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RLC's Burracoppin Iron Project WA presentation to steel industry participants

A report on the Burracoppin Iron Project located in the south of Western Australia that was presented to participants in the steel industry on Thursday 17 November by Reedy Lagoon Corporation Limited's managing director is attached.

Authorised for release on behalf of the Company.

G Fethers
Company Secretary

Dated: 21 November 2022

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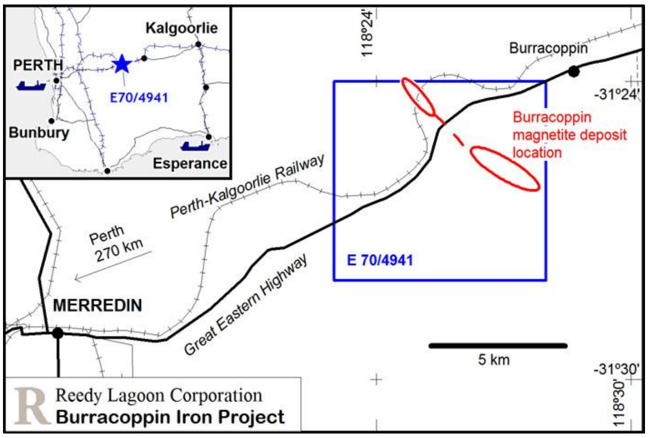
17 November 2022

Burracoppin Iron Project, Western Australia.

Burracoppin magnetite + HIsmelt = PIG IRON

Exploring ways to engage parties interested in planned production of pig iron - Burracoppin HPPI.

The Burracoppin Iron project plans to produce green high-purity pig iron ("Green HPPI") by mining the Burracoppin magnetite deposit to produce iron concentrate, growing biomass for processing to produce biochar, smelting the iron concentrate with the biochar using HIsmelt technology to produce Green HPPI for sale to steel makers in Australia and export.



Work is currently focused on establishing an Indicated Mineral Resource within the Burracoppin magnetite deposit (refer ASX release 12/02/2021 and 28/10/2022).

HIsmelt - the technology to produce Burracoppin Pig Iron

The project plans to process Burracoppin magnetite to produce Green High Purity Pig Iron using HIsmelt technology and biochar from locally grown biomass.

HIsmelt pig iron – typical analysis

	HIsmelt	Typical Blast Furnace
Carbon	4.4 +/- 0.15 %	4.50%
Silicon	< 0.01 %	0.5 +/- 0.3 %
Manganese	< 0.02 %	0.4 +/- 0.2 %
Phosphorus	0.02 +/- 0.01 %	0.09 +/- 0.02 %
Sulphur	0.03 % (0.01% #)	0.04 +/- 0.02 %

0.01% Sulphur after desulphurization

HIsmelt is new but established technology that produces High Purity Pig Iron ("HPPI"). The HIsmelt technology is a significant step forward in clean technology for iron making. It eliminates sinter and pellet plants (eliminating emissions of particulates, dioxins) and it eliminates coke ovens (eliminating emissions of benzene, toluenes).

Research has identified that the HIsmelt technology could use biochar to smelt the coarse grained Burracoppin magnetite concentrate to produce HPPI with zero net emissions of CO_2 (refer to ASX release 20/08/2020 and the introduction section of the report: "Application of HIsmelt Technology to the Burracoppin Magnetite Project and its Potential for Green Pig Iron Production in WA" appended).

Project economics are enhanced by using Burracoppin magnetite concentrate for feed to a HIsmelt smelter to produce High Purity Pig Iron for sale into the steel making market (foundries and electric steelmakers). The full benefits of the higher grade and quality of the Burracoppin concentrate are captured in the pig iron production stage rather than mostly lost when sold into the iron ore market.

Demand for HPPI is predicted to increase with the increase in the use of Electric Arc Furnaces ("EAF"). EAFs melt either Direct Reduction Iron pellets ("DRI") and or scrap steel. Scrap steel recovered in developed countries is mostly contaminated with impurities such as copper. Copper effects the strength of steel and therefore cleaner sources of iron need to be added to the scrap steel to dilute the level of copper. To produce high-strength steel using electric furnaces, up to 30% of the scrap must be replaced with "virgin iron units" sourced from ore-based units such as DRI or pig iron. Pig iron is preferred to DRI by electric steel makers because of its lower levels of impurities.

