

# **ASX:CXO ANNOUNCEMENT**

17 April 2019

# Finniss Definitive Feasibility Study and Maiden Ore Reserve

## Highlights

- Finniss Lithium Project (Project or Finniss) Definitive Feasibility Study (DFS) confirms that Core Lithium Ltd (Core) is well positioned to be the next lithium producer in Australia
- DFS focussed on the development of Ore Reserves within the first two orebodies at Finniss (Grants and BP33) over an initial 3.5 year period
- Mining high-grade Ore Reserves of 1.4% Li<sub>2</sub>O combined with exceptional spodumene metallurgy enable Core to produce high quality, coarse concentrate using simple gravity DMS processing
- Project comprises a low risk, open pit mining operation and DMS processing up to 180,000 tpa of high-quality lithium concentrate with robust margins
- Excellent DFS economics are reflected in the high Pre-Tax Nominal IRR of 80%, NPV of A\$114 million and free cash flows of A\$158 million from revenue of A\$501 million
- Low start-up capital costs of A\$73 million (including pre-production mining costs for Grants) and strong cash
  flows enable quick payback of 1.5 years and confirms Finniss as one of Australia's lowest capital intensity
  projects
- C1 FOB Operating Costs of US\$300/t concentrate (A\$429/t) generates a robust operating margin of more than US\$300/t on low case pricing assumptions
- Significant potential upside to economics remains through conversion of more Mineral Resources into Ore Reserves (including BP33) and through Core's ongoing exploration in the broader Finniss Project
- Further Project expansion and increase of Mineral Resource category confidence and integration of the nearby Mineral Resources including Carlton, Hang Gong, Booths-Lees and regional exploration planned in 2019
- Financing discussions advancing with debt markets and strategic financiers
- Over one third of Project Capex can be met with US\$20 million pre-payment (A\$29 million) commitment by Core's largest shareholder - and major Chinese lithium producer - Yahua Group
- Regulatory approvals, Offtake and Finance discussions progressing to support rapid construction timetable commencing 2H 2019 toward ramping up commercial production 1H 2020



Emerging Northern Territory lithium producer, Core Lithium Ltd (ASX: CXO) (**Core** or the **Company**) is pleased to announce the release of its Definitive Feasibility Study (**DFS**) for the Finniss Lithium Project, located near Darwin in the Northern Territory. The DFS confirms that Core is well positioned to be the next lithium producer in Australia.

### **Executive Summary**

Core has taken a major step forward in its goal toward becoming Australia's next lithium producer in producing high quality lithium spodumene concentrate through the mining and processing of high grade spodumene pegmatites located within one hour's drive of the capital city of Darwin and Darwin Port - Australia's closest port to Asia.

Mining high-grade Ore Reserves of 1.4% Li<sub>2</sub>O combined with exceptional spodumene metallurgy enable Core to produce high quality, coarse concentrate using gravity only DMS processing.

Core's development of the Finniss Lithium Project is initially based on the development of the Ore Reserves within the high-grade Grants and BP33 deposits as standard open pit mining operations and the construction of a simple 1Mtpa DMS process plant to produce up to 180,000 tpa of high-quality lithium concentrate with robust operating margins.

A modest Pre-Production or Start-Up Capex of \$73 million and strong cash flows enable quick capital payback of less than 1.5 years and confirms that the Finniss Lithium Project is one of Australia's lowest capital intensity lithium projects. Excellent Reserve Case DFS economics are further reflected in the high pre-tax nominal IRR of 80%, NPV of \$114 million and strong free cash flows of \$A158 million from revenue of A\$501 million. C1 Operating Costs of US\$300/t FOB (Free on Board) concentrate (A\$429/t) generates a robust operating margin of more than US\$300/t on low case pricing assumptions.

Mining of the high grade 1.4% Li<sub>2</sub>O Grants and BP33 open pits, when coupled with the relatively low initial capital cost, results in a project capable of delivering over A\$158 million in free cash generation over a period of three and a half years. This strong cash surplus to capital cost ratio of 2.2:1 generated from Grants and BP33 will ensure Core is well placed for a first-mover advantage in this exciting new lithium province and lays solid foundations for the building of a long-term lithium production hub.

The DFS focusses on the development of the Ore Reserves within the first two ore bodies at Grants and BP33 over an initial 3.5 year period, however, those Ore Reserves and the larger Finniss Lithium Project have significant upside to increase in scale and life through the addition of more resources and conversion to reserves.

Core has, through dedicated exploration, increased the aggregate Mineral Resource and Ore Reserves for the entire Finniss Lithium Project by over 400% since the start of 2018 and plans to add further Mineral Resources and Ore Reserves to extend the life and increase the strong positive life-of-mine cash flows of the Project. The larger Finniss Lithium Project area comprises 500km<sup>2</sup> of tenements covering the Bynoe Pegmatite Field comprising hundreds of pegmatites near Darwin in the Northern Territory.



The Finniss Lithium Project's close proximity to the Darwin Port and existing high-quality sealed road infrastructure provides access for daily road train movements to transport product to port. The Project also has other substantial infrastructure advantages, including being close to grid power, gas and rail infrastructure and being less than a 1-hour commute from the skills, trades, workshops and services in suburban Darwin.

### **Key DFS Outputs**

The DFS demonstrates compelling Project economics, with globally competitive costs that result in high operating margins and rapid capital payback. Key outputs include:

Technical Metrics	Reserve Case	Financial Metrics <sup>5</sup>	Reserve Case
Schedule Production 1	481,018t conc.	Commodity Prices <sup>2</sup>	<b>A\$981/t</b> US\$687/t
Spodumene Conc. Grade	5.5%	C1 Operating Costs FOB <sup>4</sup>	<b>A\$429/t</b> US\$300/t
Total Ore Mined	2.6 mt	FX Rate (AUD:USD)	\$0.70
Average Grade Mined	1.42%	Start-Up Capital <sup>3</sup>	<b>A\$73m</b> US\$51m
Design Throughput	1Mtpa	Free Cash Flow	<b>A\$158m</b> US\$111m
Production Mine Life	3.5 years	NPV <sub>10</sub>	<b>A\$114m</b> US\$80m
Payback Period <sup>5</sup>	<1.5 years	IRR	80%

 $<sup>{\</sup>bf 1.\,Note\,Cautionary\,\,Statement\,\,included\,\,in\,\,this\,\,report.}$ 

The Reserve Case contains 14% of Inferred Mineral Resources. 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.

Between the preparation of the Pre-Feasibility Study (PFS) and this DFS, there have been several changes to the inputs and assumptions that have had an influence on the economics of the Project. These types of variances are expected when increasing the level of confidence in the Project.

<sup>2.</sup> Commodity Pricing assumptions are derived from Concentrate Benchmark Pricing - January 2019 and represents an average over the life-of-mine. Exchange Rate assumption is \$0.70.

<sup>3.</sup> Start-Up Capital costs includes pre-strip mine development costs for Grants Project of A\$30m million

<sup>4.</sup> C1 Operating Costs are defined as direct cash operating costs of production FOB, net of by-product credits, divided by the amount of payable spodumene concentrate. Direct cash operating costs include mining, processing, transport, treatment and refining costs. C1 Operating Costs exclude royalties and prestrip mine development costs.

<sup>5.</sup> NPV has been discounted using a discount rate of 10% and NPV, IRR and Free Cash Flow are pre-tax nominal calculations. Payback is calculated from sale of first concentrate. Where nominal values are noted, costs and revenues are escalated at 2% CPI



Revenue has increased from the PFS by approximately 45% resulting from additional ore from Grants and the added development of the BP33 deposit. As a result of the additional ore tonnage, the mine life has increased from 2 years to 4 years. Revenue however has been negatively impacted by a forecast drop in the spodumene price between the PFS and DFS estimates.

On the capital front, an additional \$22 million has been included, with the majority of this dedicated to the installation of a three stage dense media separation (DMS) plant, rather than the single stage DMS as contemplated in the PFS. This flowsheet improvement will enable the production of higher value 5.5% Li<sub>2</sub>O concentrate, rather than 5.0%. Approximately \$6 million of the increase is due to a combination of a larger pre-strip at Grants and slightly higher mining costs following a formal competitive formal tender process.

The operating costs have been impacted by a significantly larger and longer mining operation. Overall, there are now more than 2.5 times more tonnes being moved, and the mining rates have increased 15% (within the accuracy of the previous study) to reflect commercial contracted scheduled mining rates. The increase in grade of concentrate to 5.5% (from 5.0%) has resulted in a proportionate decrease (10%) in concentrate tonnes being produced and a slight decrease in recoveries from 76% to 72% which impact processing operating cost per tonne of concentrate.

Overall, the Project produces strong free cash generation from Stage 1, with mining focussed only the Ore Reserves within the Grants and BP33 deposits initially. This is expected to enable Core to be self-funding on future development opportunities within the Project, including any conversion of additional Ore Reserves and future development of the other Mineral Resources, including Hang Gong and Carlton, all of which have had Mineral Resources defined during the DFS preparation but are not included in the study. These additional Mineral Resources have previously been disclosed to the market. In addition to these new Mineral Resources, there are a number of additional advanced pegmatite targets within the Project (including Booths-Lees) containing known high-grade lithium intercepts that require follow up drilling.

The Company plans to infill drill, expand and announce Mineral Resources at Hang Gong, Booth-Lees and Carlton over the course of 2019, with the intention of converting these to Ore Reserves. The Company hopes to be in a position to produce an updated economic assessment of the Finniss Project towards the end of 2019 that potentially includes these additional prospects as additional ore sources.

The simple process flowsheet for Grants is based on the construction of a new three stage 1Mtpa Dense Media Separation (DMS) plant, resulting in a relatively low capital cost estimate. This also results in reduced commissioning risk relative to some peer spodumene concentrate operations that require additional capital costs associated with flotation circuits.



Core's Managing Director, Stephen Biggins, commented:

"The Definitive Feasibility Study for Finniss once again highlights the significant potential of the Project and puts Core on track to become the Northern Territory's first lithium producer.

"The DFS confirms Finniss as a simple but high value operation, in part due to the minimal spend required on infrastructure thanks to high grade spodumene reserves in close proximity to Darwin Port.

"With the DFS now completed, we are aiming to finalise funding over the coming months so that construction can commence as soon as practicable. We are also maintaining our exploration momentum, with the aim of materially increasing the potential mine life of Finniss before we commence first production.

"On behalf of the Core Board, I would like to thank our project team and valued partners who have been involved in preparing the DFS. We look forward to the Final Investment Decision for Finniss in the coming months."

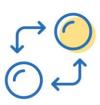
## **Next Steps**

Completion of the DFS now paves the way for the Company to advance its offtake and financing discussions, and project permitting to ensure Core is positioned to commence development and construction in 2019 and be ramping up commercial production of spodumene concentrate to customers in the first half of 2020.

In parallel with the permitting, offtake and financing discussions, Core will maintain an aggressive regional exploration campaign focused on growing the resource base of the Finniss Project to support a long-life mining operation.







IRR 80%



MINE LIFE 3.5 Years



PRE-PRODUCTION
CAPITAL
A\$73 Million



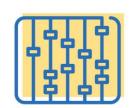
PAYBACK <1.5 years



MINERAL RESOURCE 8.85Mt @ 1.3% Li<sub>2</sub>O



LITHIUM PRICE US\$687/t LOM conc. price



C1 COSTS US\$300/t LOM conc. price



FIRST PRODUCTION 2020



TOTAL
CASH FLOW
A\$158 Million



ORE RESERVE 2.2Mt @ 1.4% Li<sub>2</sub>O



TOTAL
PRODUCTION
481Kt concentrate (5.5%)





Figure 1 - Aerial view of Darwin, the Port of Darwin and the Finniss Lithium development

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## **Important and Cautionary Notes**

The information in this report that relates to Exploration Results is based on, and fairly represents, information and supporting documents compiled by Mr Stephen Biggins (BSc (Hons) Geol, MBA) as Managing Director of Core Lithium Ltd and Dr David Rawlings (BSc(Hons) Geol, PhD) an employee of Core Lithium Ltd. Messrs. Biggins and Rawlings are members of the Australasian Institute of Mining and Metallurgy and are bound by and follows the Institute's codes and recommended practices. They have sufficient experience which is relevant to the styles of mineralisation and types of deposits under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Biggins and Dr Rawlings consent to the inclusion in the report of the matters based on their information in the form and context in which it appears. This report includes results that have previously been released under JORC 2012 by Core.

The information in this release that relates to the Estimation and Reporting of Mineral Resources is based on, and fairly represents, information and supporting documents compiled by Dr Graeme McDonald (BSc(Hons)Geol, PhD). Dr McDonald acts as an independent consultant to Core Lithium Ltd on Mineral Resource estimations. Dr McDonald is a member of the Australasian Institute of Mining and Metallurgy and has sufficient experience with the style of mineralisation, deposit type under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (The JORC Code). Dr McDonald consents to the inclusion in this report of the contained technical information relating to the Mineral Resource Estimation in the form and context in which it appears. This report includes results that have previously been released under JORC 2012 by Core.

The information in this release that relates to metallurgy and metallurgical test work has been reviewed by Mr Noel O'Brien, FAusIMM, MBA, B. Met Eng. Mr O'Brien is not an employee of the company but is employed as a contract consultant. Mr O'Brien is a Fellow of the Australasian Institute of Mining and Metallurgy, he has sufficient experience with the style of processing response and type of deposit under consideration, and to the activities undertaken, to qualify as a competent person as defined in the 2012 edition of the "Australian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves" (The JORC Code). Mr O'Brien consents to the inclusion in this report of the contained technical information in the form and context as it appears.

The information in this report that relates to Ore Reserves underpinning the Production Target have been prepared by Mr Blair Duncan (BEng (Mining), MBA) as Chief Operating Officer of Core Lithium Ltd who is a member of the Australasian Institute of Mining and Metallurgy and is bound by and follows the Institute's codes and recommended practices. He has sufficient experience which is relevant to the styles of mineralisation and types of deposits under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Blair Duncan consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

This document has been prepared by Core Lithium Ltd ("Core", "Company") and provided as a basic overview of the tenements held or controlled by the Company. This presentation does not purport to be all-inclusive or to contain all the information that you or any other party may require to evaluate the prospects of the Company.

None of the Company, any of its related bodies corporate or any of their representatives assume any responsibility for, or makes any representation or warranty, express or implied, with respect to the accuracy, reliability or completeness of the information contained in this document and none of those parties have or assume any obligation to provide any additional information or to update this document.



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The mineral tenements of the Company as described in this presentation are at various stages of exploration, and potential investors should understand that mineral exploration and development are high-risk undertakings.

There can be no assurance that exploration of the Tenements, or any other tenements that may be acquired in the future, will result in the discovery of an economic ore deposit. Even if an apparently viable deposit is identified, there is no guarantee that it can be economically exploited.

This document contains statements which may be in the nature of forward-looking statements. No representation or warranty is given, and nothing in this presentation or any other information made available by the Company or any other party should be relied upon as a promise or representation, as to the future condition of the respective businesses and operations of the Company.

There is a low level of geological confidence associated with the 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.

### **Cautionary Statement:**

The DFS results are based upon the updated Grants Mineral Resource of 22 October 2018 and the update BP33 Mineral Resource Estimate of 6 November 2018. The Mineral Resource contains Measured, Indicated and Inferred Mineral Resources in section 3.1 below. Whilst there is sufficient Measured & Indicated Mineral Resources to complete the production schedule during the 17-month payback period. There is a low level of geological confidence associated with the 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.

The Inferred Mineral Resource is not the determining factor in determining the viability of the Finniss Project as the Inferred Mineral Resource represents only 4.4% of the production during the 17 month pay-back period in the Reserve Case. The DFS Reserve Case contains 14% Inferred material. The DFS does not rely upon additional Mineral Resources from the company's other prospects. Further drilling in 2019 is expected to improve the classification of all of the company's Mineral Resources.

### **Competent Person Statements:**

The Mineral Resources and Ore Reserves underpinning the Production Target have been prepared by competent persons in accordance with the requirements of the JORC code.

The information in this report that relates to Ore Reserves underpinning the Production Target have been prepared by Mr Blair Duncan (BEng (Mining), MBA) as Chief Operating Officer of Core Lithium Ltd who is a member of the Australasian Institute of Mining and Metallurgy and is bound by and follows the Institute's codes and recommended practices. He has sufficient experience which is relevant to the styles of mineralisation and types of deposits under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Blair Duncan consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Core confirms that it is not aware of any new information or data that materially affects the information included in this announcement and that all material assumptions and technical parameters underpinning the Mineral Resource estimates in the announcements "Grants Lithium Resource Increased by 42% ahead of DFS" dated 22 October 2018 and "Over 50% Increase in BP33 Lithium Resource to Boost DFS" dated 6 November 2018, "Maiden Sandras Mineral Resource Grows Finniss to 6.3Mt" dated 29 November 2018 and "Finniss Mineral Resource Grows to 8.6Mt with Hang Gong" dated 31 January 2019 continue to apply and have not materially



changed. The Mineral Resources underpinning the production target have been prepared by a Competent Person in accordance with the requirements of the JORC code.

Core confirms that it is not aware of any new information or data that materially affects the Exploration Results included in this announcement as cross referenced in the body of this announcement.

#### **Forward-looking Statements:**

This release contains "forward-looking information" that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to the pre-feasibility and feasibility studies, the Company's business strategy, plan, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, Mineral Resources, results of exploration and relations expenses. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'likely',' believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this news release are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information.

Forward-looking information is developed based on assumptions about such risks, uncertainties and other factors set out herein, including but not limited to general business, economic, competitive, political and social uncertainties; the actual results of current exploration activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of scandium and other metals; possible variations of ore grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; accident, labour disputes and other risks of the mining industry; and delays in obtaining governmental approvals or financing or in the completion of development or construction activities. This list is not exhaustive of the factors that may affect our forward-looking information. These and other factors should be considered carefully, and readers should not place undue reliance on such forward-looking information.

The Company disclaims any intent or obligations to or revise any forward-looking statements whether as a result of new information, estimates, or options, future events or results or otherwise, unless required to do so by law. Statements regarding plans with respect to the Company's mineral properties may contain forward-looking statements in relation to future matters that can be only made where the Company has a reasonable basis for making those statements.

### **Currency**:

Unless otherwise stated, all cashflows are in Australian dollars, are undiscounted and are in real terms (not subject to inflation/escalation factors), and all years are calendar years

### **Accuracy:**

The DFS has been prepared to an overall level of accuracy of approximately -15% to +15%. This judgement is made following consideration of the basis studies and the features outlined in the Cost Estimation Handbook Second Edition Monograph 27 AusIMM, The Minerals Institute.



# DFS – Key Project Statistics

Table 1 - Key Project Statistics

Feasibility Results		Reserve Case
Life of Mine (LOM)	Months	40
Contributing Pits		Grants (MI) & BP33 (MI)
Mining		
Mining Method		Conventional Open Pit
Total Mined	bcm	19,804,161
Waste Mined	bcm	18,848,695
Ore Mined	bcm	955,466
Strip Ratio <sup>1</sup>	W:O	13.0 : 1
Ore Mined	t	2,600,204
Li₂O Ore Grade	%	1.42%
Processing - DMS		
Feed	t	2,600,204
Li₂O Head Grade	%	1.42%
Recovery	%	71.7%
DMS Output	t	481,018
Li₂O Bene. Grade	%	5.50%
Road Haulage		
Ore Hauled (88km)	t	481,018
Max. Truck Movements / Day	#	10
Shipping		
First Product Sold	Month	Jan-20
Conc. Shipped	t	481,018
Nominal Vessel Size (monthly)	t	~15,000 t
1 Evoludos pro-strip activity		

<sup>1.</sup> Excludes pre-strip activity



Feasibility Results		Reserve Case
Financial		
Exchange Rate	US:AU	0.70
Price (Real / Nominal)	US\$/t conc.	687 / 730
Price (Real / Nominal)	AU\$/t conc.	981 / 1,042
Revenue (Real / Nominal)	AU\$M	471.8 / 501.4
Start-Up Capital Cost <sup>2</sup>	AU\$m	43.0
Pre-strip Costs (Grants / BP33) <sup>3</sup>	AU\$m	29.6 / 25.3
C1 Operating Costs FOB¹	AU\$/t conc.	428.6
C1 Operating Costs FOB <sup>1</sup>	US\$/t conc.	300.0
Royalties	AU\$/t conc.	80.7
Royalties	US\$/t conc.	56.5
Total Cashflow generated <sup>3</sup>	AU\$M	158.2
Peak outflow <sup>3</sup>	AU\$M	75.6
NPV <sub>10</sub> <sup>3</sup>	AU\$M	114
IRR <sup>3</sup>	%	80
Payback from start <sup>3</sup>	Months	23
Payback from 1 <sup>st</sup> Conc. sale <sup>3</sup>	Months	17
% Inferred in payback period	%	4.4

<sup>1.</sup> C1 Operating Costs are defined as direct cash operating costs of production FOB, net of by-product credits, divided by the amount of payable spodumene concentrate. Direct cash operating costs include mining, processing, transport, treatment and refining costs. C1 Operating Costs exclude royalties and pre-strip mine development costs.

<sup>2.</sup> Start-Up Capital costs represents pre-production capital exclusive of working capital & pre-production pre-strip mine development costs

<sup>3.</sup> Disclosed on a Pre-Tax Nominal basis



#### **List Rule 5.9.1**

#### **Comments**

#### **Material Assumptions**

This DFS and the maiden Ore Reserve Estimate contained within it is based upon the Grants and BP33 Mineral Resource Estimates released to the ASX on the 22<sup>nd</sup> October and 6<sup>th</sup> November 2018, by Core Lithium, competent persons: Mr. Graeme McDonald (Consulting Geologist to Core Lithium Ltd) & Mr Blair Duncan (General Manager Project Development Core Lithium Ltd). The Minerals Resources are reported inclusive of the Ore Reserves. Mr. Duncan has relied on the integrity and accuracy of the Mineral Resource for this Ore Reserve estimate.

