



Report

National Instrument 43-101 Technical Report for the Urquhart Bauxite Project

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Submitted to:

Metallica Minerals Limited - Brisbane, Australia

Melior Resources Inc. – Toronto, Ontario

Submitted by:

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Notice to Readers

This National Instrument 43-101 Technical Report for Metallica Minerals Limited and Melior Resources Inc. was prepared and executed by Stewart Lewis, CEO., IMC Mining Pty Ltd.

This report contains the expressions of professional opinions of the Author based on (i) information available at the time of preparation, (ii) data supplied by Metallica Minerals Limited and Oresome Australia Pty Ltd, and (iii) the assumptions, conditions, and qualifications set forth in this report. The quality of information, conclusions, and estimates contained herein are consistent with the stated levels of accuracy as well as the circumstances and constraints under which the mandate was performed. There is no reason for the Author of this report not to rely on data supplied by Metallica Minerals Limited and Oresome Australia Pty Ltd. This report is intended to be used solely by Metallica Minerals Limited, subject to the terms and conditions of its contract with IMC Mining Pty Ltd. This contract permits Metallica Minerals Limited and/or Melior Resources Inc. to file this report as a Technical Report with Canadian securities regulators pursuant to National Instrument 43-101 - Standards of Disclosure for Mineral Projects. Except for the purposes legislated under Canadian securities law, any use of this report by any third party is at that party's sole risk

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS AND OTHER CAUTIONARY NOTES

This Technical Report contains statements that constitute “forward-looking statements” and “forward looking information” within the meaning of applicable Canadian securities legislation. Generally, these forward-looking statements can be identified by the use of forward-looking terminology or statements that certain actions, events or results may or may not be achieved or occur in the future.

Forward-looking statements reflect the current expectations and assumptions and are subject to a number of known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements to be materially different from any anticipated future results, performance or achievements expressed or implied by the forward-looking statements.

Forward-looking statements include, but are not limited to, statements regarding the timing of getting the project into production, the cost of shipping, the exchange rate, the price received for the Bauxite and the penalties applied, and credits obtained, for varying specifications of product.

If such opinions and estimates prove to be incorrect, actual and future results may be materially different than expressed in the forward-looking statements.

The forward-looking statements contained herein are expressly qualified by this cautionary statement.

Signature and Date Page

The effective date of this Technical Report is 18th October 2018.

“Original Signed by”

Stewart Lewis, CEO, IMC Mining Pty Ltd.

Date: October 19th 2018.

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Glossaries

"ASX" means the Australian Securities Exchange;

"ASX Listing Rules" means the listing rules of the ASX;

"Green Coast" means Green Coast Resources Pty Ltd;

"JORC" or "JORC Code" means the 2012 Edition of the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves;

"Oresome" means Oresome Australia Pty Ltd;

"Ozore Resources" means Ozore Resources Pty Ltd;

"Urquhart Bauxite Project" means the Urquhart Bauxite project in Queensland's Cape York Peninsula;

"UBx" means Urquhart Bauxite Project

Glossary of Technical Terms

"Al₂O₃" means alumina;

"cm" means centimetre;

"m" means metre;

"kg" means kilogram;

"km" means kilometre;

"km²" means square kilometre;

"mm" means millimetre;

"Mt" means million tonnes;

"ppb" means parts per billion;

"ppm" means parts per million;

"RAB" means rotary air blast;

"RC" means reverse circulation;

"RSi" mean low temperature reactive silica – at 150°C

"SiO₂" means silica oxide;

"THA" is trihydrate available alumina (gibbsite alumina + kaolinite alumina – low temperature desilication product (DSP) alumina) at 150°C; and

"tonnes" means metric tonnes.

1 SUMMARY

The Urquhart bauxite tenement (EPM15268) is 50% owned by Metallica Minerals' wholly owned subsidiary (through Oresome Australia Pty Ltd), Oresome Bauxite Pty Ltd, and 50% by a private Chinese investor, Ozore Pty Ltd. Oresome Australia Pty Ltd (100% owned by Metallica Minerals) is the Manager of the Joint Venture on behalf of the owners.

EPM15268, otherwise known as the Urquhart Bauxite Project (UBx), is located some 10 km South-West of the township of Weipa on the Western side of Cape York (As set out in Figure 1).

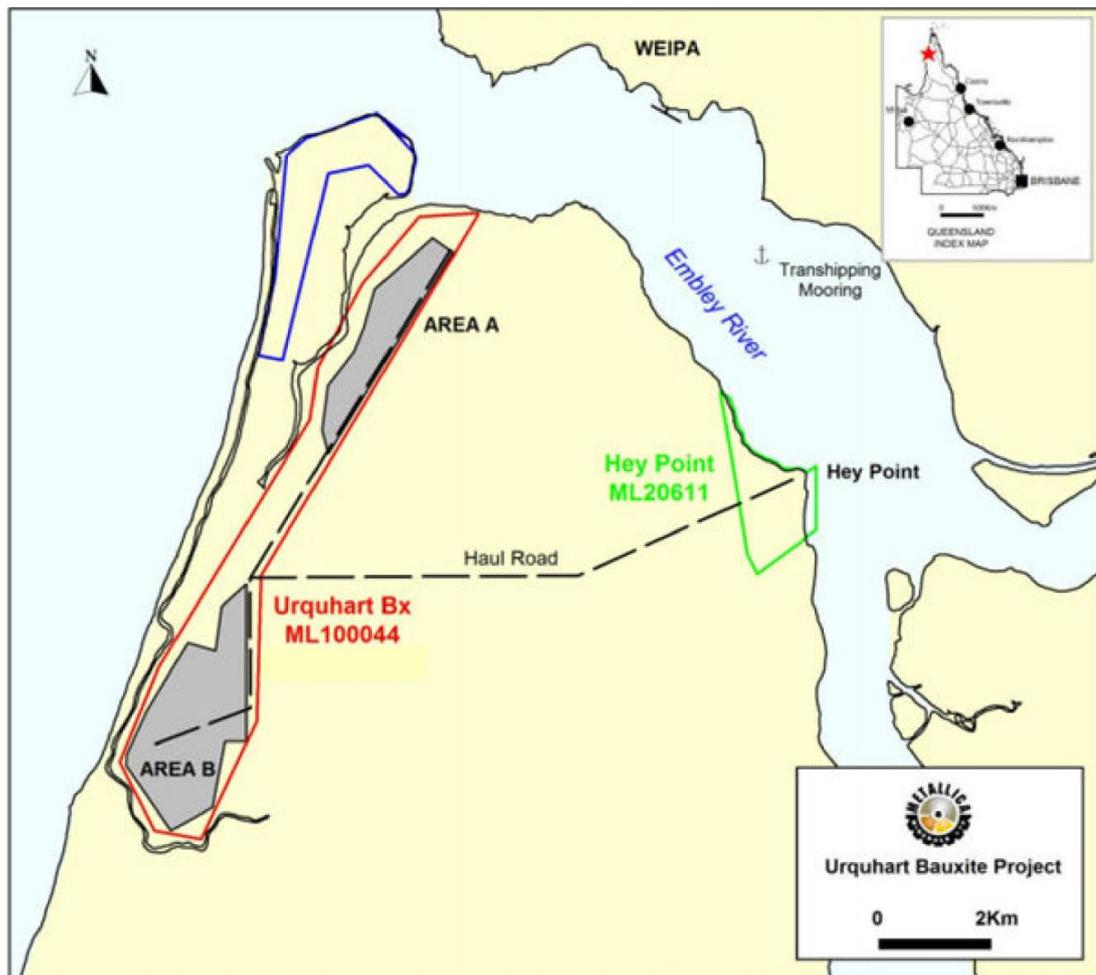


Figure 1 - Urquhart Bauxite Project location

The product targeted is direct shipped bauxite ore (DSB) for the majority of the operating life with some potential dry screened production target material at the end of mining. The Mineral Reserve estimate has been based only on the DSB ore sourced from Measured and Indicated Resources.

This Technical Report is in accordance with the NI 43-101, Form 43-101F1 Technical Report standards. The Technical Report consolidates information from the September 2018 PFS update to the 2017 Pre-Feasibility Study (released by Metallica

in December 2017). Both the September 2018 PFS update and the 2017 PFS report are available on the Metallica website.

Scientific and technical information relating to the Urquhart Bauxite Project contained in this Technical Report was prepared under the supervision of, or approved by, Mr. Stewart Lewis, CEO, IMC Mining Pty Ltd (IMC), and a “qualified person” within the meaning of NI 43-101.

Mineral Resource and Ore Reserve estimates presented in the “*Urquhart Bauxite Pre-Feasibility Study - September 2018 Update*” (the PFS Update) were prepared pursuant to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 (‘the JORC Code’).

Whilst IMC presented the Urquhart Bauxite Mineral Resources and Ore Reserves as disclosed in the PFS Update in accordance with the JORC Code – Mr. Lewis is of the opinion that if the Mineral Resources and Ore Reserves were prepared in accordance with the National Instrument 43-101 Standards of Disclosure for Mineral Projects, there would be no material differences between the Mineral Resource and Mineral Reserve categories as disclosed in the PFS Update and the categories set out in National Instrument 43-101 sections 1.2 and 1.3 and as defined in the CIM Definition Standards on Mineral Resources and Mineral Reserves.

The Mineral Resources and Mineral Reserves presented in this Technical Report are those Mineral Resources and Ore Reserves presented in the PFS Update.

Consistent with the PFS Update, from which all scientific and technical information has been sourced for this report, this Technical Report has been designated as a Pre-Feasibility Study level estimate with a target level of accuracy of $\pm 25\%$.

The key highlights of the results of this study have been as follows:

- A Proven and Probable Mineral Reserve estimate of 6.5Mt of DSB at a grade of 52.7% Al_2O_3 ;
- An operating mine that commences mining in April 2018 and runs for 5.5 years on the current Mineral Reserves;
- A simple low risk mine development strategy underpinned by an executed contract with a mine operator;
- An estimated operating margin of around AUD\$10.50/t based on an average realised bauxite price of AU\$59.62/t.

The deposit type is bauxite laterite derived from the tropical to sub-tropical weathering of aluminous sediments.

The mineralisation is regarded as horizontal due to the tabular nature of the style of deposit as demonstrated elsewhere on the Weipa Plateau. All drill holes were less than or equal to 15 m in length, vertical and intersected the mineralisation at an approximate 90° angle with all intercepts regarded as showing the true width of the ore zone. The sampling has shown the presence of broad zones of continuity of mineralisation in an unbiased manner.

The product is based on direct shipping of the ore to China with no processing by Oresome.

The revenue received for the direct shipped bauxite (DSB) is derived from benchmarking against the price received for similar bauxite shipped from Weipa with credits/penalties applied for different levels of Al₂O₃ and SiO₂ in the shipped ore.

The deposit is divided into two target areas – designated Area A (to the north) and Area B (to the south).

Exploration drilling has been completed at sufficient density in Area A to enable Measured and Indicated Mineral Resources to be estimated.

Exploration drilling in Area B is less dense and is sufficient for the definition of only Inferred Resources.

Further drilling is planned in Area B once mine production commences. The cost for this exploration has been included in the operating budget.

The Mining Lease (ML) 100044 was granted on 3rd January 2018.

This mining lease enables mining activities to commence within the ML 100044.

A further mining lease is required for the haul road from the mine to the Hey Point loading facility.

It is expected that all required permits will be in place to enable mining to commence after the 2018/2019 Wet Season – with targeted production commencement in April 2019. This commencement will be contingent on the ground being sufficiently dry prior to that such that the haul road from the mine to the barge loadout area can be constructed.

The mining will be very simple – remove the overburden with scrapers and then load the ore onto trucks with a front-end loader to be taken to the port loadout area by road trains.

Oresome sent out a request for quotation to various mining contractors in October 2016 – an aspect of the tender was that each company provide an outline of the mining method that they had based the pricing on.

From those companies, Oresome have contracted with LCR Group.

The mine plan and development strategy used as the basis for the PFS Update and presented in this Technical Report has been derived from that outlined by LCR in the contract documents.

LCR's contract and pricing encompasses all mining from pre-strip through to stockpiling at the barge load-out area at Hey Point.

Oresome are presently finalising an agreement with Green Coast Resources Pty Ltd whereby Green Coast provide stockpile space at Hey Point and manage all logistics to get the product from the stockpile onto a bulk ship.

The targeted annual quantities of ore have been derived on the basis of the allocation of tonnes being negotiated by Oresome through the Hey Point facility.

1.1 Mineral Resource

This Technical Report presents Mineral Resources that were first presented in the October 2016 Urquhart Bauxite Resource Update report “IMC01533” and then subsequently included in the September 2018 PFS update. The Mineral Resource is inclusive of the Mineral Reserves.

A cut-off grade of 48% Al₂O₃ has been applied to the insitu grades to determine the bauxite target zone.

Preliminary screening upgrade data has been developed based on wet screen test work.

The Mineral Resource is summarised in Table 1-1.

Table 1-1 - Urquhart DSB Mineral Resource statement @48% Al₂O₃ cut-off – As Per Mineral Resource Statement Announced on the 14/11/2016

Classification	Area	Mt	Al ₂ O ₃ %	SiO ₂ %	THA* %	RSi** %
Measured	A	3.0	54.4	11.8	43.2	5.0
Indicated	A	3.9	53.3	13.1	40.8	5.2
M + I	A	6.9	53.8	12.5	41.8	5.1
Inferred	A	0.3	54.2	11.3	42	4.7
	B	2.3	49.9	17.4	37.2	6
	subtotal	2.6	50.3	16.8	37.6	5.9
Total		9.5	52.8	13.7	40.7	5.3

*THA is trihydrate available alumina (gibbsite alumina + kaolinite alumina – low temperature desilication product (DSP) alumina) at 150°C

**RSi is reactive silica at 150°C

1.2 Mineral Reserves

The life of mine schedule presented in this report has been based on targeting the Proven and Probable Mineral Reserves.

Modifying factors have been applied to in-situ resources as outlined in Section 15.2 of this Technical Report.

The scheduled material is derived from the quantities outlined in Table 1-2.

The schedule has been developed solely on the basis of Proven and Probable Mineral Reserves (exclusive of Inferred Resource material).

Table 1-2 - Mineral Reserve Estimate

	Area	Bauxite Low Temp DSO	Al ₂ O ₃	SiO ₂	THA	Low Temp RSi
		Dry kt	%	%	%	%
Proven	A	2,964	53.7	12.3	42.3	5.4
Probable	A	3,568	51.9	14.2	39.1	5.9
Ore Reserve	A	6,532	52.7	13.3	40.6	5.7

1.3 Conclusions and Recommendations

IMC have completed a PFS for the extraction of direct shipped bauxite from the Urquhart Deposit.

The PFS was completed to a PFS standard as defined in JORC 2012 and was sufficient to enable a statement of Mineral Reserves for the project.

There would be no material differences between the Mineral Resource and Ore/Mineral Reserve categories as disclosed in the PFS and the categories set out in National Instrument 43-101 sections 1.2 and 1.3 and as defined in the CIM Definition Standards on Mineral Resources and Mineral Reserves as presented in this Technical Report.

The required permits to enable mining to commence have been granted. An additional permit/ML is required to enable hauling across the RTA tenement such that mining and shipping of ore can commence in April 2019. Oresome anticipate having the final permit prior to the planned commencement date of April 2019.

The project economics are robust, with a short payback period meaning there is very little risk to Oresome in terms of paying back any monies invested in project start up.

The biggest risk in terms of payback is the timing risk of getting the project up and running and achieving the targeted production ramp-up coupled with the inherent bauxite pricing risk, exchange rate impacts and shipping costs.

The financial model has been based on a project start-up in April 2019. This is considered a reasonable target.

The upside potential of the project is quite limited – additional drilling is budgeted with the aim of raising the confidence in Area B from Inferred Mineral Resources to Measured and Indicated Mineral Resources, whilst test work on screening options is budgeted to determine if screening of some of the overburden material will be economic.

2 INTRODUCTION

The Urquhart Bauxite Project is a Pre-Feasibility stage direct shipping bauxite mining project located near Weipa in far north Queensland, Australia.

Oresome Bauxite Pty Ltd, a wholly owned subsidiary of Metallica Minerals Limited (through Metallica's 100% ownership of Oresome Australia Pty Ltd which in turn owns 100% of Oresome Bauxite Pty Ltd), owns 50% of the Urquhart Bauxite Project. The other 50% is owned by Ozore Resources Pty Ltd.

In 2016, Oresome Australia Pty Ltd (Oresome) appointed IMC Mining Pty Ltd (IMC) to complete a Mineral Resource estimate and subsequently a Pre-Feasibility Study (PFS) on the Urquhart Bauxite Project (UBx). The Mineral Resource estimate was completed and published in accordance with JORC Code guidelines in November 2017. The PFS study was completed and published in accordance with JORC Code guidelines in December 2017.

In order to reflect changes in timing and some economic drivers behind the project, the PFS study was updated in 2018. An update to the PFS was completed and published in accordance with JORC Code guidelines in September 2018.

The Mineral Resources and Ore Reserves presented in the September 2018 PFS update are unchanged from the November 2017 and December 2017 published Mineral Resources and Ore Reserves respectively.

This Technical Report was prepared for Metallica Minerals Limited and Melior Resources Inc.. The Technical Report presents the inputs to, outputs from, findings in and conclusions and recommendation from the PFS September 2018 Update for the Urquhart Bauxite Project in the format as set out in National Instrument 43-101, Form 43-101F1 Technical Report.

There would be no material differences between the Mineral Resource and Ore/Mineral Reserve¹ categories as disclosed in this Technical Report and the PFS September 2018 Update and the categories set out in National Instrument 43-101 sections 1.2 and 1.3 and as defined in the CIM Definition Standards on Mineral Resources and Mineral Reserves.

¹ For the purposes of this technical report, the term 'Ore Reserves' Under JORC Code guidelines is equivalent to "Mineral Reserves" under the NI 43-101 Guidelines.

Under the JORC Guidelines an 'Ore Reserve' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibly or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

Under the NI 43-101 Guidelines a Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined.

The JORC Guideline for 'Ore Reserves' is identical to the CRISCO definition of 'Mineral Reserve' in the *CRISCO International Reporting Template for the public reporting of exploration results, mineral resources and mineral reserves*.

The PFS was managed and compiled by Stewart Lewis, CEO, IMC Mining Pty Ltd. Mr Lewis is a Qualified Person (QP) as defined under NI 43-101.

Mr Lewis is of the opinion that the Mineral Resource and Mineral Reserve and supporting data summarised in this Technical Report meet the requirements of NI 43-101.

The Ore Reserve Estimate was completed by Stewart Lewis, CEO, IMC Mining Pty Ltd who is a Competent Person (CP) in accordance with the JORC Code guidelines.

The Mineral Resource Estimate was completed by John Horton, Associate Geologist, IMC Mining Pty Ltd who is a Competent Person (CP) in accordance with the JORC Code guidelines.

The PFS September Update report has been designated as a Pre-Feasibility Study. The target level of accuracy is $\pm 25\%$.

2.1 Sources of Information

The sources of information utilised in preparation of this Technical Report and the Mineral Resource Estimate and Mineral Reserve Estimate is based on the following pre-existing reports:

- “Oresome Australia Pty Ltd Urquhart Bauxite Pre-Feasibility Study September 2018 Update” (Author Stewart Lewis – September 2018);
- “Report to Oresome Australia Pty Ltd on the Urquhart Bauxite Resource Update November 2016” (Author John Horton – November 2017).

2.2 Terms of Reference

IMC’s scope for the September 2018 PFS was to complete a Mineral Resource estimate and then to complete the PFS inclusive of an Ore Reserve statement that meets the JORC Code guidelines.

The scope of work for this Technical Report has been to present the PFS inputs, outputs, dialogue, conclusion and recommendations in accordance with NI 43-101, Form 43-101F1 Technical Report.

The PFS Study program was undertaken as a collaborative effort with Oresome, CM Group and Epic Environmental providing expert services.

IMC have been responsible for reviewing all key project drivers under the guidelines of the JORC Code and ensuring the QP is satisfied that work has been completed to an appropriate standard.

The mining costs have been based on a contract in place with LCR Group.

Cost estimates and production capacity constraints for the port stockpiling and ship loading operations have been developed by Oresome in the context of an agreement being finalised with Green Coast Resources Pty Ltd.