<u>The Burracoppin Magnetite Deposit.</u>

LOCATION	• Half way between Perth and Kalgoorlie near the town of Burracoppin • On the Great Eastern Highway, east of Merredin • Adjacent to the Trans-Australian Railway – providing heavy-haul goods service and access to ports
MINERALISATION	• Multiple bands of disseminated to semi-massive magnetite interspersed with barren migmatite bands (rocks comprising a mixture of granite and older rock which have been partially melted and recrystalised)

BENEFICIATION
 	
INDICATIVE ONLY
 	
Based on results from early testing
	• Magnetite liberated at coarse grind size
	• Recovered magnetic fraction (concentrate) at minus 150 micron :
	  ○ Fe above 65%
	  ○ Si below 5%
	  ○ Low alumina, phosphorous and sulphur

A recent study by CSIRO using advanced modelling of the magnetic field associated with the deposit is being used to guide the Company's planned drilling to establish the presence of sufficient magnetite to enable 1 Mtpa pig iron production (refer ASX release 29/04/2022).

Metallurgical testwork conducted on core samples from 3 holes drilled into the Burracoppin magnetite deposit has identified mineralisation well suited to HIsmelt. The testwork to date indicates the Burracoppin mineralisation can produce an iron concentrate of at least 65% Fe and low impurities at a grind size of 80% passing 150 micron (refer ASX releases: 18/01/2013 and 17/11/2014).

Further drilling and metallurgical testwork is planned to establish Indicated Resources which, if achieved, will enable financials for the mining and production of iron concentrate for the smelter to be estimated.

H & S Consultants is assisting with planning the drilling and metallurgical work (refer ASX release 12/02/2021). A drill program planned prior to receiving the results from the CSIRO study has been updated to incorporate testing the deposit geometry interpreted by the CSIRO study.

Drilling planned to establish a Mineral Resource.

7 core holes (2,455 metres) are planned to test the CSIRO MagResource model ("Initial holes") and additional core holes will be determined and drilled following inspection of core from the Initial holes.

The drilling is focused in the region of the 3 existing holes located towards the southeastern end of the deposit, which provided the samples for the metallurgical work completed to date (drill holes BU12DD001, BU12DD002 and BU12DD003 drilled in 2012).

The planned drilling is designed to accommodate flexibility to allow testing two alternative mineralisation models. One model, based on extrapolations of geological data recovered from the 2012 drilling, is a shallow southwest dipping set of tabular bodies (refer ASX release 12/02/2021). An alternative model, based on the CSIRO's MagResource method, is of steeply northeast dipping bodies (refer ASX release 29/04/2022). The initial drilling incorporates testing the MagResource method.

The program comprises:

Proposed hole	Planned metres	
PROP-I3	390	Scissor hole to BU12DD002 (refer image of Section I in figure 3)
PROP-C3	320	Scissor hole to BU12DD001 & 3 (refer image of Section C in figure 2)
PROP-G2w	400	Tests region between the 3 existing holes; Alternative for PROP-G2e
PROP-G2e	435	Tests region between the 3 existing holes; Alternative for PROP-G2w
PROP-F2	340	Tests region between the 3 existing holes
PROP-E4	245	Tests region between the 3 existing holes
PROP-E5	325	Tests region between the 3 existing holes
	2,455	
Holes listed below will be considered following results from holes above.		
PROP-A		Tests along strike to northwest of the 3 existing holes
PROP-B		Tests along strike to northwest of the 3 existing holes
PROP-C		Alternative to PROP-C3
PROP-D		Alternative to PROP-E4
PROP-E		Alternative to PROP-E5
PROP-G		Alternative to PROP-G2w
PROP-H		Tests region SW from BU12DD002 and the model of shallow southwest dipping mineralisation
PROP-I		Tests region NE from BU12DD002 and the model of shallow southwest dipping mineralisation
PROP-J		Tests along strike to southeast of the 3 existing holes
PROP-K		Tests along strike to southeast of the 3 existing holes