#### Criteria for Classification

The resource classification has been applied to the Mineral Resource Estimate based on the drilling data spacing, grade and geological continuity and data integrity. The resource has been classified on the following basis.

- Portions of the model that have drill spacing of better than 25m by 30m, and where the confidence in the geology, mineralisation and resource estimation is considered high and would allow the application of modifying factors in a technical and economic study have been classified as Measured Mineral Resources.
- Areas that have drill spacing of greater than 25m by 30m, and/or with lower levels of confidence in the geology, mineralisation and resource estimation or potential impact of modifying factors have been classified as Indicated Mineral Resources.
- Areas that have drill spacing of greater than 25m by 30m, and with low levels of confidence in the geology, mineralisation and resource estimation or potential impact of modifying factors have been classified as Inferred Mineral Resources.

For Ore Reserve Estimation purposes Measured Mineral Resources only convert to Proved Reserves or Probable Reserves & Indicated Mineral Resources convert to Probable Reserves.

### **Mining Method Selection**

A conventional open pit mine method was chosen as the basis of the DFS. Ore occurs approximately 50m below surface meaning pre-stripping is required. Pre-stripping has been allowed for. Selective mining methods of the ore zone have been assumed with a Smallest Mining Unit (SMU) size of 5m x 5m x 2.5m (XYZ) applied to the resource block model regularisation process to produce a diluted mining model. This SMU size was selected as the most appropriate block size considering the mining fleet and mining methods proposed by the preferred Mining Contractor Tender submission. Selective ore mining will also be supported by machine guidance systems, production blasthole grade control processes, and the highly visual nature of ore in comparison to the waste material.

The mine schedule is based on a processing plant nameplate capacity of



1.0Mtpa (dry) and the mining excavator fleet proposed by the preferred Mining Contractor that has an average annual mining capacity of 16 Mtpa (dry) over the mine life. Grants will be mined in two stages with an initial pit followed by a final cutback, with BP33 mined in one stage. The diluted mining model has been used to develop the equipment based mine schedule and assumes effective operation of the mining fleet and is based on realistic utilisation estimates.

Mining Infrastructure required to support the mine plan includes waste rock dumps, ROM pad, haul roads, crusher and processing plant, tailings storage facility, explosives storage facility, water storage, workshops and other buildings required for a contract mining operation.

#### **Processing Method**

For Lithium ore the DFS economics considered processing comprising dense media gravity separation (DMS) of the 0.5mm to 6.3mm fraction after P100 crushing to 6.3mm. This process is considered lowest risk methodology for the ore type comprising zoned, very coarse grained, spodumene- $\alpha$  pegmatite. The rejects will be stockpiled for possible future use, but nil revenue was attributed to them. The minus 0.5mm fines are to be placed in a purpose built tailings storage facility (TSF) but essentially thrown away. Four generations of metallurgical test work was used to arrive at the final process flowsheet & the competent person visited comparable operations in WA to satisfy himself that the flowsheet of a full scale plant is applicable. The introduction of a re-crush facility on DMS middlings was key to consistently producing grades of 5.5% or better at acceptable recoveries of over 70%. This necessitated a primary and secondary DMS circuit on the coarser +2mm fraction, so that the secondary coarse DMS floats could be re-crushed and recycled.

Separating the -2mm +0.5mm fines and incorporating a separate fines DMS circuit was considered to be necessary to ensure the plant design was sufficiently robust to cater for any unexpected variability in the ore body.

### **Cut-off Grades**

The Mineral Resource provided was a geologically domained resource; this geological model was modified for ore loss and dilution and evaluated to determine which blocks produced cash surplus when treated as ore. The Ore Reserve was estimated using a 0.75%  $\text{Li}_2\text{O}$  cutoff. The cut-off grade contemplates all pre-tax costs associated with the processing and selling of a  $\text{Li}_2\text{O}$  concentrate product. The following costs:

- Incremental ore haulage to the process plant RoM
- Stockpile re-handle
- Processing
- Road transport
- Ship loading
- Royalties
- General overhead cost and administration

are all easily paid for by the 0.75% Li<sub>2</sub>O cutoff. The revenue was determined using an average price for Li<sub>2</sub>O concentrate of US\$687 per tonne and an



	exchange rate of US\$0.70 per AU\$1.00. Process recoveries were applied as outlined below under "Metallurgical Factors or Assumptions".
Estimation Methodology	For both Grants and BP33 grade estimation of lithium has been completed using Ordinary Kriging (OK) into mineralised and unmineralized pegmatite domains using Micromine software. Variography has been undertaken on the grade domain composite data. Variogram orientations are largely controlled by the strike and dip of the mineralisation.  No selective mining units are assumed in the Mineral Resource estimate. SMU analysis was carried out as part of the Ore Loss & Dilution analysis when Mining Block Models where created prior to Reserve Estimation occurring.
Material Modifying Factors	Material modifying factors used in this DFS are as follows:

 Ore loss and Dilution factors are based on the diluted resource block models developed from the regularisation process. Global ore loss and dilution results for both pits are:

Grants Resource	Ore (dry tonnes)	Li <sub>2</sub> O%	% Ore Tonnage
Undiluted	2,884,603	1.48	-
Ore Loss (OL)	268,133	1.30	9.3%
Dilution (D)	160,390	0.09	5.6%
Diluted (Undil - OL + D)	2,776,860	1.42	-3.7%

BP33 Resource	Ore (dry tonnes)	Li <sub>2</sub> O%	% Ore Tonnage
Undiluted	2,143,955	1.51	-
Ore Loss (OL)	262,735	1.22	12.3%
Dilution (D)	96,946	0.14	4.5%
Diluted (Undil - OL + D)	1,978,166	1.48	-7.7%
<ul> <li>Sales prices as follows:</li> </ul>			
E E0/ C			

5.5% Concentrate						
US\$/t (FOB)	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>Spot</u>	
Real	\$732	\$639	\$669	\$754	\$677	
Nominal	\$747	\$665	\$710	\$816	\$747	

Metallurgical recoveries



Nagrom Test work Campaign	T2603		
Method	DMS with Reflu	ux Classification	
Details	-6.3mm +2mm; -2r	mm +0.5mm with re-crush	
	Grade Li <sub>2</sub> O	Overall Recovery	
Test work Result	6.07%	69.8%	
Interpolated Results			
Target Grade	6.0%	70.0%	
Target Grade	5.5%	71.7%	
Target Grade	5.0%	73.7%	



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# 1 Finniss Lithium Project

A conventional approach to open pit mining is proposed.

The Project, located near Darwin in the Northern Territory, is one of the highest grade spodumene resources in Australia, containing a Mineral Resource of 8.85Mt @ 1.3% Li<sub>2</sub>O.

The high-grade Grants lithium deposit is supported by one of the best logistics chains to China of any Australian lithium project. Focused drilling and metallurgical studies at the deposit have defined reserves with the potential to produce a high-quality lithium concentrate that suits commercial end users.

Results from this DFS have highlighted the strongly positive outcomes for the potential development of Grants and BP33, suggesting a strong case for a standalone 1.0Mtpa Dense Media Separation (**DMS**) concentrate production and export operation.

The Project has substantial infrastructure advantages; being close to a population centre capable of providing the labour for the Project and within easy trucking distance by sealed road to the East Arm Port – Australia's nearest port to Asia.

The mine and processing plant development at Grants will occur within the area of ML 31726 (the Project area). The ML covers 768ha, within which 251ha will be disturbed for development and operation of the mine and process plant.

The key components of the Project are summarised below:

- Mining of the high-grade spodumene pegmatite deposit using simple open pit drill and blast mining methods over a life of mine of approximately 3.5 years;
- Transfer of the spodumene pegmatite ore to a Run of Mine (ROM) pad located adjacent to the open pit;
- Water-based DMS to produce a high quality spodumene (lithium) concentrate product; and
- Transport of the lithium concentrate product to Darwin Port by sealed public road for overseas export.



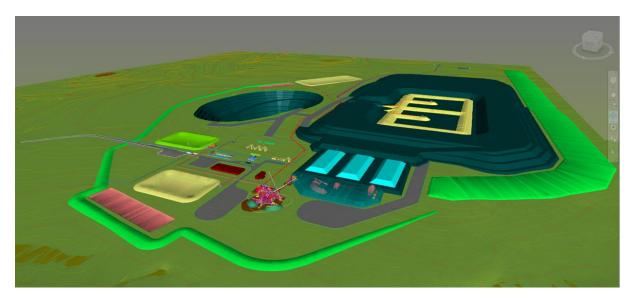


Figure 2 - Schematic view of proposed project layout adjacent to the Grants Deposit.

### 2 Mineral Resource

The Finniss Lithium Mineral Resource estimated at 8.85Mt at 1.3% Li<sub>2</sub>O (ASX announcement 12 March 2019) is one of the highest grade spodumene resources in Australia. Grants and BP33 are located within Core's 100% owned Finnis Lithium Project which consists of a large ground holding over one of Australia's significant spodumene pegmatite fields near Darwin in the Northern Territory (Finniss Lithium Project). Core has an excellent geoscientific dataset and a well-resourced exploration team focused on further discoveries.

### **2.1** Geology

The first discovery of tin-tantalum pegmatites in the Northern Territory was near Mount Shoobridge in 1882 and was followed soon after by the discovery of tin (and tantalum) on the Cox Peninsula at Leviathan Creek (Bynoe Pegmatite Field) in 1886. However, it was not until mid-2016 that the Bynoe Pegmatite Field's (BPF) potential as a world-class lithium district was recognised.

There are several historic tin/tantalum pegmatite mine sites in the area surrounding Grants; the closest sites are located 1.5 km to the west and south-west of the project area.

The BPF pegmatites are classified as LCT (Lithium-Caesium-Tantalum) type and are believed to have been derived from the 1845 Ma S-Type Two Sisters Granite, which outcrops to the west of the BPF and are predominantly hosted within the early Proterozoic metasedimentary lithologies of the Burrell Creek Formation. The region is also covered by thin areas of laterite and is subject to deep weathering, thus making surface exploration difficult.

Fresh pegmatite at Grants and BP33 are composed of coarse spodumene, quartz, albite, microcline and mica. Spodumene, a lithium bearing pyroxene (LiAl(SiO<sub>3</sub>)<sub>2</sub>), is the predominant lithium bearing phase and displays a



diagnostic red-pink UV florescence. The pegmatite is not strongly zoned, apart from a thin (1-2m) quartz-mica-albite wall facies. Overall, the lithium content throughout the pegmatite is remarkably consistent.

The depth of weathering is quite extensive, but the transition from oxidised pegmatite to fresh pegmatite is very sharp and easily determined from the interpretations associated with AC, RC and DD logging. As Lithium is depleted from oxidised pegmatite during the weathering process, lithium assays provide a good indicator as to the location of the top of fresh rock (TOFR).

The geological interpretation is considered robust due to the simple nature of the mineralisation. The mineralisation is hosted within the pegmatite. The locations of the hanging wall and footwall of the pegmatite intrusion are well understood with drilling which penetrates both contacts.

The proposed Project is located within granted Mineral Lease ML 31726 (the Project area). BP33 is on the same Exploration License as Grants (100% owned by Core) with an ML to be lodged shortly to match its timeframe to development. The ML covers 768 ha, within which approximately 251 ha will be disturbed for development and operation of the mine. The Project area is located entirely on and surrounded by undeveloped Vacant Crown Land and the main land-use in the region is mining exploration.

### 2.2 Resource

Dr Graeme McDonald (BSc PhD MAusIMM) was contracted by Core to undertake the Mineral Resource Estimate for the Grants Lithium deposit and the BP33 Lithium deposit. The estimate was derived from cross-sectional geological interpretation, generation of a 3D geological interpretation from the interpreted cross sections, creation of domain interpretations for lithium mineralisation, the development of a block model of each deposit and a geostatistical analysis of the data and estimated lithium grades.

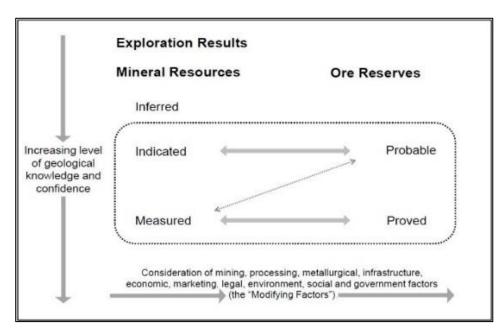


Figure 3 - Relationship between Mineral Resources and Ore Reserves



The resource classification that has been applied to the Mineral Resource Estimates for Grants and BP33 is based on the drilling data spacing, grade and geological continuity and data integrity of each deposit. The Mineral Resource has been classified on the following basis.

- Portions of the models that have drill spacing of better than 25m by 30m, and where the confidence in the
  geology, mineralisation and resource estimation is considered high and would allow the application of
  modifying factors in a technical and economic study have been classified as Measured Mineral Resources.
- Areas that have drill spacing of greater than 25m by 30m, and/or with lower levels of confidence in the geology, mineralisation and resource estimation or potential impact of modifying factors have been classified as Indicated Mineral Resources.
- Areas that have drill spacing of greater than 25m by 30m, and with low levels of confidence in the geology, mineralisation and resource estimation or potential impact of modifying factors have been classified as Inferred Mineral Resources.



"The Grants Lithium Resource is one of the highest-grade undeveloped lithium deposits in Australia"

Figure 4 - Finniss Project Pegmatite

All lithium assays are reported as ppm and converted to Li<sub>2</sub>O using a conversion factor of 2.1528 and expressed as a percentage. Typically, where intercepted by drilling the pegmatite carries economic lithium grade and is extremely homogeneous, with the exception of relatively thin contact zones. A single mineralised domain within the pegmatite was created based on a 0.3% Li<sub>2</sub>O lower grade threshold. The boundaries of the domain often coincided with the pegmatite contacts and there was very little to no internal dilution.

The mineralised domain was identified on each section based on a nominal minimum downhole width of 2m and a maximum internal dilution of 3m while trying to honour geological controls and maintain continuity. A wireframe was created by joining sectional strings together and successfully validated for open sections, intersecting triangles



and invalid connections. The result is a single mineralised domain that together with weathering and geological information can be used for sample and block model flagging.

A deposit wide top of fresh rock surface was developed based on a section by section interpretation made using available drill hole data to determine the boundary between oxidised and fresh pegmatite. This information was then used to constrain the upper surface of the mineralised domain.

Assay values from within the mineralised domain were analysed via histogram and probability plots and no significant outlying sample results were identified. As a result, a top cut has not been applied.

The complete list of the Mineral Resource Estimates at Finniss is provided in the below. Only Grants and BP33 contribute to the DFS results and the Mineral Resource Estimates for both were released to the ASX as follows:

- "Grants Lithium Resource Increased by 42% ahead of DFS" dated 22 October 2018 and
- "Over 50% Increase in BP33 Lithium Resource to Boost DFS" dated 6 November 2018

Table 2 – Finniss Lithium Mineral Resources

Mineral Resource Estimate for the Finniss Lithium Project - March 2019 - 0.75% Li₂O cut-off						
Deposit	Category	Tonnes (Mt)	Li₂O %	Li2O Contained Metal (t)		
	Measured	1.09	1.48	16,100		
Grants	Indicated	0.82	1.54	12,600		
Grants	Inferred	0.98	1.43	14,00		
	Total	2.89	1.48	42,700		
	Indicated	0.63	1.39	9,000		
BP33	Inferred	1.52	1.56	24,000		
	Total	2.15	1.51	33,000		
Sandras	Inferred	1.30	1.0	13,000		
Saliulas	Total	1.30	1.0	13,000		
	Indicated	0.46	1.3	6,000		
Carlton	Inferred	0.63	1.3	8,000		
	Total	1.09	1.3	14,000		
Hang Gong SW	Inferred	1.42	1.2	17,000		
	Total	1.42	1.2	17,000		
Finniss Project	Total	8.85	1.3	119,700		



# 3 Mining and Scheduling

## **3.1** 3.1 Mine Design

Mining of the two (2) open pits, Grants and BP33, will be undertaken by Mining Contractor using conventional open pit mining methods. All pits are similar in layout, all are round shaped conventional open pit designs, high-strip ratio with steeply dipping to near vertical orebodies. Pre-strip of weathered and transitional material occurs within the top 40 – 50 m of vertical depth from surface before encountering fresh rock exposure of the ore.

Grants pit will be mined in two stages; Stage 1 will target early ore by reducing the volume of pre-strip waste to be mined with Stage 2 a cutback out to full pit limits. Mining will predominately occur concurrently within both stages to ensure continuity of ore supply to the crusher with Stage 1 anticipated to start only 2 to 3 months before Stage 2. First ore will be mined in Month 5 of the mine schedule with activities continuing in Grants until Month 29 (Year 2, Month 5).

All material (ore and waste) will require drill and blast, except the oxidised pegmatite and phyllite waste which varies in depth between 30 and 50 m from surface, which based on previous mining activities in the Burrill Creek Formation is assumed to be predominately free dig. The Mining Contractor will also be responsible for pit dewatering, pit surface water management, heavy and light vehicle maintenance, and day to day responsibility for the mining operation. The overall site management, administration and processing functions will be undertaken by Core.

Pit designs have been designed based on:

- An optimised pit shell maximising ore production but balancing strip ratio
- The selected pit shells used to influence the pit designs do not exclude inferred material contributing to revenue
- SRK geotechnical slope design parameters
- Single access ramp with varying lengths of dual and single lane widths
- Minimum mining width of 40m
- In some areas this is relaxed down to 20m to assist with it stage merging and final pit benches. This width is achievable with the proposed mining equipment and methods
- A minimum cut-back width of 70m has been assumed
- Drill & Blast is assumed to be on 5m bench heights while mining is assumed to be on 2.5m flitches



Grants Stage 1 was designed targeting the following objectives;

- Five to six months of pre-strip
- Achieve sufficient stocks on the ROM before the first wet season (January to March inclusive)
- Target the measured and indicated portion of the resource captured in the optimisation shell
- Pit access ramp location optimised for haulage to both the WRD and ROM pad
- Consideration of Stage 2 cutback pit merging for operating efficiencies (i.e. widths, mining above and below each other, and ramp locations) and minimisation of tight digging areas and /or difficult merging locations

The Stage 1 design has a dual lane ramp starting at RL18 continuing to RL-40 where a single lane ramp is used down to the pit bottom at RL-70. The Stage 1 design is shown in Figure 5 and Figure 6 blow.

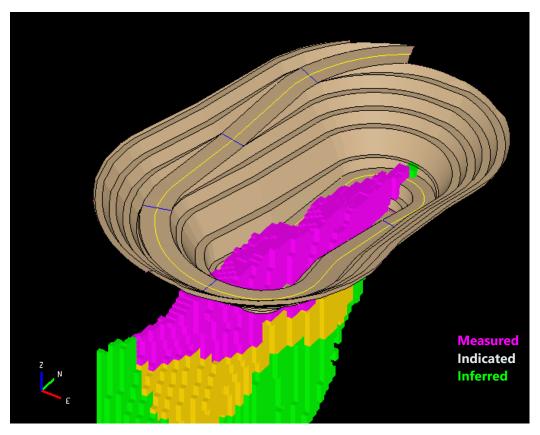


Figure 5 - Grants Stage 1 and Diluted Mineral Resource



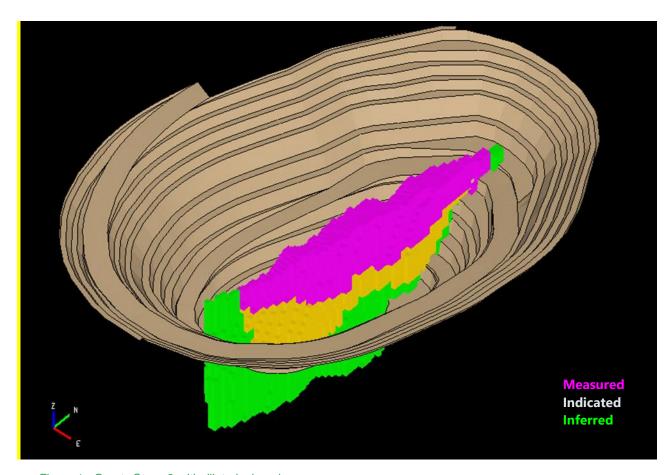


Figure 1 - Grants Stage 2 with diluted mineral resource

The BP33 pit design was completed using the same slope design parameters as the Grants pit designs. During the next round of resource drilling at BP33 (2019) geotechnical holes designed to confirm the slope design parameters for BP33 will be completed. The current design for BP33 is shown in Figure 7 below.



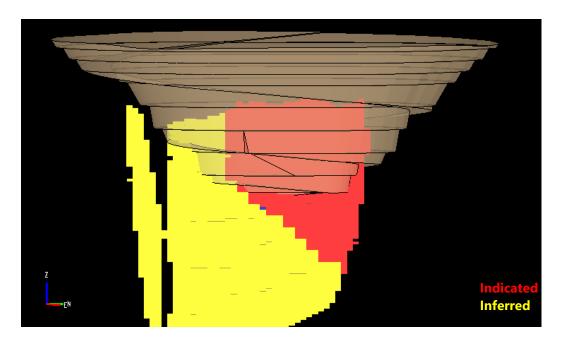


Figure 2 – BP33 Current Pit Design

The dual lane access ramp starts at RL18 and continues to RL-40 where a single lane ramp is used down to pit bottom at RL-125. The bottom of the pit is designed as a drop-cut ("good-bye cut") from RL-115. Compared to Grants, the shorter orebody strike length and slightly narrower width, combine to influence the high strip ratio outcomes with this design for BP33.

