



QUARTERLY REPORT

to 31 Dec 2015

ASX Release

28 January 2016

Metallica Minerals Limited is an Australian bauxite, graphite, zircon–rutile, and nickel–cobalt–scandium resource development and exploration company

ASX:MLM

ISSUED CAPITAL (31/12/15)

167,440,316 Ordinary Shares
8,000,000 Options

See latest Appendix 5B Lodged
28/01/16 for more detail

SHAREHOLDERS (31/12/15)

1,968 shareholders
Top 20 shareholders hold 56.28%

LARGEST SHAREHOLDERS

Jien Mining Pty Ltd – 24.0%
Victorian Ferries Pty Ltd – 9.8%
Golden Breed Pty Ltd – 5.3%
Bondline Ltd – 2.9%

DIRECTORS

Barry Casson
Non Executive Chairman

Andrew Gillies
Non Executive Director

Shu Wu
Non Executive Director

Shu Zhang
Alternate Director to Dr Wu

SENIOR MANAGEMENT

Simon Slesarewich
Chief Executive Officer

John Haley
CFO & Company Secretary

CASH BALANCE

As at 31/12/15, MLM's cash balance was approximately \$833,000. No debt.

PROJECT HIGHLIGHTS

URQUHART BAUXITE PROJECT

- » Environmental studies and permitting are ongoing with the aim of commencing production in 2017. Dry season survey was completed in late 2015.
- » Direct Shipping Bauxite (DSB) confirmed with high available alumina of 40.6% and moderate reactive silica 4.9%¹.
- » Inferred Mineral Resource of 7.5 million tonnes (Mt) averaging 51% total aluminium oxide (Al₂O₃) and 16.3% total silicon oxide (SiO₂) of Direct Shipping Bauxite (DSB)².
- » Current demand and growth forecast for bauxite remains strong and supported by the recently announced Malaysian export bauxite ban.

ESMERALDA GRAPHITE PROJECT

- » Two exploration drill holes completed on the granite-hosted, hydrothermal-style Esmeralda graphite deposit.
- » Assay results confirm thick graphite (Cg) mineralised intervals³:
 - » WD001 – 95.0 m @ 6.5% Cg from 71 m
 - » WD002 – 29.1 m @ 7.8% Cg from 71.9 m, including 7.1 m @ 12.9% Cg
- » Petrology confirms the same mineralisation style hosted within hydrothermally altered granite is present in both holes which are 1.2 km apart.
- » Results indicate mineralisation is open in all directions with strong potential to define a very large graphite deposit that could support a bulk mining operation.
- » Metallurgical test work has commenced.

URQUHART POINT HEAVY MINERAL SANDS (HMS) PROJECT

- » The project is fully permitted.
- » The modularized HMS plant has arrived in Australia.
- » Development options will be assessed at the completion of the current wet season.

¹ ASX Release 11 May 2015 "Maiden Bauxite Resource", available www.asx.com.au.

² ASX Release 17 April 2015 "Direct Shipping Bauxite confirmed at Urquhart Point", available www.asx.com.au.

³ ASX Release 26 February 2015 "Direct Shipping Bauxite results", available www.asx.com.au.

COMPANY HIGHLIGHTS

CORPORATE

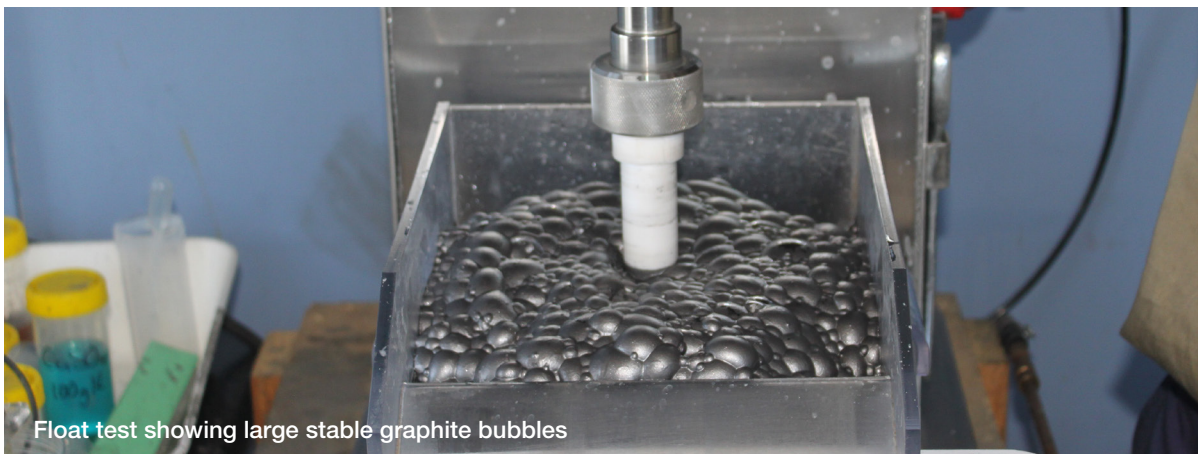
- » An option agreement has been executed to sell the non-core Boyne Limestone Project for \$1,000,000⁴.
- » Proceedings have commenced to recover the final \$200,000 royalty payment that is now due from a private company who completed nickel mining operations at the Lucky Break Project.