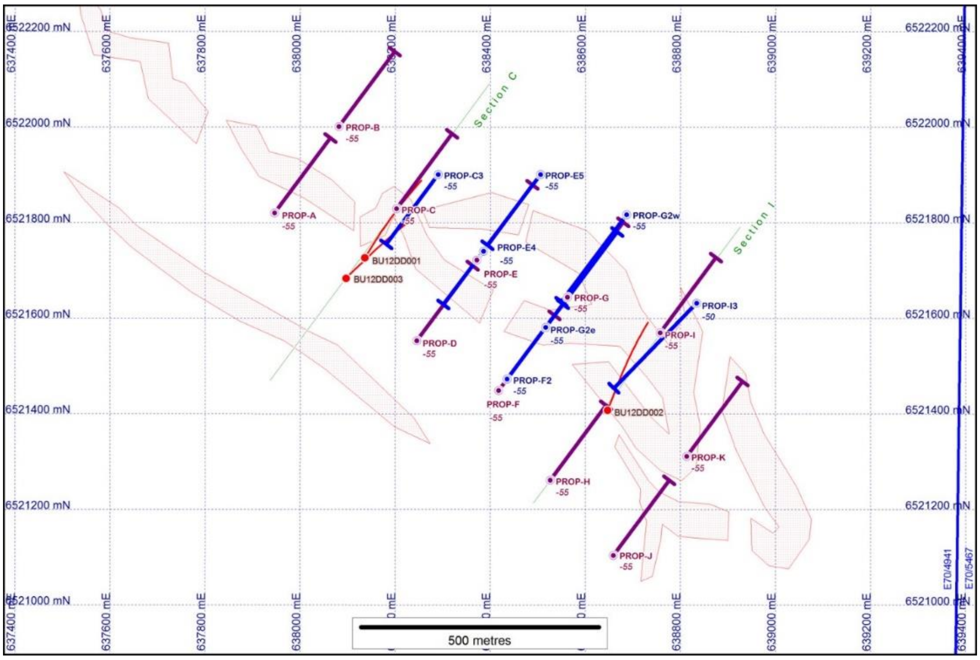


Figure 1. Map of CSIRO's MagResource modelled deposit outline at 80 metres below surface. Existing drill holes: BU12DD001, 2 and 3 are shown in red, with planned Initial drill holes (blue) and holes that were planned prior to the MagResource model (purple).

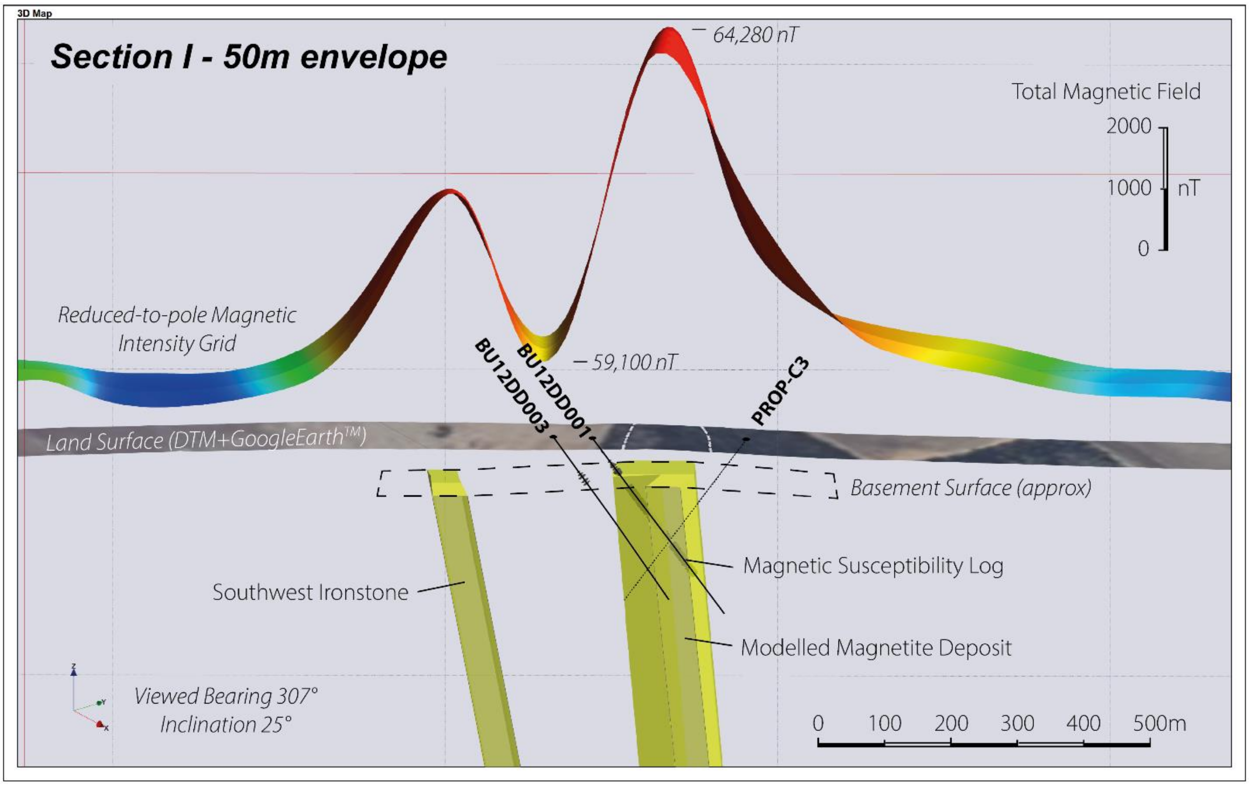


Figure 2. Section C. Existing drill holes are shown with BU12DD001 piercing CSIRO's MagResource modelled deposit while BU12DD003 mostly fails to intersect (refer also to figures 1 & 6). Planned drill hole PROP-C3 is shown.