### 3.2 Mineral Reserve Estimate

A Mineral Reserve Estimate (MRE) for both Grants and BP33 has been prepared. It is summarised as follows:

Table 1 – MRE Grants and BP33

Deposit /Resource	Classification	Tonnes (Mt)	Grade (Li₂O%)	Contained Metal (kt)
Grants	Proved	1.0	1.4	14.9
Grants	Probable	0.8	1.5	11.6
Grants Sub-total		1.9	1.5	26.5
BP33	Probable	0.4	1.3	5.7
Total Reserves		2.2	1.4	32.2



The MRE was made following the detailed mine planning work completed during the DFS and is based on the Measured and Indicated Resources contained within the Grants and BP33 pit designs. Section 4 of table 1 of the JORC code 2012 and a competent person's statement appear in the schedule to this announcement.

The Ore Reserve was estimated using 0.75% cut-off, which was based on the Mineral Resource being a geologically domained resource; and the geological model being modified for ore loss and dilution and evaluated to determine which blocks produced cash surplus when treated as ore.

# 3.3 Scheduling

The Reserve Case LOM Schedule is contained in the table below.

Reserve Case	Units	Year 1 - 2019	Year 2 - 2020	Year 3 - 2021	Year 4 - 2022	Total
Grants plus BP33 MI - Rev E						
Mining						
Total Mined	bcm	7,709,926	6,965,844	4,988,252	140,139	19,804,161
Waste Mined	bcm	7,520,361	6,653,337	4,584,392	90,605	18,848,695
Ore Mined	bcm	189,565	312,506	403,860	49,535	955,466
Ore Mined <sup>1</sup>	t's	515,651	850,626	1,099,121	134,805	2,600,204
Ore Grade	(Li <sub>2</sub> O%)	1.49%	1.39%	1.42%	1.40%	1.42%
Processing	% Inferred	1%	6%	27%	11%	14%
Mine Ore Crush & Screen	t's	370,000	912,600	996,500	321,104	2,600,204
Grade	(Li <sub>2</sub> O%)	1.48%	1.40%	1.43%	1.37%	1.42%
Recovery	%	71.7%	71.7%	71.7%	71.7%	71.7%
DMS Output	t's	71,557	166,884	185,402	57,176	481,018
Grade	(Li <sub>2</sub> O%)	5.50%	5.50%	5.50%	5.50%	5.50%
Haulage						
Product Hauled	t's	67,500	170,000	182,500	61,018	481,018
Hauled Grade	(Li <sub>2</sub> O%)	5.50%	5.50%	5.50%	5.50%	5.50%
Shipped						
Ore Shipped	t's	67,500	170,000	182,500	61,018	481,018
Shipped Grade	(Li <sub>2</sub> O%)	5.50%	5.50%	5.50%	5.50%	5.50%
# of ships		7	12	12	4	35

<sup>1.</sup> Total Proved tonnes in the schedule is 1.0 Mt, total Probable tonnes in the schedule is 1.2 Mt. The reserve schedule contains 14% Inferred material but this quantity is not the determining factor of project viability.



# 4 Processing

## 4.1 Summary

The metallurgical test work program was conducted by Nagrom, in their Perth laboratory, under the supervision of Mr Noel O'Brien. The proposed Finniss Lithium Project Gravity Plant has been designed to treat a nominal 1.0 million tonnes of spodumene bearing pegmatite at a head grade of between 1.4% & 1.5% Li<sub>2</sub>O and targeting production of a spodumene concentrate containing an average 5.5% Li<sub>2</sub>O. Once operational, at Grants, the Finniss processing plant will operate 24 hours per day. Operation and maintenance of the plant will be completed by Primero Group. Manning will be scheduled for one day and one-night shift per day, shifts working continuously 7 days per week, 365 days per year. At full processing capacity there will be a Management, Supervisory and Operations workforce of approximately 48 people dedicated to the Ore Processing Facility (OPF).

Based on laboratory test work and given the current process flowsheet (as at April 2019), a spodumene concentrate containing 5.5% Li<sub>2</sub>O is achievable at an overall recovery above 70.0% of Li<sub>2</sub>O in crushed ore feed. − Noel O'Brien, Trinol Pty Ltd.

## 4.2 Metallurgical Results

In order to determine the amenability of the Finniss pegmatites to concentration through density separation techniques, test work was conducted on composited core samples with Heavy Liquid Separation (HLS) and Dense Media Separation (DMS) test work being performed on feed streams at various size distributions.

The HLS and DMS test work indicated the grade and corresponding recoveries achievable for the assumed feed size distribution. This test work not only confirmed that density concentration is a viable process treatment route, but also highlighted that a number of size fractions and separation stages could enhance the targeted grade and recovery.

The test work identified two (2) stage DMS on two separate size fractions, 6.3 - 2mm and 2 - 0.5mm (including DMS on the re-crushed 6.3 - 2mm stage 2 float material) produces a high-grade concentrate, at a high recovery. This configuration presents the greatest capacity for handling variability in process plant performance and feed composition, and the greatest capacity to accommodate adverse effects of scale-up from laboratory-scale test work.

The culmination of all the test work efforts is summarised in Table below.



Table 4 - DMS test work results

Nagrom Test work Campaign	T2603		
Method	DMS with Reflux Classification		
Details	-6.3mm +2mm; -2mm +0.5mm with re-crush		
	Grade Li <sub>2</sub> O	Overall Recovery	
Test work Result	6.07%	69.8%	
Interpolated Results			
Target Grade	6.0%	70.0%	
Target Grade	5.5%	71.7%	
Target Grade	5.0%	73.7%	

# 4.3 Flow Sheet Development

Following the four (4) generations of metallurgical test work the processing flowsheet is to have the following characteristics:

- The crushing circuit is designed to crush to P100 of 6.3mm. This is a four (4) stage crushing circuit.
- The DMS circuit is configured with a coarse and fines circuit with a secondary DMS on the coarse
- A re-crush facility on DMS middlings consistently aids the production of grades of 5.5% or better at acceptable recoveries of over 70%.
- A primary and secondary DMS circuit is used to manage the coarser +2mm 6.3mm fraction, so that the secondary coarse DMS floats could be re-crushed and recycled.
- Separating the -2mm +0.5mm fines and incorporating a separate fines DMS circuit is necessary to ensure the plant design is sufficiently robust to cater for the expected variability in the ore body.
- A reflux classifier and mica removal circuit is included in the flowsheet

The nominated concentrate grade of 5.5% Li2O at greater than 70% recovery has been met consistently since a recrush section was incorporated into the flowsheet. During the test work it was observed that product impurities were consistently below reject specifications. The Process Block Flow Diagram (BFD) appears over the page.



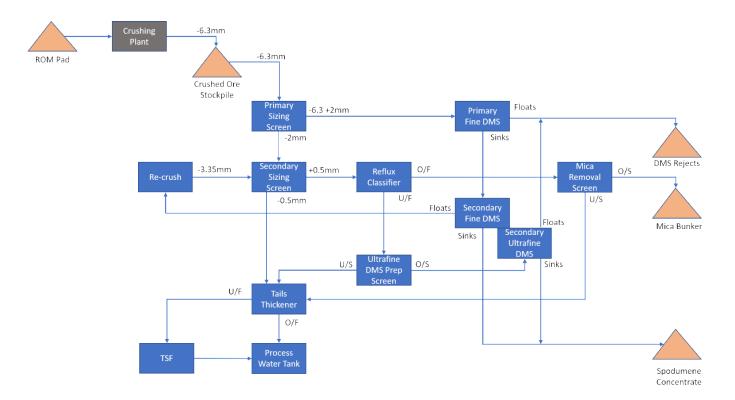


Figure 3- Process Block Flow Diagram



# 5 Infrastructure, Transport and Services

### 5.1 Darwin Infrastructure



Figure 4 - Aerial view of Darwin, the Port of Darwin and the Finniss Lithium development

The Project is in proximity to Darwin allowing access to key operational infrastructure. The Project is located within:

- 0.5km of sealed road connecting to Darwin Port
- 4km of 400,000kl Process Water Dam
- 15km of 310MW Gas Fired Power Station
- 20km of Zoned Industrial Park
- 25km of Port Darwin (88km by road)
- 1hrs drive from Darwin Airport and City

The development and operation of the Project is supported by a superior logistics chain to China, being within 25km of Darwin Port - Australia's nearest port to China.



The Project also has other significant infrastructure advantages, these include being close to sealed roads, grid power, gas and rail infrastructure and being less than a 1-hour drive from the skills, trades, workshops and services in suburban Darwin.

## 5.2 Project Water Balance

The water system requirements for the Finniss project is illustrated in Figure 10 below.

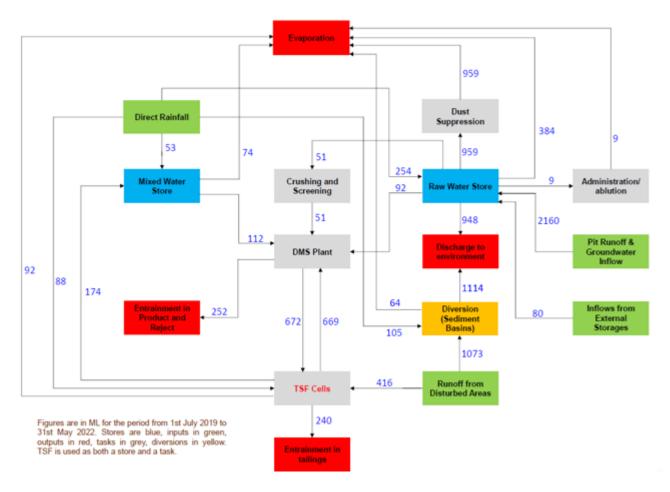


Figure 5 - Water System Requirements

The major source of inflows into the Finniss OPF is modelled from aquifer interception, unregulated surface water harvesting via runoff and rainfall and regulated extraction from off-site surface water stores. The major outflows include evaporation, environmental discharge and entrainment.

Despite the groundwater modelling showing that over 50% of the water inputs will be from aquifer inception the Observation Hill Dam, a man-made dam that has supported historical tin mining activities in the region, with an estimated capacity of over 400,000kl, will be kept as a key water infrastructure element supporting the project. The OHD dam is situated on Core's tenure to the east of Grants. It is illustrated in Figure 11.



An additional dam to the west of the mine has also been designed. It is modelled that the combined capacity of OHD and the western dam will provide over 100% of the projects water needs. Security of water supply for the project is a key risk mitigant.

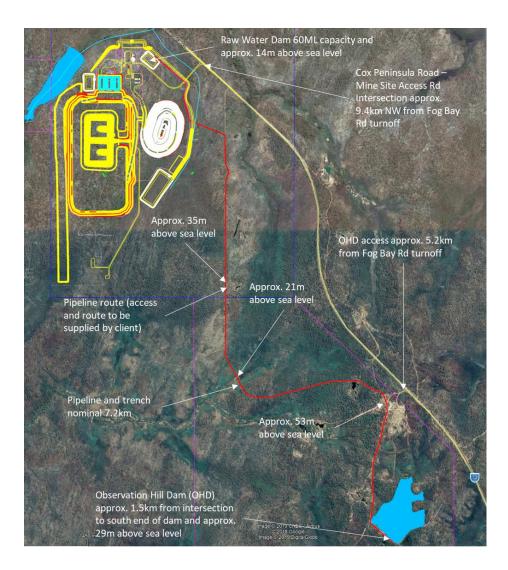


Figure 11 – Observation Hill Dam & Pipeline



# 5.3 Concentrate Product Haulage

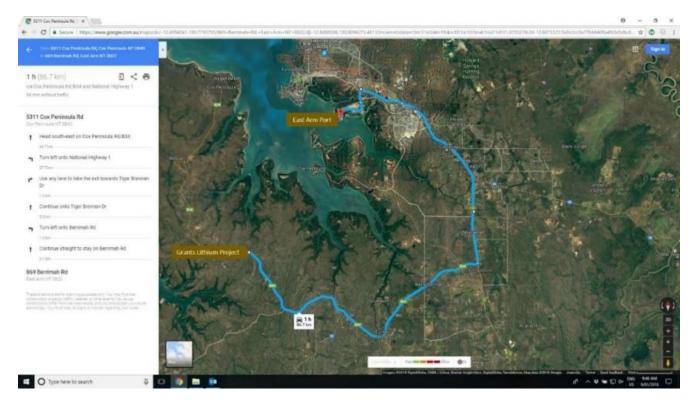


Figure 6 - Google image showing proposed transport route from project to the Port of Darwin

The DMS product will be loaded into road trains for transport to Darwin Port (**East Arm** or **EAW**). The proposed trucking route will be along the sealed Cox Peninsula Road, through to the Stuart Highway, along the Stuart Highway to Tiger Brennan Drive and then Berrimah Road, to the East Arm Port.

Total travel distance to the East Arm Wharf for Route 1 is calculated to be 88.31km.

Each road train has a 95-tonne capacity. It is estimated that ten (10) road train movements per day will be required at nameplate production rates. Qube Bulk are the preferred contractors for the product haulage from the project.

### 5.4 Darwin Port

Darwin Port (EAW) is a multi-user facility with 4 berths spaced along 865 metres of quay line. Berths 1 and 3 are primarily used for general cargo, containers, motor vehicles and livestock.

Berth 2 is used for bulk ore exports and has a rail mounted dry bulk ship loader. Dry bulk imports can be handled at any EAW berth. Berth 4 is primarily used for bulk liquids and has a dedicated bulk liquids transfer facility.

The continuous length of wharf facilitates provides flexibility in berth allocations to visiting ships.



Cargo handling activities are undertaken by either of the two stevedore service providers operating at EAW, LINX Stevedoring and QUBE Ports. Cargo transfers are commonly performed by mobile harbour cranes operated by the stevedores.

EAW has a rail mounted bulk minerals ship loader with a maximum capacity of 2,000t per hour. Bulk minerals are transferred from rail wagons to the stockpile areas using a dedicated rail dump and conveyor systems or dumped directly from road trains. The minerals are transported by truck from the stockpiles to the ship loader truck dump for loading onto bulk carriers.

It is the only port between Townsville and Fremantle with full access to multi-modal transport services. Darwin Port provides world class pilotage and harbour control systems and a seamless supply chain capable of handling containers and general cargo, bulk liquids, bulk materials, live exports and heavy lift oversized cargoes.

Core established a Heads of Agreement (HOA) with the Darwin Port in March of 2017 and has now formally applied for port access. The Darwin port is conducting a feasibility study into how best to receive and manage our product through the port. Once that Feasibility study is completed the HOA will be replaced by a formal access agreement.

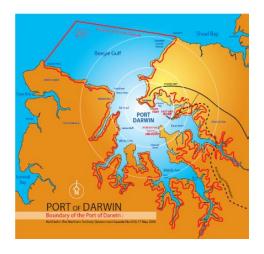


Figure 13 - Boundary of the Port of Darwin



Figure 14 - Proximity of Darwin to major trading port



Figure 15 - East Arm Port



Figure 16 - Berth 2 bulk berth (ship docked)



# 6 Capital Cost Estimation

The capital costs to establish a DMS operation are listed below.

Table 5 - Capital cost summary

Item	Capital Cost
DMS Plant	\$ 33,809,357
Mobilisation	\$ 2,803,416
Site Establishment & Setup	\$ 2,665,007
TSF	\$ 2,000,000
Office & Site Infrastructure	\$ 1,250,000
Raw Water System	\$ 638,812
Roads	\$ 160,668
<b>Total Up-front Capital Costs</b>	\$ 43,327,260
Demobilisation	\$ 2,041,395
Rehab & Sustaining Capital	\$ 1,508,000
Total Capital Costs (excl. pre-strip)	\$ 46,876,655
Pre-strip Grants	\$ 29,608,775

The capital costs are derived from multiple contractor sources. The DMS Plant cost is an EPC Estimate from Primero. The pre-production capital costs represent the pre-strip mining activity costs up until the month prior to first revenue.



## 7 Operating Cost Estimation

The operating costs for a DMS operation are detailed below.

Table 6 - Summary of operating costs

Operating		Unit Costs		Comparative Quality Level
	All – in	Excluding Pre-strip	Excluding Pre-strip	
	AU\$/t conc.	AU\$/t conc.	US\$/t conc.	
Mining Costs				
Mining Costs - Contractor	\$379	\$270	\$189	Commercial tender
Mining Costs - Owner	\$29	\$25	\$17	Estimate
Sub-total : Mining Costs	\$408	\$295	\$206	
Processing	\$114	\$113	\$80	Commercial tender or quotation
Hauling	\$9	\$9	\$6	Commercial tender
General & Administration	\$4	\$4	\$3	Estimate
Port Costs	\$8	\$8	\$5	Darwin Port advice
C1 Operating Costs FOB <sup>1</sup>	\$543	\$429	\$300	
C1 Operating Margin	\$438	\$552	\$387	
C1 Operating Margin	48%	56%	56%	
Royalties	\$81	\$80	\$57	Modelled by KPMG
<b>Total Unit Operating Costs</b>	\$624	\$509	\$357	
Total Operating Margin	\$357	\$472	\$330	
Total Operating Margin (%)	36%	48%	48%	

<sup>1.</sup> C1 Operating Costs are defined as direct cash operating costs of production FOB, net of by-product credits, divided by the amount of payable spodumene concentrate. Direct cash operating costs include mining, processing, transport, treatment and refining costs. C1 costs exclude royalties and pre-strip mine development costs.



## 8 Project Valuation

The key price assumptions are as follows.

Table 7- Key price assumptions (USD/tonne 5.5% concentrate)

5.5% Concentrate					
US\$/t (FOB)	2019	2020	2021	2022	Spot
Real	\$732	\$639	\$669	\$754	\$677
Nominal	\$747	\$665	\$710	\$816	\$747

Table 8 - NPV and IRR for project using different price assumptions for 5.5% concentrate pricing

Reserve Case	Currency	<u>NPV</u>	<u>IRR</u>
Pre-Tax Real	AU\$M	\$98	71%
Pre-Tax Nominal	AU\$M	\$114	80%



### Cost & Revenue Sensitivity

Table 9 - Sensitivity of NPV to changes in operating costs and revenue

Costs					
Flex Point	-20%	-10%	0%	+10%	+20%
NPV-DMS (pre-tax)	\$174	\$144	\$114	\$84	\$54
Revenue					
Flex Point	-20%	-10%	0%	+10%	+20%
NPV-DMS (pre-tax)	\$46	\$80	\$114	\$147	\$181
Exchange Rate					
Flex Point		0.65	0.70	0.75	
NPV-DMS (pre-tax)		\$140	\$114	\$91	
<b>Discount Rate</b>					
Flex Point		8%	10%	12%	
NPV-DMS (pre-tax)		\$122	\$114	\$107	
DMS Recovery					
Flex Point		69.70%	71.7%	73.7%	
NPV-DMS (pre-tax)		\$104	\$114	\$123	

Cost sensitivities are applied to all costs Capital & Operating. Favourable is negative & unfavourable is positive. The table above is illustrated below.

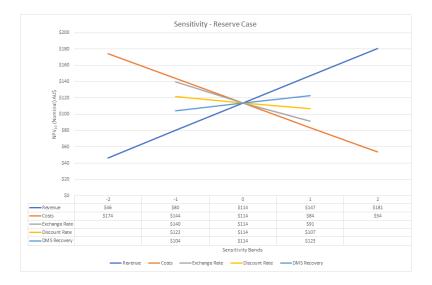


Figure 17 - Cost and revenue sensitivities (pre-tax)



#### 9 Environment and Approvals Timeline

#### 9.1 Fnvironment

The Environmental Impact Statement (**EIS**) is in the final stages of assessment. The EIS released in November 2018 reviews the impact the Grants Project would have on vegetation, flora and fauna, water, local roads, greenhouse gas emissions, rehabilitation and stakeholder engagement. The EIS has since been closed for public comment, comment have been reviewed and Core's responses have been submitted as a supplementary. Full EIS documentation can be found here:

#### https://ntepa.nt.gov.au/environmental-assessments/register/grants-lithium-project

The EIS Assessment Report is a key outcome leading into the assessment of the projects Mining Management Plan (MMP) by the Department of Primary Industry and Resources.

#### 9.2 Operational Approval & Project Timeline

The Company, via its wholly owned subsidiary, is the holder of a granted mineral lease. An ancillary Mineral Lease over the Observation Hill dam area is under application.

All mining activities Authorised (licenced) under the Mining Management Act are required to lodge a security with the Department of Primary Industry and Resources. The purpose of the security is for the payment of costs if action needs to be taken by the government to prevent, minimise or rectify environmental harm caused by mining activities on or off the mining site or for completion of rehabilitation. The amount of security is based on the amount of disturbance likely to be caused by the mining activities carried out under the Authorisation, subject to the approved Mining Management Plan (MMP). A DPIR MMP presentation session has been scheduled for early May 2019. Following that presentation, the projects MMP will be formally submitted. Although there is no statutory time frame on the DPIR time to accept the MMP the DPIR continue to advise that 30 days is a typical timeframe.



#### 10 Offtake & Prepayment

#### Yahua Offtake Agreement

The Offtake Agreement is for the supply of Li<sub>2</sub>O concentrate from the Mineral Lease and exploration license that contains the Grants and BP33 lithium deposits (Lithium Deposits) until 30 November 2023 and the delivery of 300,000 dry metric tonnes of Li<sub>2</sub>O concentrate.

The Offtake Agreement provides for attractive pricing linked to the market for 6.0% FOB spodumene concentrate and contains an agreed price floor and ceiling for the first 2 years, ensuring Core's operating margin is protected during the commissioning and capital payback period.

The Offtake Agreement accounts for approximately 40% of the Grants and BP33 lithium deposit production over the life of those mines, underpinning its production profile and providing great confidence to Core to fast-track development of the mine. The Offtake Agreement represents significant value for the Company in early stage project revenues over the term of the Offtake Agreement.

As part of the Offtake Agreement, Core has granted Yahua a first right of refusal over Li<sub>2</sub>O concentrate offtake produced from ML31726 and EL29698 up to the greater of 300,000 tonnes of Li<sub>2</sub>O concentrate or 50% of the forecast production for any calendar year.