IMC have reviewed the status of the negotiations regarding port operations and ship loading and are confident that the IMC financial model and production targets are consistent with the intent of the agreements currently being negotiated with Green Coast Resources.

IMC have been responsible for the finalisation of scheduled quantities which include Proven and Probable Reserves.

2.3 Site Visits

IMC did not undertake a site visit. The IMC team are very familiar with the area around Weipa and down to Aurukun.

IMC understand that the mining contractor undertook two site visits in developing their tender pricing and mining strategies.

3 RELIANCE ON OTHER EXPERTS

For certain items in this Technical Report the QP relied on a report, opinion, or statement of another expert who is not a QP, or on information provided by Oresome, concerning legal, environmental, permitting, tax matters, bauxite pricing, exchange rates, shipping costs and port charges relevant to the Technical Report.

In each case, the QP hereby disclaims responsibility for such information to the extent of his reliance on such reports, opinions, or statements.

This reliance applies to information provided by Oresome for Sections 4 (Property Land Tenure, Agreements, Permits and Authorization), Section 19 (Market Studies and Contracts and Section 20 (Environmental Considerations) of this Report and for the relevant costs and factors included in Section 22 (Economic Analysis).

The source of information on Bauxite pricing was a spreadsheet provided by Oresome that was compiled by CM Group titled “Metallica bx pricing.xlsx” and dated 13th August 2018.

The transshipping costs, shipping costs and exchange rates were based on information provided by Metallica Pty Ltd in a memo spreadsheet titled “180813 Model inputs.pdf”.

The contract mining costs were based on information provided by Oresome in a document titled “20170522 Mining Services Contract – LCR.pdf” dated 22nd May 2017.

The QP has not independently reviewed the information in these sections and financial/cost inputs and has fully relied upon, and disclaims responsibility for, information provided by Oresome in these sections and inputs.

The QP has relied upon fully, and believes there is a reasonable basis for this reliance on, information provided by Oresome regarding mineral tenure, surface rights, ownership details, royalties, environmental obligations, permitting, bauxite pricing forecasts, exchange rate forecasts, shipping cost forecasts, Metallica Pty Ltd tax position, LCR Contract conditions and port/ship loading charges relevant to the Urquhart Bauxite Project.

4 PROPERTY DESCRIPTION AND LOCATION

EPM15268 otherwise known as *Urquhart Bauxite*, is located some 10 km south-west of the township of Weipa on the western side of Cape York as shown in Figure 4-1.

EPM 15268 forms part of the Cape York HMS & Bauxite Project Joint Venture (Joint Venture or JV). The project is operated by Oresome Australia Pty Ltd a wholly owned subsidiary of Metallica Minerals Ltd.

4.1 Mineral Tenure

The Joint Venture has finalised the Mining Lease for ML 100044 of 1379 Ha (Figure 4-2), which covers the Urquhart Bauxite resource (Area A and Area B).

The mine operations plan covers both Area A and Area B, with mining focussed on Area A before moving to Area B.

This Technical Report contains Mineral Reserves that have been derived from the Measured and Indicated Resources in Area A only.

Terms are being finalised with RTA Weipa Pty Ltd (RTA) for an access agreement under S316 of the Minerals Resources Act 1989 to allow construction a haul road over part of RTA's ML7024 which will culminate in the granting of S316 ML.

The JV have finalised an agreement with the native title holders as represented by the Ngan Aak-Kunch Aboriginal Corporation RNTBC (NAK).

An allowance has been made in the financial model for payments under the terms of the agreement.

An allowance of 10% of revenue has been allocated for state royalty payments.

4.2 Permitting

Oresome has advised IMC that the JV holds all material permits to allow mining to commence on ML 100044.

Oresome has advised IMC that it anticipates the permit/ML that will enable bauxite to be hauled across the RTA tenement to Hey Point to be granted prior to the planned commencement of mining in April 2019.

Oresome has advised IMC that it anticipates that the agreement to allow haulage to the port across the RTA ML will provide certain powers to RTA that could potentially result in RTA not allowing Oresome to utilise the haul road.

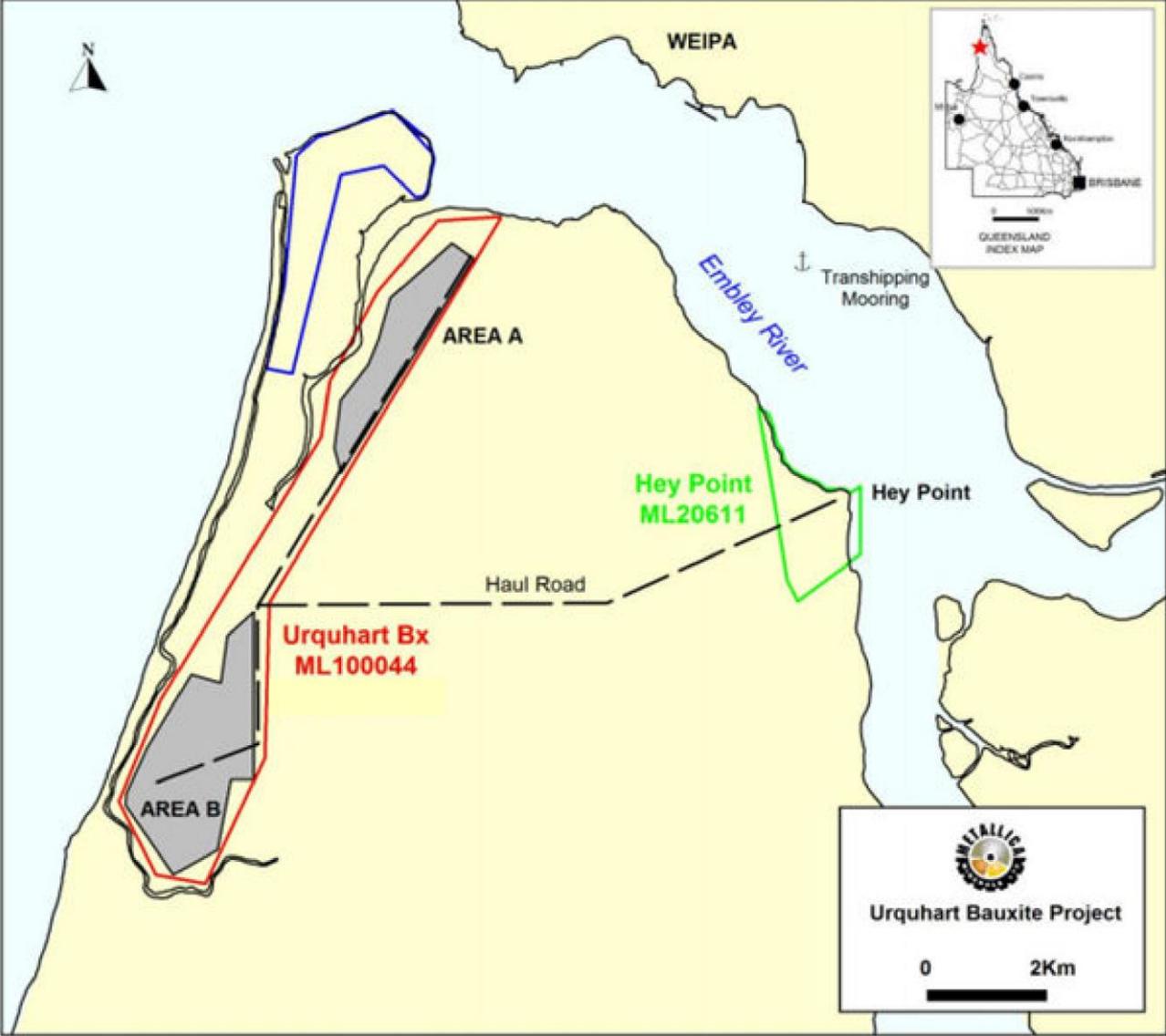


Figure 4-1 – Urquhart Bauxite Project Location – note ML 100044 has been granted

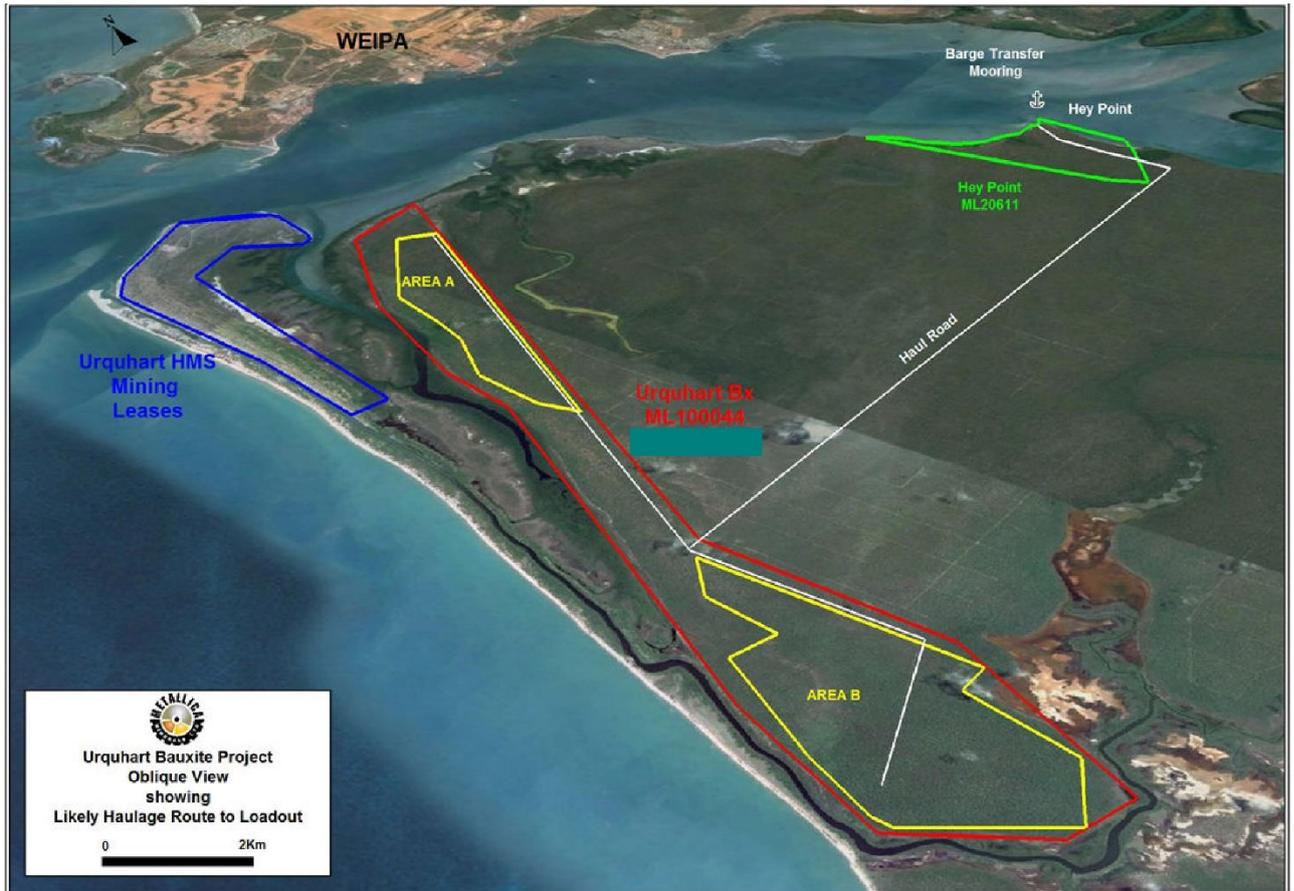


Figure 4-2 - Urquhart Bauxite project ML 100044

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The project is located close to the town of Weipa so no accommodation or major site facilities are required. Labour will be based at Weipa and commute to site. The port loadout facility is already in operation and agreements are being finalised for access to those facilities.

Bauxite mining has been undertaken in Weipa for decades so the resources, both physical and human, available in the town to support bauxite mining are substantial.

Access to the site from Weipa is via barge and boat.

The project is heavily impacted as it is in a tropical climate wet season.

In northern Australia the Wet season generally commences around 1st January and runs through to sometime in March.

During the wet season it is not practical to operate the mine – the clayey soil at the mine and on the haul road would rapidly degrade to the extent it would be unpassable.

The granted ML does not allow mining to be carried out in the wet season – accordingly operations are planned for only 9 months of the year – with no operations from January through March.

6 HISTORY

Oresome completed an initial program of drilling on the Urquhart Bauxite project for bauxite in late 2014 in Area's A and B and then a follow-up program in August 2016 with infill drilling of the more prospective Area A.

The tenement has no previous history for bauxite exploration except for the initial drilling by Oresome in 2014 and exploration for minerals sands over nearby areas.

7 GEOLOGICAL SETTING AND MINERALIZATION

Western Cape York Peninsula is occupied by rocks of the Mesozoic Carpentarian Basin and the Cainozoic Karumba Basin, over a basement (not exposed on the west side of Cape York Peninsula) of Proterozoic metamorphics and late Palaeozoic granitoids and volcanics.

The sequence in the Carpentarian Basin commences with 250 m of Jurassic to Cretaceous fluvial sandstone, overlain by marine sediments. These are followed by 600 m of early Cretaceous shallow marine mudstone, siltstone and sandstone of the Rolling Downs Group. The Rolling Downs Group is followed in turn by a fluvial to deltaic unit known as the Weipa Beds which commence with 6 to 8 m of coarse greyish-white angular, poorly sorted, quartz sandstone (with a pebble conglomerate at the base) overlain by interbedded clayey sands, sandy clays and clay lenses, fining upwards to kaolinitic clays and quartz sands in the lateritic weathering profile. Bauxite is developed in the upper parts of this unit.

On the Weipa Peninsula the Weipa Beds are up to 20 m thick and dip gently west. A 20 to 35 m thick weathering profile has been imposed on this sequence, comprising four gradational zones from the surface down.

8 DEPOSIT TYPES

The Urquhart deposit is contained in the lateritic weathering profile described above.

This Laterite zone comprises from top to bottom:

a) soil;

b) bauxite, comprising loose, fawn to dark brown coloured pisolites from 1 to 20 mm in diameter in a red brown and sandy matrix. The bauxite is composed mainly of gibbsite and boehmite and minor kaolinite and quartz, with silica as both combined silica and free quartz;

c) ironstone made up of nodules of goethite and hematite, with varying quantities of kaolinite and quartz.

The mineralisation is regarded as horizontal due to the tabular nature of the style of deposit as demonstrated elsewhere on the Weipa Plateau. All drill holes were less than or equal to 15 m in length, vertical and intersected the mineralisation at an approximate 90° angle with all intercepts regarded as showing the true width of the deposit. The sampling has shown the presence of broad zones of continuity of mineralisation in an unbiased manner.

The geological logging data was used to define the five principal domains within the laterite zone are as follows:

- 100 Overburden soil (coded SA + SO, KS, RS, EB)
- 200 Upper high silica Bauxite (coded SB + PB, EB) <48% Al₂O₃ & >20% SiO₂
- 300 Target Bauxite (coded PB + SB, TZ) >48% Al₂O₃ & <20% SiO₂
- 400 Lower high silica Bauxite (coded TZ + PI, PB) <48% Al₂O₃ & >20% SiO₂
- 500 Underburden (coded IS + PI, KA, KI).

9 EXPLORATION

The drilled area was identified due to its recognised proximity to known bauxite deposits within the adjoining Rio Tinto ML, desk-top mapping of potential bauxite plateau features in satellite image studies and encouraging results from limited hand auger drilling completed in 2014.

Resource definition drilling was completed in two phases. An initial pattern of 320 m by 320 m drilling in Area's A and B was completed late 2014. This was followed up with resource definition drilling at Area A on both 160 m by 160 m and 80 m by 80 m patterns, mostly as infill and some extension.

10 DRILLING

For both programs the resource definition drilling was executed by Wallis Drilling Pty Ltd, utilising a Wallis Mantis 80 aircore drill rig. In 2014 holes were drilled using an NQ air-core system (83 mm drill bit) and in 2016 an HQ system (103 mm drill bit) was used. Drill hole samples were logged on 0.25 m intervals and samples representing 0.25 m intervals were collected in plastic bags through a cyclone mounted on the drill rig. The entire sample was collected to ensure full representivity of the drilled material. All samples were geologically logged at the time of drilling to determine:

- the type of bauxite material
- which samples to composite over 0.5 m intervals
- which samples to retain for analysis and
- when to stop the hole.

Samples were collected as individual 0.25 m samples or composited over successive 0.5 m intervals where the logged material was geologically similar. Samples that contained pisolites in significant volume were logged as bauxitic and submitted for analysis. Sample bags were labelled with a unique sample number and a corresponding sample ticket placed inside the bag and the sample interval recorded on the drill log sheet and in the sample ticket book.

A small representative sub-sample (approx. 50 g) was collected for each 0.25 m interval and stored in a plastic sample tray for future reference.

Resource definition samples of non-bauxitic material were not retained. Samples were dispatched for sample preparation at ALS Townsville and assay at ALS Brisbane. Intervals of bauxitic material that were very thin, or interpreted as low grade, were not submitted to ALS for assay. In some cases, samples of these intervals were submitted to confirm the geological logging interpretation by selecting a few 0.25 m samples.

The resource definition drilling is summarised in Table 10-1.

In 2016 a sonic drilling program was also undertaken to provide samples suitable for bulk density measurement. The sonic drilling provides a higher quality recovery with more confidence in the sample weights and representivity of the in-situ material.

23 sonic drill holes were completed by Groundwave Drilling using a track mounted Boart Longyear Sonic Delta Base DB320 rig. The sonic drill holes twinned a number of 2014 drill holes which intersected commercial grade bauxite material and as a result the expected depths to bauxite for the sonic drill holes could be predicted.

A few sonic drill holes were selected for whole rock analysis to provide twin data. The sonic drilling assays were not used for resource estimation.

Table 10-1 - Drilling summary

Area	Year	Drill Type	Holes	Hole Name Range	Drilled m	Assayed Samples (m) for :		
						Al ₂ O ₃	THA	Screened
A	2016	Sonic	15	UPB-002S- UPB-021S	78.71	29.60	-	-
B	2016	Sonic	8	UPB-031S- UPB-078S	33.58	-	-	-
A	2016	AirCore	175	UPB16001 -UPB16175	1442.0	525.5	411.0	-
A & B	2015	WaterBore	13	GWMB01S - GWMB08D	137.0	-	-	-
A	2014	AirCore	23	UPB-001 -UPB-023	167.5	53.5	36.0	60.50
B	2014	AirCore	62	UPB-024 -UPB-081	305.0	69.5	-	70.25

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Field Certified Reference Materials (CRM)

Two standard bauxite reference samples were sourced from Geostats Pty Ltd in Perth including:

"OREAUS1" code for Geostats CRM GBAP-2

"OREAUS2" code for Geostats CRM GBAP-3

The bauxite reference samples were re-labelled and renumbered prior to being provided to ALS to insert in each batch at a ratio of 1 of each standard inserted per sample batch. Results of the analysis of the standards were all within one standard deviation of the certified values.

The results indicate a high reproduction of the expected values for the major elements with significant relative variation only elements close to analytical detection limit.

11.2 Laboratory Standards and CRMs

ALS undertook Quality Control measures with regular standards, most of which are certified.

The results are generally tight and on target and considered acceptable. The THA results display some spread and the RSi results appear to have some bias. A close inspection of the available metallurgical digest CRMs indicates some were not matched exactly on the CRM name with ALS using batch variants for which the expected values could not be independently sourced. Review of the higher RSi CRMs

BXMG-5ca and BXBA-4ca in the online ALS Webtrieve system indicates the expected values for RSi are lower and the ALS results are tightly distributed around the expected value.

Independent review of the majority of the CRMs used by ALS indicate no major concerns. Minor variations were found to be in order.

LOI standards are internal and are not certified though displaying some upward range they are well within the ALS acceptance tolerance.

11.3 Duplicates

No field duplicate samples were collected because the total sample was collected for analysis.

In 2016, 1 in 50 second splits from the coarse reject were taken and submitted in a separate batch. Also, ALS undertook regular duplicates analyses of the pulp samples.

Three assayed twin holes completed in 2014 and 2016 also provide coarser down hole duplicate pairs.