SAFETY

- » There were no lost-time injuries recorded during the December quarter.

FINANCIAL AND INVESTMENT POSITION

- » Metallica had approximately \$833,000 in cash as at 31 December 2015 and no debts other than trade creditors.



Float test showing large stable graphite bubbles

NOTICES

COMPETENT PERSON'S STATEMENT

The technical information contained in this report was compiled or supervised by Mr Andrew Gillies, BSc(Geol), a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM) and Director of Metallica Minerals Ltd. Mr Gillies has relevant experience in the mineralisation, exploration results and resources being reported to qualify as a Competent Person as defined in the 2012 Edition of the *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves* (JORC Code 2012). Mr Gillies consents to the inclusion of this information in the form and context in which it appears in this release.

CAUTION REGARDING FORWARD-LOOKING STATEMENTS

Certain statements made in this announcement contain or comprise certain forward-looking statements. Although Metallica believes that the estimates and expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct. Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in commodity prices and exchange rates and business and operational risk management. Metallica undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events.

⁴ ASX Release 16 November "Option to Sell Boyne Limestone for \$1,000,000", available www.asx.com.au.

OUTLOOK

FOR THE MARCH QUARTER

Following the very successful Esmeralda exploration drilling program reported in December 2015, the company has now commenced metallurgical analysis to determine the quality and purity of the Esmeralda graphite. It is envisaged that results from this work will be reported in the current quarter.

Metallica has signed an option agreement for the sale of the non-core Boyne Limestone Project for \$1,000,000 with a six-month option term. If the sale proceeds, it should be completed by mid-2016.

The company continues to progress all things necessary to de-risk and bring the Urquhart Bauxite Project into production in 2017. Recent production bans in Malaysia continue to support the seaborne bauxite market.

The Urquhart HMS plant is currently being stored near Brisbane. The company continues to monitor

the mineral sands market and potential market impacts on the Urquhart HMS Project. Given the continuing decline in zircon-rutile prices, the Cape York HMS and Bauxite Project Joint Venture will assess all options to ensure that the project is robust before proceeding to construction and production.

The company is currently in ongoing discussions with an established nickel company for a possible joint venture partnership on the SCONI (Ni-Co-Sc) Project. It is also seeking a potential joint venture partnership or other transaction on the Cape Flattery Silica Sands Project and the remaining Fairview Limestone project (near Gladstone).

The company continues to assess potential acquisitions that will add value to shareholders.



CAPE YORK

HMS AND BAUXITE JOINT VENTURE

AREA	1,797 Ha under mining leases and applications and 1,257 km ² under exploration tenure
COMMODITY	Heavy Mineral Sands (zircon, rutile, titanium minerals) and Bauxite
HOLDING	MLM 50% (Ozore Resources Pty Ltd 50%)

Pursuant to the joint venture agreement, the Cape York HMS and Bauxite Project Joint Venture (Cape York JV) is now held 50% by Oresome Australia Pty Ltd, a wholly owned subsidiary of Metallica Minerals, and 50% by a private Chinese investor, Ozore Resources Pty Ltd (Ozore). In accordance with the JV agreement, Ozore has provided A\$7.5 million to the JV to fund the development of the Urquhart HMS Project.

Since the formation of the Cape York JV on 8 September 2014, it has expended in excess of \$7.5 million on progressing the Urquhart HMS Project and regional exploration programs within the JV tenements on western Cape York. The majority of funds were applied to the fabrication of the Urquhart HMS processing plant, which is being stored near Brisbane.

The Cape York JV comprises three separate projects: Urquhart Bauxite Project, Urquhart Point HMS Project, and Cape York Regional HMS and Bauxite Exploration Project.

PRIORITIES FOR THE MARCH QUARTER

- » Continue all things necessary to de-risk and bring the Urquhart bauxite project into production in 2017.
- » Continue to monitor the mineral sands market and assess all options to ensure that the Urquhart Point HMS Project is robust before proceeding to construction and zircon – rutile sand concentrate production.