The Offtake Agreement ends on the latter of Core having supplied 300,000 dry metric tonnes of Li<sub>2</sub>O concentrate to Yahua, or 30 November 2023, and may be extended by mutual agreement between Core and Yahua.

#### Yahua Prepayment Agreement

Pursuant to the Prepayment Agreement that has been executed with Yahua, subject to the satisfaction of various conditions precedent, Yahua has agreed to provide a US\$20 million prepayment to Core to be used for the development of Grants. The prepayment will be offset by Core through the delivery of Li2O concentrate production from the Finniss Lithium Project or cash payment.

#### **Further offtake discussions**

The Company has initiated and received considerable attention from global lithium players interested in securing lithium concentrate offtake. This includes companies based in China, US, Europe, Korea and Japan. The Company is developing a strategy to significantly fund a large component of the capital cost through the application of prepayments, debt financing and equity with potential offtake partners. This strategy will be explored during the Feasibility Study.



#### 11 Financial Evaluation

#### **Financial Analysis**

The cumulative NPV over time at Concentrate Benchmark Prices for 5.5% spodumene concentrate using a 10% discount rate shows that the Finniss Lithium Project has a Nominal Pre-Tax NPV and IRR of A\$114 million and 80% respectively for the Reserve Case.

#### Price Sensitivity, Net Cashflows and NPV

The sensitivity analysis of the NPV to key variables, including spodumene concentrate price, US\$ exchange rate and recoveries, indicates that the Finniss Lithium Project is robust. The Finniss Lithium Project is most sensitive to the AUD:USD exchange rate, with spodumene concentrate price and costs with recoveries and grade being the next most significant variables.

Mine plans can be optimised in response to a change in commodity prices, based on the direction of the change in commodity prices. The sensitivity analysis looked at changes of between +10/-10 and +20/-20 percent for revenue and costs, +5/-5 cents for FX, +2/-2 percent for discount rate and +2/-2 percent for grade and recoveries. The Finniss Lithium Project did not present one scenario which had neutral or negative NPV at these combinations.

The net cashflows from the Finniss Lithium Project have improved compared to the Pre-Feasibility Study estimates. This was mainly driven by the increase in volume mined due to a much greater mine life and higher concentrate grades offset in part by lower Australian dollar spodumene concentrate prices and greater accuracy in estimating operating and capital expenditures.

The estimated total expenditure is higher earlier in the mine life due to a larger starter open pit (Grants) resulting in additional pre-strip and due to greater life of mine operating costs with the inclusion of the BP33 open pit. Increases in the total estimated capital expenditure reflects both the EPC price estimate from Primero and amendments and improvements to the plant layout (i.e. from a one stage to a three stage DMS plant) which ultimately improves recovery efficiency.

The Finniss Lithium Project includes the pre-strip of both the Grants and BP33 open pits. The pre-strip mine development costs are treated pre-production capital for each pit. Pre-strip mine development costs for the Grants and BP33 open pits are A\$30.0 million and A\$25 million respectively. The Finniss Lithium Project's operating margin excluding pre-strip mine development for both Grants and BP33 is 48% using Concentrate Benchmark Pricing.

Assuming Concentrate Benchmark Pricing, the payback period from shipment of first concentrate is 17 months.

The Life of Mine C1 Operating Cost FOB (excluding pre-strip capital expenditure) is estimated to be A\$429/t conc. (US\$300/t conc.) and excludes Northern Territory royalties of A\$81/t conc. (US\$57/t conc). The total capital costs over the LOM including plant, mobilisation and pre-strip capital are estimated at A\$212/t conc. (US\$148/t conc.).



The commodity price assumptions used in the financial valuations carried out during the DFS are detailed in the Capital and Operating Cost section of this report. The USD:AUD exchange rate assumptions have taken into account both spot exchange rates and forecasts.

#### **Funding Options**

The objective of the funding plan is to provide certainty of the Finniss Lithium Project and provide Core Lithium with flexibility to pursue other growth opportunities. To achieve the production-targets and forecast financial information contained in the DFS, Core Lithium will require a suitable funding solution.

A standalone debt financing solution offers flexibility and preserves optionality to the highest level possible but is more complex and costly to implement. The extent and form of the completion support will, in part, depend on the underlying completion risk and allocation.

To maintain optionality in funding other growth projects of the Company, a range or combination of options are open to Core Lithium to fund the development of the Finniss Lithium Project, including:

- EPC construction and contractor finance
- Sales, marketing and customer arrangements
- Project finance including convertible note structure
- Equity at both project and corporate level
- Royalty based capital and similar arrangements
- Offtake and prepayment arrangements

The financing solution and capital management strategy includes:

- Securing a fully funded solution for the Finnis Lithium Project
- Minimising potential dilution for existing Core shareholders
- Maximising returns to all stakeholders whilst minimising dilution to existing shareholders
- Capitalising on prevailing positive trends in the lithium market

The company is evaluating its financing strategy with the objective of minimising dilution for existing shareholders and for managing priorities of all invested stakeholders. Core expects that, due to prevailing economic conditions, it should be able to secure funding on terms consistent with peer project developers. Core has had multiple financing discussions with financiers, in Australia, Asia, Europe and North America who have expressed an interest in project funding considering the positive project economics.



#### 12 Exploration and Resource Upside

The DFS considers the development of the first two orebodies at Grants and BP33 over an initial three and a half year period, however the Project has significant upside to increase in size and life through adding more resources and reserves.

The larger Finniss Lihtium Project comprises over 500 square kilometres of tenements covering the Bynoe Pegmatite Field comprising hundreds of pegmatites near Darwin in the Northern Territory.

The Bynoe Field has over 100 years of mining history dating back to the late 1800's. Notably, Greenex (Greenbushes) mined and processed pegmatite material from a large number (20-40) of pegmatites mines within the Bynoe Pegmatite Field during the 1980s and 1990s to produce tin and tantalum concentrates without assaying from lithium.

Over 100 pegmatites are known within clustered groups or as single pegmatite bodies. Individual pegmatites vary in size from a few metres wide and tens of metres long up to larger bodies over a ten of metres wide and hundreds of metres long.

Core has increased the Global Resource Base of the Project rapidly by over 400% since the start of 2018 and plans to add further resources and reserves to extend the life and strong positive cash flows of the Project.

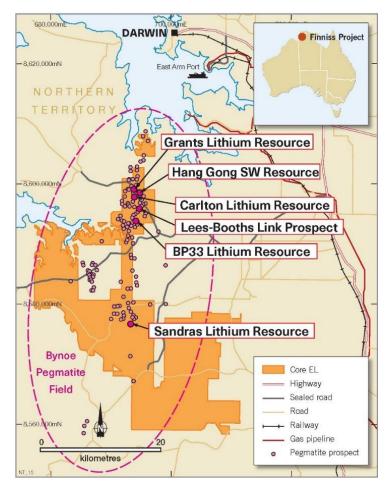


Figure 18 - Core Lithium's Finniss Project tenure showing historic pegmatite occurrences



#### 12.1 Additional Mineral Resources and Prospects

The Finniss Project consists of additional deposits and prospects that are not subject of the Feasibility Study assessment for project development to date. Based on recent drilling results and geological assessment, they offer potential growth opportunities pending ongoing drill program success and subsequent Mineral Resource Estimate ("MRE") upgrades.

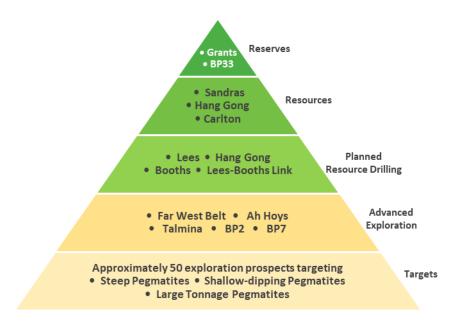


Figure 19 – Core Lithium's Finniss Project tenure showing historic pegmatite occurrences

#### **Carlton Prospect**

The Carlton pegmatite is similar in many respects to Grants, being a lozenge shaped body following the regional NNE-oriented grain. It is narrower (up to 20m true width) but longer (300m) than Grants, and it too appears to plunge steeply to the south.

Recent diamond drilling at Carlton, in addition to the expected 27m pegmatite intersection of the main Carlton orebody, unexpectedly intersected another 26m intersection of spodumene pegmatite just 15m to the west of the currently defined Mineral Resource.

The Carlton deposit is located approximately 1km southeast of the Grants ore body and conveniently on the same recently granted Mineral Lease. A number of potential operational synergies and efficiencies may be gained from development of the nearby orebodies.



#### Hang Gong SW Prospect

The Hang Gong SW Prospect is the southwestern component of the broader Hang Gong Prospect area that includes a large historic pit mined for tin and tantalum. This prospect is made up of a number of sub-parallel, shallow-dipping pegmatites and therefore differs somewhat from BP33 and Grants. The pegmatites are narrower (1-15m true thickness) and patchy in grade, but are laterally more continuous than their steep-dipping counterparts.

There are numerous historic holes to the north and northeast that could not be included in the current MRE, but there is sufficient data to have estimated an Exploration Target Range for this area (3-5Mt @ 1-1.4% Li<sub>2</sub>O). Furthermore, the concept of shallow-dipping stacked pegmatites had not been considered or tested in the district until mid-2018. Core believes there is considerable scope to discover more of this style of prospect, which are expected to have a larger footprint and therefore robust mining economics.

#### Sandras Prospect

Sandras Prospect is a NNE-oriented, steep-dipping spodumene pegmatite body that is of larger dimensions to Grants, but mineralisation is not developed throughout the body. It is composed of a similar mineralogy to Grants and BP33, but in general has a wider barren wall zone.

#### Lees Prospect

Drilling at Lees has identified down-dip continuation of at least five separate, but stacked, pegmatite "sheets" that dip at relatively shallow angles (~45 degrees) to the NNE. Additionally, a number of those sheets intersected in the fresh domain are strongly mineralised, including:

- 11m @ 1.66% Li<sub>2</sub>O from 122m in NRC037; and
- 13m @ 1.46% Li<sub>2</sub>O from 193m in NRC066

Core is currently undertaking a modest MRE for Lees, however, further drilling in the greater Lees area has the capacity to deliver a large deposit of stacked pegmatites with shallow dips. The five pegmatite "sheets" have been identified in recent drilling may have substantial spatial consistency and extend beyond the current drilling area into what has been called Lees-Booths Link.

#### **Booths Prospect**

Drilling has encountered a series of 1m-15m thick pegmatites below the historic Booths set of pits with results including:

- 6m @ 1.03% Li2O from 154m in NRC029; and
- 5m @ 0.95% Li<sub>2</sub>O from 113m NRC050



The Booths pegmatite is now interpreted to persist in a NW direction and potentially link up under cover with Lees, which has the same orientation and similar pegmatite geometry.

Core has drilled only 12 holes in the 1km gap between the Booths and Lees Prospects deposits. If these and other parallel sheets prove to persist along the 1 km strike extent, this could translate to a significant volume of stacked pegmatite sheets, with shallow (<45 degree) dip with favorable attributes for low-strip-ratio open cut mining.

#### **Regional Drilling Results**

Five pegmatites drill tested to date have moved on to become JORC resources, soon to be joined by Lees. There over 100 historic pegmatite occurrences (some having been mined for tin-tantalum) and also over 50 new pegmatite occurrences emanating from the Core mapping and shallow RAB drilling. The vast majority of these have not yet been tested in any way or sufficiently to describe them as exhausted. A number of prospects have generated economic grades, but over insufficient thickness to class as significant intercepts. Some have not had sufficient lateral extent to warrant prioritized drilling. Some examples are shown below.

Table 10 – Selected regional drilling results for the Finniss Project

Prospect	Hole_ID	Summary_Intercept
Ah Hoys	FRC074	12m @ 1.19% Li2O from 67m
Ah Hoys SE	FRC014	19m @ 0.68% Li2O from 89m
BP31	FRC185	13m @ 0.74% Li2O from 109m
Far West central	FRC143	14m @ 1.35% Li2O from 77m
Far West central	FRC139	12m @ 1.17% Li2O from 78m
Far West central	FRC145	7m @ 1.41% Li2O from 77m
Far West North	FRC030	45m @ 1.57% Li2O from 62m
Far West North	FRC028	16m @ 1.12% Li2O from 77m
Far West North	FRC054	11m @ 0.71% Li2O from 95m
Far West South	FRC190	3m @ 0.61% Li2O from 82m
Hills	FRC016	3m @ 0.55% Li2O from 103m
Rocky Ridge West	LBRC011	8m @ 0.97% Li2O from 71m
Saffums 4	SRC035	6m @ 0.62% Li2O from 121m
Talmina 3	SRC023	10m @ 1.07% Li2O from 148m
Talmina West	LBRC034	11m @ 0.62% Li2O from 139m
Talmina West	LBRC033	4m @ 1.25% Li2O from 99m

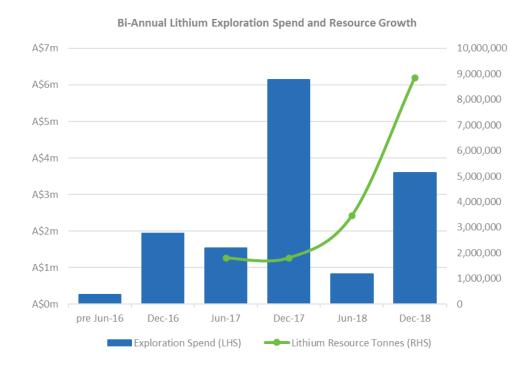


#### **Exploration Performance**

Drilling statistics show that 90% of RC holes intersected pegmatite and 45% intersected economic grades (as defined by a 0.4% Li<sub>2</sub>O cutoff), which is a strike rate that would be considered excellent in other commodities.

Analysis of expenditure and resource estimation data also shows that Core's Discovery Cost is A\$1 per tonne of ore demonstrated to Inferred JORC category, again enviable in any commodity.

The data show that pegmatites are plentiful in the Finniss Project area and Core has been efficient in testing these in a prioritized manner. There is no reason to believe that the success rate will diminish in any material way in the near future. In fact, Core's recognition of a class of pegmatites that are shallow-dipping or flat-lying adds another layer of potential discovery that has thus far been scantly tested.



#### 13 Conclusions

The Board approve the release of the Definitive Feasibility Study.



# **14** Definitive Feasibility Study Contributors

Table 11 - DFS Contributors

Consultant / Contributor	Component	Scope of Work
Core / Primero	DFS Engineering	Overall DFS lead
		<ul> <li>Process plant design</li> </ul>
		Project infrastructure design
		Project layout
		<ul> <li>Overall capital and operating cost estimates</li> </ul>
Dr Graeme McDonald	Geology and	Resource estimation
	Resource	Ore grade variability modelling
SRK	Mine Geotechnical	Geotechnical diamond core logging and testing
	Design	<ul> <li>Geotechnical pit wall stability modelling</li> </ul>
		<ul> <li>Pit wall design parameters</li> </ul>
		<ul> <li>Trafficability</li> </ul>
		Haul ramp design
Core / TME / Proactive	Ore Reserve	Resource optimisation
Mining Solutions		<ul> <li>Final pit shell designs</li> </ul>
		Ore Reserve estimation
TME	Mine Planning &	Detail mine planning and scheduling
	Scheduling	<ul> <li>Preliminary mining equipment selection</li> </ul>
		<ul> <li>Equipment productivity benchmarking</li> </ul>
TME	Mining	Verification of mine planning and ore scheduling
		<ul> <li>Detailed staged pit designs</li> </ul>
		Detailed haul route designs
		<ul> <li>Final equipment sizing and selection</li> </ul>
		Mining equipment capital estimates
		<ul> <li>Mining operating cost estimates</li> </ul>
		<ul> <li>Final overburden waste dump designs</li> </ul>



Consultant / Contributor	Component	Scope of Work
EcOz / Simon Fulton	Hydrogeology	Raw water borefield hydrogeological modelling
		Ground water resource estimation
		Pit dewatering hydrogeological model
		<ul> <li>Pit dewatering re-injection hydrogeological model</li> </ul>
		Re-injection borefield design
Core	Pit Dewatering	Pit dewatering borefield design
	Design	<ul> <li>Pit dewatering capital and operating cost estimate</li> </ul>
GHD	Civil Geotechnical	<ul> <li>Civil test pit logging and sample testing</li> </ul>
	Design	<ul> <li>Burrow pit sampling and testing</li> </ul>
		Civil pavement design for main access road
		Civil pavement design for airstrip
		Civil foundation design for process plant
Cable Blu	Communication Infrastructure	Telecommunications design and engineering
		Telecommunications capital cost estimate
		Telecommunications operating cost estimate
Core Lithium Ltd	Power & Fuel Supply	<ul> <li>Pre-qualification tender evaluation of power supply</li> </ul>
		<ul> <li>Commercial evaluation of natural gas and diesel fuel options</li> </ul>
Benchmark	Marketing	Lithium market study and forward pricing
Core / Argonaut	Economic Modelling	Development of project financial model
co.c / / ligoridat	200110111110 WIOGEIII118	Project economic evaluation
Trinol / Nagrom	Metallurgical Test	HLS &
or, Hugioni	work	• DMS
GHD / Trilabs / Outotec	In-Pit Tailings	<ul> <li>In-pit tailings stability testing</li> </ul>
	Disposal	<ul> <li>In-pit tailings capacity</li> </ul>
		<ul> <li>In-pit tailings operating philosophy</li> </ul>



The following schedule contains the Table 1 requirements for Grants and BP33 and is summarised as follows:

- Table 1 Report Grants (section 1,2,3 repeated here but the subject of ASX announcement dated 22 October 2018)
- Table 1 Report BP33 (section 1,2,3 repeated here but the subject of ASX announcement dated 06 November 2018)
- Table 1 Report Grants and BP33 (section 4 of Table 1 for Grants & BP33 this is the maiden reserve for both Grants & BP33)

#### 14.1 JORC Code, 2012 Edition – Table 1 Report Grants

#### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

techniques chips, or specific specialised industry standard measurement relate to Reverse Circulation (RC) and Diamond Drill Hole (DDH) drilling	Criteria	JORC Code Explanation	Commentary
These examples should not be taken as limiting the broad meaning of sampling.  Drillhole Information section below. A chronological summary is provided by periods where activity was focussed elsewhere or restricted the tropical wet season:  Aspects of the determination of mineralisation that are Material to the Public Report.  In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to		<ul> <li>chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to</li> </ul>	<ul> <li>August 2016 to January 2017</li> <li>January to March 2018</li> <li>June to September 2018</li> <li>Drilling chronology</li> <li>RC drillholes FRC005 to FRC008 and FRC017 to FRC018 (6 holes for 615m)</li> </ul>



explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.

- HQ) were drilled in October-November 2016 by WDA Drilling using Alton rig.
- RC drillholes FRC031 to FRC038 and FRC039 to FRC041 (11 holes for 1874m) were drilled in November-December 2016 by Grid Drilling using Evolution rig. These holes were drilled with 5.5 inch hammer bit and 4.5 inch rods. All other RC holes used a 5 inch hammer bit and 4 inch rods.
- RC drillholes FRC075 to FRC076 (2 holes for 258m) were drilled in December 2016 by Bullion Drilling using Schram 450 rig.
- Aircore drillholes FAC001 to FAC004 (4 holes for 203m) were drilled in December 2016 by Wallis Drilling using Mantis rig. These vertical holes were drilled to define the fresh-weathered contact. Assay data was not used in this resource estimate.
- DDH drillholes (with RC precollar) FRCD005 to FRCD006 (2 holes for 524m HQ) were drilled in January 2017 by WDA Drilling using Alton rig.
- DDH drillholes FDD001 to FDD003 and (mud rotary precollar) FMRD001 (4 holes 216m PQ) were drilled in January 2017 by WDA Drilling using Alton rig. These vertical holes were drilled to provide large diameter PQ core for customer bulk samples of fresh pegmatite, geotechnical data and metallurgical test-work of the saprolite.
- RC drillholes FRC109 to FRC124 (16 holes for 1793m) were drilled in the period January-February 2018 by WDA Drilling using UDR1000 rig.
- DDH drillholes (with RC or mud rotary precollar) FRCD009 to FRCD012 and FMRD006 (5 holes for 717 m) were drilled in February-March 2018 by WDA Drilling using DE811 and Alton rigs.
- RC Drillholes FRC125 to FRC138 were drilled in June 2018 by WDA Drilling using UDR1000 rig as part of a sterilization program around Grants. Data was used to assist with the wider definition of the weathering profile.
- RC Drillholes FRC146 to FRC160 and FRC176 to FRC184 were drilled by



- Swick Drilling using a Schramm 685 rig between June and September 2018 as part of the current resource definition and exploration program.
- DDH drillholes (with RC precollar) FRCD013 to FRCD015 were drilled in August 2018 by WDA Drilling using DE811 rig. At the time of the current resource estimation these holes had not been assayed but were used for geological interpretation only.

#### Sampling methods

- Core's RC drill spoils over all programs were collected into two subsamples:
  - 1 metre split sample, homogenized and cone split at the cyclone into 12x18 inch calico bags. Weighing 2-5 kg, or 15% of the original sample.
  - 20-40 kg primary sample is collected in 600x900mm green bags and retained until assays have been returned and deemed reliable for reporting purposes.
- RC sampling of pegmatite for assays is done on a 1 metre basis. 1m-sampling continued into the barren wall-zone of the pegmatite and then a 3m composite was collected from the immediately surrounding barren phyllite host rock.
- Drill core was collected directly into trays, marked up by metre marks and secured as the drilling progressed. Geological logging and sample interval selection took place soon after.
- DDH Core was transported to a local core preparation facility and cut firstly
  into half longitudinally along a consistent line between 0.3m and 1m in
  length, ensuring no bias in the cutting plane. Again, without bias, half core
  was then cut into two further segments. A quarter was then collected on a
  metre basis (where possible), bagged and sent to the North Australian
  Laboratory in Pine Creek, NT, for analysis. Half core from most of the holes



#### Drilling techniques

• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).

was provided to Nagrom laboratory in Perth for metallurgical test-work. The remaining quarter core is retained at Core's storage shed in Berry Springs.