The pulp duplicates have a low variance with the metallurgical digest analyses displaying the highest variance for the major elements, as would be expected of the analytical method.

The coarse splits display a slight increase in variance for the whole rock analyses (metallurgical digest analyses were not undertaken for the duplicates). The Half relative absolute difference (HARD) variance measure is <2% for all the major elements suggesting that the coarse splitting method used in the sample preparation does not significantly increase the sampling error. This confirms that the sample preparation process undertaken in 2014 and 2016 is suitable.

The variance of the twin hole pairs is considerably larger with SiO₂, RSi and Fe₂O₃ displaying higher relative variance than LOI and Al₂O₃.

11.4 Sample Preparation

No sub-sampling of material was undertaken at the time of collection. The entire sample was collected over each 0.25 m interval directly from the cyclone on the drill rig. Sample weights were on average between 3 kg and 4 kg for each 0.25 m sample and 6 kg to 8 kg for the composited 0.5 m samples.

The samples were dispatched to the sample preparation facility at the ALS laboratory located in Townsville and then for analysis to ALS Brisbane.

For each drill hole, bauxite intervals were selected for Direct Shipping Bauxite (DSB) analysis based on geological logging and analysed for total oxides.

Following the return of the total oxide analyses, samples were then selected for available alumina and reactive silica low temperature digest (metallurgical digest) analysis based on the criteria of total oxide sample results of >48% Al₂O₃ and <20% SiO₂.

No screened or beneficiated test work was undertaken on samples from the 2016 drilling program though beneficiated results are available for the 320 m spaced drilling from the 2014 program.

Samples were prepared for analysis using the following method:

- Weigh sample and report received weight
- Dry at 105°C
- Weigh 'dry' sample and report weight
- Split sample into splits A and B. Return B split to original bag and store
- Weigh A split
- Crush/Pulverise A split sample to a nominal 85% passing 75 microns

The sample preparation is regarded as being appropriate for bauxite analyses.

11.5 Sample Analysis

Sample analyses were undertaken by ALS laboratory at its Stafford facility in Brisbane.

The analytical methods applied to the pulverised sample were as follows:

- Total oxides by XRF (ALS code ME-XRF13n) for Al₂O₃, BaO, CaO, Cr₂O₃, Fe₂O₃, K₂O, MgO, MnO, Na₂O, P₂O₅, SO₃, SiO₂, SrO, TiO₂, V₂O₅, Zn, ZrO₂
- H₂O/LOI by TGA furnace (ALS code ME-GRA05)
- Free moisture content from the weight difference, pre and post oven drying at 105°C
- Tri-hydrate available Alumina (THA) (ALS code Al-LICP01)
- Reactive Silica (RSi) (ALS code Si-LICP01).

11.6 Qualified Person Opinion on the Adequacy of Sample Preparation, Security, and Analytical Procedures

It is IMC's opinion that the sample preparation, security and analytical procedures used by Oresome were consistent with standard industry practices and that the data was suitable for the 2017 Mineral Resource Estimate. IMC has no material concerns with the geological or analytical procedures used or the quality of the resulting data.

12 DATA VERIFICATION

No field duplicate samples were collected because the total sample was collected for analysis. Available duplicate sample data included:

- In 2014 four twin drill holes were completed, only one of which has twinned assay data
- In 2016 two twin resource definition drill holes were completed and assayed
- In 2016 23 sonic drill holes twinned 2014 drilling at Area A and B of which 8 were assayed
- ALS as part of routine QAQC include regular duplicate samples from second splits or the pulverised sample

- In 2016, 1 in 50 samples were resplit at the laboratory from the coarse reject and resubmitted for analysis to provide duplicate samples.

Two standard bauxite reference samples were sourced from Geostats Pty Ltd in Perth. The bauxite reference samples were relabelled and renumbered prior to being provided to ALS to insert in each batch at a ratio of 1 of each standard inserted per sample batch. Results of the analysis of the standards were all within one standard deviation of the certified values.

In addition, the laboratory undertook Quality Control measures with one in every 12 samples analysed in duplicate. Seven laboratory standards and one blank were run with each sample batch and the results reported.

12.1 Qualified Person Opinion on the Adequacy of Data Verification

It is IMC's opinion that the data verification procedures used by Oresome were consistent with standard industry practices and that the data was suitable for the 2017 Mineral Resource Estimate.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

It has been assumed that the DSB product for Urquhart Bauxite will be sold as feed to low temperature Aluminium refineries. For these sales, the bauxite is paid on the basis of Tri-hydrate Available Alumina (THA). Whilst there is a reasonable possibility that the product will be sold into high temperature refineries – no marketing and pricing data was provided to IMC to support such sales. The project revenues would be higher if the product could be used as feed to high temperature refineries.

For these reasons, it is assumed payment is only received for the THA in the ore.

Reactive silica (RSi) is the non-quartz component of total quartz in the feed that dissolves in the low temp refinery and therefore consumes caustic soda – the RSi is therefore considered deleterious and significant cost driver that attracts penalties in the selling price.

For each drill hole, bauxite intervals were selected for Direct Shipping Bauxite (DSB) analysis based on geological logging and analysed for total oxides. Following the return of the total oxide analyses, samples were then selected for available alumina and reactive silica low temperature digest (metallurgical digest) analysis based on the criteria of total oxide sample results of > 48% Al₂O₃ and < 20% SiO₂.

For those samples that were not selected for the metallurgical digest analysis, the THA and RSi must be estimated through a normative approach through correlation with other elements that are assayed, noting however that this data is only required to assist with dilution estimates as the potential DSB material was all tested as above.

The correlation between RSi and SiO₂, and that between THA and Al₂O₃ display varying degrees of correlation for most samples selected for analysis.

The relationship appears to change within the laterite profiles.

The largest deviations from the generally direct correlation/trend between RSi and SiO₂ occur at the base of the bauxite horizon, generally in domain 400 or samples logged as transition (TZ).

Based on the above, different relationships were developed for each laterite zone.

The following relationships were used to assign metallurgical digest grades to samples only assayed for DSB grades as follows:

- Domain 200:
 $THA = 1.08 * Al_2O_3 - 17.2$, $RSi = 0.11 * SiO_2 + 3.12$
- Domain 300 (excluding TZ):
 $THA = 1.19 * Al_2O_3 - 22.2$, $RSi = 0.15 * SiO_2 + 3.34$
- Domain 400 & 300 TZ:
 $THA = 1.56 * Al_2O_3 - 40.3$, $RSi = 0.57 * SiO_2 + 0.98$

The assignment of metallurgical grades is mostly to populate peripheral samples in domains 200 and 400 for dilution and fill the a few missing values in domain 300 Area A and all domain 300 in Area B. An indicator is carried in the resource estimate (AAIAss) which represents the proportion of assigned grades in the estimates.

14 MINERAL RESOURCE ESTIMATE

14.1 Introduction

In this Technical Report, the Mineral Resource Estimates for the Urquhart Bauxite Project contain forward-looking information.

Inferred Mineral Resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Material factors that could cause actual results to differ materially from the conclusions and estimates set out in this report include: 1) naturally occurring geological variability 2) geological interpretations 3) differences from the assumed criteria applied by the resource geologist to determine the reasonable prospects of economic extraction. The material factors, or assumptions, that were applied in drawing the conclusions, forecasts, and projections set forth in this Item are summarised in this, and other Items of this Technical Report. For this reason, readers should read this Item solely in the context of the full report, and after reading all other Items of this report.

14.2 Summary

The PFS has been based on resource data provided in the October 2016 Urquhart Bauxite Resource Update report IMC01533. The Mineral Resource is inclusive of the Mineral Reserve.

The total Mineral Resources are summarised in Table 14-1 as per the announcement released on 14/11/2016.

IMC is not aware of any new information or data that materially affects the information included in the estimate of Mineral Resources and all material assumptions and technical parameters underpinning the estimate have not materially changed.

The Resource estimate has been based on Direct Shipping of bauxite (DSB).

The Mineral Resource estimate does not reflect a strict 48% Al₂O₃ cut-off on the block but includes all blocks from the main bauxite horizon (domain 300) and includes some areas with marginal subgrade that are required to maintain continuity of the main bauxite horizon.

Table 14-1 - Urquhart DSB Mineral Resource – As Per Updated Mineral Resource Statement Announced on the 14/11/2016

Classification	Area	Mt	Al ₂ O ₃ %	SiO ₂ %	THA* %	RSi** %
Measured	A	3.0	54.4	11.8	43.2	5.0
Indicated	A	3.9	53.3	13.1	40.8	5.2
M + I	A	6.9	53.8	12.5	41.8	5.1
Inferred	A	0.3	54.2	11.3	42	4.7
	B	2.3	49.9	17.4	37.2	6
	subtotal	2.6	50.3	16.8	37.6	5.9
Total		9.5	52.8	13.7	40.7	5.3

**THA is trihydrate available alumina (gibbsite alumina + kaolinite alumina – low temperature desilication product (DSP) alumina) at 150°C*

***RSi is reactive silica at 150°C*

14.3 Domaining

The geological logging data was used to define the five principal domains as follows:

- 100 Overburden soil
- 200 Upper high silica Bauxite - < 48% Al₂O₃ and/or > 20% SiO₂
- 300 Target Bauxite ≥ 48% Al₂O₃ & ≤ 20% SiO₂
- 400 Lower high silica Bauxite < 48% Al₂O₃ and/or > 20% SiO₂
- 500 Underburden (coded IS + PI, KA, KI).

After coding on a geological basis the DSB assay data was used to refine the boundary conditions excluding samples to the transitions if there was evidence of mixed geochemistry and unusually low Al₂O₃ content. Logging of transition lithology (TZ) was also considered as was the metallurgical digest analyses with samples < 34% THA or > 10% RSi considered for allocation into the transition domains.

Al₂O₃ and SiO₂ display grade trends within the bauxite profile which includes:

- An increasing grade in the upper portion of the bauxite horizon, with increasing Al₂O₃ and decreasing SiO₂ with depth.
- A central high-grade zone typically above 50% Al₂O₃ and below 10% SiO₂.
- Where sampled or present, a thin lower grade lower transition zone is defined. Though the transition zone is typically only defined as a single 0.25 m sample interval it is part of a broader lower Al₂O₃ and higher SiO₂ trend that occurs at the base of the bauxite zone. The samples flagged as transition are often geologically logged as transition bauxite and could represent mixed bauxite/ironstone samples.

Natural grade cut-offs in the bauxite horizon do occur for both Al₂O₃ and SiO₂ as generally sharp breaks.

These appear to vary between drill holes and as a result occur mostly between 46% to 50% Al₂O₃ and 15% to 25% SiO₂.

Since the chosen economic target of cut-off grade of 48% Al₂O₃ lies within the natural range it has been broadly used for the domain selection, with the flexibility of considering both Al₂O₃ and SiO₂ grade changes for the domaining where the two conflict.

The 20% SiO₂ is higher than that of economic interest but was selected as it geologically correlates with the 48% Al₂O₃ cut-off and within the upper transition zone is characterised by low RSi.

The modelling of the bauxite horizon Domain 300 is based on the target DSB specification and the samples generally selected for assaying of available alumina (THA) and reactive silica (RSi).

14.4 Wireframing

Several of the areas modelled display bauxite that is not closed out by drilling but are bounded by coastal limits or the tenement boundary. Surface models were developed with an outer extrapolation boundary expanded horizontally from the last intercept. The effective boundary to the geological models became the Mining Lease boundary and the LiDar topography when the extrapolated surface intersected topography.

The drill intercept depths for each domain boundary were wireframed as surfaces and limited to the outer boundary. This creates a domain that thins slightly when extrapolated beyond the limit of the drilling – this is illustrated in Figure 14-1 and Figure 14-2.

Blocks were discarded outside the tenement and the classification removes highly extrapolated areas for the Mineral Resource.

Figure 14-3 displays the grade estimates for the example cross section indicated in Figure 14-1.

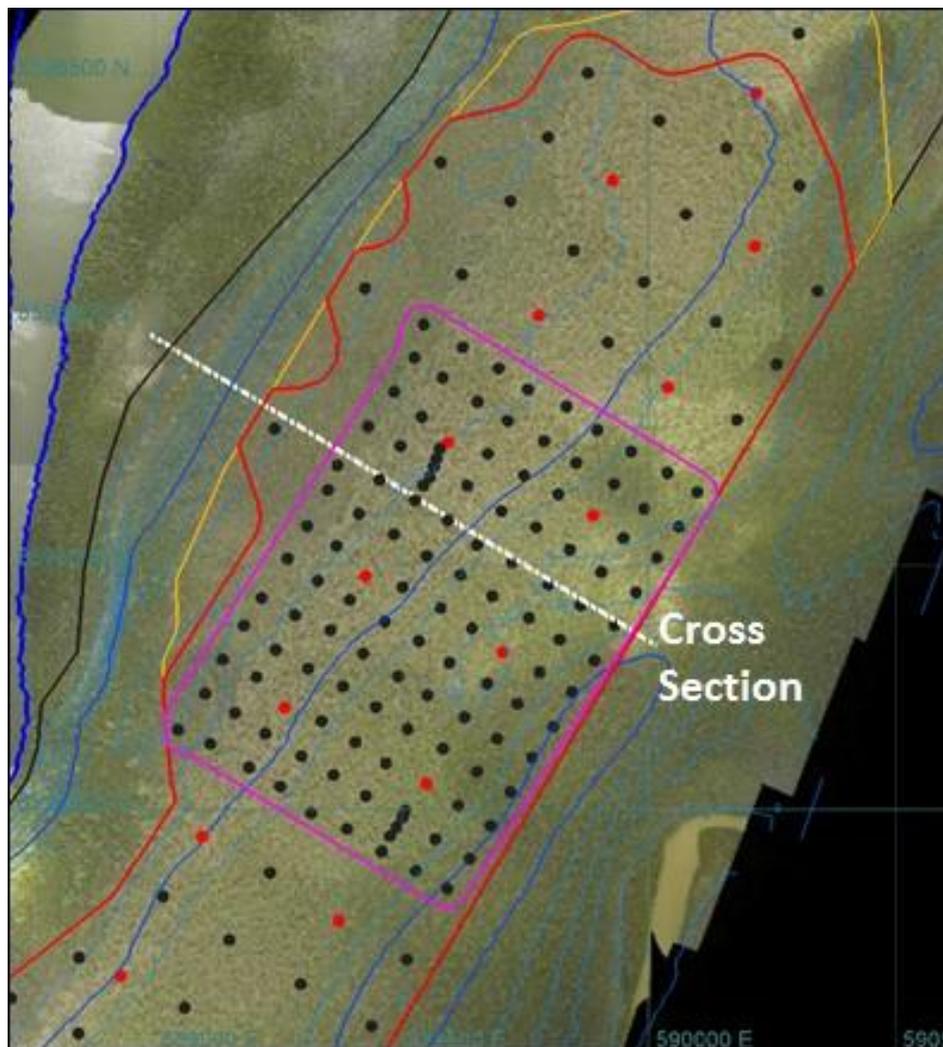
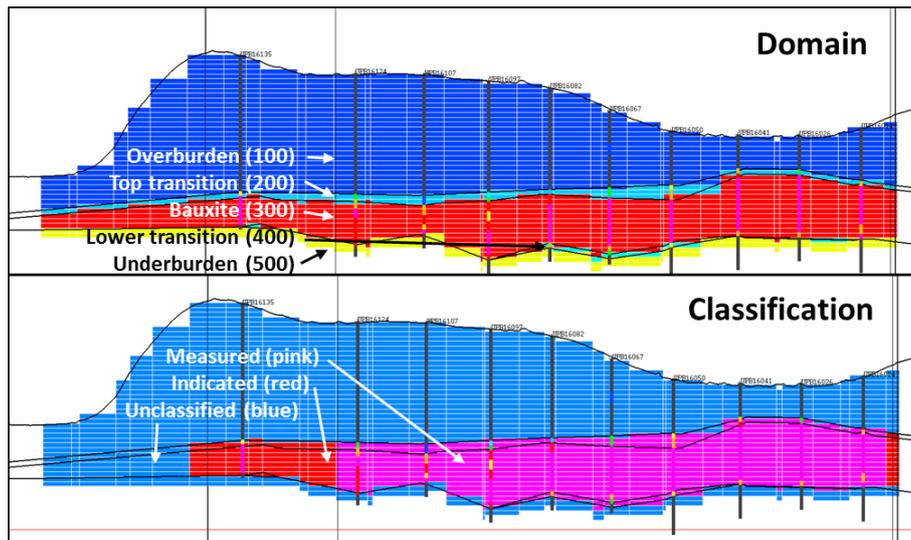
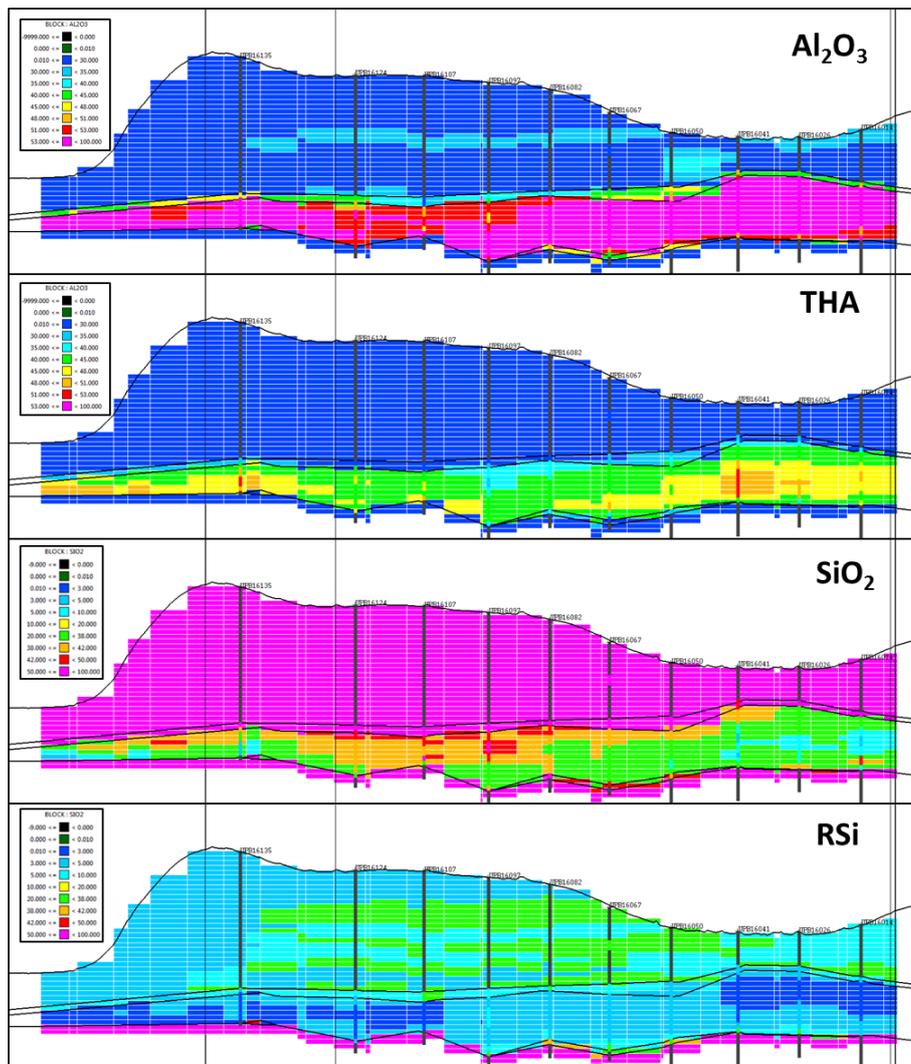


Figure 14-1 - Plan of Area A cross section location



Vertical exaggeration 1:25, section line

Figure 14-2 – Area A cross section block model values



Vertical exaggeration 1:25, section line

Figure 14-3 – Area A cross section block model grade estimates

The average thickness of the domains is included in Table 14-2 with Domain 500 modelled at a thickness of 0.5 m. Table 14-2 is presented for the classified blocks where domain 300 occurs and hence represents the average thickness of overburden (Domains 100 and 200) over the target Domain 300. Generally, in more than 90% of the cases, Domain 200 exists as a modelled zone with some dilution transitional grades. The remaining areas are directly overlain with logged sand and have been assigned default grades.