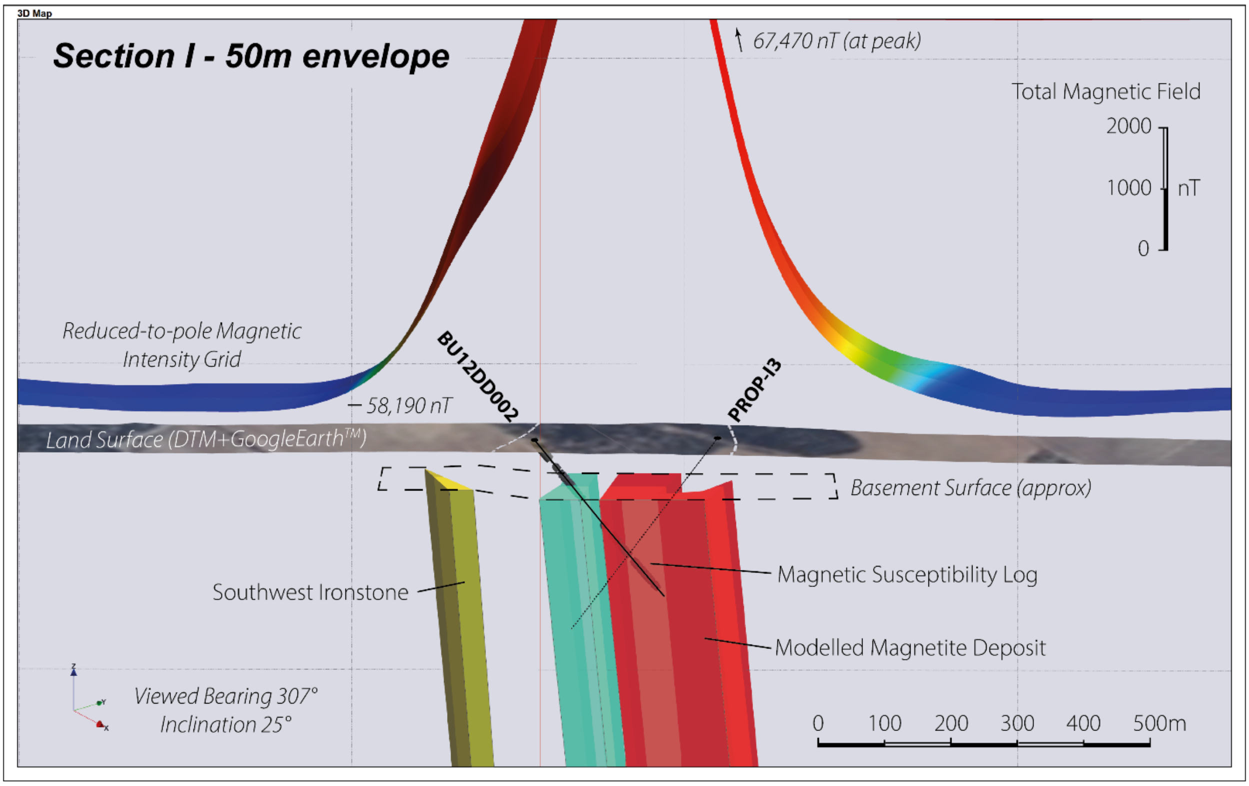


Figure 3. Section I. Existing drill hole BU12DD002 is shown piercing CSIRO's MagResource modelled deposit. Planned drill hole PROP-I3 is shown (refer also to figure 1).