- DDH sampling of pegmatite for assays is done over the sub-1m intervals described above. 1m-sampling continued into the barren phyllite host rock.
- Drilling technique used by Core and reported herein comprises:
  - DE811 rig (RC): Standard Reverse Circulation (RC) 4 and ¾ inch face sampling hammer (5-inch diameter bit). The rig used is a wheel mounted Sandvik DE811 multi-purpose rig and running a 1150 CFM 500/1000 psi compressor/booster combo. The rig is operated by WDA Drilling Services, Humpty Doo NT.
  - UDR1000 rig: Standard Reverse Circulation (RC) 4 and ¾ inch face sampling hammer (5-inch diameter bit). The rig used is a wheel mounted UDR1000 multi-purpose rig and running a 1150 CFM 500/1000 psi compressor/booster combo. The rig is operated by WDA Drilling Services, Humpty Doo NT.
  - Evolution rig: Standard Reverse Circulation (RC) 5 and ¼ inch face sampling hammer (5.5-inch diameter bit). The rig used is a multipurpose wheel mounted Evolution FH3000 rig and running 1150 CFM 350 psi compressor and 1800 CFM booster/auxiliary combo, with trailer-mounted cyclone operated by Grid Drilling, Qld.
  - Schram 450 rig: Standard Reverse Circulation (RC) 4 and ¾ inch face sampling hammer (5-inch diameter bit). The rig used is a wheel mounted Schram T450WS rig and running a 900 CFM 350 psi compressor/booster combo. The rig is operated by Bullion Drilling, SA.
  - Alton rig: Standard track-mounted Alton MD600 or HD900 DDH rig using HQ or PQ core assembly (triple tube), drilling muds or water as



# Drill sample recovery

- Method of recording and assessing core and chip sample recoveries and results assessed.
- Measures taken to maximise sample recovery and ensure representative nature of the samples.
- Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.

- required, wireline setup. The rig is operated by WDA Drilling Services, Humpty Doo NT.
- DE811 rig (DDH): Standard truck-mounted Sandvik DE811 multipurpose rig using HQ core assembly (triple tube), drilling muds or water as required, wireline setup. The rig is operated by WDA Drilling Services, Humpty Doo NT.
- Mantis rig: track-mounted Mantis 75 aircore rig within onboard 160
   CFM 150 psi compressor. This rig is operated by Wallis Drilling, WA.
- Schramm 685 rig: Truck-mounted Schramm 685 with standard Reverse Circulation (RC) 5 and ¼ inch face sampling hammer (5.5-inch diameter bit). Running an air pack of twin compressors with 2500 CFM @ 350psi with a Hurricane 6T booster up to 1000psi. The rig is operated by Swick Mining Limited.
- Oriented core was obtained for DDHs drilled in 2018 using the Longyear TruCore tool.

#### 2016-2017 Drilling program

- Once the RC drilling at Grants was advanced enough in 2016 to suggest resource definition would be carried out (FRC031 onwards), the geologist noted and documented the recovery (0-100%) and sample quality (Wet, Moist, Dry) for each metre, according to a SoP. Prior to this, poor recovery and potential contamination were only documented when it was apparent by inspection of the sample bags. This procedure was sufficient to recognise a contamination issue in FRC017 and FRC018 (see below). Apart from that, recovery was generally >95% and samples were dry apart from certain drillholes, and then only the first sample after a rod change. The drilling contractors took great care to maintain a dry sample, even if this meant long periods of airlifting water at the start of a rod.
- Contamination was monitored regularly. If evidence of contamination was



noted in the calico sub-sample, the procedure was to visually compare to the green RC bag. This contamination would normally take the form of a brown dis-colouration (due to barren phyllite host rock) to what is normally bright white pulverized pegmatite. This contamination was noted in two of the early exploration-stage holes drilled at Grants, FRC017 and FRC018. Brown ferruginous-micaceous discolouration in the calico bags alerted the site geologist of an issue. The issue stemmed from leaking compressor seals and an inadequate drill pressure, which allowed infiltration of host phyllite into the splitter. This issue could not be resolved until the rig left the site. The green bags appeared to be free of this discolouration and therefore were not subject to contamination. As a result, the primary sampling of these holes took place by spearing the green bags. Intense QA-QC was initiated to ensure this was the correct course of action.

- No other drilling related contamination issues were encountered in the 2016-2017 program.
- The rigs splitter is emptied between 1m samples by hammering the cyclone bin with a mallet. The set-up of the cyclone varied between rigs, but a gate mechanism was used to prevent inter-mingling between metre intervals. The cyclone and splitter were also regularly cleaned by opening the doors, visually checking, and if build-up of material is noted, the equipment cleaned with either compressed air or high-pressure water. This process was in all cases undertaken when the drilling first penetrated the pegmatite mineralization, to ensure no host rock contamination took place.
- Drill collars are sealed to prevent sample loss and holes are normally drilled dry to prevent poor recoveries and contamination caused by water ingress. Wet intervals are noted in case of unusual results.



- No material bias has been recognised.
- DDH recovery was close to 100% and was reconciled by the weights dispatched to Nagrom for metallurgical test-work for the metres drilled.

#### 2018 Drilling program

- DDH core recoveries were measured using conventional procedures utilising the driller's markers and estimates of core loss, followed by mark up and measuring of recovered core by the geologist or geotechnician.
- RC sample recoveries were visually estimated in the field and recorded by Core geologists for each metre drilled. RC recoveries are monitored qualitatively as the hole progresses, the principle aim being to identify bags that have significantly less spoil than expected for the metre.
- A semi-quantitative estimate of % recovery is subsequently made after completion of the hole, once the average volume of material can be gauged for a metre of drilling.
- Core Lithium has weighed most of the primary "green" RC sample bags from 2016 and 2018 drilling programs. From this data it is possible to quantify recovery better than by visual estimation. Core undertook a QAQC exercise and constructed a report concluding that:
  - RC recovery of RC spoils varies according to the presence or absence of groundwater, and according to the tolerances of the RC hammer-bit shroud assembly.
  - o There was no relationship identified between recovery and grade.
  - Wet and moist samples readily reflect the grade of the drilled interval, as much as the dry sample.
- The rigs splitter is emptied between 1m samples by hammering the
  cyclone bin with a mallet. The set-up of the cyclone varied between rigs,
  but a gate mechanism was used to prevent inter-mingling between metre
  intervals. The cyclone and splitter were also regularly cleaned by opening



#### Logging

- Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.
- Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.
- The total length and percentage of the relevant intersections logged.

the doors, visually checking, and if build-up of material is noted, the equipment cleaned with either compressed air or high-pressure water. This process was in all cases undertaken when the drilling first penetrated the pegmatite mineralization, to ensure no host rock contamination took place.

- Drill collars are sealed to prevent sample loss and holes are normally drilled dry to prevent poor recoveries and contamination caused by water ingress. Wet intervals are noted in case of unusual results.
- No material bias has been recognised.
- Standard sample logging procedures are utilised by Core, including logging codes for lithology, minerals, weathering etc.
- A chip tray for the entire hole is completed. A sub-sample is sieved from the large RC bags at site into chip trays over the pegmatite interval to assist in geological logging. These are photographed and stored on the Core server.
- Geology of the RC drill chips were logged on a metre basis with attention to main rock forming minerals within the pegmatite intersections.
- Geology of the drill core is logged on a geological basis with attention to main rock forming minerals and textures within the pegmatite intersections.
- Entire drilled interval of RC and DDH logged.
- Pegmatite sections are also checked under a single-beam UV light for spodumene identification on an ad hoc basis. These only provide indicative qualitative information.
- Estimation of mineral modal composition, including spodumene, is done visually. This will then be correlated to assay data when they are available.
- Core trays and RC chip trays are photographed and stored on the Core server.
- Geotechnical logging has been carried out on oriented DDH drillholes that



Sub-sampling techniques and sample preparation

- If core, whether cut or sawn and whether quarter, half or all core taken.
- If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.
- For all sample types, the nature, quality and appropriateness of the sample preparation technique.
- Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.
- Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.
- Whether sample sizes are appropriate to the grain size of the material being sampled.

CXO have drilled subsequent to the resource drilling. Remaining holes from 2018 DDH program are also oriented and can be logged in future if needed.

- RC samples referred to in this report have been collected on a 1m-basis utilising the cone splitter mounted under the drill rig's cyclone or on a trailer (rotary type).
- Where the sample was too wet for the cone splitter to operate effectively, 1m samples were collected from the 1m bulk bags using a spear. This was a rare occurrence.
- The type of sub-sampling technique and the quality of the sub-sample was recorded for each metre. The quality of the samples was assessed prior to their inclusion in calculated interval averages.
- Quarter Drill Core sample intervals were constrained by geology, alteration or structural boundaries, intervals varied between a minimum of 0.3 metres to a maximum of 1 m. The core is cut along a regular Ori line to ensure no sampling bias.

#### **Field RC duplicates**

- A field duplicate sample regime is used to monitor sampling methodology and homogeneity of RC drilling. During the 2016-2017 program at Grants, 52 duplicates were collected out of the 821 original RC samples, equating to roughly 1 in 20. The typical procedure was to collect Duplicates via a spear of the green RC bag, having collected the Original in a calico bag via a rotary split. Trying to split the 2-3kg calico bag into an Original and a Duplicate has inherent dangers, least of all reducing the sample mass. However, comparing rotary split sample with a spear sample also has some element of incompatibility. The expectation would be a high degree of variability in the spear sample, because of the heterogenous and stratified RC bag, but overall it should statistically match the split original sample.
- A series of duplicates were also selected to test on a "like for like" basis. A



- Spear sample was used for the Original and the Duplicate, to test for heterogeneity in the RC bag. Data show a remarkably good correlation.
- During the 2018 drilling programs a total of 95 duplicates were collected.
   At the Grants deposit they were collected at a rate of roughly 1 in 20.

   Samples were collected in the same way as in previous seasons. The duplicates cover a wide range of Lithium values up to 13,000 ppm.
- Results of duplicate analysis show an acceptable degree of correlation given the heterogeneous nature of the pegmatite.

#### Sample heterogeneity

- Given the pegmatite minerals, including the spodumene, are very coarse grained, there is expected to be an issue of heterogeneity. The sample size for NQ drill core is borderline, and this is why CXO have drilled using HQ diameter. Assaying of coarse rejects as part of the Umpire process in 2017 showed that there is good correlation between the original and duplicate samples at that scale. However, there is assay variability from one metre to the next that reflects the heterogeneity. This is evident when comparing assays profiles twinned DDH and RC holes. RC tend to exhibit a flatter more consistent trend. This is because RC samples a larger volume of material for each metre and flattens out the fluctuations. Further discussion of twins can be found in section below.
- Quarter core is cut as described above, bagged and sent to the laboratory for analysis. As discussed, the heterogeneity of pegmatite core material means it is not suitable for "second-half" or "second-quarter" duplicate analysis.

#### Sample preparation

- Sample prep occurs at North Australian Laboratories ("NAL"), Pine Creek,
   NT.
- DDH samples are crushed to a nominal size to fit into mills, approximately -

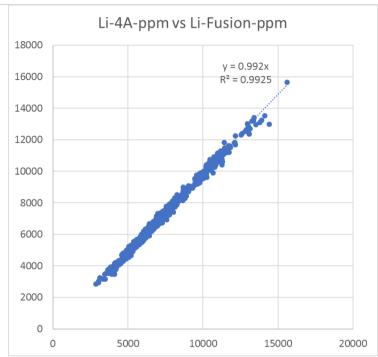


Quality of
assay data
and
laboratory
tests

- The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.
- For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.
- Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.

- 2mm. RC samples do not require any crushing, as they are largely pulp already.
- A 1-2 kg riffle-split of DDH crushed material and RC Samples are then prepared by pulverising to 95% passing -100 um. In the 2016-2017 program, samples were pulverised in a Vertical Spindle Pulveriser (Keegormill).
- In mid-2018, Steel Ring Mills were installed at NAL to reduce the iron contamination that was recognised in the 2016-2017 assays (see discussion below).
- Sample analysis also occurs at North Australian Laboratories, Pine Creek, NT.
- A 0.3 g sub-sample of the pulp is digested in a standard 4 acid mixture and analysed via ICP-MS and ICP-OES methods for the following elements: Li, Cs, Rb, Sr, Nb, Sn, Ta, U, As, K, P and Fe. The lower and upper detection range for Li by this method are 1 ppm and 5000 ppm respectively.
- In the 2016-2017 program, all samples were also analysed via fusion method a 0.3 g sub-sample is fused with a Sodium Peroxide Fusion flux and then digested in 10% hydrochloric acid. ICP-OES is used for the following elements: Li, P and Fe. Sulphur has also been collected routinely since August 2018. The lower and upper detection range for Li by this method are 10 ppm and 20,000 ppm respectively. Exhaustive checks of this data suggested an excellent correlation exists (see chart below), so in 2018 a 3000 ppm Li trigger was set to process that sample via a fusion method.





- Selected drill core samples were also run for the following additional elements to provide a broader suite: Al, Ca, Mg, Mn, Si, LOI, SG (immersion), SG (pychnometer) and various trace elements. Na was also analysed using a 4-acid digest and ICP-OES method.
- A barren flush is inserted between samples at the laboratory.
- The laboratory has a regime of 1 in 8 control subsamples.
- NAL utilise standard internal quality control measures including the use of Certified Lithium Standards and duplicates/repeats.
- CXO-implemented quality control procedures include:
  - o One in twenty certified Lithium ore standards are used for this



drilling.

- One in twenty duplicates are used for this drilling (RC only).
- o Blanks inserted at a rate of roughly one in twenty.

#### QAQC of 2016-2017 data

- One in 20 certified Lithium reference standards were used for Grants drilling program. Core uses two standards of roughly 1700 ppm and 7000 ppm Li ppm, covering the range of expected Li values in the mineralized pegmatite.
- Early in the program, there was a noted variability of the assayed standards from the expected range, both higher and lower. However, this improved for the bulk of the program and standards reported back with an excellent correlation, especially for the higher concentration standard. Overall the standards average within 1% of the expected value for Li.
- Blanks were inserted on a 1 in 20 basis, once resource definition drilling was initiated.
- The data from the 30 routine blanks pulverised and assayed at NAL indicate that the Li content averages 85 ppm (0.02% Li2O) and the highest is 196 ppm Li. This is reasonable given the aggressive (hard) nature of the coarse quartz blanks, effectively scouring the crusher and mill. This value is well below the effective cut-off grade used for the significant intercepts.
- The baseline Fe2O3 content of Blanks is ~0.01%, whereas the average runof-sample value of 3.68%. This is indicative of substantial Iron being stripped from the steel pulverising equipment at the NAL laboratory. This stripping of metal obviously has an effect on the Fe content of the Lithium bearing samples as well, especially the core, which are equally as hard as the quartz blanks. This is discussed further below.
- One in 20 field duplicates are used for Grants RC drilling, as discussed above.



• Duplicates were not collected for the DDH core drilling, as discussed above. The Laboratory indicated that physical wear on milling equipment was high and that contamination with Fe and the steel hardening components, such as Mn, would predictably be high.

#### QAQC of 2018 data

- During the late 2017 to early 2018 drilling program at the broader Finniss Project, a total of 88 field standards were inserted alongside routine RC and DD samples. During the 2018 programs at Grants and BP33 a total of 92 field standards were inserted. At the Grants and BP33 deposits they were inserted at a rate of roughly 1 in 20. Five different standards with certified Li values of 1,682 ppm, 2,270 ppm, 4,784 ppm, 7,016 ppm and 10,300 ppm were used covering the range of expected Li values in the mineralized pegmatite. Overall, the performance of the field standards was excellent with no bias evident.
- Throughout the 2017/18 drilling, a total of 64 quartz blanks were inserted into the sample stream at a rate of 1 in 20 with the Grants drilling. The Li content averaged 38 ppm (0.01% Li₂O) and is considered to be very acceptable. During the 2018 drilling a total of 82 quartz blanks were inserted with samples submitted from Grants and BP33. The Li content averaged 24 ppm. Again, this is considered to be very acceptable.
- Duplicates have been discussed above.

#### **Umpire** checks

External laboratory checks took place at the end of the 2016-2017 RC/DDH program and results indicate a high degree of correlation (NAL vs Nagrom; refer to next section). A further round of umpire checks was completed on a total of 140 RC and DD samples from across the project area in July 2018. As with previous external laboratory checks there was a high degree of correlation between NAL and Nagrom assays.



# Verification of sampling and assaying

- The verification of significant intersections by either independent or alternative company personnel.
- The use of twinned holes.
- Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.
- Discuss any adjustment to assay data.

- Core's experienced project geologists are supervised by Core's Exploration Manager.
- All field data is entered into excel spreadsheets (supported by look-up tables) at site and subsequently validated as it is imported into the centralized CXO Access database.
- Hard copies of survey and sampling data are stored in the local office and electronic data is stored on the Core server.
- Metallic Lithium percent was multiplied by a conversion factor of 2.15283/10000 to report Li ppm as Li<sub>2</sub>O%

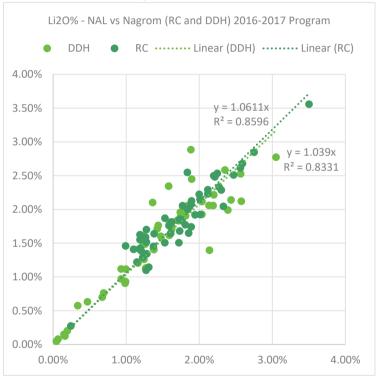
#### 2016-2017 Program verification

- Two diamond core holes were drilled as twins to RC holes and used to check the difference between RC and DDH assays across a similar part of the mineralized pegmatite. The data indicate variability on a metre-bymetre basis, related to the heterogeneity of the pegmatite, but overall the +30m intercepts are proportionate.
- One in twenty external laboratory checks ("umpire checks") were submitted to an independent laboratory (Nagrom in Perth) for final verification of results. The material used is the residue of coarse primary crushed archive material from original RC samples provided to NAL. This serves to check laboratory Li assay repeatability and to investigate the Fe contamination caused by milling equipment at NAL.
- A further sample set of ¼ core was processed at Nagrom to compare with NAL drill core data ("umpire checks"). 20 of these samples were in-tact quarter core cut from HQ drillcore from Grants, while the remaining 31 were coarse rejects of quarter core that were crushed at NAL.
- The in-tact core was first prepared via primary crushing.
- All samples then underwent pulverising in a tungsten carbide mill to minimise or eliminate Fe contamination. NAL and Nagrom both used



Fusion ICP-OES/MS for Li.

• From this "umpire" exercise, the Lithium check values correlate well with the original NAL values, but are by average 3-6% higher at Nagrom (see chart below). It could be argued that they are under-reported at NAL, where Li is diluted by the introduction of Fe from the mill.



#### 2018 Program verification

• As part of the 2018 drilling, Core attempted to twin a further 3 RC holes with HQ DDH holes. The downhole plots demonstrate slight thickness



variations of the pegmatite but in general the RC and DDH holes display similar trends of higher and lower  $\text{Li}_2\text{O}$  values downhole despite the significant separation in some cases. The majority of hole pairs demonstrate higher  $\text{Li}_2\text{O}$  values on average in the DDH holes, suggesting a slight bias.

- Based on QAQC assessments of RC and DDH assays as well as data from blanks and check assays, a substantial iron contamination issue has been identified in the drill hole assays. The two primary sources of contamination are the wear on the RC drill bits and rods as well as wear and abrasion of the steel sample preparation equipment at the laboratory. The level of contamination was shown to be both significant and highly variable. It is estimated that the level of Fe contamination in the assays may be in excess of 3% Fe<sub>2</sub>O<sub>3</sub> in some cases from the 2016-2017 drilling. Changes in equipment at the laboratory prior to the 2018 drilling campaign has seen a reduction in the contamination levels to around 1% Fe<sub>2</sub>O<sub>3</sub>.
- The current assay database is known to contain Fe data that is affected by variable levels of Fe contamination that is difficult to correct. For these reasons Fe was not estimated as part of the current Mineral Resource Estimate for the Grants Deposit as it would be misleading.

# Location of data points

- Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.
- Specification of the grid system used.
- Quality and adequacy of topographic control.

