



# METALLICA MINERALS

  
**CAPE YORK**  
HMS & Bauxite

  
**SCONI**  
Ni-Co & Sc

**Emerging Resource Developer to Producer**

**Mining 2014**

29 & 30 October

Hilton Hotel, Brisbane

ASX:MLM



# Disclaimer

Statements & material contained in this presentation, particularly those regarding possible or assumed future performance, production levels or rates, metal prices, metal markets, resources or potential growth of Metallica Minerals Ltd, industry growth or other trend projections are, or may be, **Forward Looking Statements**. Such statements relate to future events & expectations as such, involve known & unknown risks & uncertainties.

The **Cape York Heavy Mineral Sands (HMS) and Bauxite (Bx) Projects (Incl Urquhart Pt) and the SCONI Scandium-Cobalt-Nickel Project**, are at the exploration, advanced evaluation & feasibility stage & although reasonable care has been taken to ensure that the facts stated in this presentation are accurate & or that the opinions expressed are fair & reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or on its completeness.

Actual results & developments of projects and scandium market development may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors.

Nothing in this presentation should be construed as either an offer to sell or a solicitation of an offer to buy or sell shares in any jurisdiction.

This material is used for a company summary presentation only, for more detailed information the reviewer should seek company information as provided in Metallica's ASX releases, Annual & Quarterly Reports.

**Forward-looking statements** are based on assumptions regarding Metallica Minerals Limited ("Metallica"), business strategies, plans and objectives of the Company for future operations and development and the environment in which the Metallica may operate.

Forward-looking statements are based on current views, expectations and beliefs as at the date they are expressed and which are subject to various risks and uncertainties. Actual results, performance or achievements of Metallica could be materially different from those expressed in, or implied by, these forward-looking statements. The forward-looking statements contained in this presentation are not guarantees or assurances of future performance and involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of Metallica, which may cause the actual results, performance or achievements of Metallica to differ materially from those expressed or implied by the forward-looking statements. For example, the factors that are likely to affect the results of Metallica include general economic conditions in Australia and globally; ability for Metallica to fund its activities; exchange rates; production levels or rates; demand for Metallica's products, competition in the markets in which Metallica does and will operate; and the inherent regulatory risks in the businesses of Metallica. Given these uncertainties, readers are cautioned to not place undue reliance on such forward looking statements.

- The **Urquhart Point Project** is at an advanced evaluation and feasibility stage and reasonable care has been taken to ensure that the facts stated in this announcement are accurate and or that the opinions expressed are fair and reasonable. However, actual results may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors.
- A key conclusion of the **Feasibility Study (FS)** which is based on forward looking statements is that the Urquhart HMS Project is considered to have positive economic potential and subject to funding the project is intended to be developed.

**Technical information** contained in this report has been compiled by Metallica Minerals Managing Director Mr Andrew Gillies B.Sc. & M. AUSIMM, who is a **competent person** & a member of the Australasian Institute of Mining & Metallurgy & have relevant experience to the mineralisation being reported on to qualify as Competent Persons as defined by the Australasian Code for Reporting of Minerals Resources & Reserves. Mr Gillies consents to the inclusion in this presentation of the matters based on the information in the form & context in which it appears.

**\*Exploration Target** - The potential quantity and grade of the bauxite deposits are conceptual in nature. There is insufficient information at this time to define a mineral resource and there is no certainty that further exploration will result in the determination of a mineral resource in these areas.

For further detailed information on the content of this presentation please also refer to the following ASX Releases dated: 20 May 2014, 17 June & 24 June 2014 & 11 July 2014, 1 & 27 August 2014, 29 & 30 September 2014, Annual Report 6 October 2014



# MLM Financial Overview

## METALLICA'S VISION

*Become a successful producer of zircon-rutile,  
bauxite & scandium-nickel-cobalt products*

### Financial Information

<b>Share price</b> (9 Oct 2014)	<b>7.3c</b>
Shares on Issue	166.9M
Market Cap (9 Oct 2014)	\$12.3M
Cash Position (9 Oct 2014) <i>No Debt</i>	~\$2.5M
*R & D Claim by Nov 2014	~\$0.5M

### Major Shareholders

Jien Mining Pty Ltd	24.0%
Victorian Ferries Pty Ltd	10.4%
Golden Breed Pty Ltd	5.3%
Bondline Ltd	2.9%
Top 20 shareholders (2,100)	57%

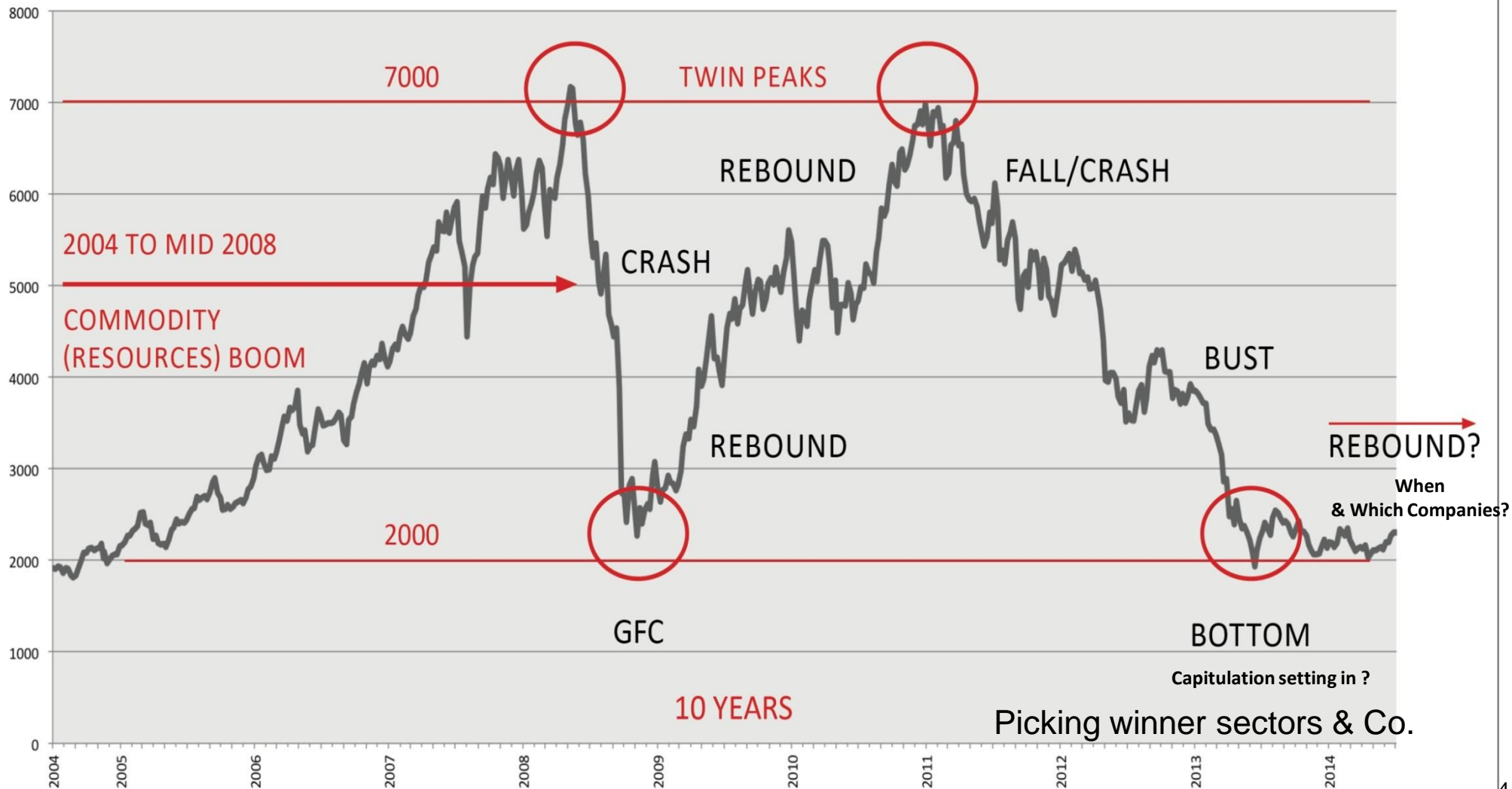
Name	Position	Background	Experience
David Barwick	Non-Executive Chairman	Financial / Corporate	40+ years
Andrew Gillies	Managing Director - CEO	Geology / Mining / Corp Dev	27+ years
Barry Casson	Non-Executive Director	Financial / Corporate	40+ years
Wu Shu (Shu Zhang– Alternate)	Non-Executive Director	Engineering	30+ years
John Haley	CFO/Company Secretary	Financial	28+ years



# Australian Junior Resources Sector Market

a Volatile market and sector provides Opportunity – timing is critical

XSR : ASX SMALL RESOURCES JULY 2004 - JULY 2014







# MLM Core Projects

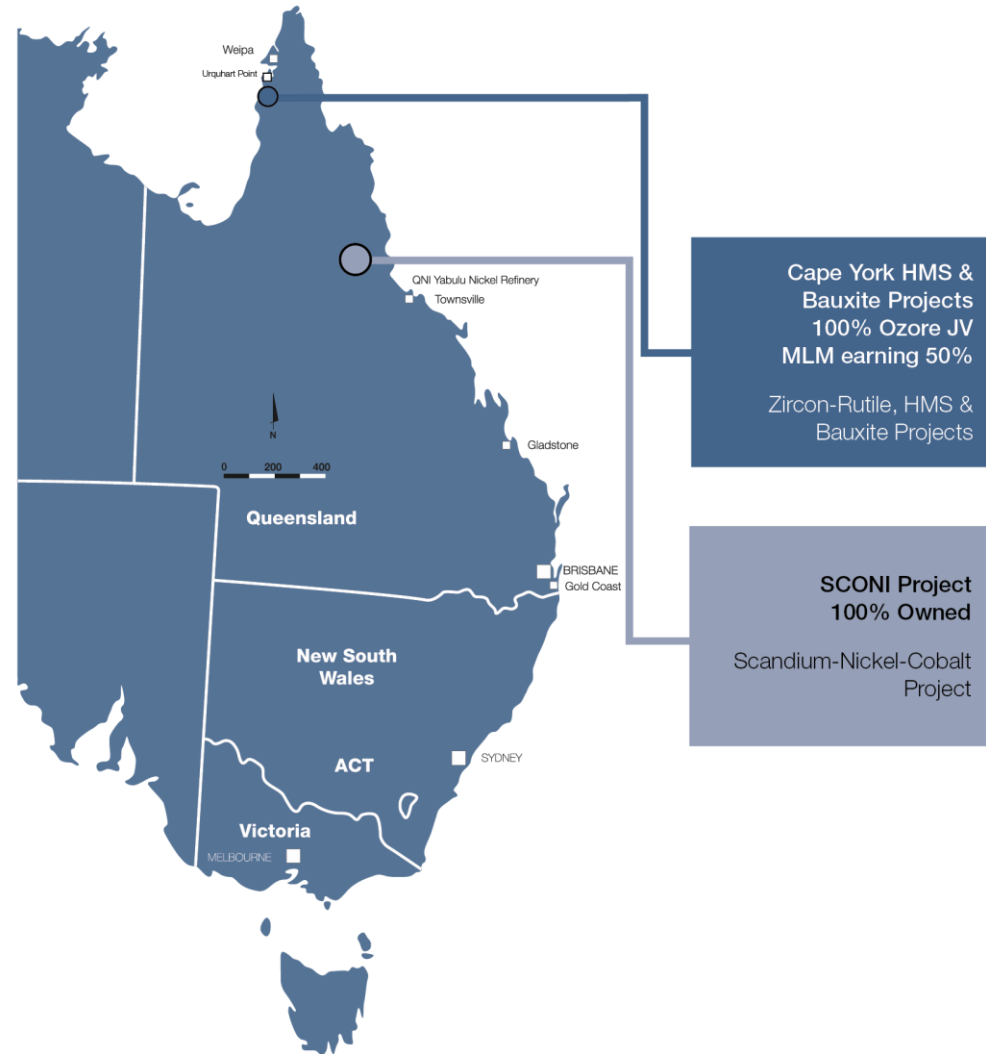
## ■ HMS – Zircon, Ti Minerals & Bauxite