For Area A the average thickness of Domain 300 is 1.8 m with 5.2 m of overburden that includes 0.5 m of transitional bauxite material and 4.7 m of sand with occasional transported bauxite patches.

In approximately half (43%) the areas a lower transitional zone of 30 cm is logged or sampled with the remainder transitioning immediately into ironstone or kaolinite dominated underburden.

Area B has a thin Domain 300 of only 70 cm and only occurs over half the drilled area. The overburden is thinner with the bauxite physically higher in RL but there is still a significant upper transition zone.

Table 14-2 - Domain thickness (m)

Area	Domain	100	200	300	400
A	Average thickness	4.70	0.50	1.80	0.13
	Occurrence	100%	92%	100%	43%
	Average thickness when occurs	4.70	0.54	1.80	0.30
B	Average thickness	2.43	0.56	0.69	0.17
	Occurrence	100%	97%	100%	54%
	Average thickness when occurs	2.43	0.58	0.69	0.31

14.5 Water table

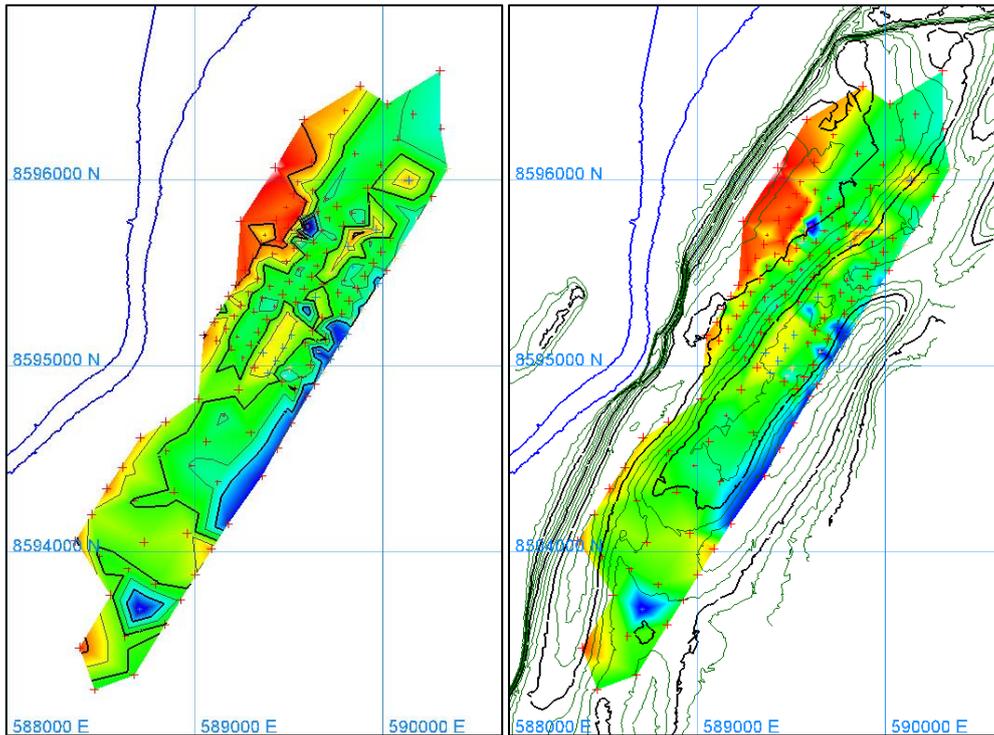
The possible water table can be interpreted from the sample logs of water, wet or damp samples.

A true measure of the water table can only be obtained by relogging the open holes after drilling and allowing the water level to stabilise. Nonetheless the logging of at least damp samples in 177 of the 260 drill holes provides some indication of the possible water table, summarised in Table 14-3 and in Figure 14-4.

Area B is higher in surface elevation and has fewer logged wet or damp samples. Most holes from Area A have some wet or damp samples logged and the uppermost elevation of these are modelled in Figure 14-4 and indicates a consistent surface, shallowing inland. This trend is contrary to normal expectations but does in part mirror the surface topography that also shallows inland. The water table would appear to be consistently above the top of the prospective bauxite horizon.

Table 14-3 - Uppermost logged water depth and RL means

Area	Logged	Holes	Top RL Mean	Min Depth Mean
A	Damp	23	1.3	2.7
A	Water Table	131	2.1	3.0
A	Wet	18	1.1	2.8
B	Damp	4	0.8	3.3



Water elevation 1, 2 m contours

Topography 0.5, 2 m contours

Figure 14-4 - Area A plan of uppermost logged water RL model

14.6 Grade and thickness Summary

Figure 14-5 to Figure 14-12 present plan compilations of the block model estimates for the bauxite horizon (Domain 300) composited into plan view to display thickness, metal, and average grade values.

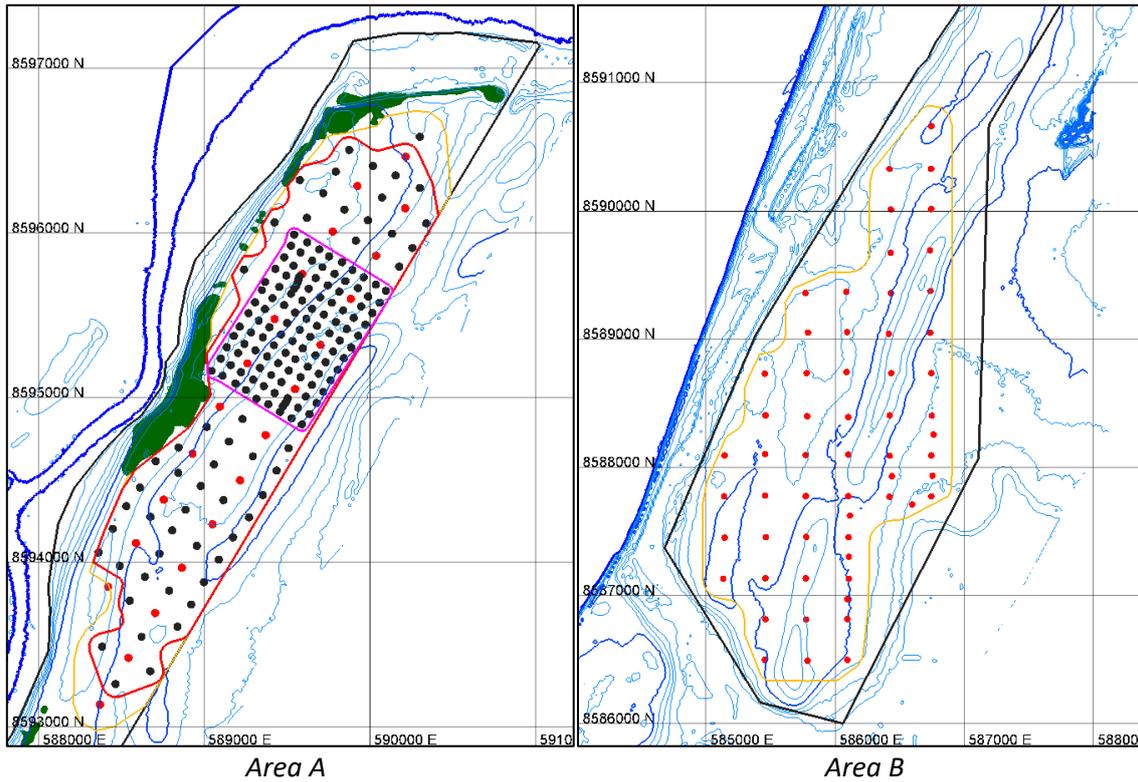
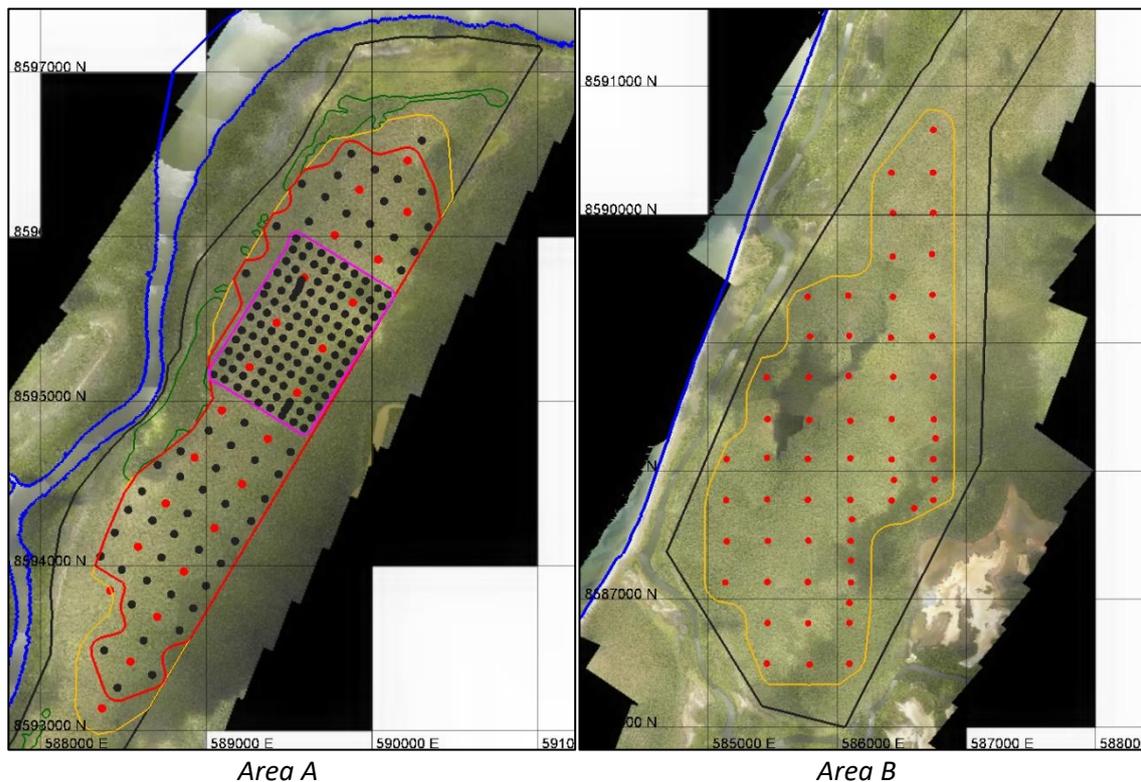


Figure 14-5 - Plan of drill collars and surface topography contours (1, 5 m)



Circles: Red = 2014 drilling, Black = 2016 drilling
 Polygons: Orange = Inferred, Red = Indicated, Pink = Measured, Black = ML, Green = Vine Thicket
 Figure 14-6 – Plan of drill collars and resource classification on LiDar topography image

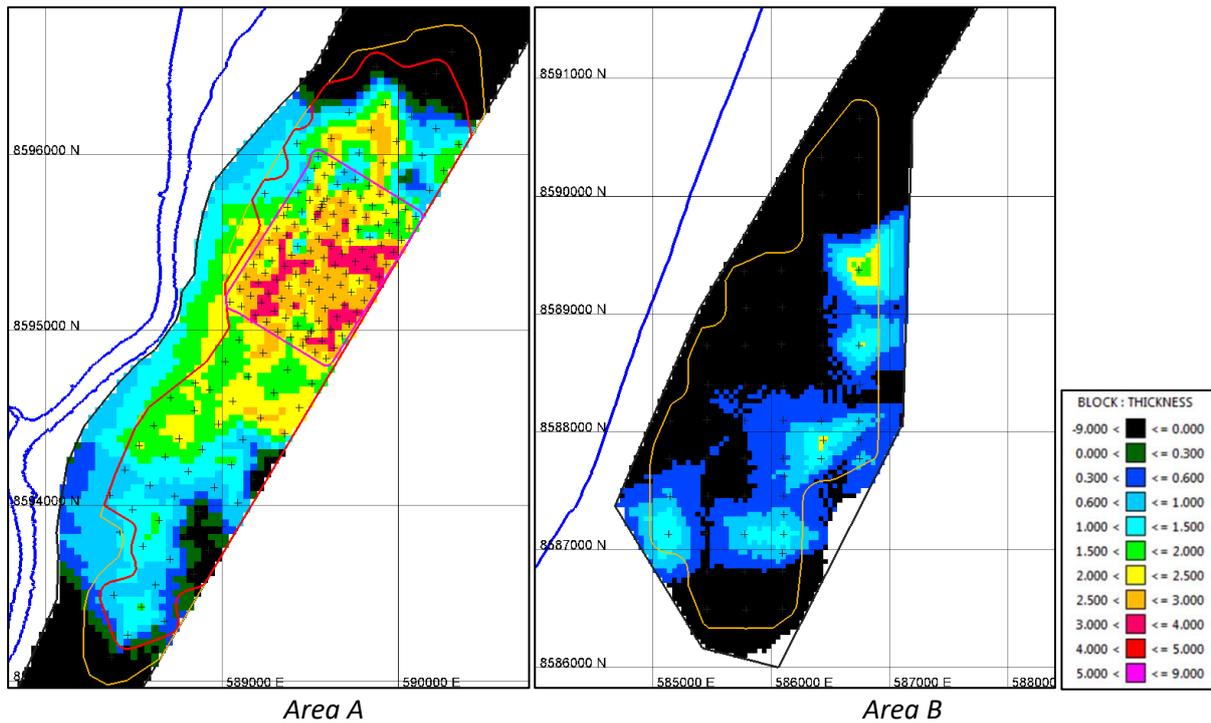


Figure 14-7 – Plan of compiled bauxite horizon (Domain 300): DSB thickness (m)

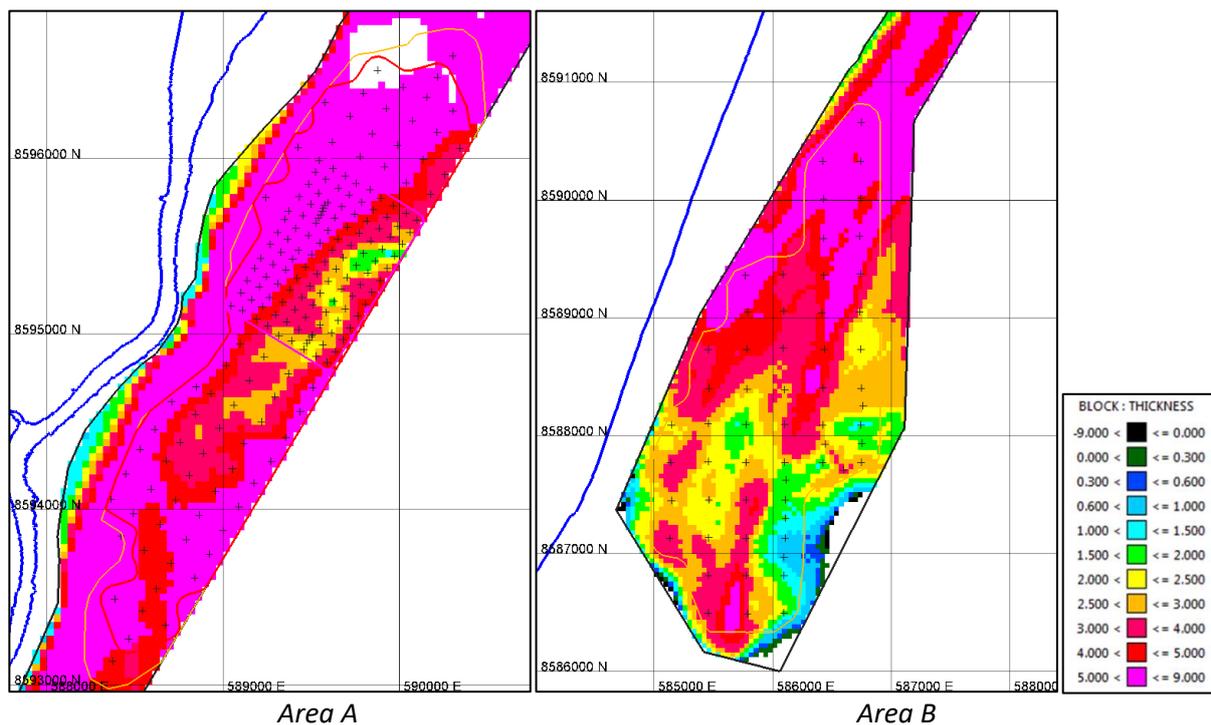


Figure 14-8 – Plan of compiled bauxite horizon (Domain 300): Overburden thickness (m)