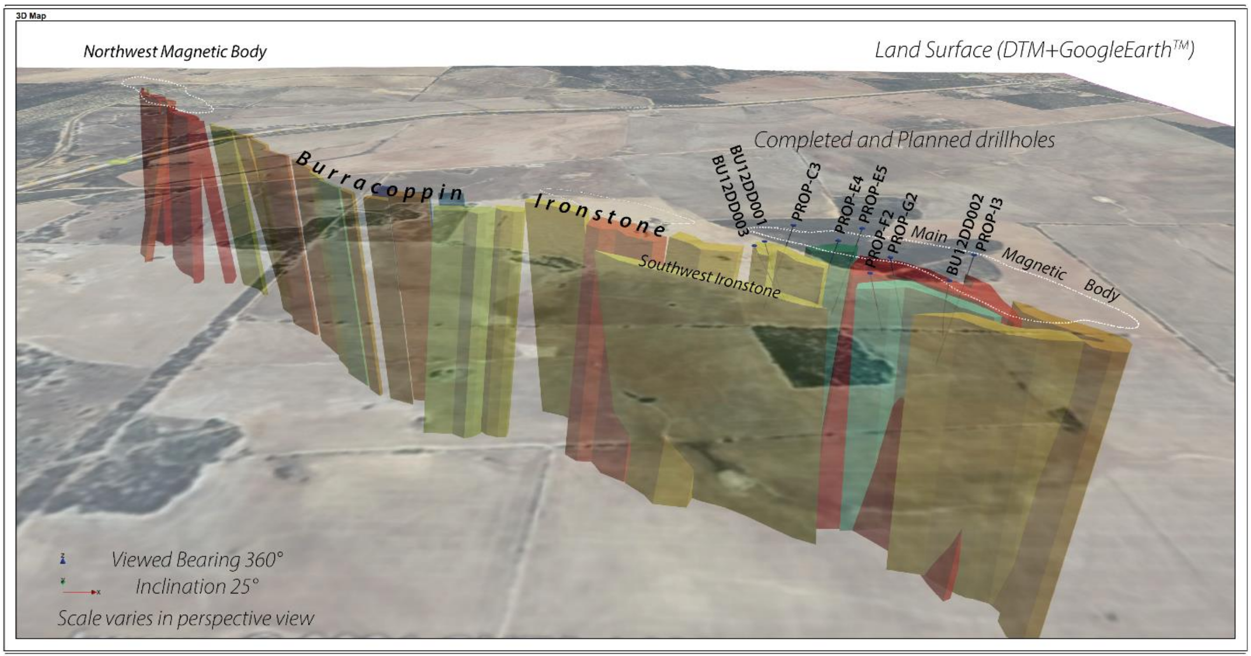


Figure 4. CSIRO's MagResource model of the Burracoppin magnetite deposit shown beneath land surface imaged from GoogleEarth. Existing and selected planned drill holes are shown. Refer also to figure 5 for plan view.