### Cape York HMS & Bauxite Project

**MLM 67% Ozore 33% (earning 50%)**

1. Urquhart Point HMS Mine
2. Urquhart Point Bauxite (DSO)
3. Regional HMS (Potential Province)
4. Regional Bauxite

## ■ Nickel – Cobalt – Scandium **SCONI (Sc-Co-Ni) Project** 100% MLM



*All commodities which China needs*



# Cape York Tenure

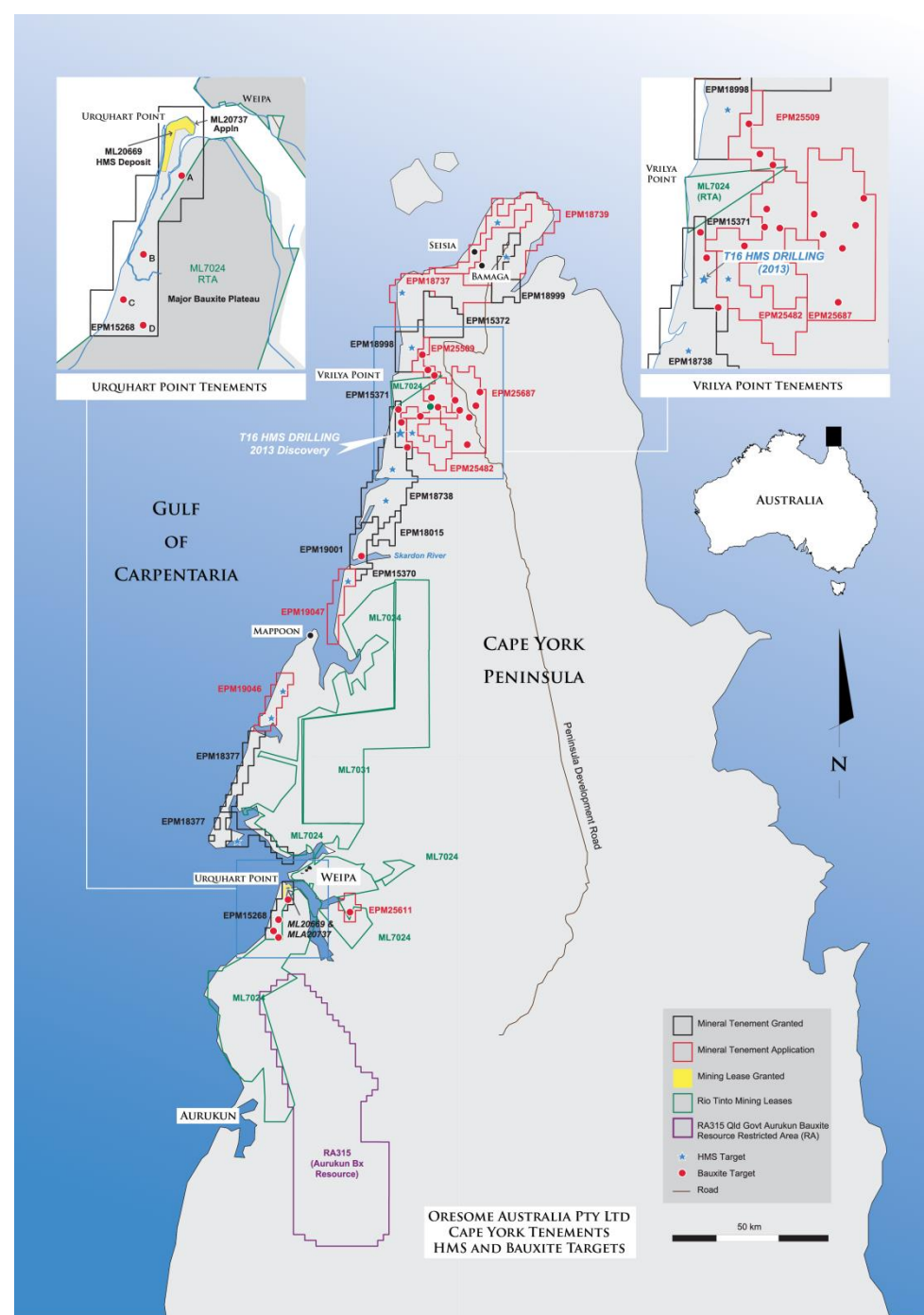
## *"Title is Vital"*

- ✓ 2,500 sq km prospective exploration tenure
- ✓ 300 km coastal tenure
- ✓ Highly prospective HMS & Bauxite
- ✓ Incredible Urq Pt only HMS deposit in CY
- ✓ T16 HMS Discovery - first target tested, 160km north of Urq Pt



Photo looking east above the Urquhart Point mining lease and proposed HMS mining area (including barge loading sites) across the Embley River (a deep protected shipping channel), Weipa Port and Township. Further distance is Rio Tinto's Weipa bauxite mining and shipping operations.

ASX:MLM





## Recent Highlights

- ✓ JV Agreement with Ozore invests \$7.5M for 50% CY HMS & Bx Project
- ✓ \$5M in funding received (MLM 67% : Ozore 33%)
- ✓ Plant Supply contract executed with Consulmet for Urquhart Point HMS Project
- ✓ Committed Development - Commissioning expected mid 2015 – Cashflow (4-5 yrs based on current reserve)
- ✓ Bauxite drilling program commenced – Urquhart Point (potential for DSO)
- ✓ HMS Drilling in November – T16 deposit (300 holes)
- ✓ \$580k R & D Refund expected by late November 2015
- ✓ Exciting Bx & Ni Laterite – DSO market gap opportunity from Indonesia's export ban
- ✓ Actively progressing & adding value to CY projects without having to directly dilute shareholders

***2015 will be a very productive year for MLM***



## Urquhart Point – HMS Development (Weipa)

- Urquhart Point Reserve & Positive FS *(See ASX Release 24 June 2014)*
- NPV of \$4.9 m & IRR of 69% - 5 year mine life
- 1 year payback on \$6.5M establishment cost
- Simple mine (<3m), basic 110tph (270ktpa) processing (wet gravity- Spirals), barge conc. & ship operation
- Model uses TZMI Zircon-Ti Mineral forecast prices
- 0.85 long term FX rate
- Offtake in advanced negotiations
- Fully permitted, development starting
- Supply Contract signed with Consulmet – fixed price turnkey & delivered to Weipa ~\$3.7M





## West Cape York HMS & Bauxite Project

- Exceptional Regional Potential within 2,500 square km tenure 300km sandy coastlines adjoining Bx plateaus
- Modern day/recent version of Eucla & Murray Basin HMS
- T16 “zircon-rich HMS discovery” in late 2013
- >10 regional HMS targets – T16 was the first target drilled
- 15 Bx Exploration Targets\* defined combined 47 to 138Mt  
– further information see Table page 30 and ASX release 11 July 2014
- Grid/Resource spaced drilling planned late Oct - Nov 2014

\***Exploration Target** - The potential quantity and grade of the bauxite deposits are conceptual in nature. There is insufficient information at this time to define a mineral resource and there is no certainty that further exploration will result in the determination of a mineral resource in these areas.



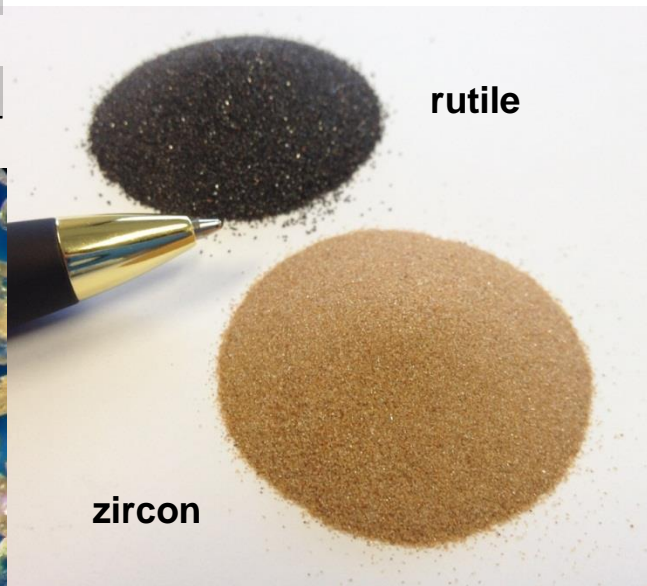
# Urquhart Point Zircon & Rutile Specifications

## Urquhart Point Primary Zircon Specifications

ZrO <sub>2</sub> + HfO <sub>2</sub> (%)	65.0 – 66.0
U + Th (ppm)	420 – 500
TiO <sub>2</sub> (%)	0.05 – 0.10
Al <sub>2</sub> O <sub>3</sub> (%)	0.10 – 0.30
Fe <sub>2</sub> O <sub>3</sub> (%)	0.08 - 0.10



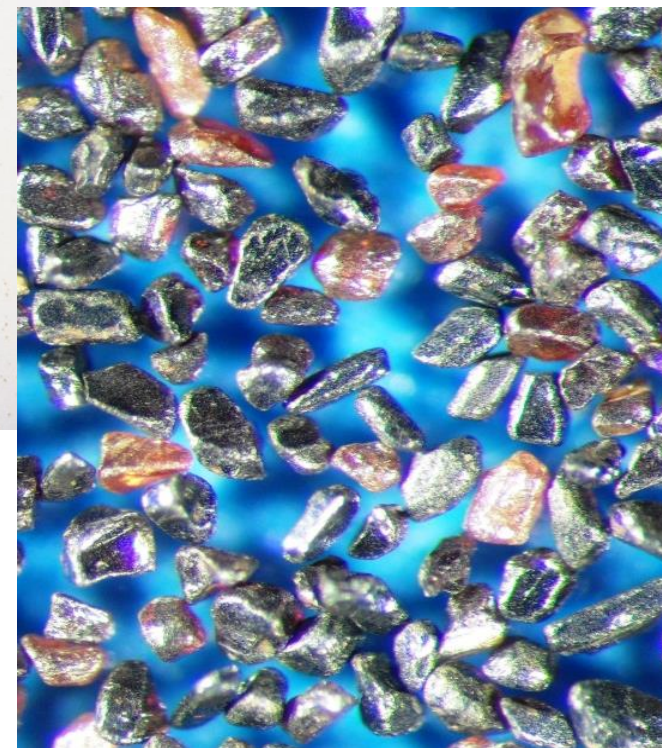
Microscope view of Urquhart Point zircon sand  
ASX:MLM



The Urquhart Point Project will produce a HM concentrate containing high quality zircon and rutile mineral sands

## Urquhart Point Primary Rutile Specifications

ZrO <sub>2</sub> + HfO <sub>2</sub> (%)	0.30 – 0.10
U + Th (ppm)	50- 100
TiO <sub>2</sub> (%)	96.0 – 97.0
Al <sub>2</sub> O <sub>3</sub> (%)	0.20 – 0.30
Fe <sub>2</sub> O <sub>3</sub> (%)	0.25 – 0.30



Microscope view of Urquhart Point rutile sand



# Urquhart Point HMS Reserve Estimate

The HMS Reserves have been independently estimated by consultants IMC Mining Pty Ltd

Ore Reserve Category	Tonnes (kt)	Head Grade						HM Tonnage & Mineral Assemblage			
		HM %	OS %	Slimes %	Zircon %	Rutile %	Ilmenite %	HM (kt)	Zircon % of HM	Rutile % of HM	Ilmenite % of HM
<b>Proved</b>	967	10.6	8.1	1.0	1.2	1.4	1.4	102	11.1	13.7	12.9
<b>Probable</b>	210	4.8	6.7	1.2	0.9	0.6	0.7	10	17.7	13.2	14.4
<b>Total</b>	<b>1,177</b>	<b>9.5</b>	<b>7.9</b>	<b>1.0</b>	<b>1.1</b>	<b>1.3</b>	<b>1.2</b>	<b>112</b>	<b>11.7</b>	<b>13.6</b>	<b>13.1</b>

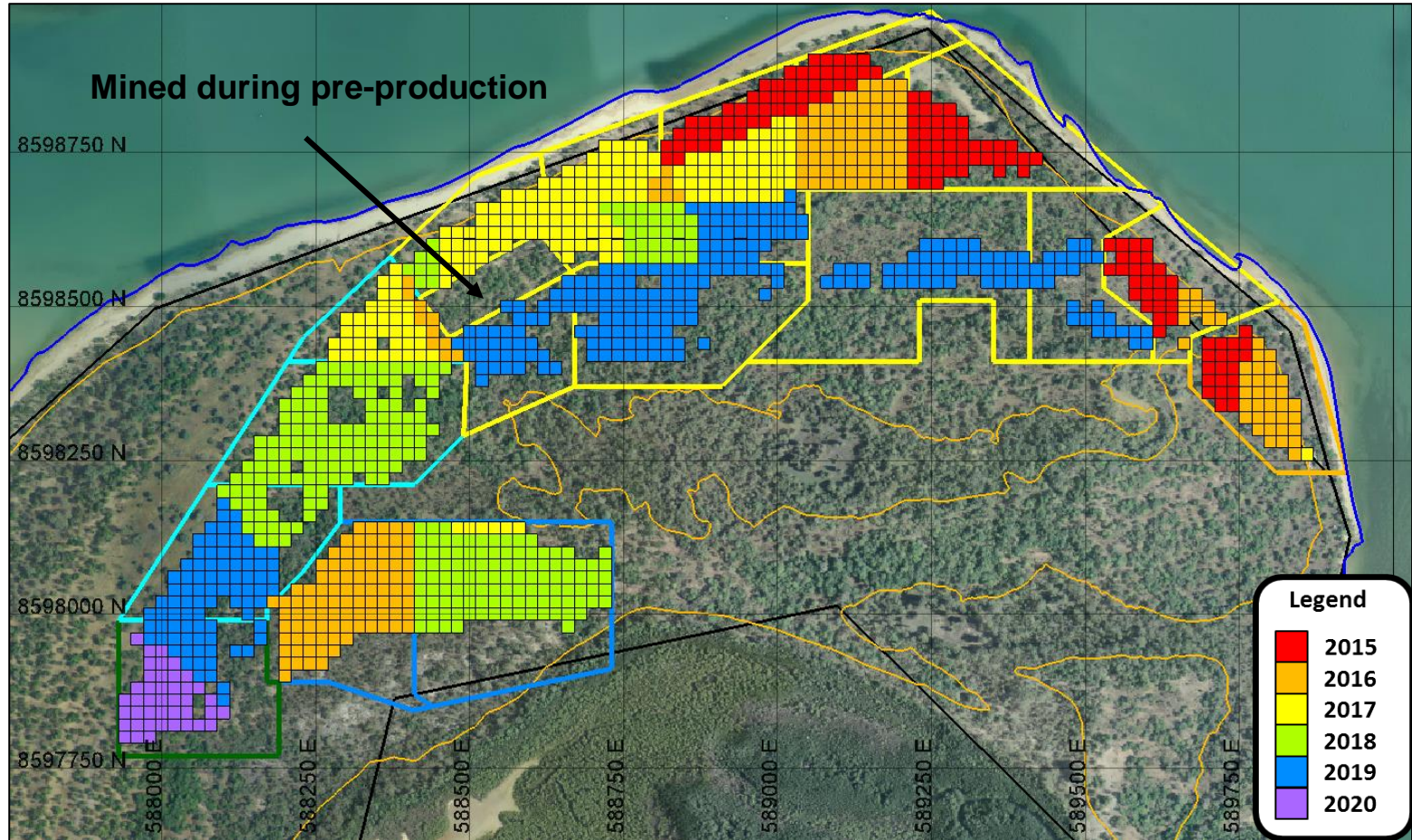
- The Ore Reserves are based on the following long term FOB prices: Zircon \$1,500/t, Rutile US\$1,200/t and Ilmenite US\$200/t
- Ore Reserves are based on a Zircon Equivalent cut-off grade of 0.90%.
- Zircon Equivalent =  $\text{Zircon\%} + 0.8 \times \text{Rutile \%} + 0.13 \times \text{Ilmenite\%}$ . Recoveries used in the equivalence calculation are 98.2%, 98.0% and 95.8% for Zircon, Rutile and Ilmenite respectively.