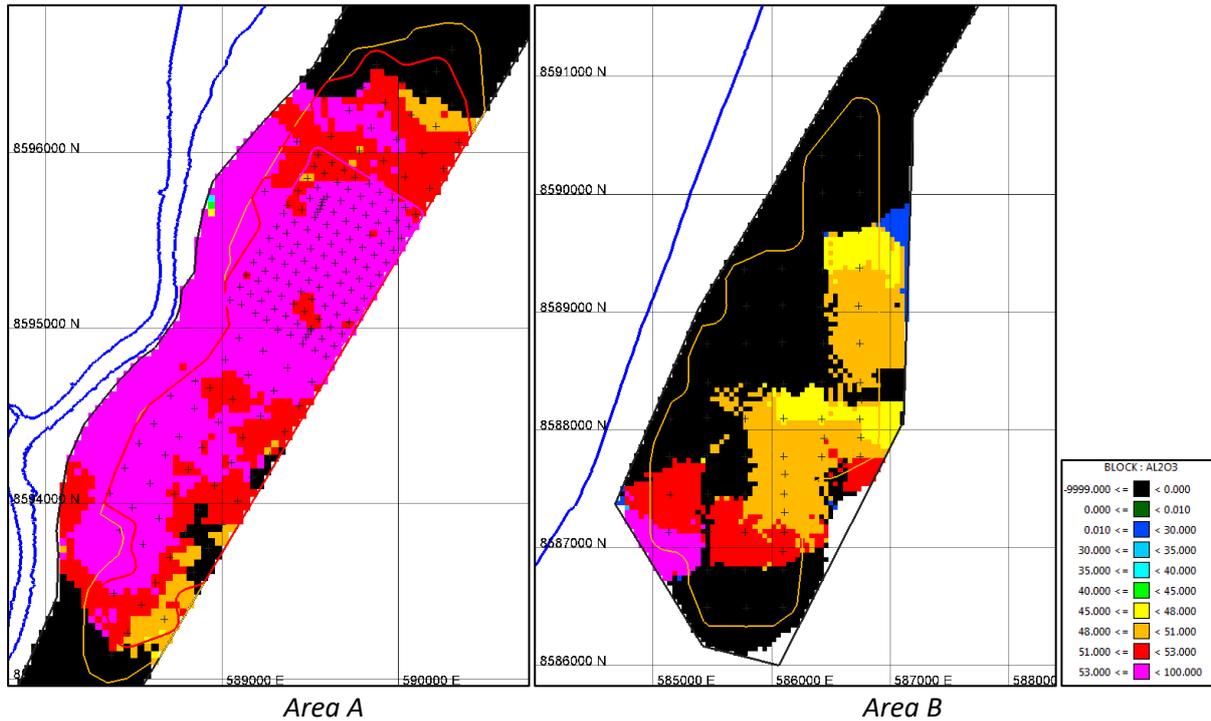


Figure 14-9 – Plan of compiled bauxite horizon (Domain 300): DSB Al₂O₃

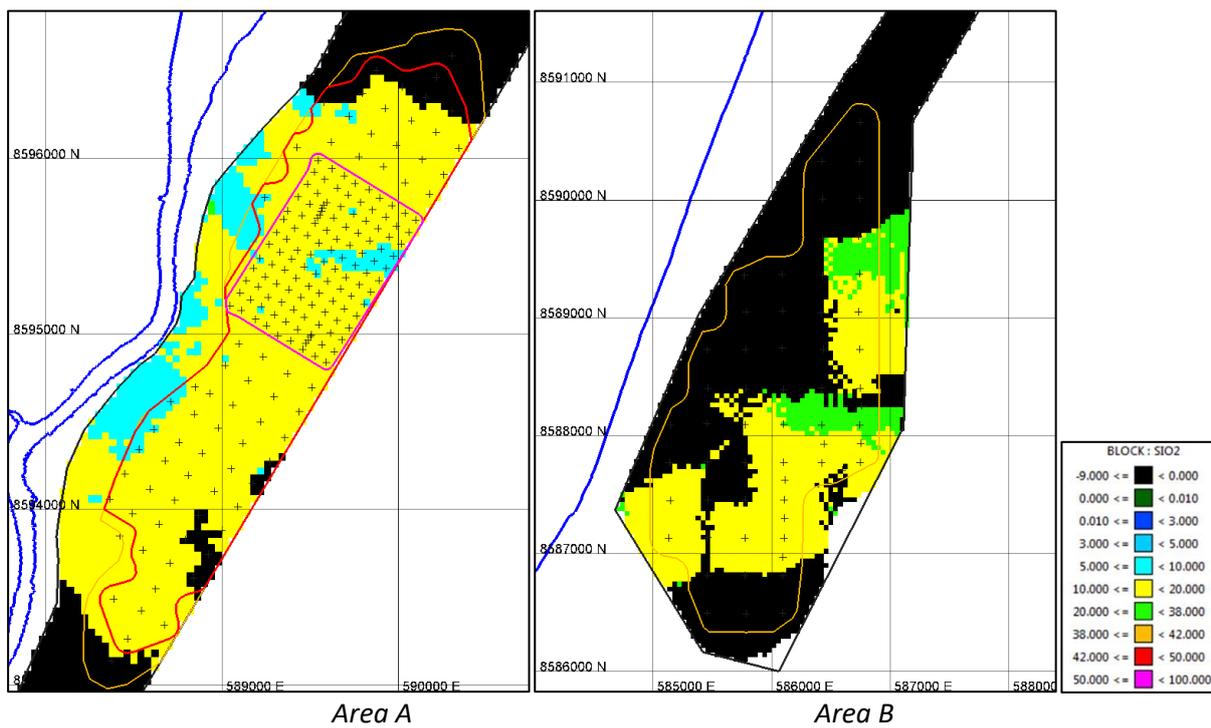


Figure 14-10 – Plan of compiled bauxite horizon (Domain 300): DSB SiO₂

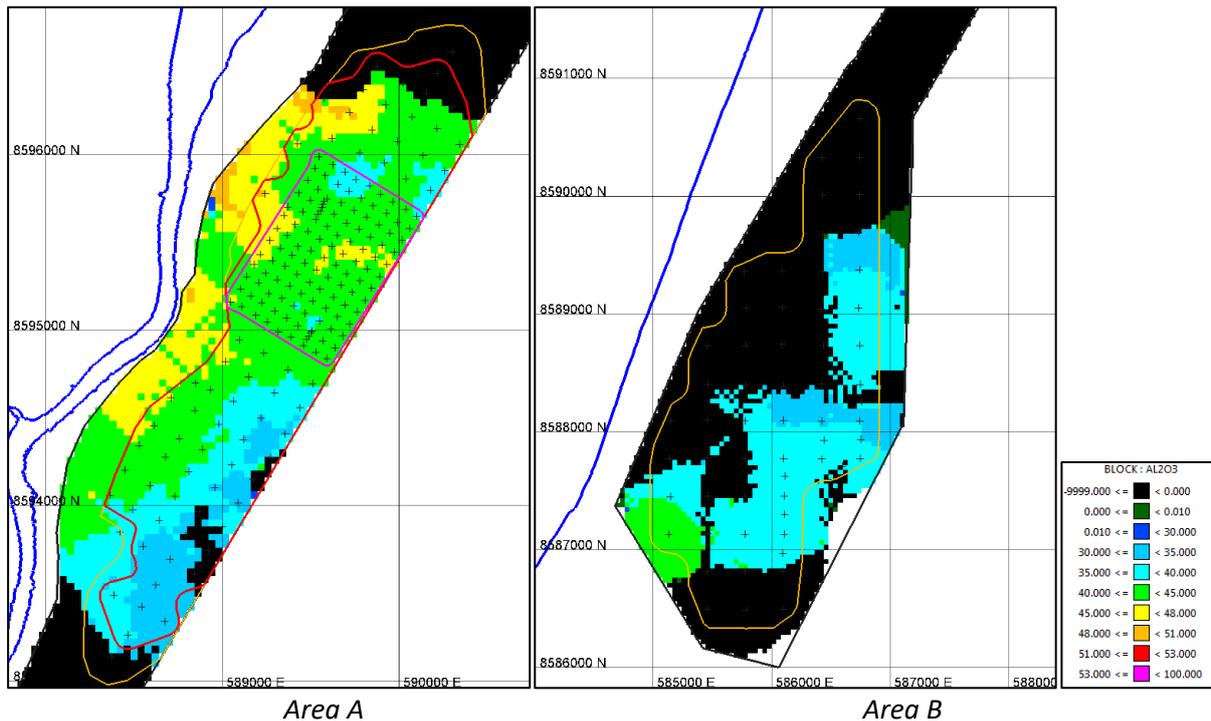


Figure 14-11 – Plan of compiled bauxite horizon (Domain 300): DSB THA

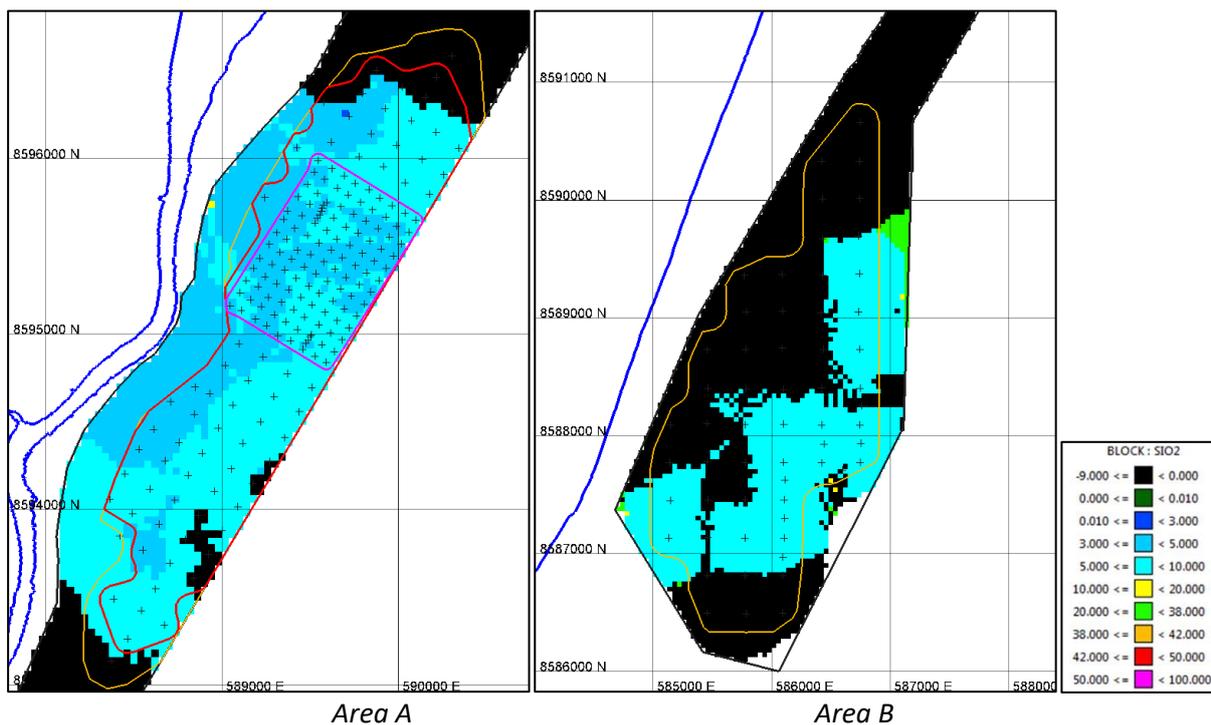


Figure 14-12 – Plan of compiled bauxite horizon (Domain 300): DSB RSi

14.7 Classification

Blocks are classified as Measured, Indicated and Inferred Mineral Resource where drilled at 80, 160 and 320 m grid spacing, respectively. Extrapolation of each category is limited to half the nominal drill spacing i.e. up to 160 m extrapolation beyond the drilling for Inferred Mineral Resource. Domains 100 and 500 are not classified as they contain no viable bauxite.

14.8 Mineral Resource statement

Domining is based on the likely economic cut-off of 48% Al₂O₃ which is suitable for geological definition of the main bauxite and transition zones. The domain boundaries have been refined using a 20% SiO₂ cut-off, geological logging and where available metallurgical digest analysis cut-offs of 34% THA and 10% RSi.

Metallurgical digest analyses were selectively undertaken targeting the main bauxite horizon and are complete for the resource statement at 48% Al₂O₃.

At lower cut-offs the metallurgical digest analyses are based increasingly on regression formulas and calculated values and will have less confidence. A measure of that confidence is included in the model as the proportion of assayed to calculated values used in the estimate.

All metallurgical digest estimates for Area B are based on derived values as metallurgical digest analyses have not been undertaken as yet.

Screened estimates have been based on the 2014 drilling at a 320 m spacing. The screened tonnage and grades are not reported as part of the Resource statement since the basis of the resource classification is for DSB.

The 2016 Resource estimate for Urquhart Bauxite Project at effectively a 48% Al₂O₃ cut-off is shown in Table 14-4.

Table 14-4 - Urquhart DSB Resource statement details at 48% Al₂O₃ cut-off – As Per Updated Resource Statement Announced on the 14/11/2016

Classification	Area	Mt	Al ₂ O ₃ %	SiO ₂ %	THA* %	RSi** %
Measured	A	3.0	54.4	11.8	43.2	5.0
Indicated	A	3.9	53.3	13.1	40.8	5.2
M + I	A	6.9	53.8	12.5	41.8	5.1
Inferred	A	0.3	54.2	11.3	42	4.7
	B	2.3	49.9	17.4	37.2	6
	subtotal	2.6	50.3	16.8	37.6	5.9
Total		9.5	52.8	13.7	40.7	5.3

*THA is trihydrate available alumina (gibbsite alumina + kaolinite alumina – low temperature desilication product (DSP) alumina) at 150°C

**RSi is reactive silica at 150°C

This does not reflect a strict 48% Al₂O₃ (DSB) cut-off on the block but includes all blocks from the main bauxite horizon (domain 300) and includes a few drill holes and areas with marginal subgrade that are required to maintain continuity of the main bauxite horizon.

Area A and B are reported separately as Area B has had no infill drilling and displays more variability and a thinner bauxite horizon than Area A.

Area B Inferred is considered higher risk than Area A Inferred even though Area A Inferred is predominantly extrapolated.

Though the total whole rock SiO₂ content is generally elevated - the metallurgical digest analyses at Area A indicate the reactive silica is still relatively low indicating that the majority of the SiO₂ occurs in the form of quartz. This is particularly the case for the upper transition contact that comprises the majority of the subgrade bauxite

available. Block estimates above 45% Al₂O₃ from the transition zones (Domain 200 and 400) are provided in Table 14-5.

Table 14-5 – Urquhart Bauxite additional low grade DSB Resource above a 45% Al₂O₃ cut-off

Classification	Area	Mt	Al ₂ O ₃ %	SiO ₂ %	THA %	RSi %
Measured	A	0.33	46.4	23.4	32.5	8.4
Indicated	A	0.32	46.4	22.3	32.2	8.9
Inferred	A	0.03	45.7	23.6	31.7	6.6
	B	0.10	45.5	21.9	30.8	11.9
	subtotal	0.13	45.5	22.3	31.0	10.6
Total		0.78	46.2	22.8	32.1	9.0

If the 50 m buffer zone is applied to the coastal breakaway zone that encapsulates the vine thicket areas then the total Mineral Resource is reduced by 0.43 Mt to the subset in Table 14-6. This represents the mining target for the Urquhart Bauxite project based on environmental restrictions.

Table 14-6 – Urquhart Bauxite DSB Resource statement details (48% Al₂O₃ cut-off) outside buffer

Classification	Area	Mt	Al ₂ O ₃ %	SiO ₂ %	THA %	RSi %
Measured	A	3.0	54.4	11.8	43.2	5.0
Indicated	A	3.6	53.2	13.3	40.5	5.2
Inferred	A	0.1	54.0	11.4	39.3	4.9
	B	2.3	49.8	17.4	37.1	6.0
	subtotal	2.4	50.1	17.1	37.2	5.9
Total		9.0	52.7	13.8	40.5	5.3

15 MINERAL RESERVE ESTIMATE

15.1 Introduction

In this Technical Report, the Mineral Reserve Estimates for the Urquhart Bauxite Project contain forward-looking information.

Material factors that could cause actual results to differ materially from the conclusions and estimates set out in this report include: 1) naturally occurring geological variability 2) geological interpretations 3) differences from the assumed criteria applied by the mining engineer to determine the cost of extraction and the criteria applied to estimate the price received for the DSB product.

The material factors, or assumptions, that were applied in drawing the conclusions, forecasts, and projections set forth in this Item are summarised in this, and other Items of this Technical Report. For this reason, readers should read this Item solely in the context of the full report, and after reading all other Items of this report.

The Mineral Reserve estimate is based on the life of mine scheduled material quantities. The life of mine schedules that underpin the Mineral Reserve have been based on targeting Measured and Indicated Resources with appropriate modifying factors applied.

15.2 Modifying Factors

Various adjustments have been made to the in-situ bauxite to develop Proven and Probable Mineral Reserves. The key modifying factors are summarised below.

15.2.1 Buffer Zone

The Mineral Resource subset used to inform the Mineral Reserve is trimmed at the mining lease boundary or 50m inside the edge of any vine thicket or seaward breakaway, whichever boundary is hit first. This is the Mineral Resource estimate as presented in Table 14-6.

Mining is not allowed up to the vine thicket or seaward breakaway – accordingly a 50m buffer zone has been created within which none of the Resource is converted to Reserves. It was noted in the Resource estimate that around 0.43Mt of Mineral Resources are within this buffer zone.

15.2.2 Bauxite Zone/Loss Dilution

The Resource model defined a target bauxite zone designated as zone 300 – this was a zone based on two surfaces – nominally a top surface where the average grade in a 40m x 40m x 0.25 m block is above 48% Al₂O₃ and a nominal bottom surface where the blocks transition to below 48% Al₂O₃.

The reason for these being nominal surfaces is that in the geological modelling some discretion was used to ensure continuity of surfaces and also to consider impacts of Si, however it is noted that in most instances the surfaces are controlled by the 48% Al₂O₃ Cut-off.

As is typical with bauxite operations, mining will be carried out in such a way that overburden waste material will be slightly overdug at the top transition zone – resulting in a loss of ore at the top of zone 300.

Based on experience in similar operations, IMC have assumed a 100mm loss from the top block as a result of this over digging. This is premised on mining being carried out with scrapers and small front end loaders and accurate grade control based on continuous monitoring of the digging horizon as per the LCR proposed mining strategy.

Similarly, the lower boundary will be slightly over dug – IMC have assumed that the over dig will be 100mm at the bottom. The characteristics of the waste material have been added in as dilution.

The balancing out of loss and dilution results in only a minor change in total tonnes but a reduction in grade and no impact on the thickness of the bauxite zone mined.

These criteria assume mining horizon control with differential GPS and dig level controls in the scrapers and loaders linked to a grade control model.

15.2.3 Bauxite Thickness

IMC are of the opinion that any bauxite zone that is less than 0.5m thick cannot be reliably targeted for selective mining.

All Zone 300 material that is less than 0.5m thick has therefore not been included in the Mineral Reserve.

Once operations commence and these areas of thinner potentially economic bauxite are better understood, it may be appropriate to allocate this material to a screening stockpile rather than directly to waste.

Overburden and bauxite thickness data was presented in the Mineral Resource section of this report – however that data included all bauxite down to a thickness of 0.25m.

The mined bauxite which forms the Mineral Reserve is based on a subset of the zone 300 material that is 0.5m or thicker.

The thickness of overburden and bauxite in the Mineral Reserve target Area A is illustrated in Figure 15-1.

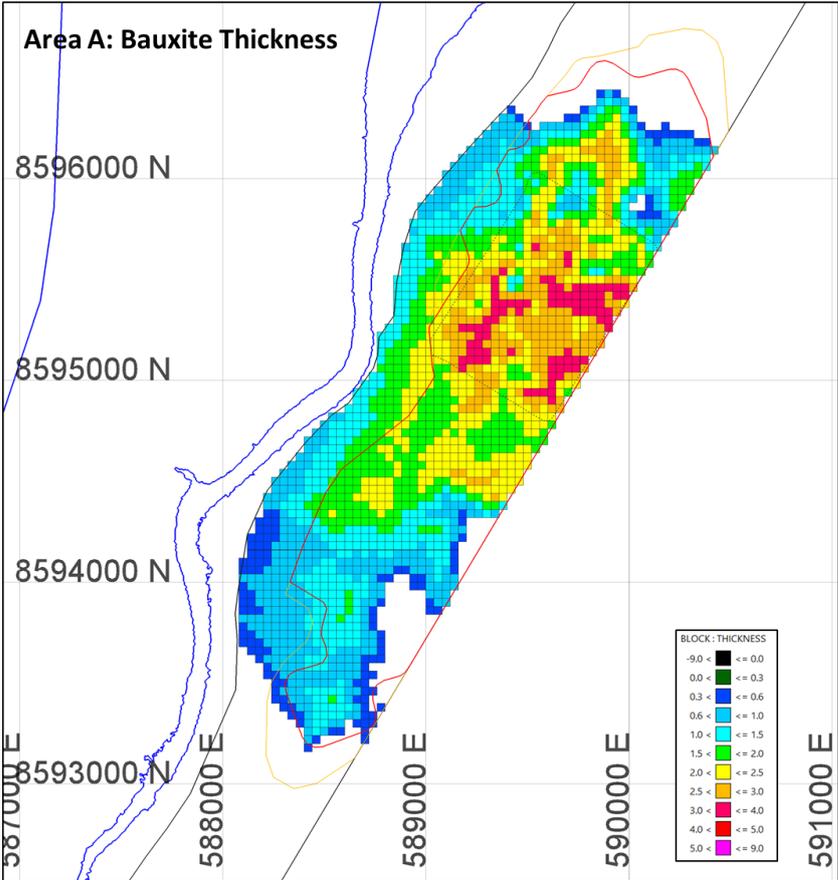


Figure 15-1 – Area A: Bauxite Thickness

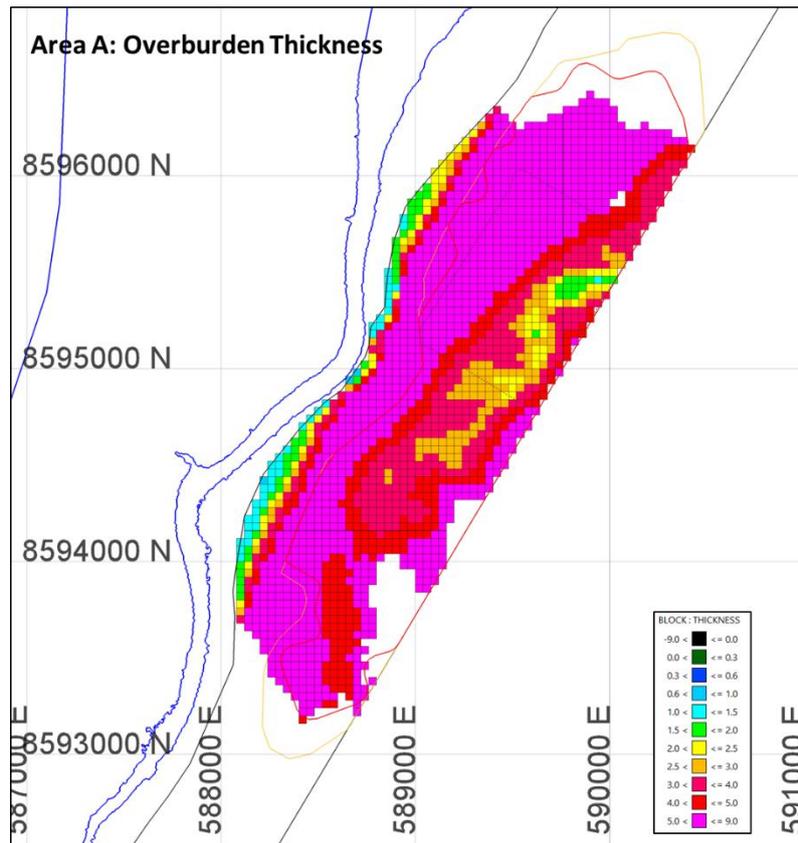


Figure 15-2 – Area A: Overburden Thickness

15.2.4 Rehandle

The majority of waste will be dumped in the strip mined prior to the active strip.