FIGURE 1: Civil works completed in preparation for the HMS processing plant with haul road from the initial mining area

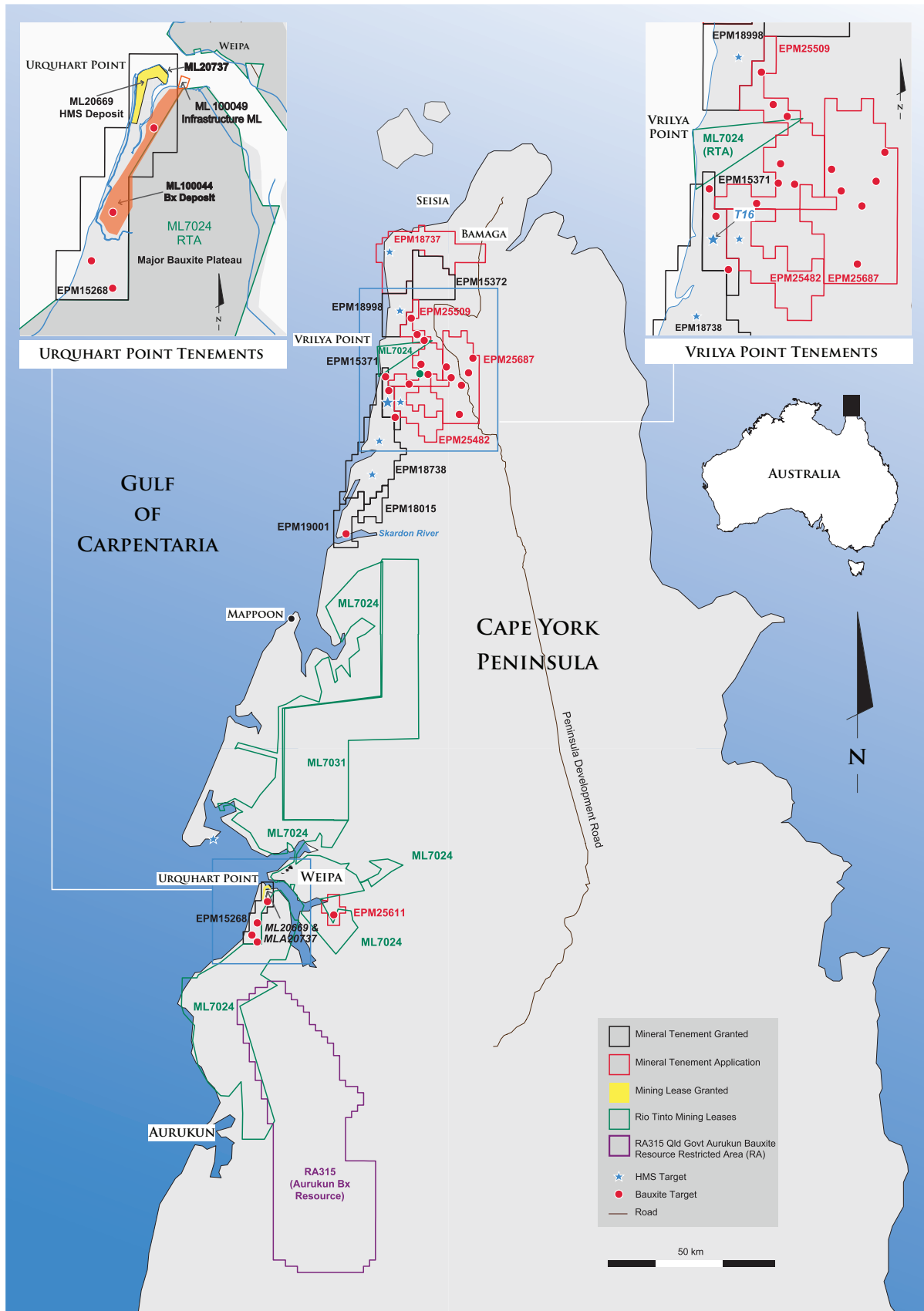


FIGURE 2: Cape York HMS and Bauxite Project Areas

URQUHART

BAUXITE PROJECT

The Urquhart Bauxite Project is situated adjacent to the Urquhart HMS Project, some 5 km south-west of Weipa on Queensland's Cape York Peninsula. The western Cape York is world-renowned for its extensive deposits of high-quality, export-grade pisolitic bauxite. The project consists of two bauxite plateaus, known as Area A and Area B, which are wholly contained within the lease area.

In June 2015, the Cape York JV lodged Mining Lease Application (MLA) 100044 of 1,379 Ha, which covers the Urquhart Bauxite Resource (Area A and Area B)⁵, and MLA 100049, which covers the proposed North Point Jetty load-out facility (one of three potential barging and shipping options).