*For further information see ASX Release 24 June 2014*





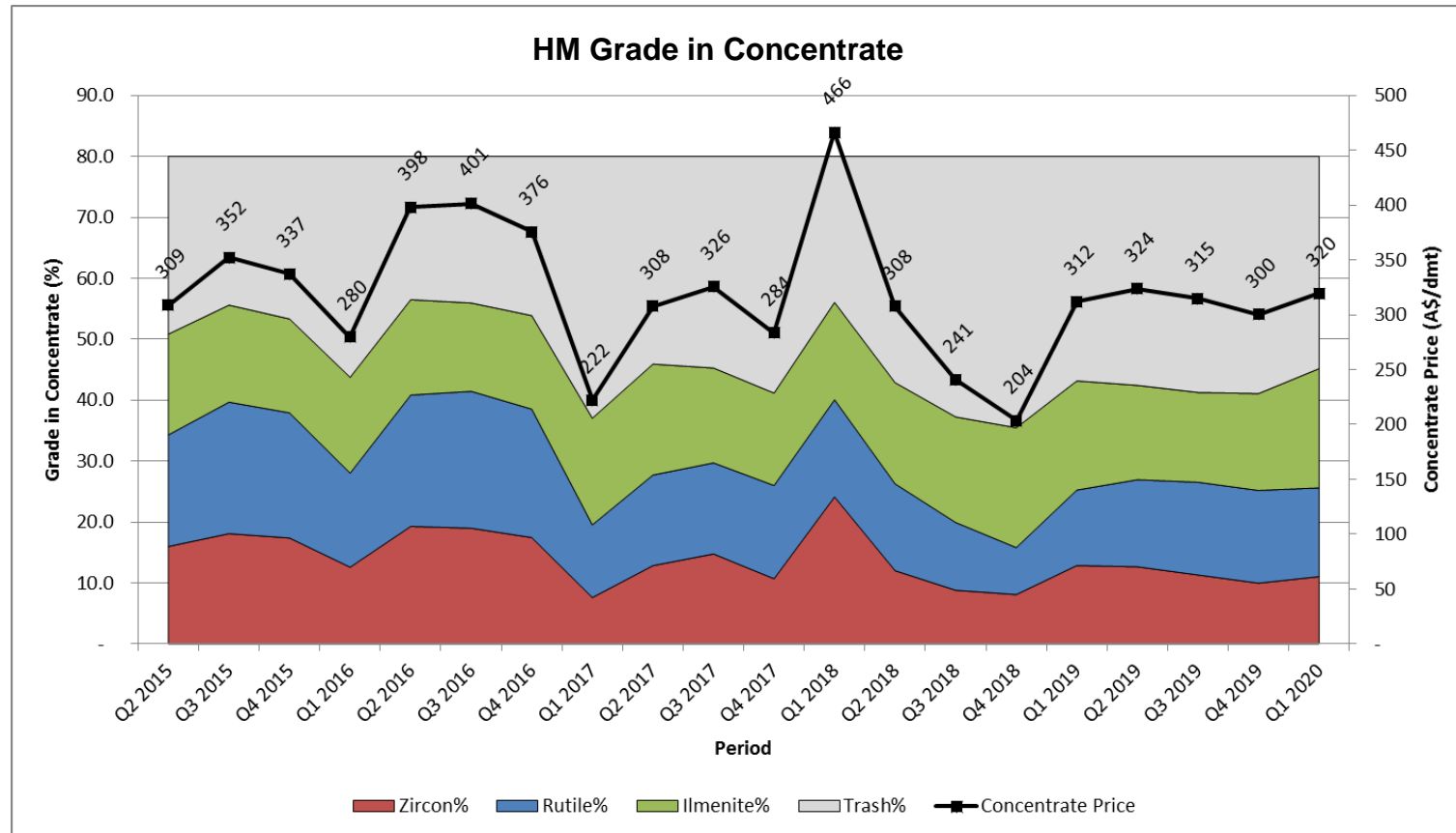
# Mining Sequence of HMS Reserve Blocks







# HM Concentrate Grade & Pricing Estimate



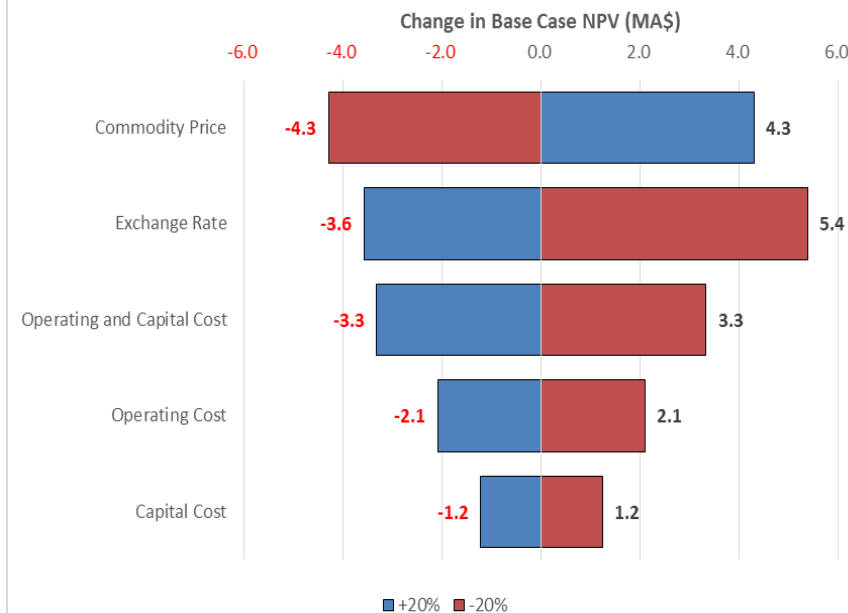


# Urquhart Point HMS Project Financial Metrics

## ■ Key Metrics (June 14 – Feasibility Study)

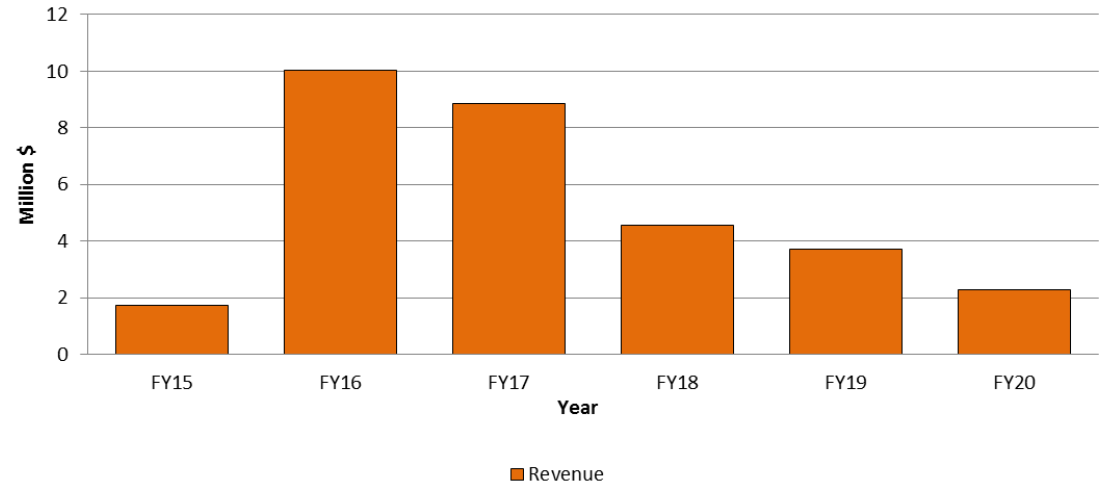
Parameter	Quantity
NPV <sub>10%</sub>	A\$4.9M
IRR	69%
Mine life	4.9 years
Capex estimate	A\$6.51M
Undiscounted cash-flow (after CAPEX)EBITDA	A\$7.3M

NPV Sensitivity Analysis

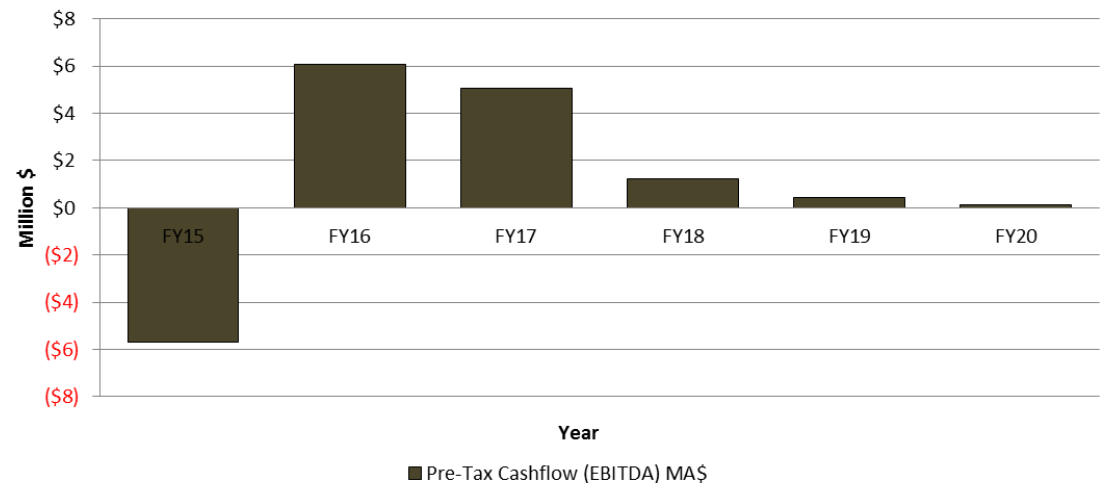


ASX:MLM

Net Revenue (A\$)



Undiscounted Cash Flow



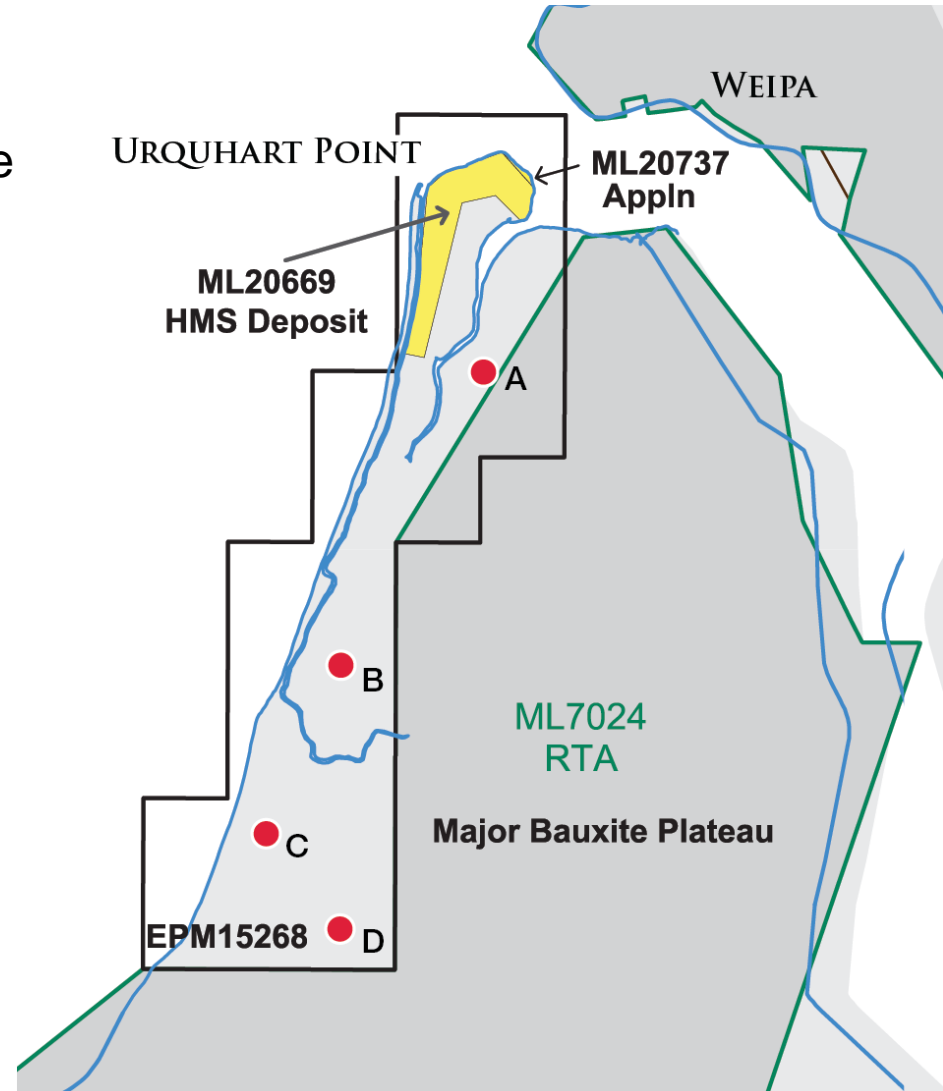


# Urquhart Point HMS & Bx Project (near Weipa – Hub 1)

- Fully permitted granted ML (yellow) covering Urquhart Pt HMS Resource/Reserve
- Urquhart Point EPM15268 also covers bauxite (bx) targets
- Urquhart Pt Tenements adjacent to huge bauxite resources held by RTA (South of Embley) & Qld Gov (Aurukun) Bx deposits
- Potential for accessing third party bauxite using Urquhart Pt barging/shipping infrastructure will be investigated