- Coordinate information for the Grants drillholes was collected by Differential GPS (DGPS), by Land Surveys Australia Pty Ltd. This data is accurate to 10 cm in all three dimensions. These collar RLs were verified against CXO's DTM.
- All are GDA94 Zone 52.
- In 2016-2017 program, roughly half of the Grants RC and DDH holes were surveyed by isGyro down hole tool and the collar is oriented using the Azi Aligner tool, both from Downhole Surveys, Perth. A QA-QC procedure is



		<ul> <li>applied to the azimuth data. Spurious data are excluded. The remaining holes were surveyed by downhole camera tool and the collar is oriented using the Azi Aligner tool.</li> <li>In 2018 program, RC and DDH hole traces were surveyed by north seeking Champ gyro tool (multishot mode at 5m and 10m intervals) operated by the drillers and the collar is oriented by a line of sight compass and a clinometer. Downhole Camera shots are also taken on an ad hoc basis during drilling to ensure the holes are kept relatively straight.</li> <li>Drill hole deviation has been minor and predictable in the most part. However, for the deeper holes, deviation was significant in the lower parts of the holes as a result of hard bedrock. Despite this, the holes still tested the targets roughly oblique to the strike of the pegmatite, which is acceptable for resource drilling. In any case, the gyro down hole survey has accurately recorded the drill traces and any deviation from the planned program can be accommodated in a 3D GIS environment.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Drill collars are spaced approximately 25m apart along the north trending pegmatite body of Grants.</li> <li>This data will be used to support a resource.</li> <li>Refer to figures in report.</li> <li>Sample compositing reported here are calculated length weighted averages of the assays. Length weighted averages are acceptable method because the density of the rock (pegmatite) is constant.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and</li> </ul>	<ul> <li>Core's drilling is oriented perpendicular to the interpreted strike of mineralization (pegmatite body) as mapped or predicted by the geological model. In some areas the rocks may trend at an angle to the drill traverse. Because of the dip of the hole, drill intersections are apparent thicknesses and overall geological context is needed to estimate true thicknesses.</li> <li>The azimuth of Core's drill holes is largely oriented approximately</li> </ul>



	reported if material.	perpendicular to the interpreted strike of the mineralised trend. Holes are oblique in a dip sense.
		<ul> <li>Core has also drilled a number of vertical or sub-vertical drillholes that are essentially drilling down-dip and hence were only completed to 10-15 m beyond the weathered-fresh contact, which is what they were designed to resolve:</li> </ul>
		<ul> <li>PQ diameter DDH drillholes FDD001, FDD002, FDD003 and FMRD001</li> </ul>
		<ul> <li>RC holes FRC117, FRC118 and FRC119</li> <li>Aircore holes FAC001 to FAC004</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Company geologist supervises all sampling and subsequent storage in field and transport to point of dispatch to assay laboratories.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	• A review of sample weights, recovery statistics and assay data with regard to the sampling techniques was undertaken after the 2016-2017 drilling program to demonstrate representivity. Learnings from this review were applied to the 2018 drilling, such as regular checks of the calico bag for signs of contamination.



#### Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>Drilling by Core at Grants Prospect on what is EL29698 that is 100% owned by Core.</li> <li>The area being drilled comprises Vacant Crown land</li> <li>There are no registered heritage sites covering the areas being drilled.</li> <li>The tenement is in good standing with the NT DPIR Titles Division.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The history of mining in the Bynoe Harbour – Middle Arm area dates back to 1886 when tin was discovered by Mr. C Clark.</li> <li>By 1890 the Leviathan Mine and the Annie Mine were discovered and worked discontinuously until 1902.</li> <li>In 1903 the Hang Gong Wheel of Fortune was found and 109 tons of tin concentrates were produced in 1905. In 1906, the mine produced 80 tons of concentrates, but it was exhausted and closed down the following year after a total of 189 tons of concentrates had been won.</li> <li>By 1909 activity was limited to Leviathan and Bells Mona mines in the area with little activity in the period 1907 to 1909.</li> <li>Renewed activities in 1925 coincided with the granting of exclusive prospecting licences over an area of 26 square miles in the Bynoe Harbour – West Arm section but once again nothing eventuated.</li> <li>The records of production for many mines are not complete, and in numerous cases changes have been made to the names of the mines and prospects which tend to confuse the records still further. In many cases the</li> </ul>



		<ul> <li>published names of mines cannot be linked to field occurrences.</li> <li>In the early 1980s the Bynoe Pegmatite field was reactivated during a period of high tantalum prices by Greenbushes Tin which owned and operated the Greenbushes Tin and Tantalite (and later spodumene) Mine in WA. Greenbushes Tin Ltd entered into a JV named the Bynoe Joint Venture with Barbara Mining Corporation, a subsidiary of Bayer AG of Germany.</li> <li>Greenex (the exploration arm of Greenbushes Tin Ltd) explored the Bynoe pegmatite field between 1980 and 1990 and produced tin and tantalite from its Observation Hill Treatment Plant between 1986 and 1988. An abandoned open cut to 10m depth remains at BP33.</li> <li>They then tributed the project out to a company named Fieldcorp Pty Ltd who operated it between 1991 and 1995.</li> <li>In 1996, Julia Corp drilled RC holes into representative pegmatites in the field, but like all of their predecessors, did not assay for Li.</li> <li>Since 1996 the field has been defunct until recently when exploration has begun on ascertaining the lithium prospectivity of the Bynoe pegmatites.</li> <li>The NT geological Survey undertook a regional appraisal of the field, which was published in 2004 (NTGS Report 16, Frater 2004).</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The tenements cover the northern portion of a swarm of complex zoned rare element pegmatite field, which comprises the 55km long by 10km wide West Arm – Mt Finniss pegmatite belt (Bynoe Pegmatite Field; NTGS Report 16). The main pegmatites in this belt include Mt Finniss, Grants, BP33, Hang Gong and Sandras.</li> <li>The Finniss pegmatites have intruded early Proterozoic shales, siltstones and schists of the Burrell Creek Formation which lies on the northwest margin of the Pine Creek Geosyncline. To the south and west are the granitoid plutons and pegmatitic granite stocks of the Litchfield Complex.</li> </ul>



The source of the fluids that have formed the intruding pegmatites is generally accepted as being the Two Sisters Granite to the west of the belt, and which probably underlies the entire area at depths of 5-10 km.  • Lithium mineralisation has been identified as occurring at Bilato's (Picketts), Saffums 1 (amblygonite) and more recently at Grants, BP33 and Sandras.  • A summary of all information material to the understanding of information for all Material drill holes: • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.  The source of the fluids that have formed the entire area at depths of 5-10 km.  • Lithium mineralisation has been identified as occurring at Bilato's (Picketts), Saffums 1 (amblygonite) and more recently at Grants, BP33 and Sandras.  The lithium mineralisation has been identified as occurring at Bilato's (Picketts), Saffums 1 (amblygonite) and more recently at Grants, BP33 and Sandras.  The lithium mineralisation has been identified as occurring at Bilato's (Picketts), Saffums 1 (amblygonite) and more recently at Grants, BP33 and Sandras.  The lithium mineralisation has been identified as occurring at Bilato's (Picketts), Saffums 1 (amblygonite) and more recently at Grants, BP33 and Sandras.  The lithium mineralisation has been identified as occurring at Bilato's (Picketts), Saffums 1 (amblygonite) and more recently at Grants, BP33 and Sandras.  The lithium mineralisation has been identified as occurring at Bilato's (Picketts), Saffums 1 (amblygonite) and more recently at Grants 1 (amblygonite) and more recently at Grants 1 (amblygonite) and more recently at Grants 1 (amblygonit										
Information  the exploration results including a tabulation of the following information for all Material drill holes:		generand v	ally a which m m	accepted probably ineralisati	as being t underlies ion has be	he Two the en en ide	o Sistei ntire ai ntified	rs Grar rea at o	nite to depths curring	the west of the belt, s of 5-10 km. g at Bilato's (Picketts),
o easting and northing of the drill hole collar o elevation or RL (Reduced Level − elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.  • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.  • If MRD001 1 69303.4 859900.7 22.6 0 -90 42.3 Not sampled  • FD0002 1 69303.5 859900.7 22.6 0 -90 42.6 Not sampled  • FD0003 1 69303.3 859900.7 22.6 0 -90 42.6 Not sampled  • FD0003 1 69303.3 859900.7 22.6 0 -90 42.6 Not sampled  • FD0005 2 69303.4 859900.7 22.6 0 -90 42.6 Not sampled  • FD0006 2 69303.4 859900.7 22.6 0 -90 42.6 Not sampled  • FD0007 2 69303.4 859900.7 22.7 0 -90 65.6 5.7  155.8 82.6  220 2m @ 0.49% LI2O from 97m  • FMRD007 2 69285.8 859900.7 22.2 108.2 -55.2 375.9 No significant intercepts  • FMRD007 2 69285.8 859900.7 22.2 108.2 -55.2 375.9 No significant intercepts  • FRC006 1 693000.3 859900.5 22.2 92.5 -54.7 131 49m @ 1.78% LI2O from 71m	the exploration results including a tabulation of the following	Hole_ID	Cat *	_	North	RL_m	Az_T N			
<ul> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> <li>FDD002</li> <li>693025.2</li> <li>8598971.4</li> <li>19 0 -90 51 Assays not used</li> <li>693028.5</li> <li>8598971.4</li> <li>10 93028.5</li> <li>8598971.4</li> <li>11 9 0 -90 65.6</li> <li>63m @ 1.29% LI2O from 50.7m</li> <li>60 90028.5</li> <li>60 90028.5</li> <li>8598971.4</li> <li>10 90028.5</li> <li>10 900</li></ul>		FAC001	1	693058.2	8599150.4	19.1	0	-90	52	Assays not used
metres) of the drill hole collar		FAC002	1	693052.4	8599079.2	21.2	0	-90	49	Assays not used
o down hole length and interception depth o hole length.  • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.    FDD002	·	FAC003	1	693018.4	8598940.2	21.8	0	-90	51	Assays not used
o hole length.  If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.  FDD002 1 69303.2 8598971.4 21.9 0 -90 65.6 6.3 m @ 1.29% Li2O from 50.7m  FDD003 1 69303.3 8599006.7 22.6 0 -90 42.6 Not sampled  FDD006 2 69303.4 8598901.7 20.1 285.5 -58.6 220 2m @ 0.49% Li2O from 48m  FDD007 2 693014.0 8599168.7 19.7 114.7 -56.5 200 12m @ 1.65% Li2O from 97m  FMRD001 1 693033.4 8599008.2 22.5 0 -90 65.9 5m @ 1.29% Li2O from 103m  FMRD006 1 693125.8 8599072.8 19.4 268 -57 155.8 & 26m @ 1.56% Li2O from 103m  FMRD007 2 692858.0 8599103.2 22.2 108.2 -55.2 375.9 No significant intercepts  FRC005 1 693024.0 859908.7 21.9 90 -55 66 No Significant Intercepts  FRC006 1 693000.3 859909.5 22.2 92.5 -54.7 131 49m @ 1.78% Li2O from 71m	<ul> <li>dip and azimuth of the hole</li> </ul>	FAC004	1	693028.5	8598990.7	22.4	0	-90	51	Assays not used
• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.    FDD003	, ,	FDD001	1	693031.5	8599008.1	22.6	0	-90	42.3	Not sampled
detract from the understanding of the report, the Competent Person should clearly explain why this is the case.    FDD006   2   693035.4   8598901.7   20.1   285.5   -58.6   220   2m @ 0.49% Li2O from 48m	If the exclusion of this information is justified on the basis that	FDD002	1	693025.2	8598971.4	21.9	0	-90	65.6	-
Person should clearly explain why this is the case.    FDD006   2   693035.4   8598901.7   20.1   285.5   -58.6   220   2m @ 0.49% Li2O from 48m		FDD003	1	693030.3	8599006.7	22.6	0	-90	42.6	Not sampled
FMRD001 1 693033.4 8599008.2 22.5 0 -90 65.9 5m @ 1.29% Li2O from 47m  FMRD006 1 693125.8 8599072.8 19.4 268 -57 155.8 & 26m @ 1.56% Li2O from 103m 122m  FMRD007 2 692858.0 8599103.2 22.2 108.2 -55.2 375.9 No significant intercepts  FRC005 1 693024.0 8599088.7 21.9 90 -55 66 No Significant Intercepts  FRC006 1 693000.3 8599090.5 22.2 92.5 -54.7 131 49m @ 1.78% Li2O from 71m		FDD006	2	693035.4	8598901.7	20.1	285.5	-58.6	220	2m @ 0.49% Li2O from 48m
FMRD006 1 693125.8 8599072.8 19.4 268 -57 155.8 & 26m @ 1.56% Li2O from 103m 122m  FMRD007 2 692858.0 8599103.2 22.2 108.2 -55.2 375.9 No significant intercepts  FRC005 1 693024.0 8599088.7 21.9 90 -55 66 No Significant Intercepts  FRC006 1 693000.3 8599090.5 22.2 92.5 -54.7 131 49m @ 1.78% Li2O from 71m		FDD007	2	693014.0	8599168.7	19.7	114.7	-56.5	200	12m @ 1.65% Li2O from 97m
FMRD006 1 693125.8 8599072.8 19.4 268 -57 155.8 & 26m @ 1.56% Li2O from 122m  FMRD007 2 692858.0 8599103.2 22.2 108.2 -55.2 375.9 No significant intercepts  FRC005 1 693024.0 859908.7 21.9 90 -55 66 No Significant Intercepts  FRC006 1 693000.3 8599090.5 22.2 92.5 -54.7 131 49m @ 1.78% Li2O from 71m		FMRD001	1	693033.4	8599008.2	22.5	0	-90	65.9	5m @ 1.29% Li2O from 47m
FRC005 1 693024.0 8599088.7 21.9 90 -55 66 No Significant Intercepts  FRC006 1 693000.3 8599090.5 22.2 92.5 -54.7 131 49m @ 1.78% Li2O from 71m		FMRD006	1	693125.8	8599072.8	19.4	268	-57	155.8	& 26m @ 1.56% Li20 from
FRC006 1 693000.3 8599090.5 22.2 92.5 -54.7 131 49m @ 1.78% Li2O from 71m		FMRD007	2	692858.0	8599103.2	22.2	108.2	-55.2	375.9	No significant intercepts
		FRC005	1	693024.0	8599088.7	21.9	90	-55	66	No Significant Intercepts
FRC007 1 692991.7 8598995.7 22.5 90 -55 76 14m @ 1.22% Li2O from 62m		FRC006	1	693000.3	8599090.5	22.2	92.5	-54.7	131	49m @ 1.78% Li2O from 71m
		FRC007	1	692991.7	8598995.7	22.5	90	-55	76	14m @ 1.22% Li2O from 62m



FRC008	1	693014.1	8599169.2	19.9	89.4	-54.7	118	20m @ 1.19% Li2O from 84m
FRC017	1	693100.3	8599077.3	20.3	277.2	-54.1	112	32m @ 1.59% Li2O from 67m
FRC018	1	693084.2	8598991.5	21.0	278.4	-54.8	112	40m @ 1.66% Li2O from 58m
FRC031	1	692986.5	8599024.5	22.5	85.6	-55.5	146	59m @ 1.45% Li2O from 79m
FRC032	1	693005.9	8599125.1	21.3	90.7	-54.8	120	38m @ 1.49% Li2O from 70m
FRC033	1	692981.5	8598976.8	22.4	89.5	-55.2	138	55m @ 1.42% Li2O from 66m
FRC034	1	692970.5	8598922.9	22.3	90.1	-55.1	114	34m @ 1.45% Li2O from 68m
FRC035	1	692935.1	8598924.0	22.9	90.6	-54.5	154	12m @ 1.18% Li2O from 128m
FRC036	1	692944.7	8598976.1	22.8	92.1	-55.4	196	43m @ 1.46% Li2O from 133m
FRC037	1	692951.5	8599022.7	22.7	88.7	-55.1	190	42m @ 1.61% Li20 from 130m
FRC038	1	692964.2	8599072.2	22.4	90.7	-55.2	202	53m @ 1.6% Li2O from 136m
FRC039	1	692971.0	8599126.7	21.8	89.2	-55	186	No Significant Intercepts
FRC040	1	692977.9	8599173.1	20.8	90.5	-55.5	202	No Significant Intercepts
FRC041	1	692929.7	8599070.4	22.2	86.9	-55	226	23m @ 1.51% Li2O from 188m
FRC044	1	692898.7	8598928.0	23.2	89.5	-60	127	Did not reach target
FRC075	1	693009.6	8599222.7	18.6	92	-60	138	No Significant Intercepts
FRC076	1	692950.9	8598865.2	21.6	90	-60	120	1m @ 0.49% Li2O from 85m
FRC109	1	693135.0	8598929.4	18.8	270	-60	103	Did not reach target
FRC110	1	693080.0	8598949.1	20.4	272	-58	149	40m @ 1.36% Li20 from 67m
FRC111	1	693112.2	8598949.2	19.5	279.2	-59	185	41m @ 1.42% Li2O from 130m
FRC112	1	693095.6	8599046.6	20.8	275	-59	128	43m @ 1.44% Li2O from 68m
FRC113	1	693128.6	8599098.3	18.8	269	-56	159	29m @ 1.4% Li2O from 98m
FRC114	1	693093.8	8599099.6	19.8	270	-55	89	25m @ 1.25% Li2O from 64m



FRC115	1	693103.8	8599099.2	19.6	270	-56	125	37m @ 1.47% Li2O from 66m
FRC116	1	693063.8	8599074.2	21.1	270	-85	40	4m @ 0.54% Li2O from 33m
FRC117	1	693057.0	8599073.8	21.2	266	-86	53	5m @ 1.12% Li2O from 48m
FRC118	1	693070.9	8599146.5	19.1	270	-80	5	Did not reach target
FRC119	1	693075.5	8599146.8	18.9	268	-76	59	8m @ 1.08% Li2O from 51m
FRC120	1	692921.1	8598879.4	22.5	88	-56	155	8m @ 0.57% Li2O from 116m
FRC121	1	692966.5	8599052.5	22.6	90	-56	166	37m @ 1.57% Li2O from 114m
FRC122	1	693125.0	8599146.7	17.9	269	-62	137	5m @ 1.4% Li20 from 107m
FRC123	1	693099.7	8599146.2	18.6	270	-60	71	8m @ 1.32% Li2O from 63m
FRC124	1	693113.8	8599000.6	20.2	271	-61	169	41m @ 1.59% Li2O from 115m
FRC125	2	693060.0	8599298.0	17.2	92.7	-56.6	110	No significant intercepts
FRC146	2	692914.0	8598781.0	21.3	88.0	-65.4	150	No significant intercepts
FRC147	3	693057.3	8598894.3	19.7	275.8	-60.8	125	23m @ 1.41% Li2O from 76m
FRC148	3	693071.0	8599396.0	20.0	92.8	-60.8	149	No significant intercepts
FRC149	3	692968.4	8598950.8	22.8	89.9	-60.7	137	40m @ 1.54% Li20 from 81m
FRC150	3	692932.6	8598898.9	22.5	89.5	-60.0	149	16m @ 0.94% Li2O from 117m
FRC151	2	693119.9	8598901.7	18.8	272.4	-65.0	274	67m @ 1.57% Li2O from 191m
FRC152	2	693116.9	8598873.4	18.6	270.1	-65.0	172	Did not reach target
FRC153	2	693084.8	8598793.0	18.9	269.4	-63.5	244	30m @ 1.70% Li2O from 206m
FRC154	2	692895.3	8598928.5	23.1	95.1	-60.1	244	45m @ 1.72% Li2O from 188m
FRC155	2	692878.0	8598808.5	22.7	90.6	-59.1	232	No significant intercepts
FRC156	2	692915.7	8598814.1	22.3	93.0	-60.2	149	No significant intercepts
FRC157	2	692917.3	8598854.5	22.6	91.7	-61.2	172	18m @ 1.04% Li20 from 141m



FRC158	2	692891.9	8598856.5	22.9	93.7	-61.3	238	30m @ 1.34% Li2O from 197m
FRC159	2	692930.2	8598905.8	22.7	90.9	-65.8	202	45m @ 1.72% Li2O from 142m
FRC160	2	693030.5	8599299.1	17.3	94.3	-60.8	160	No significant intercepts
FRC176	3	692876.9	8598953.3	22.9	90.2	-60.7	276	40m @ 1.52% Li2O from 210m
FRC177	3	692925.8	8598955.9	23.0	88.6	-61.1	196	21m @ 1.17% Li2O from 153m
FRC178	3	692948.0	8598954.7	23.1	87.1	-61.1	172	31m @ 1.49% Li2O from 121m
FRC179	3	692887.6	8598908.1	23.2	89.2	-66.9	286	48m @ 1.59% Li2O from 224m
FRC180	3	692897.7	8598999.2	22.8	86.3	-68.4	298	No significant intercepts
FRC181	3	692870.0	8598778.0	20.0	91.0	-59.7	250	No significant intercepts
FRC182	3	692899.0	8598930.2	23.1	88.2	-63.1	155	Precollar; No significant intercepts
FRC183	3	692862.4	8598780.9	22.5	94.8	-68.8	256	1m @ 0.41% Li2O from 231m
FRC184	3	692918.0	8599046.0	22.6	94.5	-68.0	268	29m @ 1.42% Li2O from 232m
FRCD001	1	693086.1	8598991.2	20.9	279	-55	103.7	42.15m @ 1.52% Li2O from 57.75m
FRCD002	1	693102.5	8599078.5	20.3	274.2	-56	112.7	38m @ 1.58% Li2O from 70m
FRCD003	1	692999.3	8599094.6	22.0	92.5	-56	124.6	47.8m @ 1.53% Li2O from 70.2m
FRCD005	1	692916.9	8599020.7	22.6	88.33	-55	266.3	34.3m @ 1.35% Li2O from 200m
FRCD006	1	692905.6	8598976.0	22.9	90.52	-63.5	257.5	16.5m @ 1.37% Li2O from 217.3m
FRCD009	1	693097.6	8599043.7	20.7	270.6	-55.8	115.1	41.1m @ 1.77% Li2O from 71.3m
FRCD010	1	693109.7	8599023.6	20.4	277.8	-54.8	139.1	36.75m @ 1.25% Li2O from 90.25m



		FRCD011	1	693112.8	8598997.2	20.2	269.7	-54.4	162	37.2m @ 1.71% Li2O from 103.7m
		FRCD012	1	692985.6	8598985.3	22.6	91.1	-54.8	144.8	53.24m @ 1.69% Li2O from 65.76m
		FRCD013	3	692898.9	8598928.0	23.0	88.2	-63.1	255.2	core not cut; geology only
		FRCD014	3	693136.5	8598931.7	18.9	269.0	-58.8	283.8	core not cut; geology only
		FRCD015	3	692897.2	8598875.0	22.9	92.6	-62.5	222.3	core not cut; geology only
		1 – holes u 2 – holes p	sed in ublish	ed on 23/0	esource pub 7/2018 or 1	6/08/20	018 that	were no		n previous resource
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>						rages a is cons grades	re acco tant. s for co	eptable	e method because
Relationship between mineralisatio n widths and	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported,</li> </ul>	Веса	ıse oj veral	f the dip o	of the hole	, drill	interse	ctions	are ap	is discussed above. parent thicknesses ue thicknesses. Refer



intercept lengths	there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	See figures in report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Exploration results are discussed in the report and shown in figures.
Other substantive exploration data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	All meaningful and material data reported.
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Core is continuing to assess Grants as part of a Definitive Feasibility Study.