Drilling results, coupled with the completed geological modelling, confirm that the majority of the Urquhart bauxite resource is suitable for Direct Shipping Bauxite (DSB). The DSB will be barged from one of three locations, two within a mining lease⁴ and one held by a private company, and then trans-shipped via the sheltered Weipa Port (see Figure 3). The potential production of DSB expedites³ permitting and development of the project due to the relatively simple mining-truck-barge to ship operation with consequentially low capital and operating costs. DSB is planned to be produced at an average production rate of 1.5 to 2 million tonnes per year.

The high-quality export-grade Weipa-type bauxite has a high alumina content (>50% Al_2O_3), which is sought after in the seaborne market. In May 2015, the Cape York JV announced a maiden JORC-compliant bauxite Mineral Resource¹. The May 2015 Inferred Mineral Resource estimate for the Urquhart Bauxite Project (Areas A and B) at a 45% Al_2O_3 cut-off for DSB is 7.5 million tonnes @ 51.0% Al_2O_3 , 16.3% SiO_2 . Additional details of the bauxite Resource are provided in Table 1.

In Area A, available alumina (AAI) and reactive silica (RSi) were selectively sampled for intervals below a threshold of 15% SiO_2 or above 48% Al_2O_3 . This represents the lower half of the bauxite horizon defined in Area A. Subsequently, this lower section was modelled as a separate domain where the assays for AAI and RSi were available. In comparison, Area B has generally higher SiO_2 and a much smaller and less continuous lower bauxite domain. It has similar chemistry, but currently no AAI or RSi assay results are available to conclusively determine the overall quality of Area B. Estimates for the lower bauxite horizon as a higher grade subset of the 45% Al_2O_3 cut-off Resource in Table 1 are provided in Table 2 at an effective cut-off grade of 15% SiO_2 .

TABLE 1: Urquhart DSB Resource statement details at 45% Al_2O_3 cut-off

Area	Kt	DSB (in situ)	
		Al_2O_3 %	SiO_2 %
A	5,121	52.0	15.0
B	2,366	48.8	19.0
Total	7,487	51.0	16.3

TABLE 2: Urquhart DSB Resource statement for the lower bauxite profile

Area	Kt	DSB (in situ)			
		Al_2O_3 %	SiO_2 %	AAI%	RSi%
A	3,987	53.3	13.0	40.6	4.9
B	777	52.7	13.2	-	-
Total	4,764	53.2	13.0	-	-

a. Tonnages in Table 2 are a subset of those reported in Table 1.

b. Recovered tonnage (tonnes x yield) for the same DSB cut-off grade and DSB in situ dry tonnage.

⁵ ASX Release 25 June 2015 "Urquhart Bauxite Mining Lease Application lodged", available www.asx.com.au.



FIGURE 3: Aerial view showing Urquhart Point HMS & Urquhart Bauxite projects including load out options for Urquhart Bauxite.

URQUHART POINT

HMS PROJECT

The Urquhart Point HMS Project is located on Urquhart Point, 3 km south-west of Weipa (see Figure 2). The Cape York JV plans to develop a simple dry mining (less than 3 metre depth) and wet sand mineral processing operation using standard gravity (spiral concentrators) HMS separation to produce a zircon-rutile heavy mineral concentrate (HMC).

The mineral processing involves the separation of the heavy zircon-titanium and iron oxide minerals (>4 specific gravity [SG]) from the lighter (<3 SG) quartz and calcareous sands. No chemicals are required for HMS processing or HM concentration.

The HMS processing rate will be approximately 110 tonnes per hour, producing an average of approximately 17,000 tonnes HMC per year.

In December, the modularized plant arrived in Australia and is currently being stored near Brisbane.

The Cape York JV continues to monitor the mineral sands market. Given the continuing decline in zircon-rutile prices, the JV will assess all options to ensure that the project is robust before proceeding to construction and production. Offtake discussions and product marketing are ongoing.