Working with TLO's from exploration to production

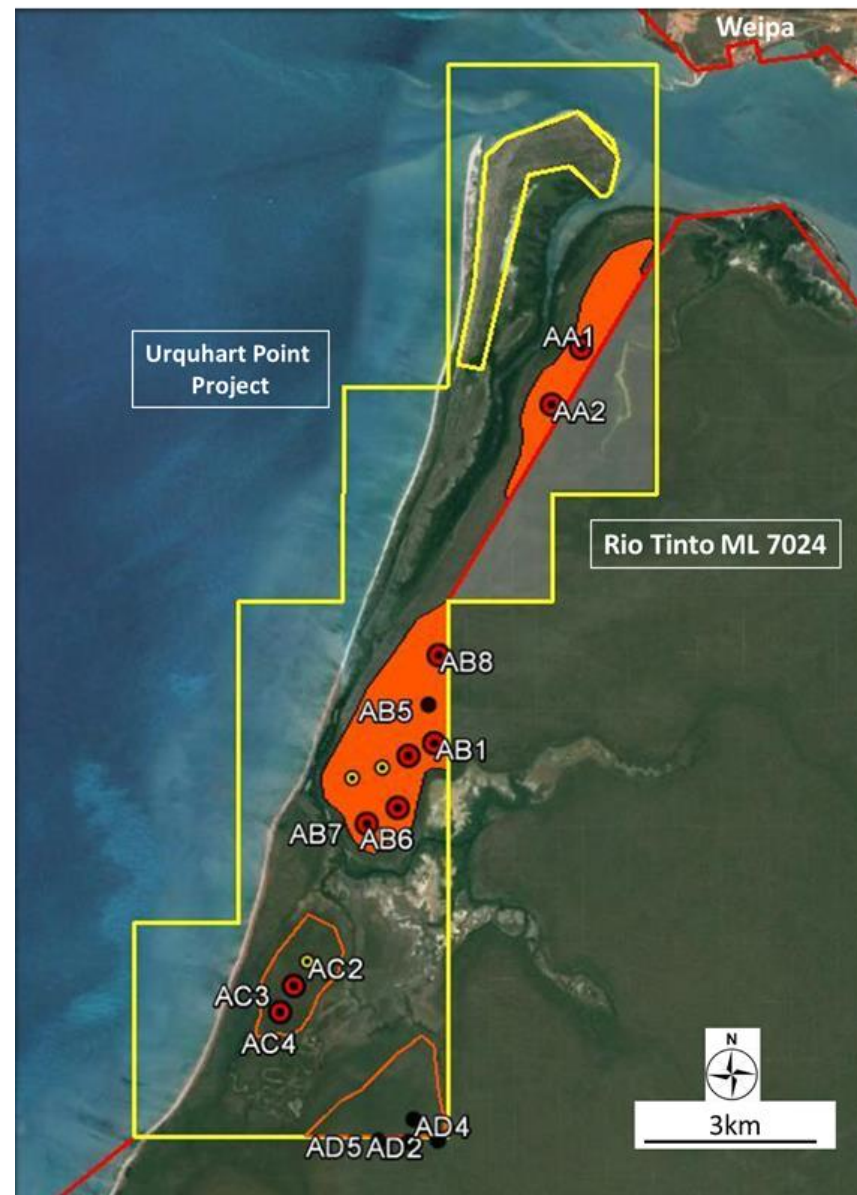


URQUHART POINT TENEMENTS



# Dual HMS & Bauxite Focus at Urquhart Point – Hub 1

- Urquhart Point EPM15268 contains a granted Mining Lease (ML) covering the HMS Resource and also edges of a major bauxite plateau
- 4 Bx Plateau target areas A, B, C, D, orange polygons showing priority Exploration Target\* 5-10Mt Bauxite
- Best areas from initial sampling was Areas A & B, covering 8km<sup>2</sup> – Follow-up drilling Planned September
  - **Area B** best result (8 auger holes) recorded\*  
57% Al<sub>2</sub>O<sub>3</sub> & 6% SiO<sub>2</sub>
  - **Area A** best result (2 auger holes) recorded\*  
53% Al<sub>2</sub>O<sub>3</sub> & 12% SiO<sub>2</sub>
- Potential for Direct Shipping Ore (DSO) Bauxite using proposed Urquhart Pt HMS barge-ship infrastructure nearby
- Urquhart Pt is very strategically located at tip of a major undeveloped bauxite plateau held by third parties (RTA & Qld Gov)



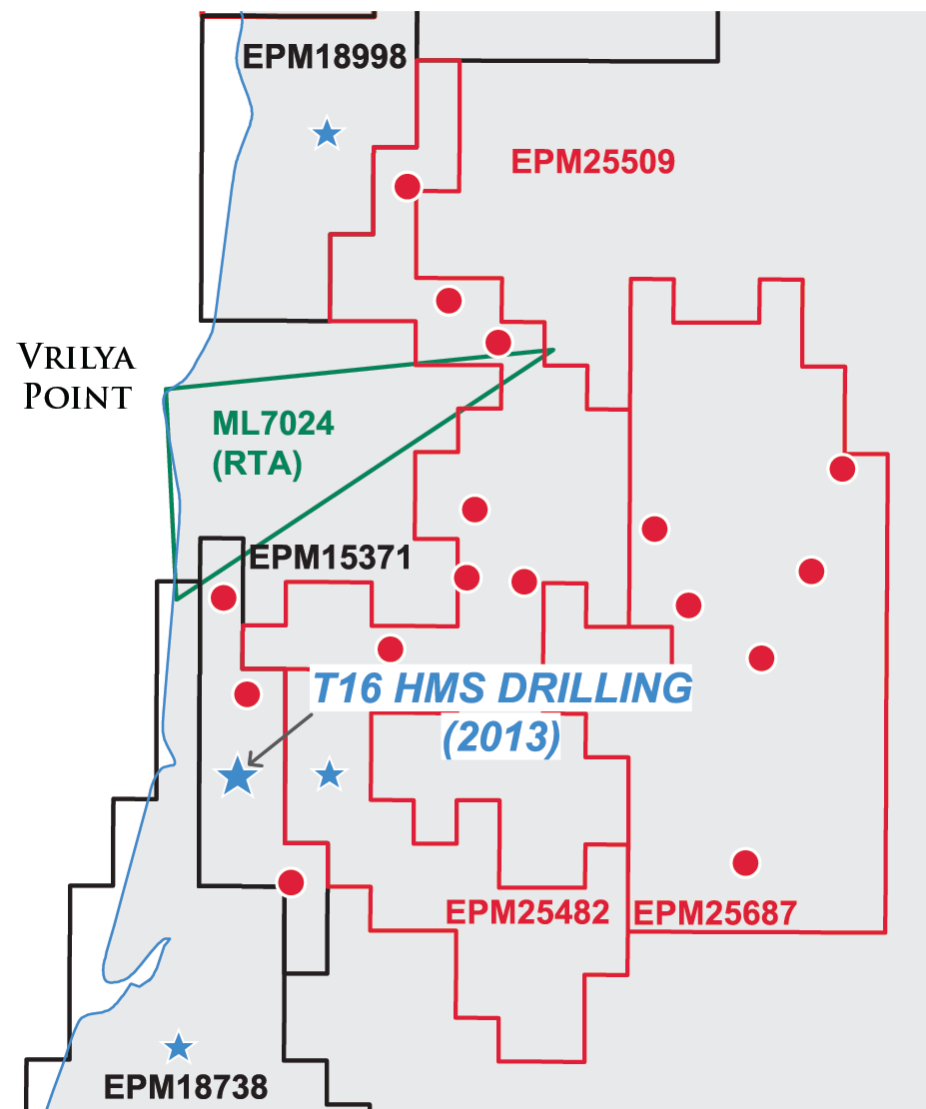
\* +1.2mm screened





# Vrilya Point HMS & Bx Project (160km N Weipa – Hub 2)

- RIO ML (green) covering portion of Vrilya Pt Bauxite deposit
- JV holds 5 EPM(black)/EPMA's (red) near Vrilya Pt cover numerous priority HMS & Bx targets
- Extensive Bx areas within tenure – need to establish quantity & quality by drilling
- Very good potential for very large Zircon rich HM deposits N & S Vrilya Pt (eg T16)
- Combined Vrilya Bauxite Exploration Target\* of 42Mt to 128Mt Range  
(See Table 1, Page 32)



VRILYA POINT TENEMENTS

\* **Exploration Target** - The potential quantity and grade of the bauxite deposits are conceptual in nature. There is insufficient information at this time to define a mineral resource and there is no certainty that further exploration will result in the determination of a mineral resource in these areas.



# Vrilya & Vrilya East Project Exploration Targets\*

- Vrilya & Vrilya East Project Tenements with outline of Government and Oresome mapped laterite/Bx plateaus (orange colour)
- 13 Identified bauxite Exploration Targets (**Orange** circles) & regional HMS exploration targets (**Yellow** Circles).

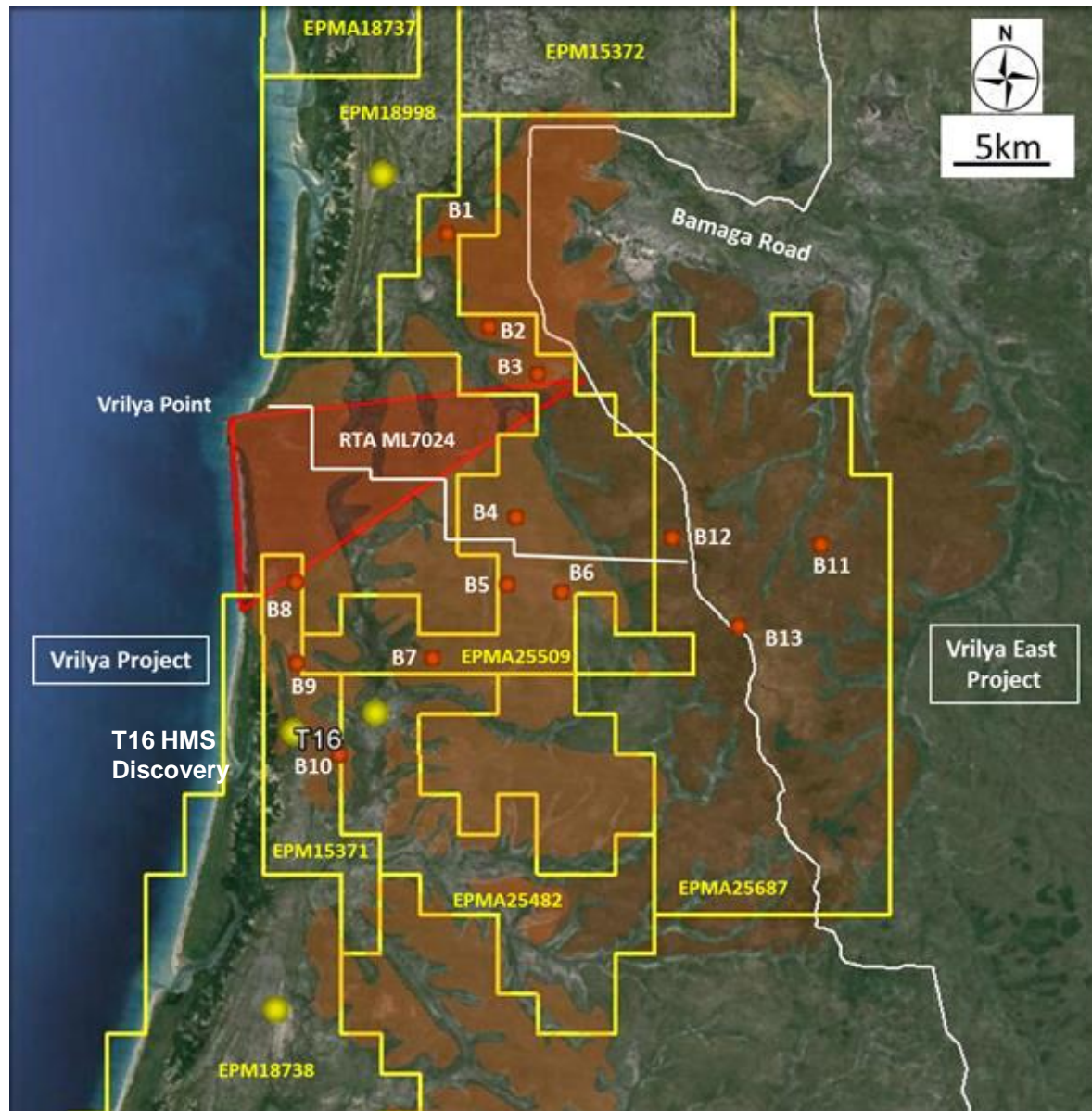


Photo from helicopter showing extensive Vrilya East bauxite laterite plateaus targeted for grid drilling



# Major Regional Exploration Opportunities (HMS & Bauxite)

1. Excellent scope to define major HMS (potentially a province) & Bx deposits.
2. Typically HMS & Bauxite deposits/projects are located close to each other and therefore potentially sharing and integrating exploration, feasibility, development, infrastructure and future costs (Mutual Cost Savings Expected).
3. Urquhart Point is close by to large bauxite deposits (Rio & QLD Govt). There may be an opportunity to use the Urquhart Point infrastructure, established local relationships and existing Mining Leases to facilitate a bauxite mining, barging and shipping operation from Urquhart Point.