The exceptions to this are the first strip mined in Area A.

The waste from these box cut strips will be dumped on an adjacent strip and will need to be rehandled when that strip is mined.

It may be possible to place this material in permanent external dumps without the need to rehandle. This would be upside that will be investigated in future studies.

For the purposes of the pre-feasibility it has been assumed that all this material is rehandled.

15.2.5 Selection of DSB Product based on Resource Classification

The scheduled quantities have been developed on the basis of Measured and Indicated Mineral Resources that are converted (after applying modifying factors) to Proven and Probable Mineral Reserve's. The Mineral Reserve does not include any screening material or Area B material.

15.2.6 Moisture

The ore is located within the water table which has resulted in the moisture measurements being relatively high.

The modelled moisture is the in-situ moisture – this will reduce substantially once mining has taken place.

IMC have assumed that mined and shipped moisture will be 8%, whilst the overburden moisture will be 4.5%. This is consistent with information provided from other operation in the vicinity of Urquhart.

15.3 Optimisation

The imposition of the minimum bauxite thickness has defined a block of material as being economic or not – if a zone of bauxite of above 48% Al₂O₃ is 0.5m or thicker it will be economic to mine as the overburden thickness, being so small, does not impact the economic viability of mining a block of ore – however it will impact the relative cost of mining that block of ore.

The purpose for carrying out an optimisation was simply to provide an economic ranking to assist with sequencing of strips.

The optimisation/ranking did not assign any value to the zone 200 potential screen material.

Ultimately, the ranking was done on a per strip basis and was a relative ranking to determine the best order to mine the strips.

15.4 Mineral Reserve Statement

Based on the above adjustments to the Mineral Reserve, the Mineral Reserve and life of mine schedule quantities of ore and waste has been developed.

The Mineral Reserve estimate for the DSB tonnes and grade is summarised in Table 15-1.

The tonnage of material that is mined is summarised in Table 15-2.

Table 15-1 - Mineral Reserve Statement

	Area	Bauxite Low Temp DSO	Al ₂ O ₃	SiO ₂	THA	Low Temp RSi
		Dry kt	%	%	%	%
Proven	A	2,964	53.7	12.3	42.3	5.4
Probable	A	3,568	51.9	14.2	39.1	5.9
Ore Reserve	A	6,532	52.7	13.3	40.6	5.7

Table 15-2 - Mining Tonnage Data

	Area	Waste (Inc Screen)	Waste (Inc Screen)	Ore (Ex Screen)
		Dry kt	Wet kt	Dry kt
Proven	A			2,964
Probable	A			3,568
Total Proven and Probable	A	16,332	17,102	6,532

15.5 Mineral Reserve Statement

The Urquhart Ore Reserves estimate is shown in Table 15-3. This estimate has been developed in accordance with the JORC 2012 guidelines.

The Mineral Reserve has been estimated by taking into account the relevant modifying factors including:

- Loss and dilution at the bauxite boundary;
- Cut-off grade;
- Pricing forecast for the direct shipped bauxite as a low temperature refinery feed;
- Mining, trucking and ship loading costs.

Measured Mineral Resources have been converted to Proven Mineral Reserves with the modifying factors outlined in Section 15.2 applied.

Indicated Mineral Resources have been converted to Probable Mineral Reserves with the modifying factors outlined in Section 15.2 applied.

Table 15-3 - Ore Reserve Estimate

	Low Temp DSO Bauxite	Al₂O₃	SiO₂	THA	Low Temp RSi
	Dry kt	%	%	%	%
Proven	2,964	53.7	12.3	42.3	5.4
Probable	3,568	51.9	14.2	39.1	5.9
Ore Reserve	6,532	52.7	13.3	40.6	5.7

The Mineral Reserves are based on an insitu Al₂O₃ cut-off grade of 48%.

It has been assumed that 100mm will be lost at the top of the DSB horizon and 100mm of dilution will come from the underlying material at the grade of that material. Other than this loss and dilution at the interfaces, the recovery through to stockpile has been assumed to be 100%.

The life of mine schedule that underpins the financial viability of the project has been developed solely on the basis of these Proven and Probable Reserves (exclusive of Inferred Resource material).

16 MINING METHODS

16.1 Introduction

The mining operations are relatively small scale seasonal operations.

The mining operations comprise:

- Topsoil removal and storage;
- Overburden removal;
- Bauxite mining;
- Haulage to port area;
- Stockpile at port;
- Load barges;
- Backfill mined out areas.

In order to develop the strategies for these activities, Oresome has executed a Mining Services Contract with LCR Mining Group Pty Ltd that covers all mining operations up to stockpiling ROM bauxite at the Hey Point loadout facility.

Negotiations are still underway with the operators of the stockpile and barge loadout facility and with the leaseholder for the land over which it is proposed to haul to the port.

IMC have developed mining strategies based on input from the above areas.

16.2 Pit Limits

The pit designs have been limited by the lease boundary and by natural barriers.

The Resource model was adjusted to reflect a 50m offset along the western margin vine thickets.

This restriction will be refined prior to establishing the final mining boundaries – the current assumption is considered conservative.

16.3 Pit Design/Strip Definition

The preferred approach of the mining contractors was to operate the mine in strips – this enables mining to progress on a logical basis utilising efficient pre-strip fleets.

The chosen strip width was 160m.

The strips will be mined from east to west to facilitate ease of dewatering.

The proposed mining block removal strategy as provided LCR is shown in Figure 16-1.

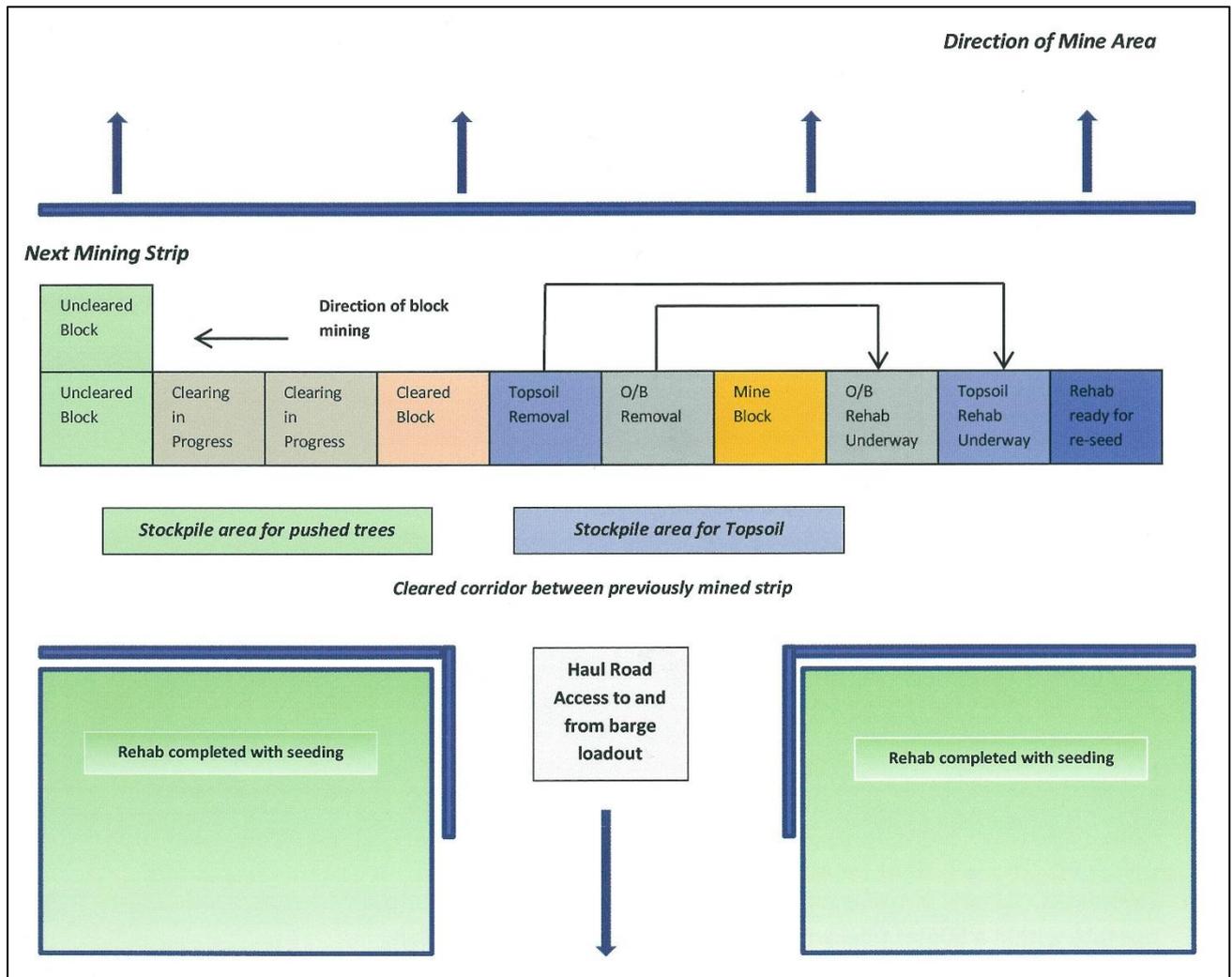


Figure 16-1 - Mining Progress

The key aspects of this strategy are:

- The main road corridor is developed within the mining area;
- Rehab is carried out progressively shortly after mining is completed.

16.4 Development Plan

The strip development plan has been based on mining complete strips from East to West irrespective of any changes in ranking across strips.

It was not deemed to be practical to split strips in an east-west direction as it is critical to open up adjacent strips for backfilling, which can be most efficiently achieved if the whole strip is accessible.

Overburden stripping is scheduled to commence a month or two prior to ore mining – with ongoing waste stripping operations being carried out in advance of ore mining.

An effort was made to smooth out waste mining rates.

Once the mine is closer to operations, more detailed planning work will be undertaken in accordance with the contractual obligations of Oresome and LCR – this planning work will determine the optimum approach for stripping.

Waste mining cannot get too far ahead of ore mining as there would be insufficient mined out space to dump the waste back in pit, however you want sufficient pre-stripped ore such that waste mining does not impact ore mining.

The mining sequence has been developed by grouping consecutive strips on the basis of the ranking.

The mine sequence has been based on targeting the central region of Area A first then working south in 160m strips until the lower ranking material in the south support moving the operations to the north, at which time operations commence back at the first strip progressing north until the end of the mining lease is reached, after which mining moves back to the most southern strip to mine out the remaining Area A strips in a Southerly direction.

The pit mining sequence is illustrated quarterly for Year 1 and 2 in Figure 16-2 and annually for Year 3 to 7 in Figure 16-3.

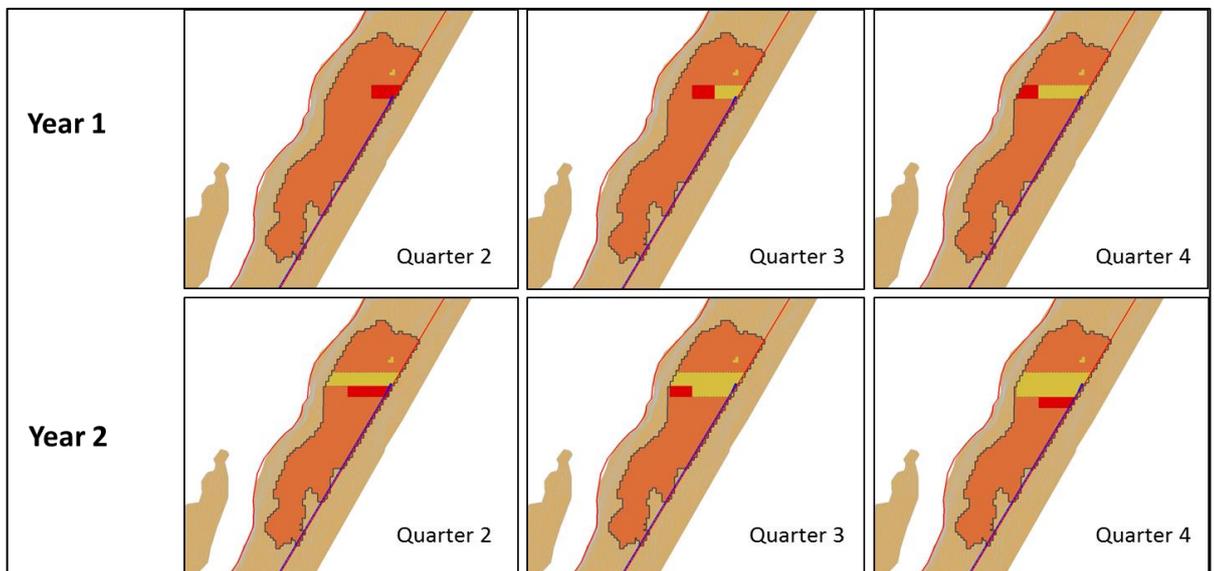


Figure 16-2 – Quarterly Pit Mining Sequence (Year 1 and 2)

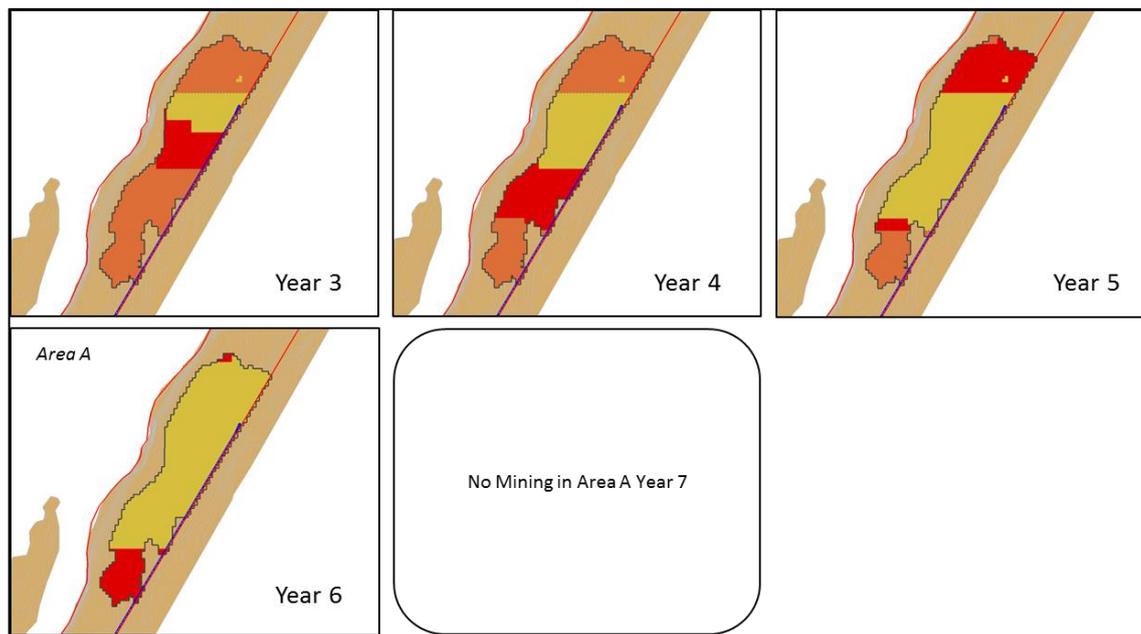


Figure 16-3 – Annual Pit Mining Sequence (Year 3 to 6)

16.5 Waste Disposal

All waste is assumed to be dumped back into mined out areas.

In the base case schedule, the zone 200 material that overlays ore zones is assumed to be waste – however in the scenario 3 schedule this material is targeted for selective screening which will require selective stockpiling.

Further work is required during the detailed planning phase to optimise the waste rehandle and stockpiling of potential screen material.

16.6 Grade Control

A core assumption in the development of the Mineral Reserve is that a substantial focus during mining will be on the accurate definition of the upper and lower bauxite horizons at the chosen cut off grades.

A loss of 100mm on the top surface and dilution of 100mm at the bottom interface will only be achieved if the boundaries are well defined in a geological model prior to mining (requiring pre-production grade control drilling) – this model is then uploaded into the key digging units (scrapers and excavators) which then use this data through GPS positioning to ensure mining is carried out to the pre-defined horizons.

Similar selectivity is achieved at other nearby operations – however UBx has the added challenge of a much higher overburden component than is typical in the area – although as the overburden is easily free mined it is not unreasonable to anticipate the horizon control as planned can be achieved after a short ramp up/learning phase.

16.7 Mining Fleet

The mining fleet is all to be provided by the contractor.

The only fleet owned by Oresome will be light vehicles.

Fuel will be stored on site in a 110,000 litre self bunded container.

Oresome are responsible for the provision of all fuel, i.e. the contractor unit rates for mining exclude fuel.

16.7.1 Clearing Operations

Clearing operations will be carried out with a D9 dozer with a tree rake blade. The trees and vegetation will be stockpiled for later rehabilitation.

16.7.2 Ore and Waste Mining Operations

Mining is not planned to be undertaken in the wet season – site operations are planned for only 9 months of the year during the dryer months.

Overburden will be removed by scraper.

Pricing has been based on K-TEC 1233's pulled by 40t articulated trucks, similar to that shown in Figure 16-4.

The use of scrapers will facilitate good control of the horizon – the target is a loss of 100mm on the top horizon which will require real time GPS control of the scraper.

The scraper will be supplemented with a D9 size dozer.

Ore will be mined with the equivalent of Cat 992 sized front-end loaders, again with GPS fitted for real time control of dig horizons.

The ore will be loaded directly onto B-Double haulers to be taken to the port stockpile area.

A small 30t excavator will be utilised for various activities as required – primarily in road construction and drainage works.



Figure 16-4 - K-TEC 1233

16.8 Road Construction and Haulage

The haul road to the port was based on the alignment shown in Figure 16-5.

The road construction will begin with the D9 dozer pushing though the road alignment a section at a time.

The D9 dozer will be supplemented by a K-TEC scraper to remove the excess dirt down to a competent foundation material – in almost all instances the competent material will be bauxite which is close to the surface within the road alignment.

The removed material above the bauxite will be stockpiled as topsoil for future rehabilitation and to form windrows along the edge of the road.

The 30t excavator will be used initially to construct spoon drains.

As haulage is not planned for the wet season, it is not envisaged that additional sheeting will be required.

The road will be constructed to 12m wide running surface with an additional 5 m each side for spoon drain construction and safety barriers and park bays.

This is a typical road construction approach for the region with water management through an extensive system of spoon drains to direct water away from the road.

The bauxite will be hauled to the port on 130 Tonne B-Double units. It is estimated that up to 8 of these units will be required.

The road will be approximately 16 km across ML7024 (RTAWs Amrun bauxite project) to the existing Hey Point stockpile/export facility on ML20611.

The proposed route of the haul road follows existing and historical cleared geological gridlines and tracks, expanded to accommodate mine haul vehicles.

16.9 Stockpile/Port/Shipping

Green Coast Resources (GCR) presently operates a small bauxite mine at Hey Point (the Hey Point Bauxite Project - HPBP).

The HPBP is approximately 10 km south of Weipa, and adjacent to the Embley River.

The Hey Point bauxite project will produce up to 2 Mt of product bauxite over the life of the mine and is approved to export up to 1.6 Mt of bauxite per year.

The HPBP has an optimal mine life of three years (potentially plus one additional year) based on dry season operation. The EA (EPML02705614) approval for the HPBP was issued with conditions on 29 May 2015, with the mining lease (ML20611) tenure granted on 14 September 2015.

The export of bauxite material from ML20611 requires the bulk handling of materials from the HPBP transshipment barge to a larger ocean-going bulk carrier vessel.

A Development Approval (DA) under the Sustainable Planning Act 2009 (SP Act) is required for activities undertaken outside of the ML. Bulk handling of materials is considered an assessable development. As such, undertaking the port activities requires a valid EA to manage the operational aspects and a DA for the use of the land/premises.