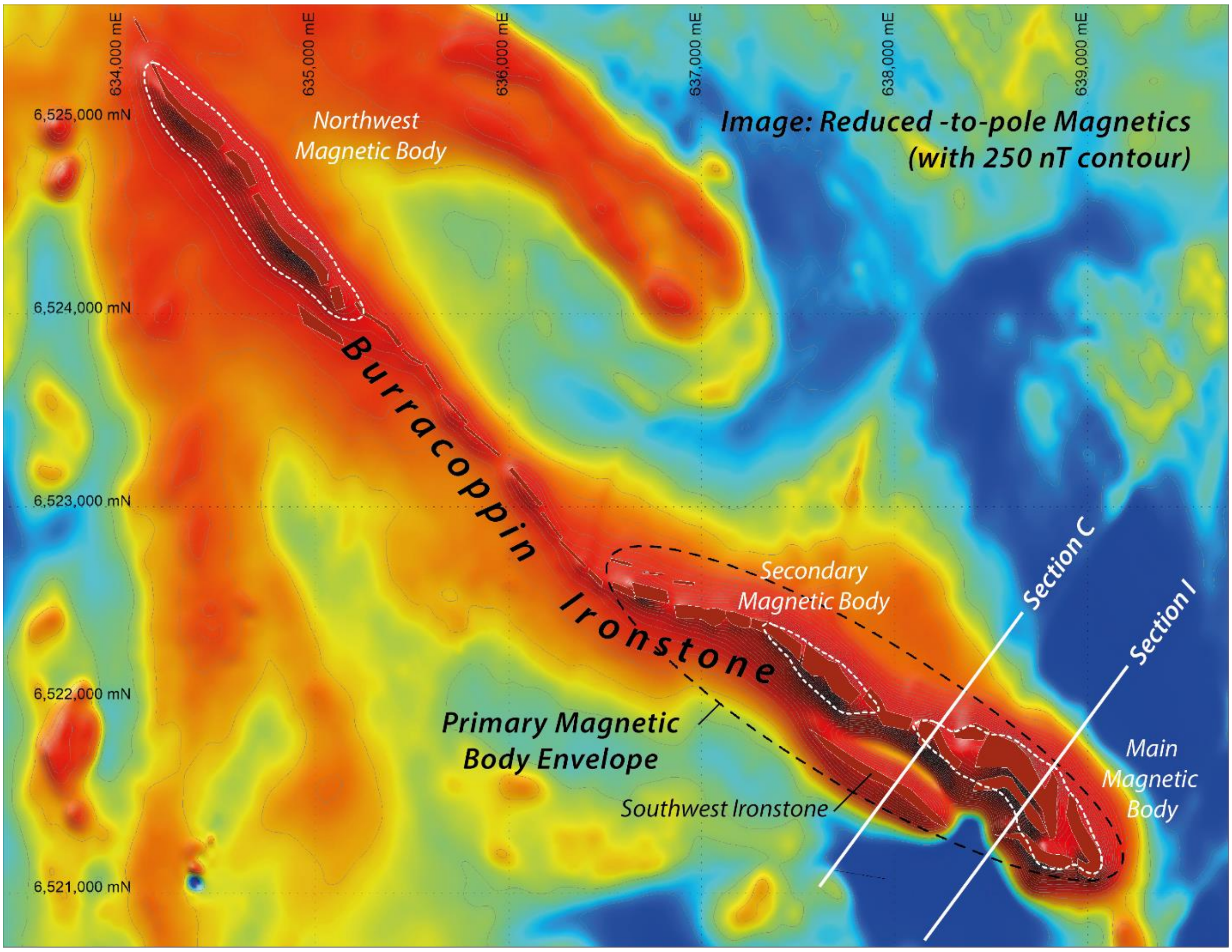


Figure 5. CSIRO's MagResource model of the Burracoppin magnetite deposit in plan view. Section C (BU12DD001 & 3, see figure 2) and Section I (BU12DD002, see figure 3) are shown.

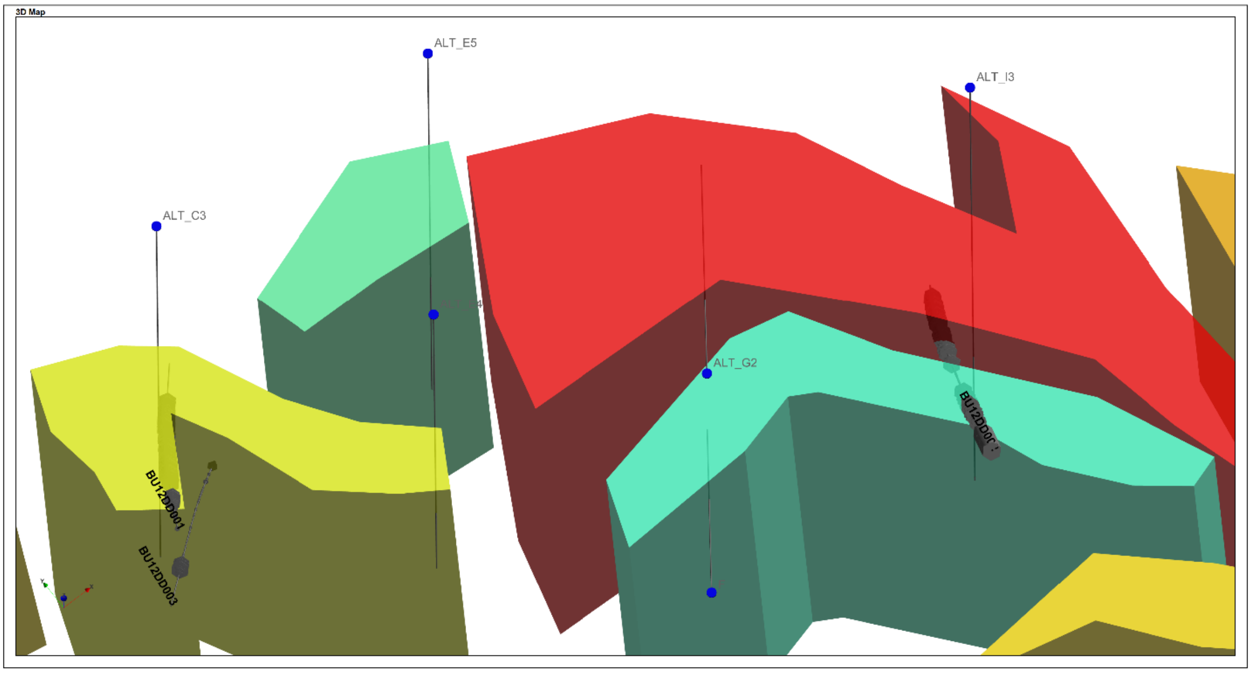


Figure 6. Detailed excerpt from the CSIRO's MagResource model showing the region between the existing drill holes (BU12DD001 & 3) and BU12DD002 (unlabeled, located towards RHS and scissored by ALT_I3). Note the drill paths for BU12DD001 (which intersected significant magnetite) and BU12DD003 (which did not intersect significant magnetite).

Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Geof Fethers who is a member of the Australian Institute of Mining and Metallurgy (AusIMM). Geof Fethers is a director of the Company and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). Geof Fethers consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Where Exploration Results have been reported in earlier RLC ASX releases referenced in this report, those releases are available to view on the INVESTORS page of reedylagoon.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in those earlier releases. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Appendix – 10 pages following.
Introduction extracted from:
"Application of HIsmelt Technology to the Burracoppin Magnetite Project and its Potential for Green Pig Iron Production in WA".
by Dinsdale Consultants, August 2020.