ASX:MLM

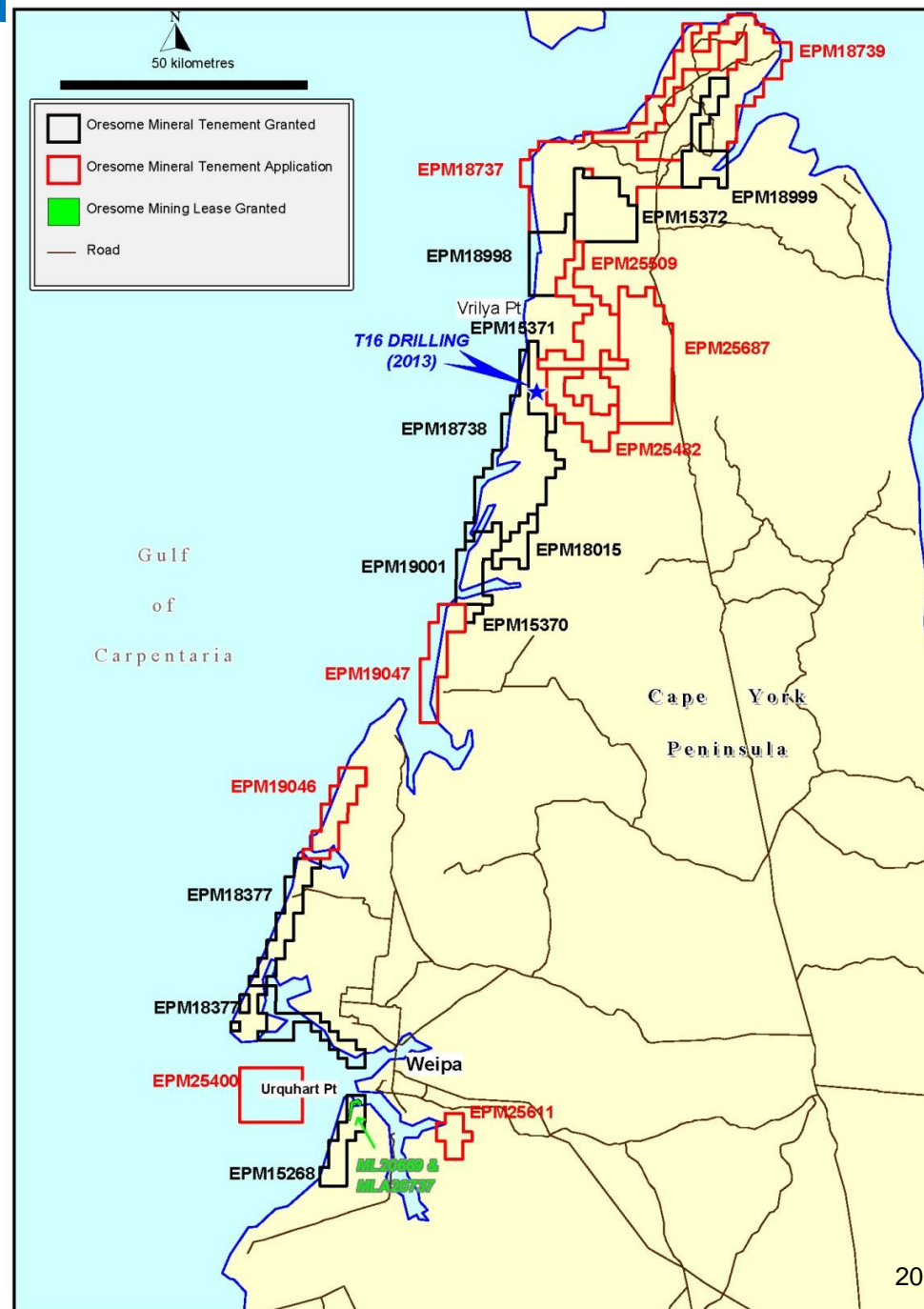






# Huge Regional HMS Potential - Starting with T16

- 2,500 sq km prospective tenure
- Highly prospective for HMS & Bx deposits
- 300 km coastal belt (near Weipa to the tip of CYP)
- T16 regional project 160km N of Urquhart Point – first regional target tested – resulted in Discovery
- T16 is one of many HMS targets (>20) along 300km of coastal belt from Weipa to tip Cape York
- Drilling to commence early Nov 2014 (~300 drill holes planned)







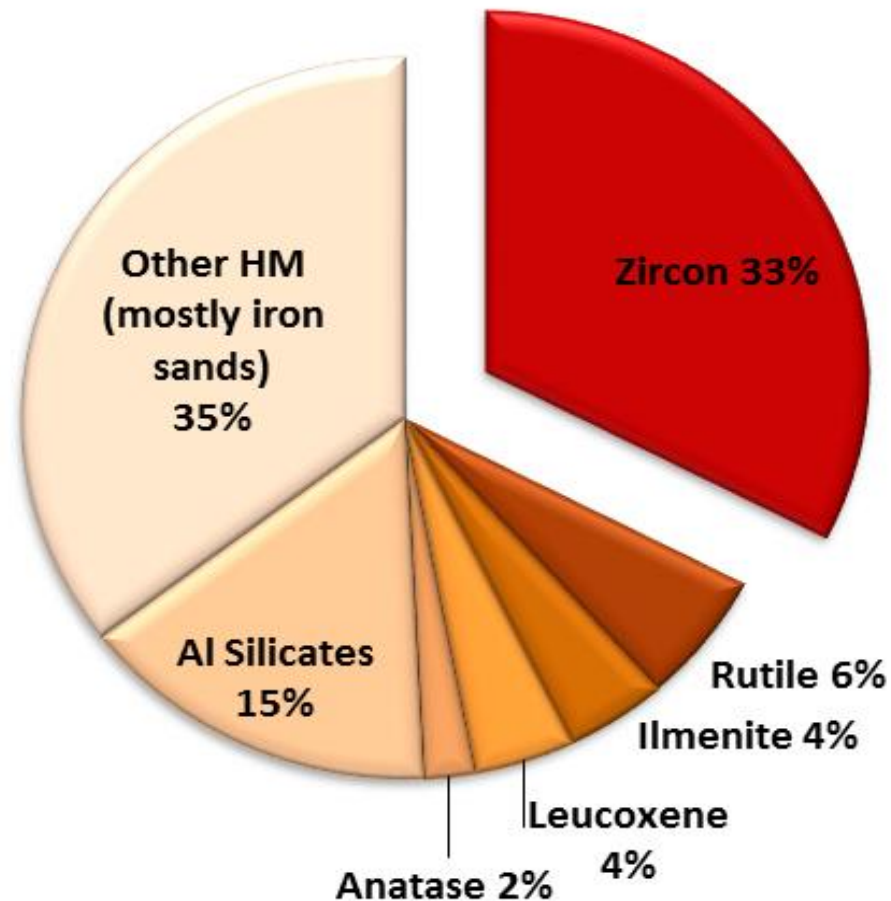
# Summary of the T16 HM Assemblage Analysis

of Composited Samples of 35 drill holes  
(Zircon rich 33% of HM, 16% Ti Minerals : 49% VHM)

## HM Assemblage

- 49% valuable HM(VHM)
- 33% high quality Zircon

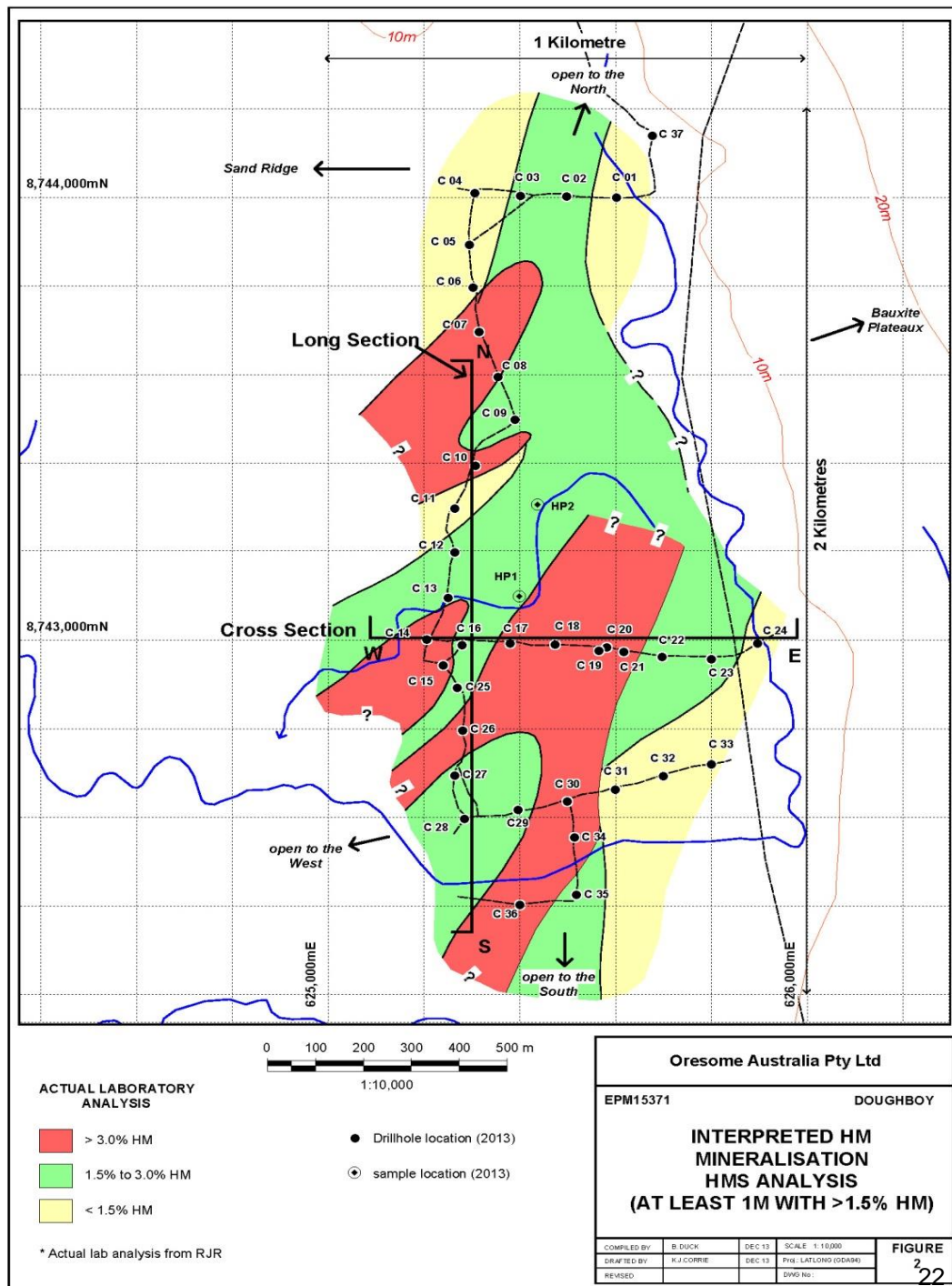
T16 - Average Heavy Mineral Proportions





# T16 HMS Discovery

- Significant mineralisation drilled over 1.8km x 800m area open in most directions
- 49% HM is Zircon (33%) & Ti Mineral (16%)
- All 36 auger holes drilled (average depth 3.7m) recorded significant mineralisation
- 24 holes ended with samples 1% HM
- T16 HM mineralisation is within fine quartz sand with generally low slimes, average 1.7%HM, HM containing 33% Zircon, 16% Ti Minerals (49% VHM)
- Only a very small portion of the total T16 prospect area has been drilled.
- For further information see ASX Release dated 22 January 2014





## Simple Mine-Barge-Ship Strategy (1)

- Simple shallow dig, basic processing, truck, barge, ship HM Con & Bx
- Low Capex, low start up cost, relatively quick startup (start small & grow)
- Focus only on accessible HMS & DSO Bauxite deposits (coastal)
- Close to bargable river-creek/mouths & protected deep waters (ships)