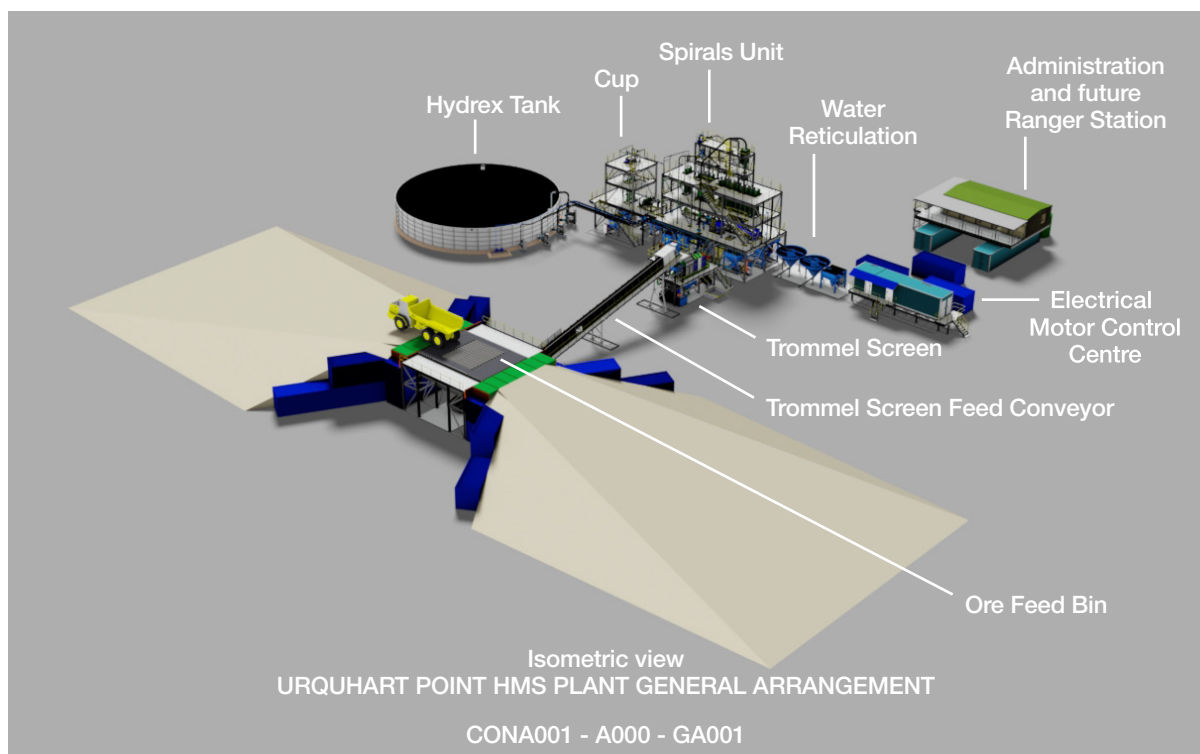


FIGURE 4: 3D CAD image Urquhart HMS plant design

CAPE YORK

REGIONAL EXPLORATION PROJECT

The Joint Venture did not undertake any field work on its regional HMS and bauxite exploration targets during the December quarter. With the start of the wet season and

a clear focus on the Urquhart Bauxite Project, regional exploration is currently on hold. Regional exploration will recommence at an appropriate time in 2016.



A local contractor's barge, travelling via the deep sheltered water shipping channel adjacent to the Urquhart Point mining lease, about to unload a drilling rig and other equipment on the beach at Urquhart Point. Similar barges can be used in the future for barging HMS concentrate and potentially bauxite for trans-shipment to a nearby ship.

ESMERALDA

GRAPHITE PROJECT

AREA	750 km ² exploration tenure
COMMODITY	Graphite (large scale “graphite in granite”) – targeting high purity graphite
HOLDING	MLM 100% (through subsidiary Touchstone Resources Pty Ltd)

In July 2015, Metallica Minerals Ltd was granted Exploration Permits for Minerals (EPMs) 25779, 25806, 25807 and 25990, which make up the Esmeralda Graphite Project (see Figure 5). The project, located near Croydon in north Queensland, covers a combined area of over 750 km² and is held 100% by Metallica's wholly owned subsidiary Touchstone Resources Pty Ltd.

Metallica has identified significant graphite occurrences within the Esmeralda Granites in the project area. These occurrences were first identified in 2006 by Metallica during a drilling program that targeted well-defined airborne and ground-defined intense electromagnetic (EM) anomalies. At the time, the drilling focused on base metal and gold-bearing massive sulphide mineralisation. Instead of sulphides, Metallica discovered significant graphite mineralisation. The discovery was unexpected because graphite is rarely associated with igneous rocks, such as granite.

Subsequently, a literature review of graphite occurrences in the Esmeralda Granites and Croydon Volcanics indicated large suites of potentially graphite-bearing igneous rocks. Metallica has identified targets where magmatic differentiation or structural controls could concentrate graphite into significantly higher percentages. Previous percussion drilling, including the 2006 Metallica program, have recorded significant zones of observable graphite mineralisation (>10% graphite visually) while exploring for metals and other types of mineralisation. Fourteen historical percussion exploration drill holes were identified intersecting significant graphitic granite.