Dinsdale Consultants

Desk-Top Report

Application of HIsmelt Technology

to the Burracoppin Magnetite Project and

its Potential for "Green" Pig Iron Production in WA

for

Reedy Lagoon Corporation Ltd

Rev. 0

ACKNOWLEDGEMENT AND DISCLAIMER

USE OF THIS REPORT

This report (the “Report”) was prepared for Reedy Lagoon Corporation (“RLC”) (the “Client”) by Dinsdale Consultants Pty Ltd ("Dinsdale") pursuant to the contract agreement with the Client of Dinsdale’s Proposal dated 12 July 2020 (the “Agreement”).

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EXECUTIVE SUMMARY

For some years Reedy Lagoon Corporation ("RLC") has been planning the development of its Burracoppin Magnetite Project in Western Australia, with a view to the production and export of magnetite concentrate on the international market.

However, largely as a consequence of the lengthy rail distances involved and the volatility of the iron ore prices, RLC has not yet been able to achieve development of the resource.

In discussions with Dinsdale Consultants Ltd ("Dinsdale") it has become apparent that there may be an avenue for development of the project, with the recent commercialisation of the HIsmelt technology, for the production of high-quality Pig Iron for export as a valuable steelmaking feed material.

HIsmelt has undergone a long gestation, starting with Rio Tinto's initial development of the technology in Kwinana, WA. However, the technology has only recently become commercially available since the successful construction and operation of a plant incorporating an improved version of the technology at the facilities of Shandong Molong Petroleum Machinery Co Ltd, China ("Molong"), the current owner of the HIsmelt technology.

Following the current successful operation of the plant in China, Molong is now seeking to license the technology outside of China and has appointed Smelt Tech Consulting Pty Ltd, represented by Mr. Neil Goodman, to lead that effort.

Mr Goodman has joined with Dinsdale Consultants Pty Ltd ("Dinsdale") represented by Mr Jim Cribbes, to assist in that commercialisation program, particularly in Australasia.

At the request of RLC, Dinsdale has prepared this Desk-Top Report to examine the potential for HIsmelt to provide a new and more economically attractive avenue to the commercialisation of the Burracoppin project.

Two separate configurations for the HIsmelt process have been considered. Firstly, it has been assumed that the HIsmelt plant will use suitable coal, likely imported from Queensland, as the reductant for the Pig Iron production. This is similar to the configuration of the existing plant at Molong.

Secondly, an alternate net-zero carbon emissions configuration has been considered, using locally grown biomass as the reductant for the production of a "green" Pig Iron which has the potential to command a premium price in the export market. This concept has been trialled successfully at a pilot-plant scale in Europe and will be the subject of additional testing during the Project development. HIsmelt has the advantage that, unlike in blast furnace ironmaking, the introduction of biomass char as the reductant does not require significant changes to the operation of the process, and the biomass char can be used in powdered form rather than mechanically compressed briquettes.

This initiative also potentially provides a pathway to the future production of “Green Steel” in Western Australia, as part of a future development concept. This pathway offers a net-zero carbon emissions solution to produce 2 million tonnes per year of steel that could generate approximately 2,000 skilled jobs in the metro and regional areas of WA.

Dinsdale has undertaken this very preliminary desk-top analysis of the HIsmelt concept for the Burracoppin situation. Relying significantly on work already completed some time ago by RLC and its consultants, who have previously considered the production and export of magnetite concentrate, Dinsdale has undertaken a fresh look at the potential to optimise the steps to produce magnetite concentrate suitable for feed to a HIsmelt plant.

It should be noted that HIsmelt is capable of using a much coarser size structure than standard magnetite concentrate, thereby saving in overall grinding power consumption. Furthermore, in the HIsmelt process the magnetite concentrate feed is injected directly into the reduction vessel without an oxidising step for sintering or pelletising, in which magnetite (Fe_3O_4) is converted to hematite (Fe_2O_3), as is required for blast furnace processing. This results in an approximately 10% overall decrease in energy consumption for HIsmelt in the reduction process with magnetite feed.

Dinsdale has also evaluated the economic benefits of using either Kwinana or Esperance ports. Given the shorter rail distance to Kwinana, it unsurprisingly indicates the rail costs to Kwinana will be significantly less. The infrastructure issues also tend to favour Kwinana with labour, electric power, water and natural gas generally available locally.

Dinsdale has identified two potential HIsmelt plant sites in the vicinity of the Kwinana port, and a third some distance away at Northam. So there can be a reasonable level of confidence that a suitable site can be acquired when RLC is in a position to do so.

Nonetheless, in this very early stage of the project, the potential of Esperance should not be excluded. Because of the extra costs involved, the economics of locating the HIsmelt plant at Esperance would be less attractive than Kwinana. The alternative for the use of locally-grown biomass char as the reductant would also favour Kwinana. However, in the event that unforeseen issues prevent the use of Kwinana, then Esperance may be a viable fall-back, albeit with a lower economic return.