Barge in deep ship channel next to Urquhart Pt



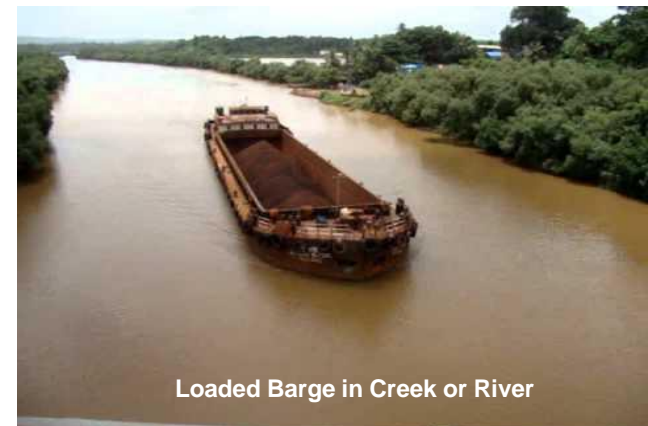
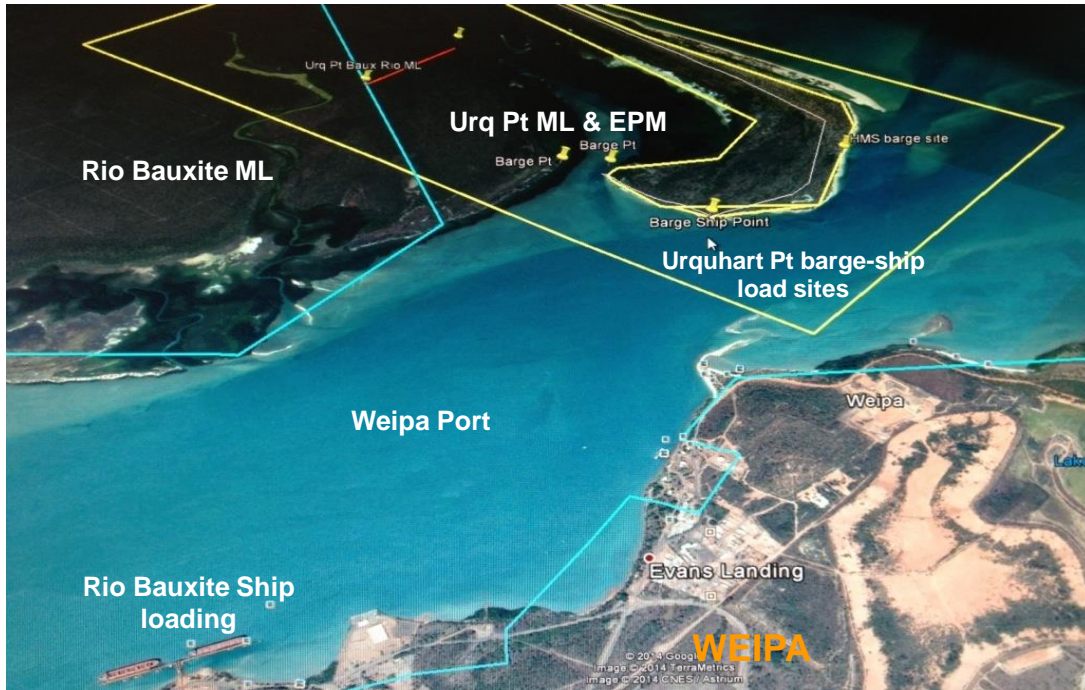
Barge in landed drill rig on Urquhart Pt beach





# Simple Mine-Barge-Ship Strategy (2)

Photos that encapsulate strategy



Barge in navigable creek or river

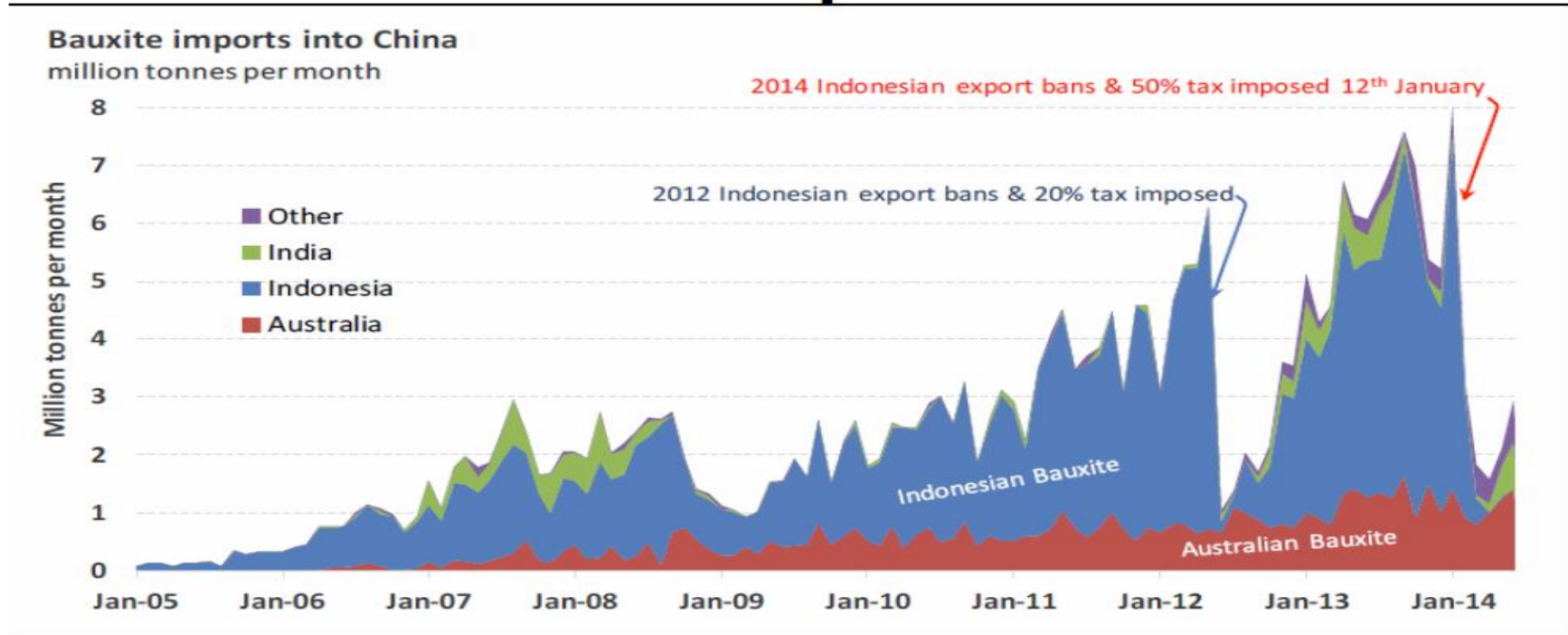






# Bauxite Market Outlook - Indonesian Bx Bans, (2013 supplied $\frac{3}{4}$ Chinese Imports), Forecasts Increasing Demand & Price

## Bauxite Volumes Imported into China



Source: ABX Quarterly Report June 2014

- Indonesia, the largest global exporter has implemented an export ban on bauxite and other minerals unless they are processed. This is a major opportunity for Queensland to replace this supply

## Major opportunity with major bauxite supply gap to China

- ✓ Increasing bauxite demand and prices are expected to intensify due to the simultaneous major reduction in bauxite supply from Indonesia and India, and increased demand for alumina to supply rising aluminium production and consumption in China, India and Middle East.

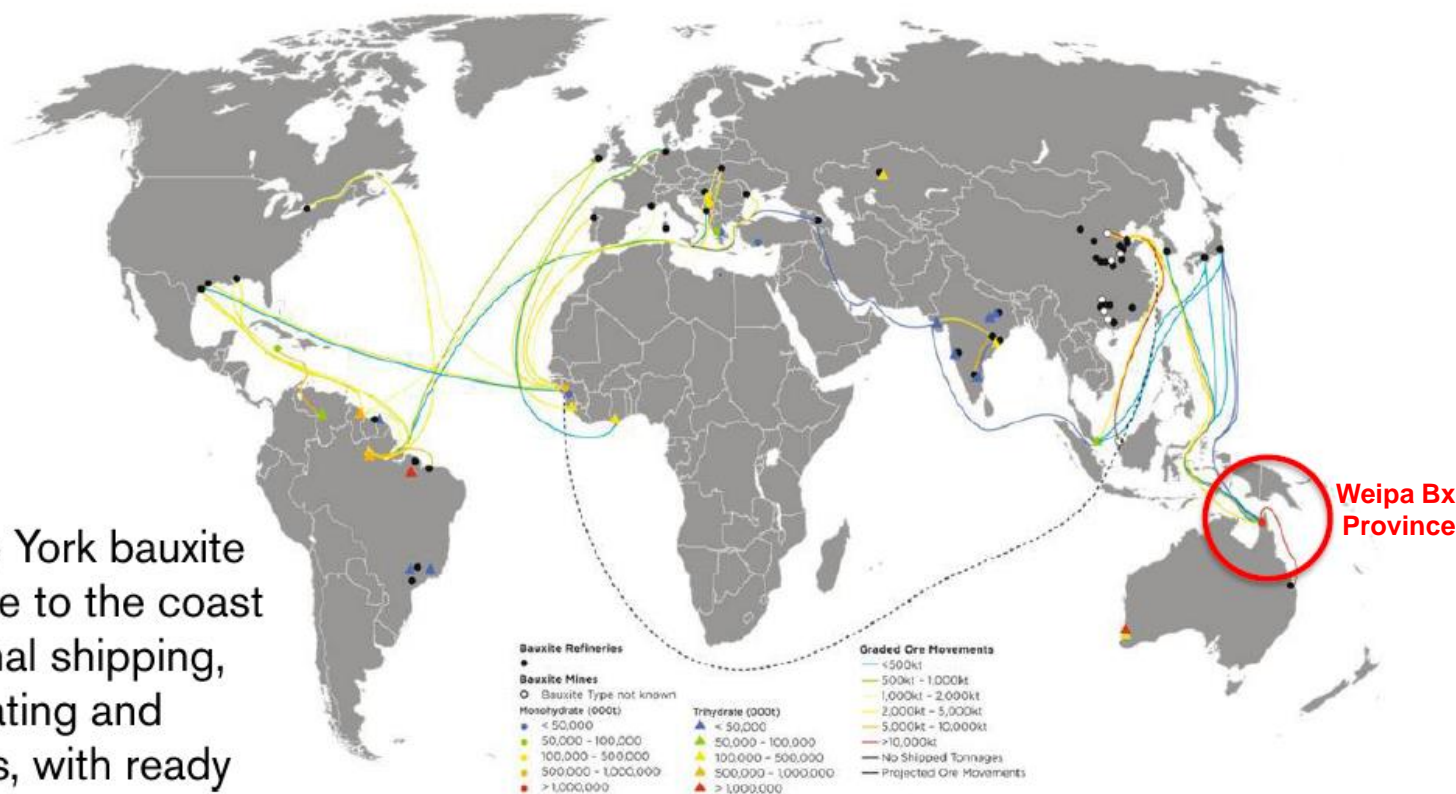


# Weipa Bauxite Advantage

## Well Known Quality, Coastal & Relatively Close to China

### Global Bauxite Shipping Route

Western Cape York bauxite is located close to the coast and international shipping, lowering operating and transport costs, with ready access to ship-borne trade to China or the Middle East

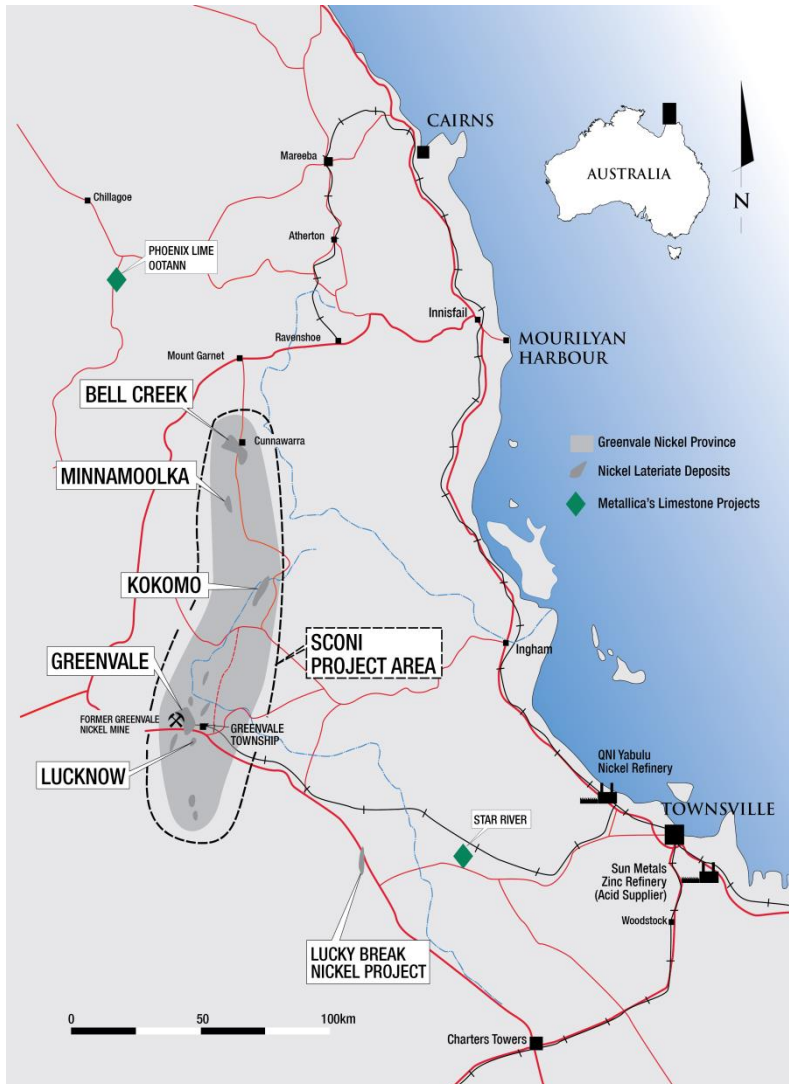


Source: Alufer



# SCONI Scandium-Cobalt-Nickel Tri-metal Project

**SCONI**  
Scandium • Cobalt • Nickel



- ✓ Greenville – Ideal location
- ✓ Established JORC Ni-Co & Sc laterite Resources – 89Mt combined resources containing 514kt Ni, 55kt Co, 4,300t Sc metals (see Tables back this presentation p 33-36)
- ✓ Historical Greenville nickel mine site - Mined 1974 – 92 produced 40Mt @ 1.56% Ni, 0.12% Co (containing 624,000t Ni & 48,000t Co)
- ✓ Low sovereign risk country
- ✓ Close proximity to industrial services & port in Townsville
- ✓ Good metallurgical oretypes, own Sc recovery IP
- ✓ Low environmental impact & strong community support