A DA was prepared and submitted to Strategic Port Land, North Queensland Bulk Ports Corporation (NQBP) NQBP in January 2016 for the following aspects of the approved HPBP:

- A mobile conveyor, to move product bauxite from the stockpile to a barge moored in the Embley River. The 1,650 t barge will be loaded by a radial stacker positioned at the end of a floating pontoon
- Product bauxite will be transported via barge to a bulk vessel moored approximately 3.5 km downstream in the Embley River (within the Port of Weipa emergency anchorage area) for export. The barge will complete up to 4 movements per day, over a seven day period to fill the bulk vessel
- Loading of product bauxite into 32,000 t bulk vessel's for export will be conducted for a total of seven and a half hours over a 24 hour period in three, two and a half hour intervals

NQBP approved the application (with conditions) on 14 March 2016 and a Development Permit for a Material Change of Use for ERA 50(1)(a) – Bulk Material Handling for the Transhipment of Bauxite (as part of the HPBP) on Strategic Port Land at the Port of Weipa was issued.

Within ML20661, the Urquhart Bauxite Project (UBx) will have a common functional area whereby the trucks transporting the bauxite from UBx to Hey Point will off-load their bauxite. This functional area will additionally serve as diesel storage for the project and will also accommodate a workshop.

Oresome will stockpile product bauxite at the Hey Point functional area after which GCR will manage the loading of the bauxite on barges for shipment with no amendment required to accommodate the Urquhart Bauxite ore for the duration of the approval.

Port operations are expected to be carried out by the port operator on a cost per tonne basis.

The general layout anticipated for the port is illustrated in Figure 16-5.

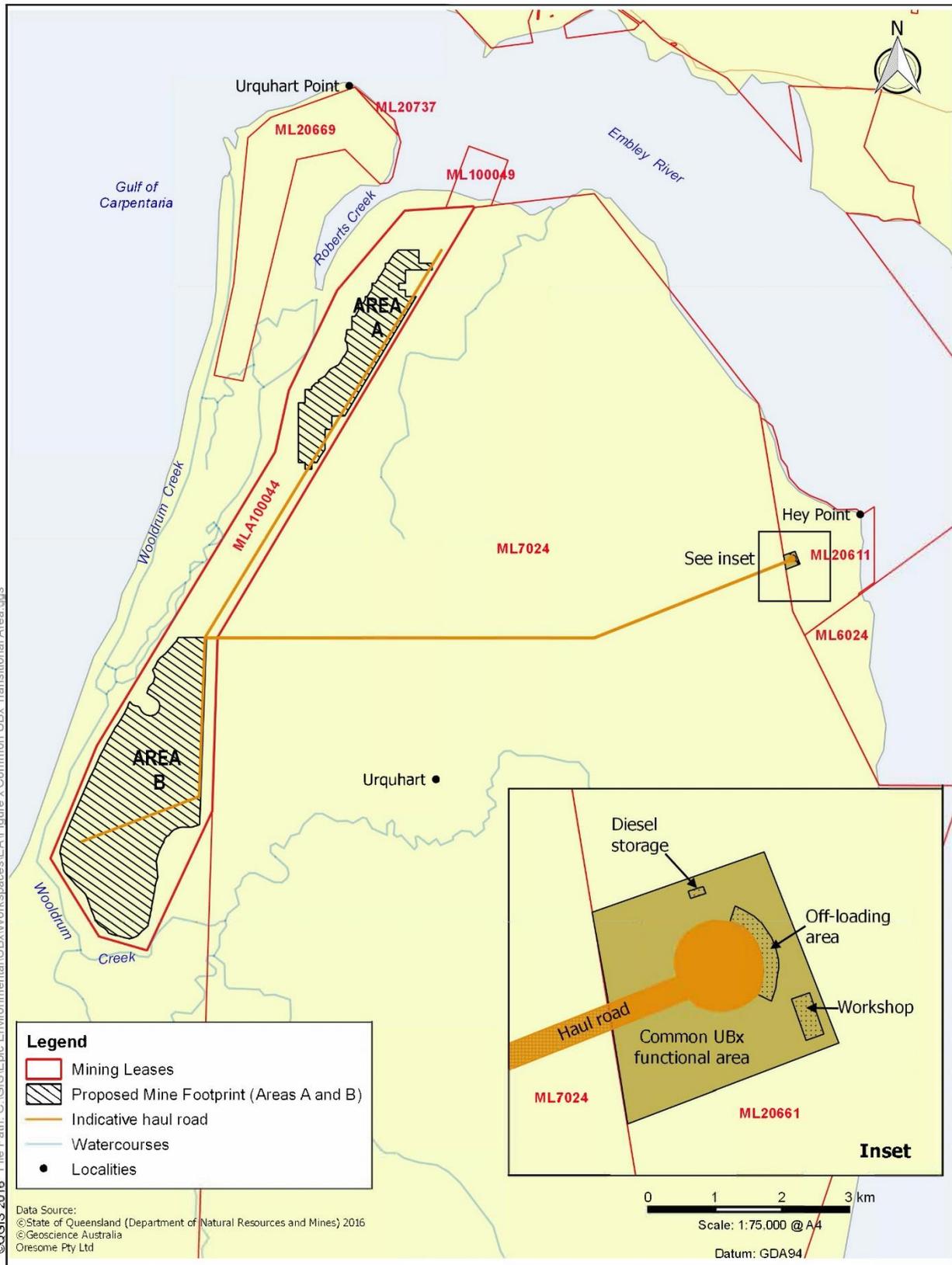


Figure 16-5 - Port Area and Road Layout

16.10 Manning

The majority of the manning will be provided by the contractor.

The standard roster will be 12-hour days - 10-days on 4 days off.

The operators will commute by ferry from Weipa to Hey Point.

Oresome will provide the SSE, a contracts administrator and a grade control team.

If required for catch up or to advance pre-strip, it is assumed that a second (night) shift for waste mining would be implemented.

It is not anticipated that ore will be mined on night shift.

The final manning numbers are to be confirmed – at the time of the PFS it is anticipated that the contractor will require around 29 personnel whilst Oresome will have between 2 – 4 people on site (Site Manager and Site admin permanently, Environmental manager as required and geological/grade control management as required).

17 RECOVERY METHODS

The Mineral Reserves comprises only the DSB component of the Mineral Resource.

This direct shipped product by definition does not require additional recovery – all refining and recovery is done by the purchaser of the product.

The project does not have any requirements for energy, water and process material except for those nominal requirements to support the direct material excavation operations.

18 PROJECT INFRASTRUCTURE

The project requires only minor infrastructure to support the basic mining operations.

This includes small office facilities, machine workshop, fuel storage and messing facilities.

The biggest investment for the project is for the haul road from the mine to the Hey Point terminal.

19 MARKET STUDIES AND CONTRACTS

Market studies have been completed by CM Group and provided to IMC Mining.

IMC did not independently review the market studies.

The pricing has been based on selling the product to refineries in China.

CM Group prepared an Independent Bauxite price assessment specifically for the Urquhart Bauxite Project.

The primary market for seaborne traded bauxite, including the Urquhart Bauxite Project, is Chinese Alumina companies in the Shandong province. Bauxite is currently exported to China with the largest exporter being Australia (primarily Rio Tinto) and West Africa (primarily Guinea) the second largest exporter. As shipping costs are a

potentially major variable cost, shipping costs and distance from a producer to customers influence the competitiveness of suppliers.

CM Group forecast the US\$ CFR price for Urquhart Bauxite product.

The price for DSB at base specification as provided to IMC for the PFS is summarised in Table 19-1.

Table 19-1 - DSB Low Temp Price Forecats

Price Forecast (US\$/dmt CFR Shandong)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Metallica LT	39.5	39.4	40.3	43.4	41.0	43.4	43.4	43.4	43.4	43.4	44.2

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

The project does not require an Environmental Impact Statement and will operate under an Environmental Management Plan (EMP).

A buffer zone of 50m has been allowed between the mine and the edge of the tenement to ensure no encroachment on vine thickets or other sensitive areas.

Epic Environmental completed the EMP in January 2018 in a report titled “Urquhart Bauxite Project Environmental Management Plan January 2018”.

21 CAPITAL AND OPERATING COSTS

21.1 Mine Production Schedule

The mine production schedule has been based on ramping up to 1.5Mtpa production over the first two years of operations.

Operations are undertaken for only 9 months of the year.

The schedule has been based on operations shutting down in Jan/Feb/Mar. It is most likely that in practice the operations will shut down from around mid-December until mid-March, however this will depend on the onset of the wet season coupled with the status of port stockpiles.

21.2 Scheduling Methodology

It has been assumed that waste stripping will commence in April 2019.

Some bauxite will be stockpiled during the initial month of waste stripping – this is not scheduled as saleable bauxite as it will be used to build up the stockpiles.

It has been assumed that 25kt will be stockpiled during the pre-production stage.

The schedule targets have been developed by first scheduling the ore feed – this provides the minimum quantity of overburden to be removed in order to meet the ore target (which fluctuates depending on the strip ratio in that area) – a waste schedule was then developed such that the cumulative waste mined is always greater than the minimum cumulative waste required to uncover ore – this process sought to smooth out waste mining as it is not practical to have a fluctuating mining fleet demand.

21.3 Scheduled Quantities

Scheduling has been carried out as follows:

- This scenario targets only material that has been classified as Proven and Probable Ore Reserves.
- Mining is only undertaken in Area A.

The schedule is best summarised in graphical format.

Figure 21-1 illustrates how the waste mining rate was determined. The bottom axis shows each month of mining, whilst the increasing curves show the minimum cumulative waste required to be moved to uncover ore, the red line shows the scheduled cumulative waste (which must always be greater than or equal to the

required waste). The Pre-Strip amount is the difference between the two which illustrates how many tonnes of waste have been mined in advance.

Generally, the pre-strip amount bounces in the range 100kt – 200kt – however at the back of the mine life the pre-strip increase to 700kt – 800kt – this is to allow for the higher stripping ratio toward the end of the mine life.

An alternate to the higher pre-strip in the latter years would be to campaign mine with a larger fleet for periods of time – or alternately implement a night shift waste mining operation for key periods to effectively double the production capacity.

The ore mining schedule is illustrated in Figure 21-2.

The ore production ceases for three months each year and ramps up over the first two years to reach the full production rate of 1.5Mt(dry) DSO Bauxite per annum.

This ramp up rate is primarily driven by port access and port throughput constraints.

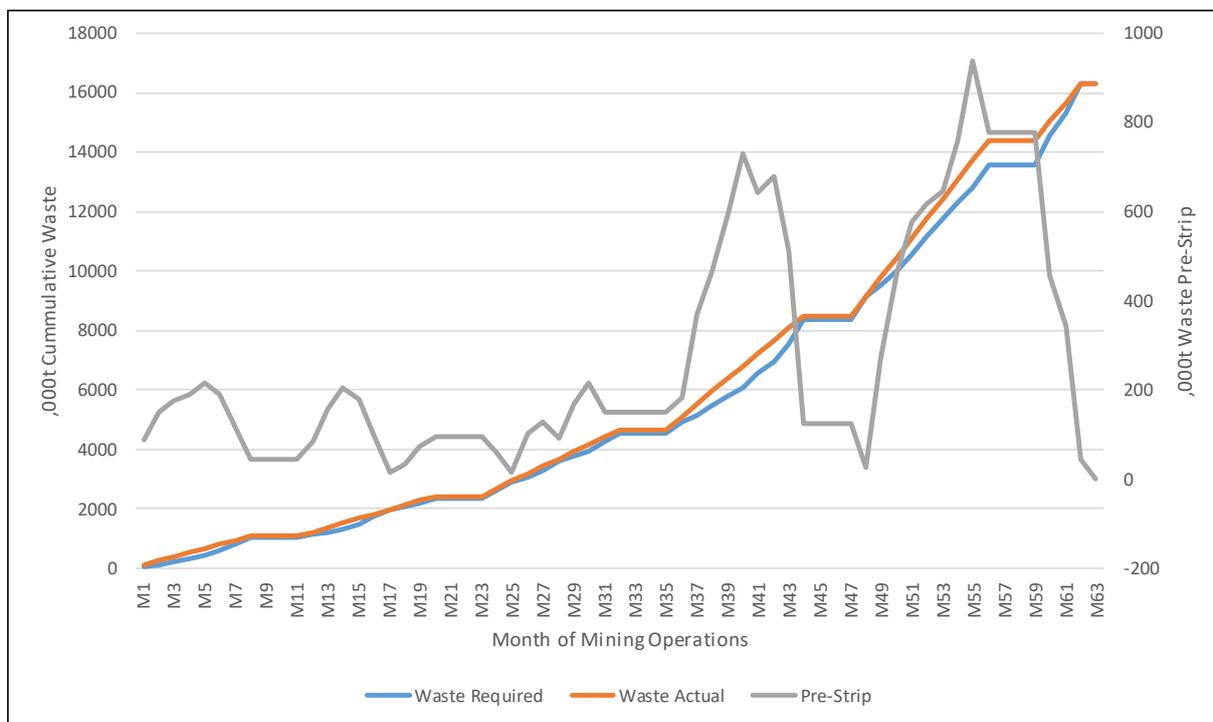


Figure 21-1 - Waste Mining Derivation

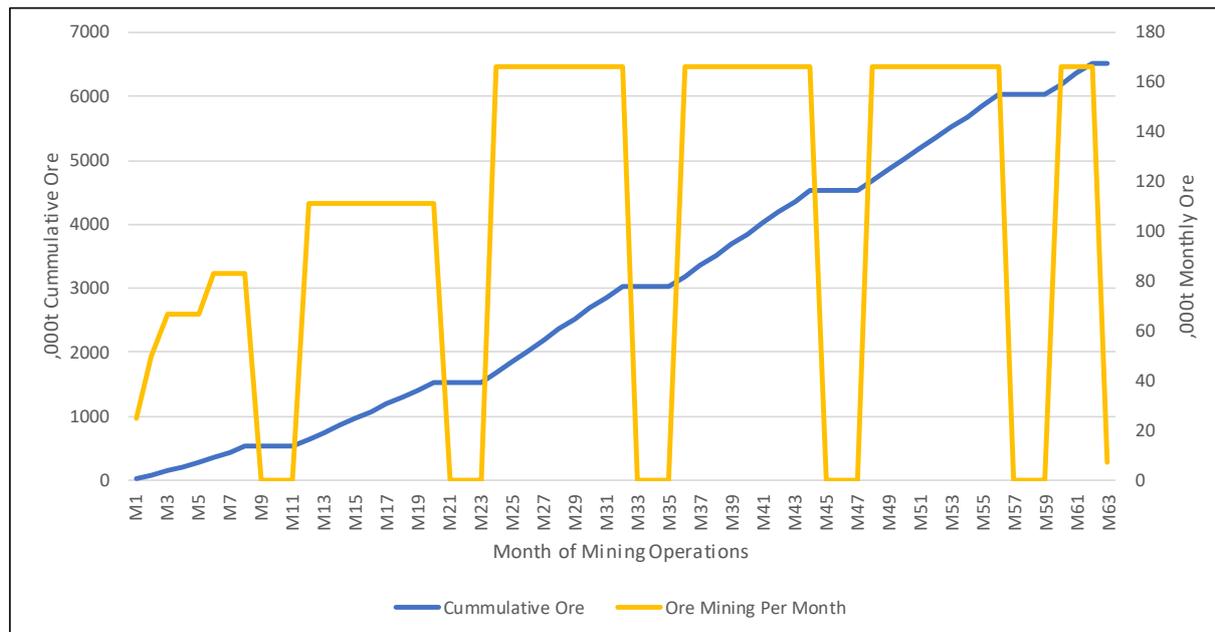


Figure 21-2 - Ore Mining Rates

For ease of presentation, Table 21-1 presents the schedule with the monthly schedule periods consolidated up to years.

The Ore mined in this schedule represents the Mineral Reserve.

Table 21-1 - Schedule Data

		Total/Avg	2019	2020	2021	2022	2023	2024
Waste Moisture	%	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Waste Mined	dry kt	16,332	1,230	1,450	2,425	4,052	5,871	1,305
Waste Mined	wet kt	17,102	1,288	1,518	2,539	4,243	6,147	1,366
Ore Mined	dry kt	6,532	636	1,056	1,500	1,500	1,500	341
Ore Mined	wet kt	7,100	691	1,147	1,630	1,630	1,630	370
Ore Moisture	%	8.0	8.0	8.0	8.0	8.0	8.0	8.0
THA	%	40.6	42.6	43.3	41.9	37.9	41.1	31.9
Low Temp RSi	%	5.7	5.2	5.1	5.6	6.1	5.9	6.5
Al₂O₃	%	52.7	53.6	54.2	53.5	52.0	51.7	50.3
SiO₂	%	13.3	12.1	11.5	12.6	14.4	14.6	14.9
		Total/Avg	2019	2020	2021	2022	2023	2024
Waste Moisture	%	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Waste Mined	dry kt	16,332	1,230	1,450	2,425	4,052	5,871	1,305

21.4 Mine Development Plans

The schedule targets the central part of Area A first – mining north to south and east to west, then the northern part of Area A mining south to north before completing the southern part of Area A mining north to south.

The development sequence is presented for each quarter of mining in Figure 21-3.

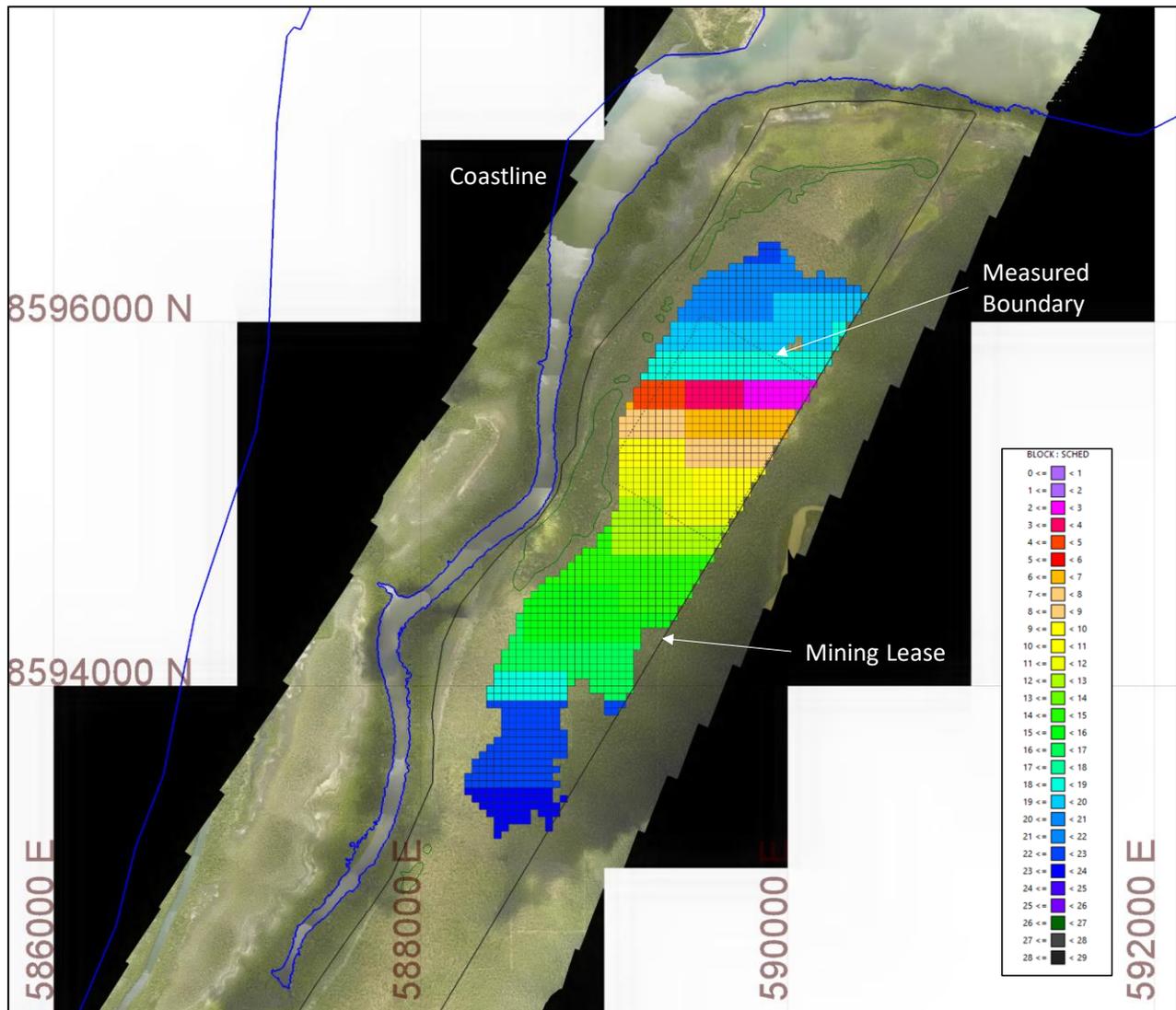


Figure 21-3 - Quarterly Mining Development

21.5 Mine Capital Costs

The mine capital costs have been estimated by Oresome and reviewed by IMC.