# **Section 3 Estimation and Reporting of Mineral Resources**

(Criteria listed in the preceding sections also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul> <li>A data check of source assay data and survey data has been undertaken and compared to the database. No translation issues have been identified. The data was validated during the interpretation of the mineralisation, with no significant errors identified. Only RC and DDH holes have been included in the MRE.</li> <li>Data validation processes are in place and run upon import into Micromine to be used for the MRE. Checks included: missing intervals, overlapping intervals and any depth errors.</li> <li>A DEM topography to DGPS collar check has been completed.</li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul> <li>Graeme McDonald (CP) undertook a recent site visit during September 2018. A review of the drilling, logging, sampling and QAQC procedures has been undertaken. All processes and procedures were in line with industry best practice.</li> </ul>
Geological interpretatio n	<ul> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul> <li>The geological interpretation is considered robust due to the nature of the mineralisation. The mineralisation is hosted within the pegmatite. The locations of the hangingwall and footwall of the pegmatite intrusion are well understood with drilling which penetrates both contacts.</li> <li>Diamond drill core and reverse circulation drill holes have been used in the MRE. Lithology, structure, alteration and mineralisation data has been used to generate the mineralisation model. The primary assumption is that the mineralisation is hosted within a structurally controlled pegmatite, which is considered robust. Air core drill holes were used as part of the geological interpretation only.</li> <li>Due to the close spaced nature of the drilling data and the geological</li> </ul>



		<ul> <li>continuity conveyed by this dataset, no alternative interpretations have been considered.</li> <li>The mineralisation interpretation is based on a cut-off grade of 0.3% Li<sub>2</sub>O, hosted within the pegmatite.</li> <li>The pegmatite is considered to be continuous over the length of the deposit. It thins and pinches out to the north and south. The mineralisation is contained within the thicker parts of the modelled pegmatite and appears to plunge to the south. A non-mineralised wall rock phase of 1-2m thickness is often present. A single grade domain has been identified and estimated using a hard boundary.</li> </ul>
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource	<ul> <li>The lithium is hosted within a 380m long section of mineralised pegmatite which strikes NNE and averages 25-30m in true width.</li> <li>The pegmatite is sub-vertical to steeply east dipping and has been intersected up to a depth of approximately 250m below surface.</li> <li>Whilst continuous, the pegmatite body does appear to narrow to the north and south. The pegmatite is deeply weathered to depths of approximately 50m below surface.</li> </ul>
Estimation and Modelling techniques	<ul> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade</li> </ul>	<ul> <li>Grade estimation of lithium has been completed using Ordinary Kriging (OK) into mineralised and unmineralized pegmatite domains using Micromine software. Variography has been undertaken on the grade domain composite data. Variogram orientations are largely controlled by the strike and dip of the mineralisation.</li> <li>Previous estimates are available for comparative analysis and have been used to inform the current Mineral Resource Estimate. A check estimate using an alternative estimation technique (ID2) has also been undertaken.</li> <li>No assumptions have been made regarding recovery of any by-products.</li> <li>Fe is considered to be a deleterious element. However, it is known that Fe contamination exists due to the use of steel drill rods, bits and steel milling</li> </ul>



- variables of economic significance (e.g. sulphur for acid mine drainage characterisation).
- In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
- Any assumptions behind modelling of selective mining units.
- Any assumptions about correlation between variables.
- Description of how the geological interpretation was used to control the resource estimates.
- Discussion of basis for using or not using grade cutting or capping.
- The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.

- equipment. By comparing RC and DD assays as well as data from blanks and check assays undertaken at an independent umpire laboratory using non-steel-based tungsten carbide mills, the level of contamination was shown to be both substantial and highly variable and difficult to correct. For this reason, Fe has not been estimated as it is known that the raw data is contaminated and will therefore result in an estimate that is misleading. No other deleterious elements have been considered and therefore estimated for this deposit.
- The data spacing varies considerably within the deposit ranging from surface drill holes at an approximate spacing of 25 m by 30 m, to deep exploration drill holes at spacings greater than 50 m by 30 m. A parent block size of 5 m (X) by 10 m (Y) by 10 m (Z) with a sub-block size of 1.25 m (X) by 2.5 m (Y) by 2.5 m (Z) has been used to define the mineralisation, with the lithium estimated at the parent block scale.
  - Pass 1 estimation has been undertaken using a minimum of 4 and a maximum of 20 samples into a search ellipse with a radius of 60m, with samples from a minimum of two drill holes.
  - Pass 2 estimation has been undertaken using a minimum of 4 and a maximum of 20 samples into a search ellipse with a radius of 120m, with samples from a minimum of two drill holes.
  - Pass 3 estimation has been undertaken using a minimum of 4 and a maximum of 20 samples into a search ellipse with a radius of 180m, with samples from a minimum of two drill holes.
- No selective mining units are assumed in this estimate.
- Lithium only has been estimated within the lithium mineralised domain.



Moisture	Whether the tonnages are estimated on a dry basis or with	<ul> <li>No correlation between variables has been assumed.</li> <li>The mineralisation and geological wireframes have been used to flag the drill hole intercepts in the drill hole assay file. The flagged intercepts have then been used to create composites in Micromine. The composite length is 1 m in all data.</li> <li>The influence of extreme sample distribution outliers in the composited data has been determined using a combination of histograms and log probability plots. It was decided that no top-cuts need to be applied.</li> <li>Model validation has been carried out, including visual comparison between composites and estimated blocks; check for negative or absent grades; statistical comparison against the input drill hole data and graphical plots.</li> <li>The tonnes have been estimated on a dry basis.</li> </ul>
	natural moisture, and the method of determination of the moisture content.	
Cut-off parameters	<ul> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul> <li>For the reporting of the Mineral Resource Estimate, a 0.75 Li₂O% cut-off has been used after consultation with Core Lithium.</li> </ul>
Mining factors or assumptions	<ul> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul> <li>The PFS concluded that the traditional open cut mining method of drill, blast, load and haul will be used.</li> <li>Throughout the PFS (released to the ASX on 26/6/2018) a number of assumptions were made that are still considered valid. Including:         <ul> <li>Mining Recovery – 95%</li> <li>Mining Dilution – 5%</li> <li>Mining Cost/tonne of conc. – AUD\$208.70</li> <li>Processing Cost/tonne of conc. – AUD\$71.19</li> <li>Haulage Cost/tonne of conc. – AUD\$11.47</li> <li>G &amp; A Cost/tonne of conc. – AUD\$8.00</li> </ul> </li> </ul>



Bulk density	•	Whether assumed or determined. If assumed, the basis for the	Water immersion and pychnometer density determinations have been
		stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	<ul> <li>As part of the PFS, preliminary mine planning and scheduling was undertaken considering possible waste and process residue disposal options and environmental impacts.</li> </ul>
Environmenta I factors or assumptions	•	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this	<ul> <li>As part of the current Definitive Feasibility Study, geotechnical studies have been undertaken as well as waste characterisation and groundwater modelling. A mining lease application has been submitted and is being processed and an Environmental Impact Statement (EIS) is being prepared ready for submission.</li> </ul>
Metallurgical factors or assumptions	•	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	<ul> <li>As part of the PFS, preliminary mine planning and scheduling was undertaken considering possible waste and process residue disposal options and environmental impacts.</li> <li>Based on initial metallurgical test work, the PFS concluded that the operation would produce a concentrate with a target grade of 5.0% Li<sub>2</sub>O. Further metallurgical test work has demonstrated a concentrate grade of 5.5% Li<sub>2</sub>O is achievable with recoveries of 79% (as described in an ASX announcement on 02/08/2018). This occurs via a simple process of crushing, screening and dense media separation.</li> </ul>
			<ul> <li>Port Costs/tonne of conc. AUD\$7.50</li> <li>Total unit operating Costs/tonne of conc. AUD\$372 (incl. royalties)</li> <li>Price – US\$649/ tonne of 5.0 % Li₂O conc.</li> </ul>



	<ul> <li>assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	undertaken by NAL on samples from 10 diamond core drill holes spread across the Grants deposit. Analysis of this data was used in the determination of the fresh pegmatite density for assignment in the Mineral Resource estimate. A bulk density value of 2.72 g/cm³ has been applied to the fresh pegmatite and has been coded into the model.
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul> <li>The resource classification has been applied to the MR estimate based on the drilling data spacing, grade and geological continuity, and data integrity.</li> <li>The classification takes into account the relative contributions of geological and data quality and confidence, as well as grade confidence and continuity.</li> <li>Confidence in the Measured and Indicated mineral resources is sufficient to allow application of modifying factors within a technical and economic study.</li> <li>The classification reflects the view of the Competent Person.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	This Mineral Resource estimate has not been audited by an external party.
Discussion of relative accuracy/confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of</li> </ul>	<ul> <li>The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code.</li> <li>The statement relates to global estimates of tonnes and grade.</li> <li>No production records have been supplied as part of the scope of works, so no comparison or reconciliation has been made. Historically, only a small amount of tin/tantalum has been produced from weathered pegmatite</li> </ul>



- the factors that could affect the relative accuracy and confidence of the estimate.
- The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation.
   Documentation should include assumptions made and the procedures used.
- These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.

from shallow pits by Greenbushes in the 1980's. This is well above the top of fresh rock reported in the current resource estimate.



# 14.2 JORC Code, 2012 Edition – Table 1 Report BP33

#### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

# Sampling techniques

Criteria

#### **JORC Code Explanation**

- Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.
- Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.
- Aspects of the determination of mineralisation that are Material to the Public Report.
- In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.

#### **Commentary**

- Drilling geology, assays and resource estimation results reported herein relate to Reverse Circulation (RC) and Diamond Drill Hole (DDH) drilling at the BP33 Deposit on EL29698 and EL30015. Assay data was derived from 22 holes for 3,129.2m. A further 11 holes for 540m were used exclusively for geological data. These comprise 27 RC holes and 6 DDH holes. A full list of hole collars that includes coordinates, azimuth, dip, depth and significant intercepts can be found in Drillhole Information section below. A chronological summary is provided below, but there have effectively been 5 drilling campaigns at BP33, two by CXO and 2 by Liontown Resources Ltd ("LTR") and 1 by Greenbushes:
  - October to November 1995 (the "1995 Greenbushes Drilling program")
  - o June 2016 (the "2016 LTR Drilling program")
  - o October 2016 (the "2016 LTR Drilling program")
  - August 2016 to January 2017 (the "2016 CXO Drilling program")
  - November 2017 to February 2018 (the "2017 CXO Drilling program")

# **Drilling chronology**

# 1995 Greenbushes Drilling program

- RC drillholes BEC050 to 060 were drilled by Greenbushes in October-November 1995
- Shallow drilling targeting tin/tantalum mineralization that was not



assayed for lithium.

#### 2016 LTR Drilling program

 RC drillholes by Liontown in June 2016 (2 holes) and October 2016 (3 holes) using Schram 450 rig

#### 2016 CXO Drilling program

- RC and DDH by CXO. WDA RC and DDH. by WDA Drilling using DE811 rig.
- RC holes FRC001 to FRC004 were drilled by Core in August 2016.
- DDH drillhole (with RC precollar) FRCD004 (1 holes for 134.6m HQ) was drilled in October 2016 by WDA Drilling using Alton rig.

#### 2017 CXO Drilling program

- RC holes FRC106 to FRC108 were drilled by Core in December 2017 by WDA Drilling using UDR1000 rig and DE811 rig.
- DDH drillholes (with RC or mud rotary precollar) FMRD002, FMRD003, FMRD004, FMRD005 and FRCD007 were drilled in December 2017 to February 2018 by WDA Drilling using DE811 and Alton rigs.

### Sampling methods

- RC drill spoils over all programs were collected into two sub-samples:
  - 1 metre split sample, homogenized and cone split at the cyclone into 12x18 inch calico bags. Weighing 2-5 kg, or 15% of the original sample.
  - 20-40 kg primary sample is collected in 600x900mm green bags and retained until assays have been returned and deemed reliable for reporting purposes.
- RC sampling of pegmatite for assays is done on a 1 metre basis. 1m-sampling continued into the barren wall-zone of the pegmatite and then a 3m composite was collected from the immediately surrounding barren phyllite host rock. Liontown RC sampling occurred on a 1m basis only of pegmatite intersections and zones of



#### interest.

- Drill core was collected directly into trays, marked up by metre marks and secured as the drilling progressed. Geological logging and sample interval selection took place soon after.
- DDH Core was transported to a local core preparation facility and cut firstly into half longitudinally along a consistent line between 0.3m and 1m in length, ensuring no bias in the cutting plane. Again, without bias, half core was then cut into two further segments. A quarter was then collected on a metre basis (where possible), bagged and sent to the North Australian Laboratory in Pine Creek, NT, for analysis. The remaining half and quarter core is retained at Core's storage shed in Berry Springs.
- DDH sampling of pegmatite for assays is done over the sub-1m intervals described above. 1m-sampling continued into the barren phyllite host rock.

# Drilling techniques

• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).

- Drilling technique used by Core and Liontown that are reported herein comprises:
  - DE811 rig (RC): Standard Reverse Circulation (RC) 4 and ¾ inch face sampling hammer (5 inch diameter bit). The rig used is a wheel mounted Sandvik DE811 multi-purpose rig and running a 1150 CFM 500/1000 psi compressor/booster combo. The rig is operated by WDA Drilling Services, Humpty Doo NT (CXO RC in 2016).
  - UDR1000 rig: Standard Reverse Circulation (RC) 4 and ¾ inch face sampling hammer (5 inch diameter bit). The rig used is a wheel mounted UDR1000 multi-purpose rig and running a 1150 CFM 500/1000 psi compressor/booster combo. The rig is operated by WDA Drilling Services, Humpty Doo NT. (CXO RC in 2017)
  - o Schram 450 rig: Standard Reverse Circulation (RC) 4 and ¾ inch



# Drill sample recovery

- Method of recording and assessing core and chip sample recoveries and results assessed.
- Measures taken to maximise sample recovery and ensure representative nature of the samples.
- Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.

face sampling hammer (5 inch diameter bit). The rig used is a wheel mounted Schram T450 rig and running a 900 CFM 350 psi compressor/booster combo. The rig is operated by Geo Drilling, NT. (Liontown 2016)

- Alton rig: Standard track-mounted Alton MD600 or HD900 DDH rig using HQ or PQ core assembly (triple tube), drilling muds or water as required, wireline setup. The rig is operated by WDA Drilling Services, Humpty Doo NT.
- Oriented core was obtained for DDHs drilled in the 2017 CXO
   Drilling program using the Longyear TruCore tool.

#### 1995 Greenbushes Drilling program

There is no record of sample recoveries for the Greenbushes RC drilling.

#### 2016 LTR Drilling program

• Sample recoveries for the Liontown RC drilling were recorded as a percentage of the expected recovery as estimated by the rig geologist. The majority of the recoveries are >90%.

#### 2016 CXO Drilling program

- The geologist noted and documented the recovery (0-100%) and sample quality (Wet, Moist, Dry) for each metre, according to a SoP. Recovery was generally >95% and samples were dry apart from certain drillholes, and then only the first sample after a rod change. The drilling contractors took great care to maintain a dry sample, even if this meant long periods of airlifting water at the start of a rod.
- The rigs splitter is emptied between 1m samples by hammering the
  cyclone bin with a mallet. The set-up of the cyclone varied between
  rigs, but a gate mechanism was used to prevent inter-mingling
  between metre intervals. The cyclone and splitter were also regularly
  cleaned by opening the doors, visually checking, and if build-up of



material is noted, the equipment cleaned with either compressed air or high-pressure water. This process was in all cases undertaken when the drilling first penetrated the pegmatite mineralization, to ensure no host rock contamination took place.

- Drill collars are sealed to prevent sample loss and holes are normally drilled dry to prevent poor recoveries and contamination caused by water ingress. Wet intervals are noted in case of unusual results.
- No material bias has been recognised.
- DDH recovery was close to 100%.

# 2017 CXO Drilling program

- DDH core recoveries were measured using conventional procedures utilising the driller's markers and estimates of core loss, followed by mark up and measuring of recovered core by the geologist or geotechnician.
- RC sample recoveries were visually estimated in the field and recorded by Core geologists for each metre drilled. RC recoveries are monitored qualitatively as the hole progresses, the principle aim being to identify bags that have significantly less spoil than expected for the metre.
- A semi-quantitative estimate of % recovery is subsequently made after completion of the hole, once the average volume of material can be gauged for a metre of drilling.
- Core Lithium has weighed most of the primary "green" RC sample bags from 2016 and 2018 drilling programs that included holes from the Grants and BP33 deposits. From this data it is possible to quantify recovery better than by visual estimation. Core undertook a QAQC exercise and constructed a report concluding that:
  - RC recovery of RC spoils varies according to the presence or absence of groundwater, and according to the tolerances of the RC hammer-bit shroud assembly.



# Logging

- Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.
- Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.
- The total length and percentage of the relevant intersections logged.

- There was no relationship identified between recovery and grade.
- Wet and moist samples readily reflect the grade of the drilled interval, as much as the dry sample.
- The rigs splitter is emptied between 1m samples by hammering the cyclone bin with a mallet. The set-up of the cyclone varied between rigs, but a gate mechanism was used to prevent inter-mingling between metre intervals. The cyclone and splitter were also regularly cleaned by opening the doors, visually checking, and if build-up of material is noted, the equipment cleaned with either compressed air or high-pressure water. This process was in all cases undertaken when the drilling first penetrated the pegmatite mineralization, to ensure no host rock contamination took place.
- Drill collars are sealed to prevent sample loss and holes are normally drilled dry to prevent poor recoveries and contamination caused by water ingress. Wet intervals are noted in case of unusual results.
- No material bias has been recognised.
- Standard sample logging procedures are utilised by Core and Liontown, including logging codes for lithology, minerals, weathering etc.
- A chip tray for the entire hole is completed. A sub-sample is sieved from the large RC bags at site into chip trays over the pegmatite interval to assist in geological logging. These are photographed and stored on the Core server.
- Geology of the RC drill chips were logged on a metre basis with attention to main rock forming minerals within the pegmatite intersections.
- Geology of the drill core is logged on a geological basis with attention to main rock forming minerals and textures within the pegmatite intersections.



# Sub-sampling techniques and sample preparation

- If core, whether cut or sawn and whether quarter, half or all core taken.
- If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.
- For all sample types, the nature, quality and appropriateness of the sample preparation technique.
- Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.
- Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.
- Whether sample sizes are appropriate to the grain size of the material being sampled.

- Entire drilled interval of RC and DDH logged.
- Pegmatite sections are also checked under a single-beam UV light for spodumene identification on an ad hoc basis. These only provide indicative qualitative information.
- Estimation of mineral modal composition, including spodumene, is done visually. This will then be correlated to assay data when they are available.
- Core trays and RC chip trays are photographed and stored on the Core server.
- DDH drillholes that CXO have drilled in the 2017 Drilling program are oriented and can be geotechnically logged in future if needed.
- RC samples referred to in this report have been collected on a 1mbasis utilising the cone splitter mounted under the drill rig's cyclone or on a trailer (rotary type).
- Where the sample was too wet for the cone splitter to operate effectively, 1m samples were collected from the 1m bulk bags using a spear. This was a rare occurrence.
- The type of sub-sampling technique and the quality of the subsample was recorded for each metre. The quality of the samples was assessed prior to their inclusion in calculated interval averages.
- Quarter Drill Core sample intervals were constrained by geology, alteration or structural boundaries, intervals varied between a minimum of 0.3 metres to a maximum of 1 m. The core is cut along a regular Ori line to ensure no sampling bias.

# **Field RC duplicates**

 A field duplicate sample regime is used to monitor sampling methodology and homogeneity of RC drilling at BP33. During the LTR and CXO Drilling programs at BP33, 32 duplicates were collected out of the 941 original RC samples. The typical procedure was to collect Duplicates via a spear of the green RC bag, having collected the



Original in a calico bag via a rotary split. Trying to split the 2-3kg calico bag into an Original and a Duplicate has inherent dangers, least of all reducing the sample mass. However, comparing rotary split sample with a spear sample also has some element of incompatibility. The expectation would be a high degree of variability in the spear sample, because of the heterogenous and stratified RC bag, but overall it should statistically match the split original sample.

- The duplicates cover a wide range of Lithium values up to 10,000 ppm.
- Results of duplicate analysis show an acceptable degree of correlation given the heterogeneous nature of the pegmatite.

#### Sample heterogeneity

- Given the pegmatite minerals, including spodumene, are very coarse grained, there is expected to be an issue of heterogeneity. The sample size for NQ drill core is borderline, and this is why CXO have drilled using HQ diameter. Assaying of coarse rejects as part of the Umpire process in 2017 showed that there is good correlation between the original and duplicate samples at that scale. However, there is assay variability from one metre to the next that reflects the heterogeneity. This is evident when comparing assays profiles twinned DDH and RC holes. RC tend to exhibit a flatter more consistent trend. This is because RC samples a larger volume of material for each metre and flattens out the fluctuations. Further discussion of twins can be found in section below.
- Quarter core is cut as described above, bagged and sent to the laboratory for analysis. As discussed, the heterogeneity of pegmatite core material means it is not suitable for "second-half" or "secondquarter" duplicate analysis.

Sample preparation CXO drilling



- Sample prep occurs at North Australian Laboratories ("NAL"), Pine Creek, NT.
- DDH samples are crushed to a nominal size to fit into mills, approximately -2mm. RC samples do not require any crushing, as they are largely pulp already.
- A 1-2 kg riffle-split of DDH crushed material and RC Samples are then prepared by pulverising to 95% passing -100 um. In the 2016 Drilling program, samples were pulverised in a Vertical Spindle Pulveriser (Keegormill).
- In mid-2018, Steel Ring Mills were installed at NAL to reduce the iron contamination that was recognised in the 2016 Drilling program assays.