Igneous or hydrothermal-style graphite deposits, such as Esmeralda, are rare. The more common metamorphic-style graphite deposits make up 95% of the world's known graphite deposits. And unlike the metamorphic-style deposits, hydrothermal-style graphite deposits are typically of high purity graphite in either flake or crystalline form. Examples of this style

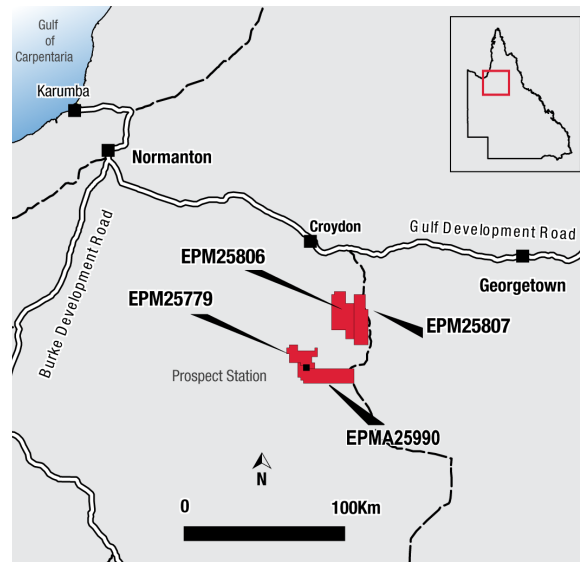


FIGURE 5: Esmeralda tenements

of mineralisation include the high-grade, narrow-vein Sri Lankan deposits and the Albany graphite deposit in Canada. The carbon source is non-organic and the carbon is thought to be from deep carbon dioxide (CO₂) or methane (CH₄) gaseous injection into the magma chamber, which later crystallises out as pure or near-pure carbon (graphite) crystals.

Metallica has developed a hydrothermal mineralisation model for the Esmeralda granite based on work completed by the Bureau of Mineral Resources (BMR) in 1988 and the recent (2013) discovery of the Albany graphite deposit.

The company mobilised a drill rig in October 2015 to carry out an initial drilling program on the project^{6,7}.

The assay results confirm thick graphite (Cg) mineralized

⁶ ASX Release 23 October 2015 “Drill rig mobilised to the Esmeralda Graphite Project”, available www.asx.com.au

⁷ ASX Release 15 July 2015 “Graphite in Granite Project”, available www.asx.com.au

⁸ ASX Release 10 December 2015 “Assays strongly support potential for large graphite deposit”, available www.asx.com.au

intervals in the first two exploration holes. The core was assayed for graphite content and total carbon. An independent petrology study has also been completed on six representative samples from the mineralised zones.

In summary, both drill holes (in a vertical two-hole drilling program) intersected significant broad graphite mineralisation⁸ with continuous intercepts of 95.0 m @ 6.5% Cg (WD001) and 29.1 m @ 7.8% Cg (WD002) including:

- » WD001 – 54.0 m @ 7.4% Cg from 95 m
- » WD002 – 7.1 m @ 12.9% Cg from 72 m
- » WD002 – 12.0 m @ 7.6% Cg from 81 m

The petrology study identified the same distinctive alteration and mineralization style is present in both holes and showed consistent grades, indicating that

the graphite mineralisation may be continuous for 1.2 km or more.

These results add strong support to the company's belief that the Esmeralda deposit is very large and would be uniquely amenable to large-scale bulk mining. WD001 ended in significant graphite mineralisation (4.1% Cg), with mineralisation open in all directions.

Metallurgical test work has commenced to determine the quality and purity of the Esmeralda graphite.

PRIORITIES FOR THE MARCH QUARTER

Complete metallurgical test work to ascertain the quality and purity of the Esmeralda graphite. It is envisaged that results from this work will be reported in the March quarter.