The capital costs are very small on this project for a number of reasons, including:

- The haul road from the mine to Hey Point is to be constructed by the contractor – the cost of this haul road has been partly taken up in the pre-production/mobilisation charges of the contractor with the remainder being amortised into the contractors operating costs;
- The facilities required on site are minimal, with the majority being taken up in the contractor rates;
- The port facilities have no capital cost to Oresome as they are provided by GCR on a user fee basis;
- The bauxite is to be direct shipped so no processing is required on site until screening commences in the later years – screening will be undertaken on a contract per tonne basis so will only require minor capital for mobilisation.

- All mining operations are undertaken on a contract mining basis.

Almost all capital costs have been amortised into the unit mining cost rate.

The assumed costs are:

• Mobilisation	\$1,048,374
• Light Vehicle	\$60,000
• ATV	\$12,500
• TLO Payment	\$125,000
• IT	\$10,000
• Drilling and Evaluation	\$250,000
• Environmental Bond	<u>\$150,000</u>
	\$2,187,221

21.6 Mine Operating Costs

As outlined above, with the exception of contractor management and grade control management, all operations at the mine will be undertaken by a mining contractor.

IMC have not developed a zero-based cost model for this project to validate the costs provided by the mining contractor. This approach is supported by the following:

- This study is at a pre-feasibility study level – for a feasibility study level work program, IMC would complete a parallel pricing estimate and then compare that estimate with contractor prices to assess the risk profile of the contract rates.
- The contractor has been appointed with an executed contract – this gives a higher level of confidence in the pricing provided.

Notwithstanding the above, IMC note that this report targets a $\pm 25\%$ level of accuracy – this should be considered when reviewing the operating and capital cost forecasts (noting that much of the capital costs are amortised into the operating costs).

Areas of concern to IMC regarding pricing are:

- Impact of daily commute on the ability to achieve target operating hours (ferry from Weipa to Hey Point and then 16 km from Hey point to the mining operations);
- Fuel cost is the responsibility of Oresome and has been based on LCR estimated fuel burn;
- Ability to construct the 16km haul road within the estimated budget and time allocated;
- If the haul road is constructed in a relatively minimalist way, how will this impact the ongoing maintenance costs on the haul road and will the contractor try to pass any increased costs onto Oresome;

- The haul road is intended for dry season operations only – what will be the impact if operations are required in the wet season;
- The grade control requirements are quite onerous and critical to the success of the operations – has the contractor adequately taken into account the impacts on productivity and production rates of the grade control requirements;
- The water table is above the ore horizon in much of the mining areas – has the contractor adequately taken into account the cost and productivity impacts of dewatering;
- Has the contractor adequately taken into account the impact of weather, particularly toward the end of the year when the wet season sets in and the start up of operations after the wet.

21.7 Operating Times

The costing has been based on operations being undertaken 9 months of the year, 12 hours per day on a 10 on 4 day off roster.

The staff will have a substantial daily commute from Weipa through Hey point to get to site. This time is part of the 12 hour shift – which means that effective production time will be 12 hours less the two way commute time from Weipa.

21.8 Contractor Unit Costs/Port Charges/Other Charges

The mining costs used for the financial analysis are summarised in Table 21-2.

IMC have reviewed the contractor pricing and are of the view that the contractor has properly understood the scope of the operations, has made a number of site visits to satisfy themselves of the operating conditions and has sufficient experience to undertake the mining operations for the price quoted.

The mine operating costs vary for annual production rates (either of ore or waste as appropriate) of below 500kt, 500kt – 1Mt and above 1Mt as shown in the table.

Table 21-2 - Mining and FOB Costs

Production Range (Ore or Waste)	Dry tonnes per annum	≤500kt	≤750kt	≤1Mt	≤1.25Mt	>1.25Mt
Mining O/B	A\$/t	1.30	1.06	0.98	0.97	0.97
Mining and Haul Bauxite	A\$/t	7.31	6.61	5.15	4.98	4.89
Fuel (LCR Estimate)	A\$/t	1.42	1.42	1.42	1.42	1.42
Throughput Independent						
Ferry and Accommodation	A\$/t	0.54				
Screening	A\$/t	0.98				
Transshipping	A\$/t	10.50				
Port Charges	A\$/t	0.80				

In addition to the unit mining costs, a state royalty of 10% has been applied and a 3% payment to traditional owners is allowed for on a free on board (FOB) revenue basis.

A marketing cost of \$0.45/t has been applied.

21.9 Organisation and Staffing

At nominal peak production, the contractor team has been assumed to include:

Project Manager	1
Operations Supervisor	1
WH&S Officer	1
Technical Support	1
Maintenance Fitter	3
Serviceman	2
Admin Officer	1
Operators – Mine	11
<u>Operators – Haulage</u>	<u>8</u>
Total	29

These numbers are subject to change and will depend on the final agreed production rate scenario which will impact build-up of personnel and peak personnel requirements.

Oresome will provide the SSE, site manager and administration manager full time on site. Other personnel will be provided as required – including grade control management.

22 ECONOMIC ANALYSIS

A relatively basic financial model has been utilised by IMC with inputs from CM Group and Oresome. The model is appropriate in the context of the UBx project being a simple dig and ship, low capital, mining operation.

The following summarises the key inputs to and outputs from the financial model.

22.1 Pricing

The forecast price realised for the Bauxite has been estimated by CM Group on the basis of schedule data provided by IMC as summarised in Table 19-1.

The realised price is based on CFR prices.

The cost of shipping has been deducted from the CFR prices to provide an FOB price for modelling. The forecast cost of shipping has been provided by Oresome as has the exchange rate.

The pricing was provided in a document titled “180813 Model inputs.pdf” dated 13th August 2018. The same document included the transshipping costs and the exchange rate forecasts. The exchange rate data provided to IMC is summarised in Table 22-2.

Table 22-1 - Shipping and Transshipping Costs

	Handymax vessels	Larger than Handymax
Shipping	US\$16/wet tonne	US\$11/wet tonne
Transshipping	US\$10.50/wet tonne	US\$11.25/wet tonne

Table 22-2 - Exchange Rate Forecast

Year	2018	2019	2020	2021	2022	2023	2024
AUD:USD	0.75	0.73	0.70	0.70	0.70	0.70	0.70

The transshipping costs reflect the best estimate at the time of compiling the report for the port charges.

The revenue forecast incorporating the base price from CM Group, the estimated shipping cost and the forecast exchange rate is summarised in Table 22-3.

Table 22-3 – Exchange Rate/Sea Freight and Bauxite Pricing Forecast

		2019	2020	2021	2022	2023	2024
Exchange Rate	AUD:USD	0.73	0.70	0.70	0.70	0.70	0.70
Ocean freight rate to China	US\$/wmt	16.00	16.00	11.00	11.00	11.00	11.00
Urquhart Bx (CFR)	US\$/t Baux	40.52	42.53	44.05	39.52	41.87	42.68

Apart from the pricing as outlined above, the other primary inputs to the financial analysis are:

- Exchange rate - a A\$:US\$ rate of 0.73 declining to 0.70 in January 2020;
- Contractor contract pricing and IMC material movement plan;
- transshipping estimate based on negotiations with GCR;
- royalties payable based on rates set by Qld State Government;

- The revenue and cost inputs are not adjusted for inflation, partly due to the relatively short project life.

The NPV has been estimated on an October 2018 basis.

The key outputs from the financial analysis are summarised in Table 22-4.

Table 22-4 – 100% Basis Financial Estimates

Item	Unit	Based on Mineral Reserve <i>Mining Proven & Probable Reserves in Area A</i>
Total Saleable Product	dry kt	6,532
Total Al₂O₃	%	52.7
Total SiO₂	%	13.3
AAI	%	40.6
RSi	%	5.7
Total Revenue	A\$m	389.4
EBITDA	A\$m	68.8
NPV¹⁰ Pre Tax	A\$m	47.3
NPV¹⁰ Post Tax	A\$m	33.7
Initial Capital	A\$m	2.2
Avg CFR Cost	A\$ dry t	49.08
Avg Received (CFR)	A\$ dry t	59.62
Payback	years	<2

22.1.1 Metallica 50% Basis

Metallica have accrued tax losses that can be applied specifically to their 50% portion of project earnings. Metallica have provided to IMC the quantum of tax losses that can be utilised such that IMC could calculate Metallica’s post tax cashflow and therefore a post-tax NPV for Metallica’s 50% share of the project. This is summarised in Table 22-5.

Table 22-5 – Metallica Basis - Financial Estimates

Item	Unit	Scenario 1 (Base Case) <i>Mining Proven & Probable Reserves in Area A</i>
NPV¹⁰ Pre Tax	A\$m	23.7
NPV¹⁰ Post Tax	A\$m	20.5

23 ADJACENT PROPERTIES

RTA Weipa Pty Ltd (RTA) have an adjacent mining lease (ML7024).

UBx are finalising terms for an access agreement to build a haulage road across the RTA ML.

24 OTHER RELEVANT DATA

24.1 Introduction

An important difference between this Technical Report and PFS report that underpins this Technical Report is the inclusion of Production Target material in the PFS.

In order to make this Technical Report understandable and not to be misleading in the context of data derived from the PFS, the QP is of the opinion that the Production Target material included in the PFS should be presented.

Under NI 43-101 Technical Reporting guidelines, there is limited scope for inclusion of information as to the economic benefit of material that is not classified as Proven and Probable Mineral Reserves in a PFS document. For this reason the potential economic benefit for the Production Target material has not been included in this report – however to provide some transparency, the tonnage of material that makes up the Production Target in the PFS is outlined below. The potential economic benefit of this material is provided in the PFS.

There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised.

As the PFS was completed in accordance with the guidelines of JORC and the Australian Stock Exchange (ASX) Listing Rules, there is scope for reporting of Production Targets, as summarised in the below FAQ document from the ASX (<https://www.asx.com.au/regulation/compliance/asx-mining-reporting-faqs.htm#types-of-pt-subject-to-ch5>).

24. What are reasonable grounds for a Production Target or forecast financial information derived from a Production Target?

It is the responsibility of the entity publishing a Production Target or forecast financial information derived from a Production Target to ensure that it has reasonable grounds for it.

Listing Rules 5.15 to 5.19 address the circumstances and disclosure obligations for reporting Production Targets and forecast financial information, depending on whether they are based on Ore Reserves, Mineral Resources, Exploration Targets and Qualifying Foreign Estimates. These Listing Rules:

- require, among other things, the disclosure of all material assumptions on which the Production Target is based, and a statement that the estimated Ore Reserves and/or Mineral Resources underpinning the Production Target have been prepared by a Competent Person or Persons in accordance with the requirements the JORC Code 2012;
- prohibit the disclosure of a Production Target that is based solely on an Exploration Target or solely or partly on Historical Estimates or Foreign Estimates (other than Qualifying Foreign Estimates) of mineralisation; and

- if a proportion of a Production Target is based partly on an exploration target or solely on Inferred Mineral Resources, require that the entity include a statement of the factors that lead it to believe that it has a reasonable basis for reporting a Production Target in that context.
- Even where disclosure of a Production Target or forecast financial information derived from a Production Target is made in accordance with these Listing Rules, for the reasons outlined in the answer to question 2 above, it must still be based on reasonable grounds existing as at the date of the disclosure or else it will be taken to be misleading under the Corporations Act.

Reasonable grounds extend not only to the mineralisation underpinning the Production Target or forecast financial information but also to any assumptions regarding the 'Modifying Factors' in Table 1 of the JORC Code.

What constitutes 'reasonable grounds' for a Production Target or forecast financial information derived from a Production Target must be judged according to the facts and circumstances of each case and the requirements of the Corporations Act. The following general observations may, however, be helpful:

Probable or Proved Ore Reserves (properly declared) will generally provide a reasonable basis for a Production Target or forecast financial information derived from a Production Target, given the level of geological knowledge and confidence and the consideration of the Modifying Factors they involve.

Indicated or Measured Mineral Resources (properly declared) may provide a reasonable basis for a Production Target or forecast financial information derived from a Production Target provided the entity has given sufficient consideration to the Modifying Factors in order to have reasonable grounds and it clearly outlines the material assumptions it has made in this regard.

Where an entity has Ore Reserves or Indicated or Measured Mineral Resources, it may have reasonable grounds for including some level of Inferred Mineral Resources or an Exploration Target in a Production Target or forecast financial information derived from a Production Target, subject to the following caveat in section 8.5 of ASX Guidance Note 31:

“Where a mining entity is reporting a production target that is based on a portion of inferred mineral resources and/or an exploration target in addition to ore reserves and/or measured and indicated mineral resources, the reporting entity must be satisfied that the respective proportions of inferred mineral resources and the exploration target are not the determining factors in project viability. In addition, the inferred mineral resources and exploration target should not feature as a significant proportion early in the mine plan.”

The proportion of Inferred Mineral Resources and Exploration Targets that may be added to the end of a mine plan depends on the maturity of the project. For example, a greater proportion may be justified for a producing mine with a history of converting Exploration Targets and Mineral Resources into Ore

Reserves, than an exploration entity that has Indicated Mineral Resources as the highest confidence Mineral Resource.

A Production Target or forecast financial information derived from a Production Target may only be based on an Inferred Mineral Resource alone if the entity complies with Listing Rule 5.16.6 and section 8.7 of ASX Guidance Note 31.

The general observations above assume, of course, that the relevant Ore Reserve, Mineral Resource or Exploration Target is a genuine one that would withstand scrutiny by a Competent Person's peers (see clause 11 of the JORC Code).

24.2 Production Target

The Scenario 2 and Scenario 3 life of mine schedules presented in the PFS have targeted the Measured, Indicated and Inferred Resources.

The mining is sequenced in such a way that the Proven and Probable Ore Reserves form the majority of production for the initial years of operation, whilst the scheduled material sourced from Inferred Resources (which together with the Mineral Reserves makes up the Production Target for scenario 2 and scenario 3) is at the end of the mine operations.

The modified Inferred Mineral Resources and screened material included in the Production Target are not a determining factor in the project viability but should be considered as upside.

IMC are of the opinion that it is reasonable to include the modified Inferred Resources in the Production Target as the Bauxite deposits in the area are well understood, are relatively continuous and the extents of the deposit have been well defined by drilling.

The re-classification of zones of Inferred Resource to Measured and Indicated Mineral Resources (at Area B primarily) requires more dense drilling and quality test work which will be funded out of operating cash flow whilst mining is underway in the Proven and Probable Mineral Reserves at Area A.

The Inferred Mineral resources do not feature as a significant proportion of the mine plan in the early stages of operations and represent only around 25% of the total scheduled material.

In all instances, the modifying factors have been applied in the same manner to the Production Target as have been applied to the Mineral Reserve's.

The Production Target that includes the Inferred Resource material from Area A and Area B is summarised in Table 24-1.

The material flagged as "Other" in Table 24-1 is the Inferred Resource material with modifying factors applied (ie loss/dilution and economic criteria).

Table 24-1 - Production Target – Scenario 2

	Area	Bauxite Low Temp DSO	Al ₂ O ₃	SiO ₂	THA	Low Temp RSi
		Dry kt	%	%	%	%
Proven	A	2,964	53.7	12.3	42.3	5.4
Probable	A	3,568	51.9	14.2	39.1	5.9
Sub Total – Ore Reserve	A	6,532	52.7	13.3	40.6	5.7
Other*	A	134	51.8	13.2	37.2	6.0
Total Production Target Area A - Excluding Screening	A	6,666	52.7	13.3	40.5	5.7
Other*	B	2,007	47.9	19.0	34.6	7.3
Production Target	A+B	8,672	51.6	14.7	39.1	6.1

* Other is the Inferred Resource material with modifying factors applied (ie loss/dilution and economic criteria)

In addition to the Mineral Reserve/Production Target material that has been derived from Measured, Indicated and Inferred Resources with appropriate modifying factors applied, additional bauxite is potentially going to be sourced through selective screening of bauxite that is below the cut-off grade (48% Al₂O₃ In-Situ) but with an estimated screened grade of ≥43% Al₂O₃.

IMC are of the opinion that it is reasonable to include screened product as a Production Target at the end of the mining operations. A nearby operation successfully screens bauxite and wet screen test work has been carried out on the Urquhart material. A conservative approach has been taken with the assumptions regarding screening.

The screened product does not feature as a proportion of the mine plan in the early stages of operations.

The DSB characteristics of this material are of a **lower confidence** than the material outlined in Table 15-3 and Table 24-1 as the test work is quite limited.

The scenario three material is summarised in Table 24-2, which includes the potential screened product.

The modifying factors applied to the Resource to estimate the Production Targets are presented in Section 15.2.

Table 24-2 - Production Target – Scenario 3

	Area	Bauxite Low Temp DSO	Al ₂ O ₃	SiO ₂	THA	Low Temp RSi
		Dry kt	%	%	%	%
Proven	A	2,964	53.7	12.3	42.3	5.4
Probable	A	3,568	51.9	14.2	39.1	5.9
Sub Total – Ore Reserve	A	6,532	52.7	13.3	40.6	5.7
Other*	A	134	51.8	13.2	37.2	6.0
Total Production Target Area A - Excluding Screening	A	6,666	52.7	13.3	40.5	5.7
Other*	B	2,007	47.9	19.0	34.6	7.3
Sub Total - Production Target Excluding Screening	A+B	8,672	51.6	14.7	39.1	6.1
Other – Screened Product**	A + B	1,624	48.9	19.3	32.3	6.1
Total Production Target with Screen Product	A + B	10,296	51.2	15.4	38.1	6.1

* Other is the Inferred Resource material with modifying factors applied (ie loss/dilution and economic criteria),

** Other – Screened Product is the potential screened product sourced from low grade material.

25 INTERPRETATION AND CONCLUSIONS

IMC updated the Urquhart PFS study in September 2018 for the extraction of direct shipped bauxite from the Urquhart Deposit.

The PFS was completed to a PFS standard as defined in JORC 2012 and is sufficient to enable a statement of Mineral Reserves for the project.

The required permits to enable mining to commence have been granted, with an additional final permit required to enable mined ore to be trucked to the Hey Point port facility.

The environmental studies which culminated in an EMP were completed prior to the granting of the Mining Lease in 2017.

The landowner/traditional owner negotiations have been completed.

An arrangement with Green Coast Resources Pty Ltd for the stockpiling of ore, barging to ships and loading the ship is well advanced with finalisation anticipated prior to mining commencing.

The project economics are robust, with a very short payback period meaning there is very little risk to Oresome in terms of paying back any monies invested in project start up.

The biggest risks in terms of payback are the timing risk of getting the project up and running, the port operations tonnage ramp up, bauxite pricing forecasts and the shipping costs.

The target commencement date of mining in April 2019 is realistic in the context of the simplicity of mining, availability of nearby infrastructure and the fact that all mining is by contractors which mitigates much of the risk – the risk primarily is in the timing of the final approval and port negotiations.

The upside potential of the project is quite limited – additional drilling is anticipated to raise the confidence in Area B from Inferred to Measured and Indicated which will support the scenario 2 schedule presented as a Production Target in section 24 of this Technical Report, whilst test work on screening options will potentially confirm that screening of some of the overburden material will be economic.

The upside potential regarding the product being suitable for a high temperature refinery is unknown at this time.

26 RECOMMENDATIONS

Oresome have budgeted additional exploration and test work in Area B in order to support the classification of the material as Measured and Indicated Resources.

This work should be prioritised to facilitate an update to the Technical Report that incorporates the financial benefits of Area B.

There is potential upside if the DSB can be sold to high temperature smelters. A marketing study should be undertaken to support the inclusion of the upside in future economic assessments.

27 REFERENCES

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