## Recent Highlights (Re-Cap)

- ✓ JV Agreement with Ozore invests \$7.5M for 50% CY HMS & Bx Project
- ✓ \$5M in funding received (MLM 67% : Ozore 33%)
- ✓ Plant Supply contract executed with Consulmet for Urquhart Point HMS Project
- ✓ Committed Development - Commissioning expected mid 2015 – Cashflow (4-5 yrs based on current reserve)
- ✓ Bauxite drilling program commenced – Urquhart Point (potential for DSO)
- ✓ HMS Drilling in November – T16 deposit (300 holes)
- ✓ \$580k R & D Refund expected by late November 2015
- ✓ Exciting Bx & Ni Laterite – DSO market gap opportunity from Indonesia's export ban
- ✓ Actively progressing & adding value to CY projects without having to directly dilute shareholders

***2015 will be a very productive year for MLM***





# METALLICA MINERALS

  
**CAPE YORK**  
HMS & Bauxite

  
**SCONI**  
Ni-Co & Sc

## THANK YOU

### METALLICA SUBSIDIARIES

NORNICO Pty Ltd | MLM 100%  
Greenvale Operations Pty Ltd | MLM 100%  
Lucky Break Operations Pty Ltd | MLM 100%  
Scandium Pty Ltd | MLM 100%  
Phoenix Lime Pty Ltd | MLM 100%  
Oresome Australia Pty Ltd | MLM 100%

ASX:MLM



# Urquhart Point HMS Resource Estimate

## ■ Global Mineral Resource – 0% HM COG

See ASX Release dated 20 May 2014

COG = 0% HM								
Resource Category	Tonnes	HM%	HM Tonnes	OS%	Slimes%	Zircon %	Rutile %	Ilmenite %
Measured	1,945,360	6.92	134,529	13.83	1.07	10.2	12.5	12.5
Indicated	1,365,440	4.60	62,746	15.33	1.15	11.4	10.9	13.2
<b>Total</b>	<b>3,310,800</b>	<b>5.96</b>	<b>197,275</b>	<b>14.45</b>	<b>1.11</b>	<b>10.6</b>	<b>12.0</b>	<b>12.7</b>

## ■ Mineral Resource constrained by mining lease and environmental buffers – 0% HM COG

COG = 0% HM								
Resource Category	Tonnes	HM%	HM Tonnes	OS%	Slimes%	Zircon %	Rutile %	Ilmenite %
Measured	1,882,960	6.57	123,716	14.17	1.07	9.7	12.0	12.4
Indicated	1,345,840	4.60	61,930	15.41	1.16	11.4	10.9	13.2
<b>Total</b>	<b>3,228,800</b>	<b>5.75</b>	<b>185,646</b>	<b>14.68</b>	<b>1.11</b>	<b>10.3</b>	<b>11.6</b>	<b>12.7</b>

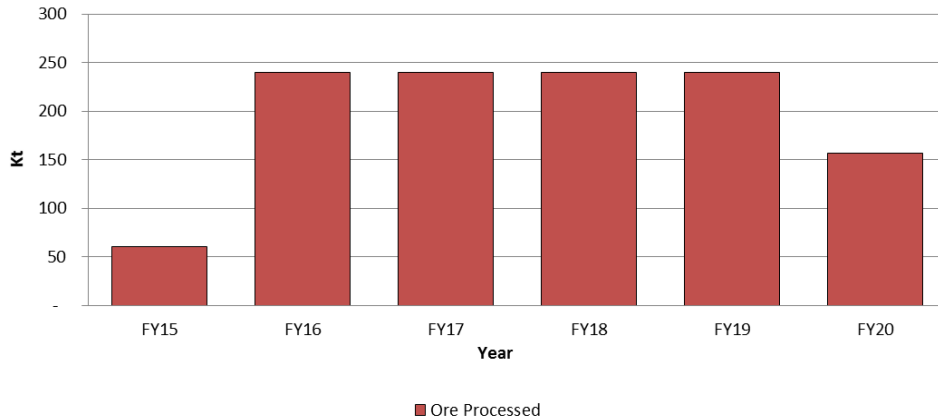
## ■ Mineral Resource constrained by mining lease and environmental buffers – 2% HM COG

COG = 2% HM								
Resource Category	Tonnes	HM%	HM Tonnes	OS%	Slimes%	Zircon %	Rutile %	Ilmenite %
Measured	1,781,360	6.85	122,090	12.46	1.03	9.8	12.0	12.4
Indicated	1,305,680	4.70	61,335	14.44	1.15	11.4	10.9	13.2
<b>Total</b>	<b>3,087,040</b>	<b>5.94</b>	<b>183,425</b>	<b>13.30</b>	<b>1.08</b>	<b>10.3</b>	<b>11.6</b>	<b>12.7</b>

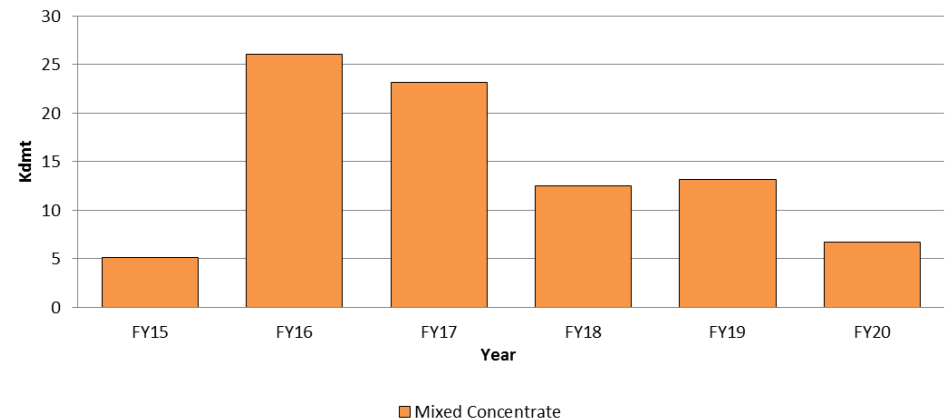


# Annual Urquhart Pt Production Forecast - Physicals

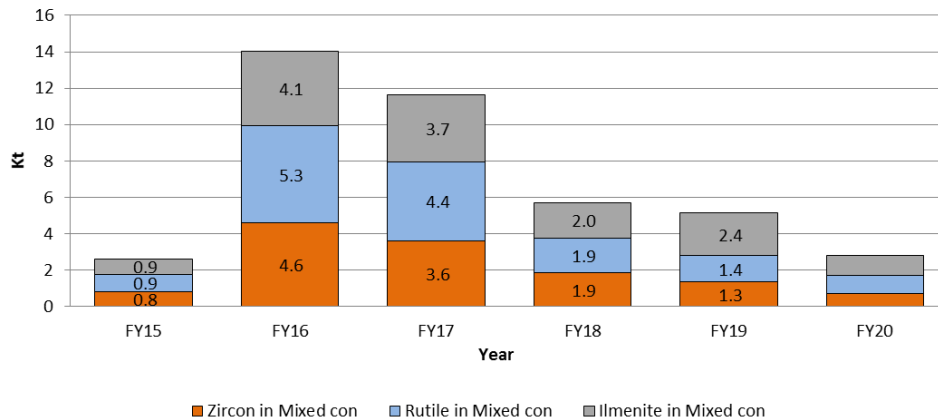
**Ore Processed**



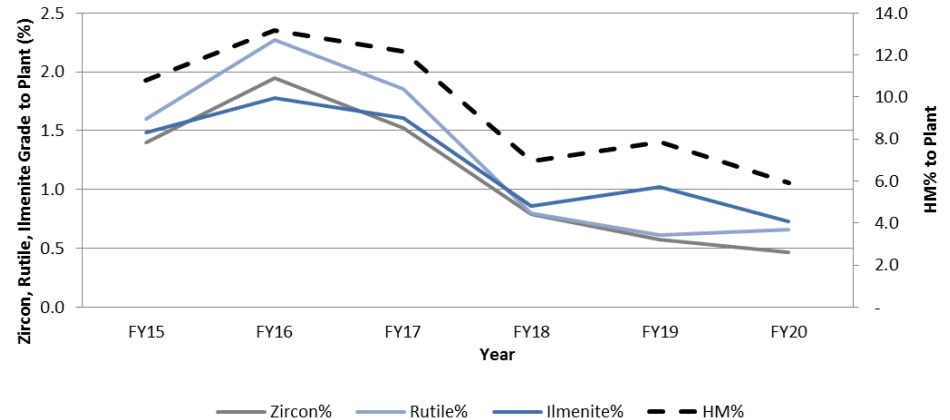
**Concentrate Tonnes**



**Total Zircon, Rutile and Ilmenite in Mixed Con**



**Grade to Plant (HM%, Zircon%, Rutile%, Ilmenite%)**

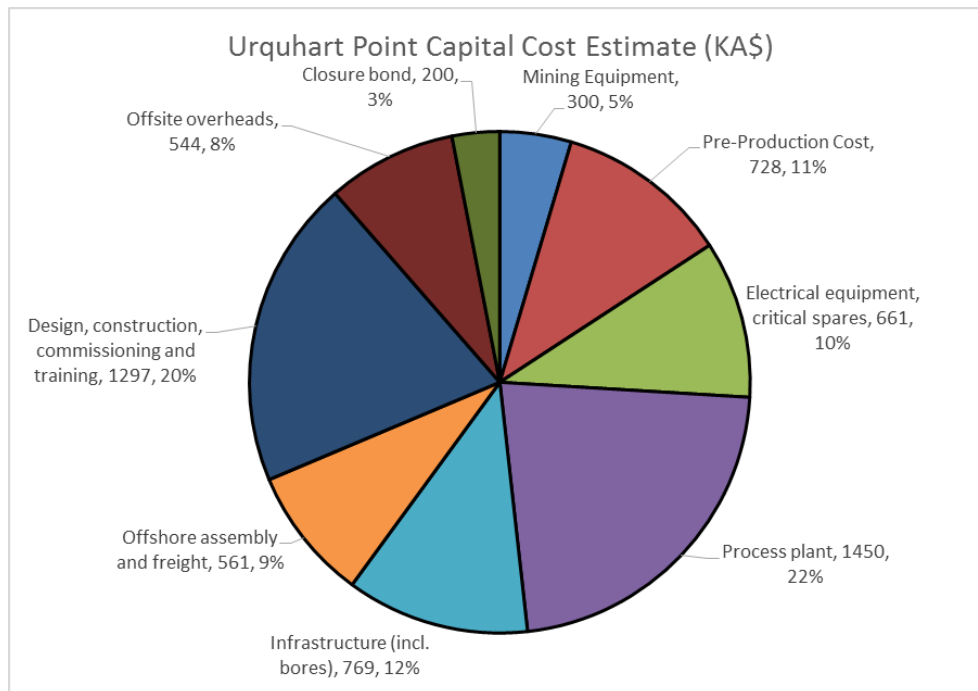




# Urquhart Point HMS Project Capital Cost Estimate

Capital Item	A\$ '000
Mining Equipment	300
Pre-Production Cost	728
Electrical equipment, critical spares	661
Process plant	1450
Infrastructure (incl. bores)	769
Offshore assembly and freight	561
Design, construction, commissioning and training	1297
Offsite overheads	544
Closure bond	200
<b>Total</b>	<b>6,510</b>

- The capital costs have been prepared to a -10%/+20% accuracy level and are quoted in 2014 Australian dollars
- The capital cost estimate includes the plant design, construction, commissioning and the training of operational personnel.







# Oresome – Current Regional Bauxite Exploration Targets\*

Project	Permit	Discrete Targets	Insitu mineralisation tonnage range (Mt) <sup>(2)</sup>	Total Al <sub>2</sub> O <sub>3</sub> (%) <sup>(3)</sup>	Total SiO <sub>2</sub> (%) <sup>(3)</sup>
<b>Urquhart</b>					
<b>Point</b>	EPM15268	2	5 to 10	43-55	5-18
<b>Vrilya</b>	EPM15371	3	2 to 6	40-47	insufficient data <sup>1</sup>
	EPMA25509	7	12 to 36	40-48	10-19 <sup>1</sup>
<b>Vrilya East</b>					
	EPMA25687	3	28 to 86	40-43	insufficient data <sup>1</sup>
<b>TOTAL</b>		<b>15</b>	<b>47 to 138</b>		

<sup>1</sup> previous exploration reports SiO<sub>2</sub> data incomplete

<sup>2</sup> range based on measured areas of target plateaus, minimum thickness of ≥0.5m bauxite, estimated average thickness of 1.5m from previous exploration data and bulk density value of 1.5

<sup>3</sup> based on screened sample assay results.

**\*Exploration Target** - The potential quantity and grade of the bauxite deposits are conceptual in nature. There is insufficient information at this time to define a mineral resource and there is no certainty that further exploration will result in the determination of a mineral resource in these areas.