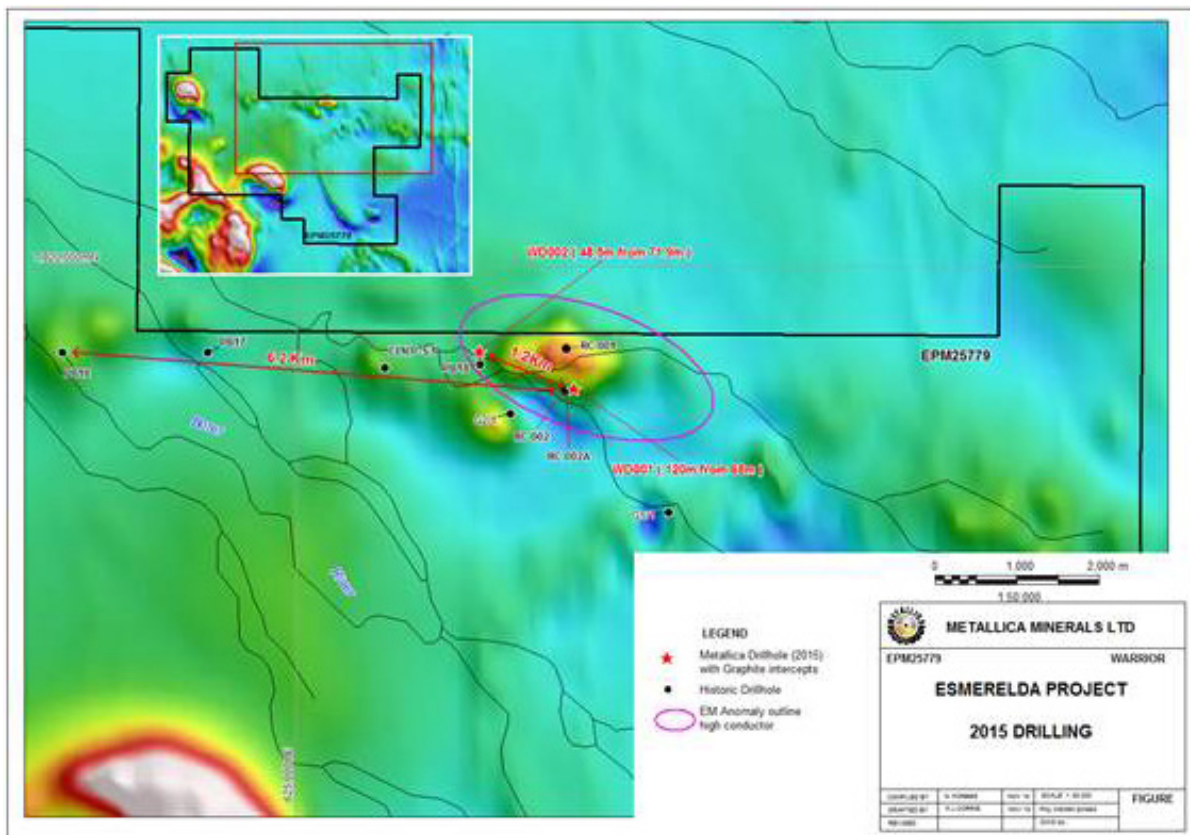


FIGURE 6: 2015 drill holes with historic holes up to 6.2 km away with graphite intersections reported.

SCONI

NICKEL – COBALT – SCANDIUM PROJECT

AREA	2,049 Ha under mining leases, 478 Ha under mineral development licences, and 155.6 km ² under exploration tenure
COMMODITY	Nickel, Cobalt and Scandium (Ni-Co-Sc)
HOLDING	MLM 100%

Metallica is seeking strategic partners to develop the SCONI Project (see Figure 7). This takes time to develop relationships and build confidence in the project. Consequently, during the December quarter, no significant project work was undertaken. The company is currently in ongoing discussions with an established nickel company for a possible joint venture partnership on the SCONI (Ni-Co-Sc) Project.

Several pre-feasibility studies have previously been undertaken on the SCONI Project, which concluded that there is considerable scope to enhance the project's processing flowsheet and resulting economics. Subject to reaching a satisfactory funding arrangement, further optimisation studies will be conducted on:

- » Beneficiation of nickel, cobalt and scandium minerals.
- » Combining pressure acid leaching (PAL) and atmospheric acid leaching (AAL) methods (previously investigated separately).
- » Reviewing and testing the latest laterite processing technologies.
- » Sourcing major plant and equipment from China and other lower cost manufacturing countries.

For further information, refer to Metallica Minerals Annual Report 2015.

PRIORITIES FOR THE MARCH QUARTER

- » Continue negotiations with potential joint venture partners.
- » Approach existing and emerging scandium producers about licensing of Metallica's proprietary technology for production of high-purity scandium oxide (99.99% Sc₂O₃).

More information about the SCONI project and scandium is available on the Metallica Minerals website⁹.

⁹ "A New Spice Metal to Enhance Industry & Life" www.metallicaminerals.com.au/media-articles.

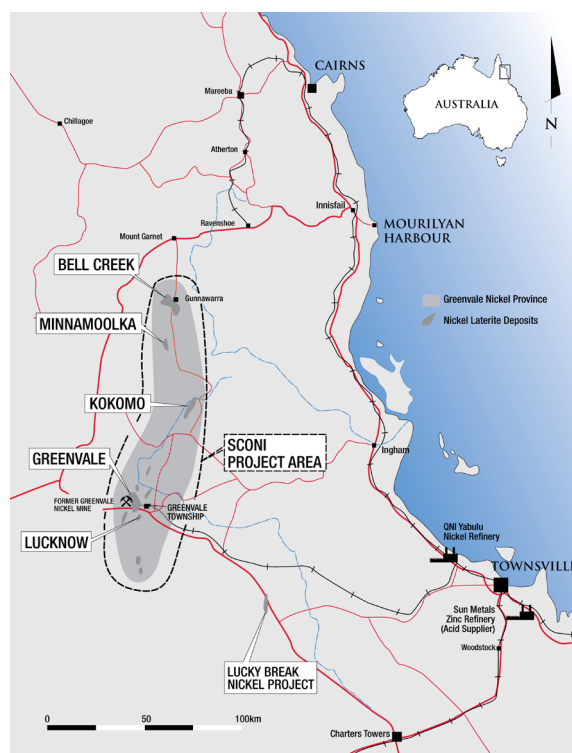


FIGURE 7: SCONI Project Area

LUCKY BREAK

NICKEL PROJECT

AREA	103 Ha under mining leases
COMMODITY	Nickel Laterite
HOLDING	MLM 100% (subject to Royalty Agreement)