Dinsdale has also done an estimate of the capital and operating costs of the venture, based on its extensive data base from other projects. For Kwinana, reasonably attractive financial margins, based on the production and export of 1.0 Mtpa Pig Iron produced from 1.6 Mtpa of magnetite concentrate, are estimated.

In the case of Esperance, the range of financial returns for the same production of Pig Iron reduce on a similar basis, when using coal as the reductant.

However, the estimates show the project to be very sensitive both to the US$/A$ exchange rate and the product pricing. This arises from the fact that the global Pig Iron prices are denominated in US$, while much of the project operating costs are incurred in A$. The project sensitivity to capital costs is much less. In this Report, the costs are presented in US$, with those costs incurred in A$ being converted at A$1 = US$ 0.70.

The returns are anticipated to be similar when using biomass char as the reductant but do not take into account any selling price premium which may become available in the future for net-zero carbon emissions Pig Iron.

Dinsdale also gave some thought to the co-production of magnetite concentrate. The preliminary analysis indicates that that while the magnetite concentrate prices are high, as they have been recently, the project would be attractive economically. However, at times when lower prices prevail the venture would not be viable.

In summary, Dinsdale is of the preliminary view that the application of HIsmelt to the Burracoppin situation for the production and sale of Pig Iron as an export product looks promising as an avenue to the creation of an economically attractive business proposition. The use of Biomass char as the reductant looks particularly attractive as a net-zero carbon emissions option for Pig Iron production, and may open the door to the eventual production of “Green Steel” in WA.

Net-zero emissions of carbon in the production of Pig Iron represents a critically important step towards a “Green Steel” future for WA.

However, it must be noted that this view is based on very preliminary information and that significant future work will be required to confirm these conclusions. In particular, the issues surrounding the local supply of the required quantities of biomass char require further, more detailed analysis.

CONTENTS

APPENDICES

TABLES

FIGURES

1. INTRODUCTION AND BACKGROUND

Reedy Lagoon Corporation ("RLC") has been planning the development of the Burracoppin Magnetite Project ("Project") since early in this decade.

The Project is located near the town of Burracoppin, on the Great Eastern Highway, east of Merredin in the Wheatbelt region of Western Australia. It also is situated approximately two kilometres from the Trans-Australian Railway between Kalgoorlie and Perth, which provides both heavy-haul goods service as well as daily passenger service to Perth on The Prospector train.

The magnetite occurrence at the Project site has been identified by airborne magnetic data, supplemented by a limited program of drilling. The potential for the Project to be developed is currently supported by two brief studies by Golder Associates/METS (Ref J850-RP-00-000-1) and Engenium (Ref 9396A-REP-0000-Z-001) both in 2014.

The Engenium report is based on a program of laboratory test work undertaken on magnetite ore samples produced by RLC's drilling campaign at the Burracoppin site. The laboratory work was conducted at the facilities of Bureau Veritas Laboratory in Canning Vale, Western Australia.

At that time, the only anticipated process route to commercialisation of the Project was seen to be through the production of magnetite concentrate for sale into the global export market. However, in the view of the author of this Report, Dinsdale Consultants Pty Ltd ("Dinsdale"), that may have now changed with the recent commercialisation of the HIsmelt technology for the production of Pig Iron in China. Magnetite concentrate is seen to be an ideal feed material for HIsmelt.

HIsmelt is a technology which was originally developed over many years of effort and expenditure by the mining company Rio Tinto, concluding in the construction of a commercial-scale operating HIsmelt plant in WA. However, in 2012 the plant and its technology were sold to the Shandong Molong Petroleum Machinery Company ("Molong") in China.

Molong have now rebuilt the plant, incorporating some process improvements, at its facility in China and it is now in Pig Iron production satisfactorily at name-plate rating on a sustained basis. Molong are now prepared to license the technology to parties outside of China.

Details of the HIsmelt technology, its history of development and its current status have been the subject of the two recent technical papers presented publicly by Mr. Neil Goodman at industry conferences.

These papers have been provided as Appendices to this Report as follows:

Appendix A - AISTech Conference, Pittsburgh, USA – May 2019 (refer page 43)

Appendix B - AusIMM Iron Ore 2019, Perth, Western Australia – July 2019 (refer page 53)

This Report examines, on a very preliminary basis, the potential for the development of the Project using the HIsmelt technology for the production of Pig Iron for sale as an export product.

Where it has deemed it appropriate, Dinsdale has used information contained in the abovementioned Golder Associates/METS and Engenium reports to inform its considerations for this Report.

In addition, this Report considers the potential for the Project to be undertaken in a net-zero carbon emissions configuration using locally grown and harvested biomass as the reductant for the Pig Iron production process in place of coal, which is the reductant normally employed.

This is a viable potential option which has already been tested successfully on a pilot-plant scale in Europe