For Further Information on Cape York Bauxite exploration and exploration targets see – *ASX Release dated 11 July 2014.*



## For further details see ASX Release 21 October 2013 **Lucknow Scandium Resource**

Lucknow Scandium Resource using a 120g/t COG (excluding Ni-Co Resource)						
Description	Tonnes (Mt)	Sc (g/t)	Ni (%)	Co (%)	Fe (%)	Mg (%)
<b>Measured</b>	<b>0.6</b>	<b>231</b>	0.30	0.08	31.6	1.6
<b>Indicated</b>	<b>5.1</b>	<b>191</b>	0.23	0.06	34.9	1.1
Inferred	0.04	130	0.10	0.01	29.5	0.5
<b>Totals</b>	<b>5.7</b>	<b>195</b>	<b>0.23</b>	<b>0.06</b>	<b>34.5</b>	<b>1.1</b>

### Competent Person's Statement

The SCONI Scandium-Cobalt-Nickel project Mineral Resource estimate(s) is based upon and accurately reflects data compiled, validated or supervised by Mr John Horton, Principal Geologist FAusIMM (CP) who is a full time employee of Golder Associates Pty Ltd. Mr Horton has sufficient experience that is relevant to the style of mineralisation and the type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Horton consents to the inclusion of this information in the form and context in which it appears in this document.

*For full details on the SCONI scandium and nickel cobalt resource see Metallica ASX release – 21 October 2013*



# Southern Deposits Sc & Ni-Co Resource Statement

**JORC 2012** - [For further details see ASX Release 21 October 2013](#)

**SCONI**  
Scandium • Cobalt • Nickel

Southern Deposits – COG NiEq (Ni + 1.5Co + 0.01Sc) = 0.7%								
Description	Tonnes (Mt)	Ni (%)	Co (%)	Sc (g/t)	Ni Metal (kt)	Co Metal (kt)	Sc Metal (t)	Equivalent Sc Oxide (t)
<b>Kokomo</b>								
Measured	2.2	0.57	0.11	80	12.2	2.5	173	265
Indicated	17.2	0.56	0.09	49	95.8	15.5	843	1,292
Inferred	10.2	0.36	0.04	59	36.7	4.5	603	924
<b>Totals</b>	<b>29.5</b>	<b>0.49</b>	<b>0.08</b>	<b>55</b>	<b>144.8</b>	<b>22.4</b>	<b>1,619</b>	<b>2,483</b>
<b>Greenvale (Insitu &amp; Dumps)</b>								
Measured	5.4	0.77	0.06	39	41.6	3.3	208	319
Indicated	10.5	0.70	0.05	36	74.3	5.3	379	581
Inferred	11.5	0.42	0.03	44	48.8	4.0	509	780
<b>Totals</b>	<b>27.4</b>	<b>0.60</b>	<b>0.04</b>	<b>40</b>	<b>164.8</b>	<b>12.7</b>	<b>1,097</b>	<b>1,682</b>
<b>Lucknow</b>								
Measured	1.7	0.45	0.10	103	7.9	1.8	180	276
Indicated	10.6	0.27	0.07	128	28.5	7.2	1,357	2,081
Inferred	1.5	0.40	0.07	41	5.8	1.0	60	92
<b>Totals</b>	<b>13.8</b>	<b>0.31</b>	<b>0.07</b>	<b>116</b>	<b>42.2</b>	<b>10.0</b>	<b>1,597</b>	<b>2,449</b>
<b>Combined Southern Deposits (COG 0.7%)</b>								
Measured	9.3	0.66	0.08	60	61.7	7.6	561	860
Indicated	38.3	0.52	0.07	67	198.7	28.0	2,580	3,957
Inferred	23.2	0.39	0.04	51	91.4	9.6	1,172	1,797
<b>Totals</b>	<b>70.7</b>	<b>0.50</b>	<b>0.06</b>	<b>61</b>	<b>351.8</b>	<b>45.2</b>	<b>4,313</b>	<b>6,615</b>

Southern Deposits – COG NiEq = 1.0% (Ni + 1.5 Co + 0.01 Sc)								
Description	Tonnes (Mt)	Ni (%)	Co (%)	Sc (g/t)	Ni Metal (kt)	Co Metal (kt)	Sc Metal (t)	Equivalent Sc Oxide (t)
<b>Combined Southern Deposits (COG 1.0%)</b>								
Measured	6.2	0.79	0.10	73	48.8	6.2	451	691
Indicated	23.2	0.56	0.08	92	129.5	19.5	2,140	3,282
Inferred	6.6	0.49	0.06	67	32.9	3.9	445	682
<b>Totals</b>	<b>36.1</b>	<b>0.59</b>	<b>0.08</b>	<b>84</b>	<b>211.2</b>	<b>29.5</b>	<b>3,036</b>	<b>4,656</b>





# Northern Deposits Ni-Co Resource Statement

Northern Deposits – COG NiEq (Ni + 1.5Co) = 0.7%					
Description	Tonnes (Mt)	Ni (%)	Co (%)	Ni Metal (kt)	Co Metal (kt)
<b>Bell Creek South</b>					
Measured	7.8	0.96	0.07	75.5	5.1
Indicated	0.1	0.81	0.05	1.2	0.1
<b>Totals</b>	<b>8.0</b>	<b>0.96</b>	<b>0.06</b>	<b>76.7</b>	<b>5.2</b>
<b>Bell Creek North</b>					
Indicated	2.0	0.86	0.03	16.8	0.5
<b>Totals</b>	<b>2.0</b>	<b>0.86</b>	<b>0.03</b>	<b>16.8</b>	<b>0.5</b>
<b>Bell Creek Northwest</b>					
Indicated	2.5	0.81	0.05	20.1	1.2
<b>Totals</b>	<b>2.5</b>	<b>0.81</b>	<b>0.05</b>	<b>20.1</b>	<b>1.2</b>
<b>The Neck</b>					
Indicated	0.4	0.84	0.03	3.5	0.1
<b>Totals</b>	<b>0.4</b>	<b>0.84</b>	<b>0.03</b>	<b>3.5</b>	<b>0.1</b>
<b>Minnamoolka</b>					
Indicated	4.7	0.82	0.05	38.3	2.1
Inferred	0.9	0.78	0.04	6.7	0.3
<b>Totals</b>	<b>5.5</b>	<b>0.82</b>	<b>0.04</b>	<b>45.0</b>	<b>2.4</b>
<b>Combined Northern Deposits</b>					
Measured	7.8	0.96	0.07	75.5	5.1
Indicated	9.7	0.83	0.04	79.9	4.0
Inferred	0.9	0.78	0.04	6.7	0.3
<b>Totals</b>	<b>18.4</b>	<b>0.88</b>	<b>0.05</b>	<b>162.1</b>	<b>9.4</b>

## Notes to Resource Statements

1. Scandium is typically sold as an oxide product. Hence the equivalent scandium oxide has been calculated at 1.534 times contained scandium metal.
2. The resources for the Southern Deposits of Lucknow, Greenvale and Kokomo are reported at a cut-off grade (COG) of NiEq 0.7% (Ni + 1.5Co + 0.01Sc). This NiEq COG formula has been calculated using commodity prices of US\$10/lb nickel, US\$15/lb cobalt and US\$1,500/kg scandium oxide, and recoveries of 90% for all three metals. Metallica indicates that the metallurgical testwork to date provides reasonable potential for the nickel, cobalt and scandium to be recovered at similar recoveries to those achieved in the testwork.
3. The Mineral Resources for the Northern Deposits of Bell Creek South, Bell Creek North, Bell Creek Northwest, Minnamoolka and The Neck are reported at a COG of NiEq 0.7% (Ni + 1.5Co). This NiEq COG formula has been calculated using commodity prices of US\$10/lb nickel and US\$15/lb cobalt, and recoveries of 90% for both nickel and cobalt.
4. No scandium content was estimated in the Northern deposits as Sc assays are generally not available. From limited data there is good indication the Northern deposits are relatively low in Sc (generally between 5 and 30 g/t Sc).
5. Variations in total may be present due to rounding factors.
6. For further details on the SCONI scandium and nickel cobalt resource see Metallica ASX release SCONI Mineral Resource upgrade – 21 October 2013

*Technical information and exploration results contained in this report have been compiled by Metallica Minerals Ltd full time employee Andrew Gillies B.Sc MAusIMM in the position of Managing Director. Mr Gillies has sufficient experience that is relevant to the style of mineralisation being reported on to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Minerals Resources and Ore Reserves. Mr Gillies consents to the inclusion in this report of the matters based on the information in the form and context in which it appears*

*The SCONI Scandium-Cobalt-Nickel project Mineral Resource estimate(s) is based upon and accurately reflects data compiled, validated or supervised by Mr John Horton, Principal Geologist FAusIMM (CP) and is a full time employee of Golder Associates Pty Ltd. Mr Horton has sufficient experience that is relevant to the style of mineralisation and the type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Horton consents to the inclusion of this information in the form and context in which it appears in this presentation.*

**For further details see ASX Release 21 October 2013**



# Combined SCONI Mineral Resource

For further details see ASX Release 21 October 2013

**SCONI**  
Scandium • Cobalt • Nickel

Total SCONI Project Mineral Resources - COG NiEq (Ni + 1.5Co + 0.01Sc) = 0.7%								
Deposit	Tonnes (Mt)	Nickel (Ni) %	Cobalt (Co) %	Scandium (Sc) g/t	Ni Metal (kt)	Co Metal (kt)	Sc Metal (t)	Sc Oxide (t)
Kokomo								
Total	29.5	0.49	0.08	55	144.8	22.4	1,619	2,483
Greenvale In-situ								
Total	16.3	0.73	0.05	38	118.8	8.9	614	941
Greenvale dumps and stockpiles								
Total	11.1	0.42	0.03	44	46	3.8	483	741
Lucknow								
Total	13.8	0.31	0.07	116	42.2	10	1,597	2,449
Combined SCONI South Project Resource								
Measured	9.3	0.66	0.08	60	61.7	7.6	561	860
Indicated	38.3	0.52	0.07	67	198.7	28.0	2,580	3,956
Inferred	23.2	0.39	0.04	51	91.4	9.6	1,172	1,798
Total	70.7	0.50	0.06	61	351.8	45.2	4,313	6,615
Bell Creek South								
Total	8.0	0.96	0.06	-	76.7	5.2	-	-
Bell Creek North								
Total	2.0	0.96	0.03	-	16.8	0.5	-	-
Bell Creek Northwest								
Total	2.5	0.81	0.05	-	20.1	1.2	-	-
The Neck (part Bell Creek)								
Total	0.4	0.84	0.03	-	3.5	0.1	-	-
Minnamoolka								
Total	5.5	0.82	0.04	-	45	2.4	-	-
Combined SCONI Northern deposits Resource								
Measured	7.8	0.96	0.07	-	75.5	5.1	-	-
Indicated	9.7	0.83	0.04	-	79.9	4.0	-	-
Inferred	0.9	0.78	0.04	-	6.7	0.3	-	-
Total	18.4	0.88	0.05	-	162.1	9.4	-	-
Combined SCONI (Southern and Northern deposits) Resource								
Measured	17.1	0.8	0.07	33	137.3	12.7	561	860
Indicated	48.0	0.58	0.07	54	278.6	32.0	2,580	3,957
Inferred	24.0	0.41	0.04	49	98.1	9.9	1,172	1,797
Total	89.1	0.58	0.06	48	514	54.5	4,313	6,615

Northern deposits Sc grade is typically low (5-30 g/t Sc), therefore no Sc Resource estimated. Resultant Sc grade for combined SCONI (South and North) Project is therefore low.

Variations in totals may be due to rounding factors.

Total SCONI Project Mineral Resources - COG NiEq (Ni + 1.5Co + 0.01Sc) = 1.0%								
Deposit	Tonnes (Mt)	Nickel (Ni) %	Cobalt (Co) %	Scandium (Sc) g/t	Ni Metal (kt)	Co Metal (kt)	Sc Metal (t)	Sc Oxide (t)
Kokomo								
Total	13.9	0.56	0.10	80	77.4	14.2	1,108	1,699
Greenvale In-situ								
Total	9.5	0.95	0.07	39	90.3	6.9	365	560
Greenvale dumps and stockpiles								
Total	2.6	0.58	0.05	40	15.1	1.3	103	158
Lucknow								
Total	10.1	0.28	0.07	145	28.4	7.3	1,459	2,238
Combined SCONI South Project Resource								
Measured	6.2	0.79	0.10	73	48.8	6.2	451	691
Indicated	23.2	0.56	0.08	92	129.5	19.5	2,140	3,281
Inferred	6.6	0.49	0.06	67	32.9	3.9	445	682
Total	36.1	0.59	0.08	84	211.2	29.5	3,036	4,656
Bell Creek South								
Total	3.6	1.21	0.08	-	43.3	3.0	-	-
Bell Creek North								
Total	0.4	1.16	0.04	-	4.8	0.1	-	-
Bell Creek Northwest								
Total	0.4	1.05	0.06	-	4.5	0.3	-	-
The Neck (part Bell Creek)								
Total	0.1	1.17	0.03	-	0.9	0.02	-	-
Minnamoolka								
Total	1.0	1.07	0.08	-	11.0	0.8	-	-
Combined SCONI Northern deposits Resource								
Measured	3.6	1.21	0.08	-	43.0	3.0	-	-
Indicated	1.9	1.09	0.06	-	20.4	1.2	-	-
Inferred	0.1	1.04	0.07	-	1.0	0.1	-	-
Total	5.5	1.16	0.08	-	64.5	4.3	-	-
Combined SCONI (Southern and Northern deposits) Resource								
Measured	9.8	0.94	0.09	46	91.9	9.2	451	691
Indicated	25.1	0.60	0.08	85	149.9	20.7	2,140	3,281
Inferred	6.7	0.50	0.06	66	33.9	3.9	445	682
Total	41.6	0.66	0.08	73	275.7	33.8	3,036	4,656

Northern deposits Sc grade is typically low (5-30 g/t Sc), therefore no Sc Resource estimated. Resultant Sc grade for combined SCONI (South and North) Project is therefore low.

Variations in totals may be due to rounding factors.