On 12 January 2015, Metallica entered into a royalty agreement with a private company to allow the mining and extraction of nickel laterite ore from Metallica's Dingo Dam Mining Lease, which is part of the Lucky Break Nickel Project, located 140 km by road west of Townsville (see Figure 8).

The private company has advised that it has completed mining operations in the royalty area and has extracted more than 100,000 tonnes of high-grade nickel laterite ore. The company is currently undertaking mine site remediation and rehabilitation work. The final \$200,000 royalty payment remains outstanding. Metallica has commenced proceedings to recover the full amount owed.

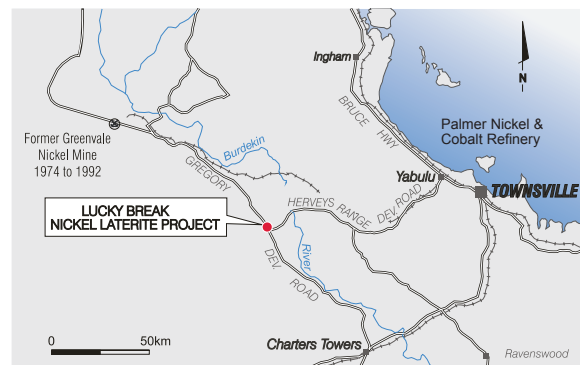


FIGURE 8: Lucky Break Nickel Project Area

PRIORITIES FOR THE MARCH QUARTER

Recover outstanding royalty payment.

CAPE FLATTERY

SILICA SANDS PROJECT

AREA	54 km ² under exploration tenure
COMMODITY	Silica Sand (for bulk export shipping)
HOLDING	MLM 100% (through subsidiary Oresome Australia Pty Ltd)

The Cape Flattery Silica Sands Project is located approximately 200 km north of Cairns in North Queensland (see Figure 9). The EPM covers part of a large Quaternary sand dune field, which is believed to contain high-grade silica sand. A section of the sand dune field is currently being mined by Cape Flattery Silica Mines Pty Ltd (CFSM), a wholly owned subsidiary of Mitsubishi Corporation (see Figure 10). Cape Flattery has operated since 1967 and is the world's largest silica sand mining operation.

PRIORITIES FOR THE MARCH QUARTER

Metallica is currently undertaking desktop studies and preparing material to attract potential joint venture or other partners for a potential silica sand mining and bulk shipping operation.



FIGURE 9: Cape Flattery Project Area

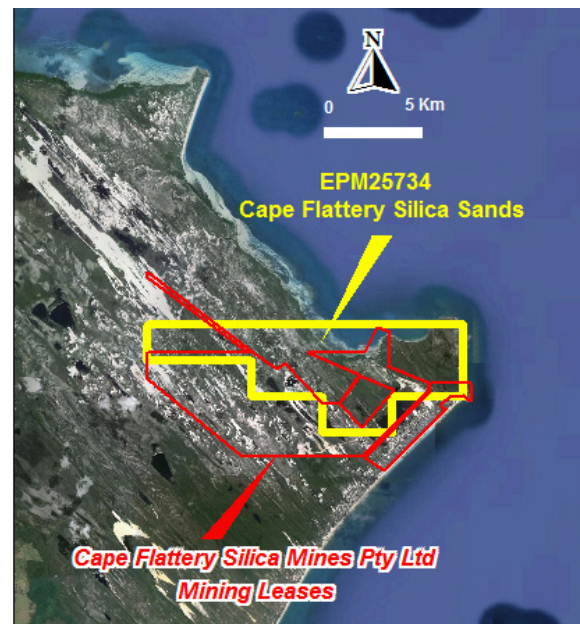


FIGURE 10: Cape Flattery EPM & CFSM mining lease location

SUBSIDIARY COMPANIES

NORNICO Pty Ltd ACN 065 384 045
Oresome Australia Pty Ltd ACN 071 762 484
Oresome Bauxite Pty Ltd ACN 606 362 252
Lucky Break Operations Pty Ltd ACN 126 272 580
Phoenix Lime Pty Ltd ACN 096 355 761
Greenvale Operations Pty Ltd ACN 139 136 708
Scandium Pty Ltd ACN 138 608 894
Touchstone Resources Pty Ltd ACN 126 306 018



METALLIGAMINERALS.COM.AU