

<https://www.widgienickel.com.au/site/content/default.aspx>

RESEARCH AND DEVELOPMENT PROJECTS



Eli® Process Technology Project
(Neometals 70% / Mineral Resources 30%)

In addition to Neometals’ three core projects, the Company has a range of R&D initiatives at varying stages of development. Like the core projects, all the initiatives are focused on the energy storage megatrend.

Of particular note during the quarter, Neometals has fielded numerous enquiries regarding the potential application of the Eli® Process (“**ELI**”) on a range of third-party lithium feed sources to produce lithium chemicals. ELI® has been developed by a 70:30 co-owned company, Reed Advanced Materials (“**RAM**”), held by Neometals and Mineral Resources respectively.

ELI® is a patented process for purifying an aqueous lithium solution (lithium chloride) to produce lithium hydroxide in conventional chlor-alkali (electrolysis) cells. ELI® has the potential to provide a sustainable long-term cost advantage for lithium chemical production with a reduced carbon footprint. A feasibility study for the application of the ELI® technology in a Malaysian plant was completed in 2016 (for further details see Neometals announcement titled “*Positive Lithium Downstream Processing Feasibility Results*” dated 11th July 2016). The process has been tested on synthetic and actual lithium sources, both hard rock and brine, and the next stage gate for the process is completing pilot trials and associated feasibility evaluation to confirm the technical and economic viability.

RAM developed the process behind ELI® from concept through to semi-pilot scale testing during the past 8 years. The aim was to develop a competitive and reliable method of large-scale lithium hydroxide and carbonate production with a lower carbon footprint than conventional processes to support efforts to decarbonise the LIB supply chain. Sourcing lithium chemical units with a reduced CO₂ footprint is a high priority for the electric vehicle industry.

CORPORATE

Commercial / Corporate

Neometals has made strong commercial progress during the quarter.

In particular, the Company has continued to actively pivot away from reliance on hard rock mining and explorations towards circular, sustainable materials recovery and recycling opportunities. Having sold its stake in the Mt Marion mine in 2019 and extinguished its remaining Mt Marion offtake rights this year (for \$30 million in consideration), the Company continued the trend with the demerger of its Mt Edwards nickel project in the quarter gone via an in-specie share distribution to Neometals shareholders (\$26M based on capital raising price). This is enabling Neometals to keep a laser focus on its aim of decarbonising the battery minerals supply chain with eco-friendly processing solutions.

In addition to the demerger and the myriad commercial developments mentioned elsewhere in this document, Neometals has also been active during the quarter preparing for admission of its shares to trading on the AIM market of the London Stock Exchange (“LSE”). Subject to the required regulatory approvals from the LSE, including publication of an Admission Document, Neometals anticipates that it will be admitted to AIM during Q4 2021.

Financial

Hannans Limited (ASX:HNR) (Hannans) (Yilgarn Nickel/Lithium/Gold)

As at 30 September 2021 Neometals held 773,164,028 ordinary fully paid shares (~33% of the issued capital) in Hannans on an undiluted basis. At 30 September 2021, Hannans’ shares closed at 3.36c implying a value of \$26.0M.

Critical Metals Limited (Unlisted, Scandinavian Lithium/Cobalt/Base Metals)

Neometals holds 19.8% of unlisted public company Critical Metals Ltd, a company which now houses the Scandinavian mineral assets previously held by Hannans and is collaborating with Neometals on Scandinavian LIB recycling and vanadium recovery opportunities.

Other Investments

The market value of the Company’s other investments as at 30 September 2021 totalled \$9.3M.

Finances (unaudited)

Cash and term deposits on hand as of 30 September 2021 totalled A\$83.5 million, including \$4.2 million in restricted use term deposits supporting performance bonds and other contractual obligations. The Company has net receivables and investments totalling approximately \$38.7 million.

Related Party payments for the quarter outlined in the ASX Appendix 5B released contemporaneously at section 6.1 total \$413,500 and are made up of Director fees and superannuation.

Issued Capital

The total number of shares on issue at 30 September 2021 was 548,376,396.

ENDS

Authorised on behalf of Neometals by Christopher Reed, Managing Director

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Compliance Statement

The information in this report that relates to Mineral Resource Estimates for the Barrambie Vanadium/Titanium Project is extracted from the ASX Announcement listed below, which is also available on the Company's website at www.neometals.com.au

17/04/2018	Barrambie – Updated Barrambie Mineral Resource Estimate
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The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.

APPENDIX 1: TENEMENT INTERESTS

As at 30 September 2021, the Company has an interest in the following projects and tenements in Western Australia.

Project Name	Licence Name	Beneficial Interest	Status
Barrambie	E57/769	100%	Live
Barrambie	E57/770	100%	Live
Barrambie	E57/1041	100%	Live
Barrambie	L57/30	100%	Live
Barrambie	L20/55	100%	Live
Barrambie	M57/173	100%	Live
Barrambie	L20/80	100%	Pending
Barrambie	L20/81	100%	Pending
Jilbadji	E77/2809	100%	Pending
Queen Victoria Rocks	E15/1416	100%	Live

Changes in interests in mining tenements

Interests in mining tenements acquired or increased

Project Name	Licence Name	Acquired or Increased
Jilbadji	E77/2809	Application

Interests in mining tenements relinquished, reduced or lapsed

Project Name	Licence Name	Relinquished, Reduced or Lapsed
Mt Edwards	M15/45	Relinquished due to the demerger
Mt Edwards	M15/46	"
Mt Edwards	M15/48	"
Mt Edwards	M15/74	"
Mt Edwards	M15/75	"
Mt Edwards	M15/87	"
Mt Edwards	M15/77	"
Mt Edwards	M15/78	"
Mt Edwards	M15/79	"
Mt Edwards	M15/80	"
Mt Edwards	M15/94	"

Mt Edwards	M15/96	“
Mt Edwards	M15/97	“
Mt Edwards	M15/99	“
Mt Edwards	M15/100	“
Mt Edwards	M15/101	“
Mt Edwards	M15/102	“
Mt Edwards	M15/103	“
Mt Edwards	M15/105	“
Mt Edwards	L15/102	“
Mt Edwards	M15/478	“
Mt Edwards	M15/633	“
Mt Edwards	M15/653	“
Mt Edwards	M15/693	“
Mt Edwards	M15/698	“
Mt Edwards	M15/699	“
Mt Edwards	M15/1271	“
Mt Edwards	L15/254	“
Mt Edwards	E15/989	“
Mt Edwards	L15/397	“
Mt Edwards	L15/280	“
Mt Edwards	P15/5905	“
Mt Edwards	P15/5906	“
Mt Edwards	E15/1505	“
Mt Edwards	E15/1507	“
Mt Edwards	E15/1576	“
Mt Edwards	E15/1583	“
Mt Edwards	E15/1679	“
Mt Edwards	P15/6362	“
Mt Edwards	P15/6387	“
Mt Edwards	E15/1665	“
Mt Edwards	P15/6408	“
Mt Edwards	P15/6539	“
Mt Edwards	P15/6092	“
Mt Edwards	E15/1553	“
Mt Edwards	E15/1749	“
Mt Edwards	P15/6570	“
Mt Edwards	P15/6612	“
Mt Edwards	L15/0426	“
Mt Edwards	E77/2809	“