#### LTR drilling

- Sample prep occurred at ALS in Perth, WA.
- RC Samples were rifle split to a max of 3kg and then prepared by pulverising to 85% passing -75 um.

# Quality of assay data and laboratory tests

- The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.
- For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.
- Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.

#### **CXO** drilling

- Sample analysis also occurs at North Australian Laboratories, Pine Creek, NT.
- A 0.3 g sub-sample of the pulp is digested in a standard 4 acid mixture and analysed via ICP-MS and ICP-OES methods for the following elements: Li, Cs, Rb, Sr, Nb, Sn, Ta, U, As, K, P and Fe. The lower and upper detection range for Li by this method are 1 ppm and 5000 ppm respectively.
- In the 2016 Drilling program, all samples were also analysed via fusion method - a 0.3 g sub-sample is fused with a Sodium Peroxide Fusion flux and then digested in 10% hydrochloric acid. ICP-OES is used for the following elements: Li, P and Fe. The lower and upper detection range for Li by this method are 10 ppm and 20,000 ppm respectively. Exhaustive checks of this data suggested an excellent



correlation exists (see chart below), so in the 2017 Drilling program a 3000 ppm Li trigger was set to process that sample via a fusion method.

- Selected drill core samples were also run for the following additional elements to provide a broader suite: Al, Ca, Mg, Mn, Si, LOI, SG (immersion), SG (pychnometer) and various trace elements. Na was also analysed using a 4 acid digest and ICP-OES method.
- A barren flush is inserted between samples at the laboratory.
- The laboratory has a regime of 1 in 8 control subsamples.
- NAL utilise standard internal quality control measures including the use of Certified Lithium Standards and duplicates/repeats.
- CXO-implemented quality control procedures include:
  - One in twenty certified Lithium ore standards are used for this drilling.
  - One in twenty duplicates are used for this drilling (RC only).
  - o Blanks inserted at a rate of roughly one in twenty.

# **Liontown drilling**

• A sub-sample of the pulp was assayed by sodium peroxide fusion ICPMS using method codes ME-ICP89 (K, Li, P) and ME-MS91 (Cs, Nb, Rb, Sn, Ta) at ALS in Perth.

# **QAQC** of CXO Drilling data

- One in 20 certified Lithium reference standards were used at BP33.
   Core used four standards roughly between 1700 ppm and 10000 ppm Li, covering the range of expected Li values in the mineralized pegmatite.
- The standards reported back with an excellent correlation. Overall the standards average within 1% of the expected value for Li.
- Blanks were inserted on a 1 in 20 basis, once resource definition drilling was initiated.
- The data from the blanks pulverised and assayed at NAL indicate



that the Li content averages 36 ppm (0.01%  $\text{Li}_2\text{O}$ ) and the highest is 328 ppm Li. This is reasonable given the aggressive (hard) nature of the coarse quartz blanks, effectively scouring the crusher and mill. This value is well below the effective cut-off grade used for the significant intercepts.

- The baseline  $Fe_2O_3$  content of Blanks is <0.01%, whereas the average run-of-sample value of 0.65%. This is indicative of Iron being stripped from the steel pulverising equipment at the NAL laboratory. This stripping of metal obviously has an effect on the Fe content of the Lithium bearing samples as well, especially the core, which are equally as hard as the quartz blanks. This is discussed further below.
- One in 20 field duplicates are used for BP33 RC drilling, as discussed above.
- Duplicates were not collected for the DDH core drilling, as discussed above.

## Liontown drilling

 Due to the small number of holes drilled by LTR at BP33 there is only a small number of associated QAQC samples. This included field duplicates and Blanks. There were no apparent issues identified with this data.

### **Umpire checks**

External laboratory checks by CXO took place at the end of the 2016
 Drilling program and results indicate a high degree of correlation. A
 round of checks for the 2017 CXO Drilling program is currently
 underway.

# Verification of sampling and assaying

- The verification of significant intersections by either independent or alternative company personnel.
- The use of twinned holes.
- Documentation of primary data, data entry procedures, data
- Core's experienced project geologists are supervised by Core's Exploration Manager.
- All field data is entered into excel spreadsheets (supported by lookup tables) at site and subsequently validated as it is imported into



verification, data storage (physical and electronic) protocols.

• Discuss any adjustment to assay data.

the centralized CXO Access database.

- Hard copies of survey and sampling data are stored in the local office and electronic data is stored on the Core server.
- Metallic Lithium percent was multiplied by a conversion factor of 2.15283/10000 to report Li ppm as Li20%

#### 2016 CXO Drilling program verification

 One diamond core hole was drilled as a twin to an RC hole and used to check the difference between RC and DDH assays across a similar part of the mineralized pegmatite. The data indicate variability on a metre-by-metre basis, related to the heterogeneity of the pegmatite, but overall the +30m intercepts are proportionate.

#### 2017 CXO Drilling program verification

- Based on QAQC assessments of RC and DDH assays as well as data from blanks and check assays, a substantial iron contamination issue has been identified in the drill hole assays. The two primary sources of contamination are the wear on the RC drill bits and rods as well as wear and abrasion of the steel sample preparation equipment at the laboratory. The level of contamination was shown to be both significant and highly variable. It is estimated that the level of Fe contamination in the assays may be in excess of 3% Fe<sub>2</sub>O<sub>3</sub> in some cases from the 2016 Drilling program. Changes in equipment at the laboratory prior to the 2018 drilling campaign has seen a reduction in the contamination levels to around 0.6% Fe<sub>2</sub>O<sub>3</sub>.
- The current assay database is known to contain Fe data that is affected by variable levels of Fe contamination that is difficult to correct. For these reasons Fe was not estimated as part of the current Mineral Resource Estimate for the BP33 Deposit as it would be misleading.
- Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations
- Coordinate information for most of the BP33 drillholes was collected by Differential GPS (DGPS), by Land Surveys Australia Pty Ltd. This

Location of data points



used in Mineral Resource estimation.

- Specification of the grid system used.
- Quality and adequacy of topographic control.

data is accurate to 10 cm in all three dimensions. These collar RLs were verified against CXO's DTM.

- Historic Greenbushes collars were surveyed at the time, using conventional surveying along a local grid. These coordinates were converted by CXO to the current datum. Two collars were located and captured by DGPS, which allowed rectification of the rest of the Greenex collars. Their position can be considered accurate.
- Liontown holes are hand-held GPS only, but sufficiently well-defined for the purposes herein.
- All are GDA94 Zone 52.
- In 2016 CXO/LTR Drilling programs, all holes were surveyed by downhole camera tool.
- In 2017 CXO Drilling program, RC and DDH hole traces were surveyed by north seeking Champ gyro tool (multishot mode at 5m and 10m intervals) operated by the drillers and the collar is oriented by a line of sight compass and a clinometer. Downhole Camera shots are also taken on an ad hoc basis during drilling to ensure the holes are kept relatively straight.
- Drill hole deviation has been minor and predictable in the most part.
  However, for the deeper holes, deviation was significant in the lower
  parts of the holes as a result of hard bedrock. Despite this, the holes
  still tested the targets roughly oblique to the strike of the pegmatite,
  which is acceptable for resource drilling. In any case, the gyro down
  hole survey has accurately recorded the drill traces and any
  deviation from the planned program can be accommodated in a 3D
  GIS environment.

# Data spacing and distribution

- Data spacing for reporting of Exploration Results.
- Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and
- Drill collars are spaced approximately 30m apart along the north easterly trending pegmatite body of BP33.
- This data will be used to support a resource.
- Refer to figures in report.



	<ul><li>classifications applied.</li><li>Whether sample compositing has been applied.</li></ul>	<ul> <li>Sample compositing reported here are calculated length weighted averages of the assays. Length weighted averages are acceptable method because the density of the rock (pegmatite) is constant.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>Core's drilling is oriented perpendicular to the interpreted strike of mineralization (pegmatite body) as mapped or predicted by the geological model. In some areas the rocks may trend at an angle to the drill traverse. Because of the dip of the hole, drill intersections are apparent thicknesses and overall geological context is needed to estimate true thicknesses.</li> <li>The azimuth of Core's drill holes is largely oriented approximately perpendicular to the interpreted strike of the mineralised trend. Holes are oblique in a dip sense.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Company geologist supervises all sampling and subsequent storage in field and transport to point of dispatch to assay laboratories.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>A review of sample weights, recovery statistics and assay data with regard to the sampling techniques was undertaken after the 2016 CXO Drilling program at Grants (and to a lesser extent BP33) to demonstrate representivity. Learnings from this review were applied to the 2018 drilling, such as regular checks of the calico bag for signs of contamination.</li> </ul>



# Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>Drilling by CXO and LTR at the BP33 Prospect took place across the boundary between EL29698 and EL30015, both of which are now 100% owned by CXO.</li> <li>30015 was previous owned by LTR, and in September 2017 was purchased by CXO via a sale agreement (ASX Release 14 Sept 2017).</li> <li>The area being drilled comprises Vacant Crown land.</li> <li>There are no registered heritage sites covering the areas being drilled.</li> <li>The tenements are in good standing with the NT DPIR Titles Division.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The history of mining in the Bynoe Harbour – Middle Arm area dates back to 1886 when tin was discovered by Mr. C Clark.</li> <li>By 1890 the Leviathan Mine and the Annie Mine were discovered and worked discontinuously until 1902.</li> <li>In 1903 the Hang Gong Wheel of Fortune was found and 109 tons of tin concentrates were produced in 1905. In 1906, the mine produced 80 tons of concentrates, but it was exhausted and closed down the following year after a total of 189 tons of concentrates had been won.</li> <li>By 1909 activity was limited to Leviathan and Bells Mona mines in the area with little activity in the period 1907 to 1909.</li> <li>Renewed activities in 1925 coincided with the granting of exclusive prospecting licences over an area of 26 square miles in the Bynoe Harbour – West Arm section but once again nothing eventuated.</li> <li>The records of production for many mines are not complete, and in numerous cases changes have been made to the names of the mines</li> </ul>



and prospects which tend to confuse the records still further. In many cases the published names of mines cannot be linked to field occurrences.

- In the early 1980s the Bynoe Pegmatite field was reactivated during a period of high tantalum prices by Greenbushes Tin which owned and operated the Greenbushes Tin and Tantalite (and later spodumene) Mine in WA. Greenbushes Tin Ltd entered into a JV named the Bynoe Joint Venture with Barbara Mining Corporation, a subsidiary of Bayer AG of Germany.
- Greenex (the exploration arm of Greenbushes Tin Ltd) explored the Bynoe pegmatite field between 1980 and 1990 and produced tin and tantalite from its Observation Hill Treatment Plant between 1986 and 1988. An abandoned open cut to 10m depth remains at BP33.
- They then tributed the project out to a company named Fieldcorp Pty Ltd who operated it between 1991 and 1995.
- In 1996, Julia Corp drilled RC holes into representative pegmatites in the field, but like all of their predecessors, did not assay for Li.
- Since 1996 the field has been defunct until recently when exploration has begun on ascertaining the lithium prospectivity of the Bynoe pegmatites.
- The NT geological Survey undertook a regional appraisal of the field, which was published in 2004 (NTGS Report 16, Frater 2004).

#### Geology

• Deposit type, geological setting and style of mineralisation.

- The tenements cover the northern portion of a swarm of complex zoned rare element pegmatite field, which comprises the 55km long by 10km wide West Arm – Mt Finniss pegmatite belt (Bynoe Pegmatite Field; NTGS Report 16). The main pegmatites in this belt include Mt Finniss, Grants, BP33, Hang Gong and Sandras.
- The Finniss pegmatites have intruded early Proterozoic shales, siltstones and schists of the Burrell Creek Formation which lies on



the northwest margin of the Pine Creek Geosyncline. To the south and west are the granitoid plutons and pegmatitic granite stocks of the Litchfield Complex. The source of the fluids that have formed the intruding pegmatites is generally accepted as being the Two Sisters Granite to the west of the belt, and which probably underlies the entire area at depths of 5-10 km.

• Lithium mineralisation has been identified as occurring at Bilato's (Picketts), Saffums 1 (amblygonite) and more recently at Grants, BP33 and Sandras.

## Drill hole Information

- A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:
  - o easting and northing of the drill hole collar
  - elevation or RL (Reduced Level elevation above sea level in metres) of the drill hole collar
  - o dip and azimuth of the hole
  - o down hole length and interception depth
  - o hole length.
- If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.

							Total
Hole ID	Туре	Easting	Northing	RL	Azimuth	Dip	Depth
BEC050	RC	694395.0	8593474.0	14.1	90	-60	60
BEC051	RC	694415.0	8593474.0	11.1	90	-60	60
BEC052	RC	694452.0	8593497.0	10.2	90	-60	54
BEC053	RC	694432.1	8593496.6	13.5	90	-60	59
BEC054	RC	694480.0	8593528.0	10.6	90	-60	39
BEC055	RC	694495.0	8593526.0	10.7	90	-60	24
BEC056	RC	694460.0	8593528.0	12.7	90	-60	36
BEC057	RC	694472.0	8593496.0	11.1	90	-60	36
BEC058	RC	694435.0	8593473.0	10.4	90	-60	64
BEC059	RC	694500.6	8593554.8	13.2	90	-60	66
BEC060	RC	694482.0	8593555.0	14.2	90	-60	42
FMRD002	MRD	694544.7	8593502.0	12.9	313	-65	176.9
FMRD003	MRD	694526.0	8593457.5	12.7	313	-65	194.9
FMRD004	MRD	694487.9	8593423.9	12.8	321	-66	186
FMRD005	MRD	694357.7	8593470.2	15.9	133	-66	125.8
FRC001	RC	694433.8	8593517.0	15.6	125	-55	111
FRC002	RC	694473.5	8593443.2	13.6	303	-55	113
FRC003	RC	694509.7	8593468.7	13.0	305	-55	136
FRC004	RC	694407.8	8593497.4	16.2	125	-55	106
FRC102	RC	694378.2	8593520.0	17.0	132.84	-60.87	185
FRC103	RC	694433.2	8593541.6	15.9	133	-65	173
FRC104	RC	694466.7	8593568.0	15.6	133.65	-65.79	155
FRC105	RC	694341.7	8593486.9	17.0	133	-65	124



FRC106	RC	694571.4	8593603.2	13.5	182.89	-60.17	119
FRC107	RC	694511.4	8593608.3	14.8	140.04	-62.09	137
FRC108	RC	694425.2	8593549.5	16.3	131.25	-66.26	172
FRCD004	DDH	694518.4	8593466.7	12.9	305	-55	134.6
FRCD007	DDH	694369.3	8593528.3	17.2	134.79	-64.99	285
LBRC001	RC	694533.0	8593573.0	14.2	128	-80	78
LBRC002	RC	694499.0	8593566.0	14.5	128	-60	78
LBRC052	RC	694472.0	8593589.0	15.5	138	-67	175
LBRC053	RC	694570.0	8593630.0	13.6	305	-60	91
LBRC054	RC	694585.0	8593611.0	13.3	318	-60	73

\* BEC series holes used to aid geological interpretation only.

# Data aggregation methods

- In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.
- Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.
- The assumptions used for any reporting of metal equivalent values should be clearly stated.

- Sample compositing reported here are calculated length weighted averages of the assays. Length weighted averages are acceptable method because the density of the rock (pegmatite) is constant.
- 0.4% Li<sub>2</sub>O was used as lower cut off grades for compositing and reporting intersections with allowance for including up to 3m of consecutive drill material of below cut-off grade (internal dilution).

# Relationship between mineralisatio n widths and intercept lengths

- These relationships are particularly important in the reporting of Exploration Results.
- If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.
- If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').
- The oblique nature of drillholes with respect to geology is discussed above. Because of the dip of the hole, drill intersections are apparent thicknesses and overall geological context is needed to estimate true thicknesses. Refer figures in report

#### **Diagrams**

- Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.
- See figures in report.



Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	Exploration results are discussed in the report and shown in figures.
Other substantive exploration data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples         <ul> <li>size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul> </li> </ul>	All meaningful and material data reported.
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Core is continuing to assess BP33 in terms of expanding the resource and will soon embark on a drilling program to explore for extensions to the south, and infill to enable the resource to be partially upgraded to Indicated.</li> </ul>



# Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in the preceding sections also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul> <li>A data check of source assay data and survey data has been undertaken and compared to the database. No translation issues have been identified. The data was validated during the interpretation of the mineralisation, with no significant errors identified. Only RC and DDH holes have been included in the MRE.</li> <li>Data validation processes are in place and run upon import into Micromine to be used for the MRE. Checks included: missing intervals, overlapping intervals and any depth errors.</li> <li>A DEM topography to DGPS collar check has been completed.</li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul> <li>Graeme McDonald (CP) undertook a site visit during November/December 2017. A review of the drilling, logging, sampling and QAQC procedures has been undertaken. All processes and procedures were in line with industry best practice.</li> </ul>
Geological interpretation	<ul> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul> <li>The geological interpretation is considered robust due to the nature of the mineralisation. The mineralisation is hosted within the pegmatite. The locations of the hangingwall and footwall of the pegmatite intrusion are well understood with drilling which penetrates both contacts.</li> <li>Diamond drill core and reverse circulation drill holes have been used in the MRE. Lithology, structure, alteration and mineralisation data has been used to generate the mineralisation model. The primary assumption is that the mineralisation is hosted within structurally controlled pegmatite, which is considered robust. Additional surface exposure within the historic pit helps to constrain the pegmatite contacts. Older BEC series RC drill holes were used as part of the geological interpretation only as Li was not assayed.</li> </ul>



		<ul> <li>Due to the relatively close spaced nature of the drilling data and the geological continuity conveyed by this dataset, no alternative interpretations have been considered.</li> <li>The mineralisation interpretation is based on a lithium cut-off grade of 0.3% Li<sub>2</sub>O, hosted within the pegmatite.</li> <li>The pegmatite is considered to be continuous over the length of the deposit. It thins and pinches out to the north and south. The mineralisation terminates approximately 40 m from the northern extent of the modelled pegmatite. A non-mineralised wall rock phase of 1-2m thickness is often present. A single grade domain has been identified and estimated using a hard boundary.</li> </ul>
Dimensions	<ul> <li>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource</li> </ul>	<ul> <li>The lithium is hosted within a 170m long section of mineralised pegmatite which strikes NE and averages 20-30m in true width.</li> <li>The pegmatite is sub-vertical to steeply east dipping and has been intersected at a depth of approximately 240m below surface.</li> <li>Whilst continuous, the pegmatite body does appear to narrow to the north but remains open to the south. The pegmatite is deeply weathered to depths of approximately 50m below surface.</li> </ul>
Estimation and Modelling techniques	<ul> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage</li> </ul>	<ul> <li>Grade estimation of lithium has been completed using Ordinary Kriging (OK) into mineralised and unmineralized pegmatite domains using Micromine software. Variography has been undertaken on the grade domain composite data. Variogram orientations are largely controlled by the strike and dip of the mineralisation.</li> <li>No previous estimates are available for comparative analysis. A check estimate using an alternative estimation technique (ID2) has also been undertaken.</li> <li>No assumptions have been made regarding recovery of any byproducts.</li> <li>Fe is considered to be a deleterious element. However, it is known that Fe contamination exists in the assayed samples due to the use of</li> </ul>



characterisation).

- In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
- Any assumptions behind modelling of selective mining units.
- Any assumptions about correlation between variables.
- Description of how the geological interpretation was used to control the resource estimates.
- Discussion of basis for using or not using grade cutting or capping.
- The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.
- steel drill rods, bits and steel milling equipment. By comparing RC and DD assays as well as data from blanks and check assays undertaken at an independent umpire laboratory using non-steel-based tungsten carbide mills, the level of contamination was shown to be both substantial and highly variable and difficult to correct. For this reason, Fe has not been estimated as it is known that the raw data is contaminated and will therefore result in an estimate that is misleading. No other deleterious elements have been considered and therefore estimated for this deposit.
- The data spacing varies considerably within the deposit ranging from surface drill holes at an approximate spacing of 25 m by 30 m, to deep exploration drill holes at spacings greater than 100 m by 30 m. A parent block size of 5 m (X) by 10 m (Y) by 10 m (Z) with a sub-block size of 1.25 m (X) by 2.5 m (Y) by 2.5 m (Z) has been used to define the mineralisation, with the lithium estimated at the parent block scale.
  - o Pass 1 estimation has been undertaken using a minimum of 4 and a maximum of 20 samples into a search ellipse with a radius of 50m, with samples from a minimum of two drill holes.
  - Pass 2 estimation has been undertaken using a minimum of 4 and a maximum of 20 samples into a search ellipse with a radius of 100m, with samples from a minimum of two drill holes.
  - Pass 3 estimation has been undertaken using a minimum of 4 and a maximum of 20 samples into a search ellipse with a radius of 150m, with samples from a minimum of two drill holes.
  - Pass 4 estimation has been undertaken to populate any remaining blocks. All criteria remained the same as for pass 3 but with a minimum of one drill hole.



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			•	No selective mining units are assumed in this estimate.  Lithium only has been estimated within the lithium mineralised domain. No correlation between variables has been assumed.  The mineralisation and geological wireframes have been used to flag the drill hole intercepts in the drill hole assay file. The flagged intercepts have then been used to create composites in Micromine. The composite length is 1 m in all data.  The influence of extreme sample distribution outliers in the composited data has been determined using a combination of histograms and log probability plots. It was decided that no top-cuts need to be applied.  Model validation has been carried out, including visual comparison between composites and estimated blocks; check for negative or absent grades; statistical comparison against the input drill hole data
Moisture	•	Whether the tonnages are estimated on a dry basis or with natural	•	and graphical plots.  The tonnes have been estimated on a dry basis.
		moisture, and the method of determination of the moisture content.		
Cut-off parameters	•	The basis of the adopted cut-off grade(s) or quality parameters applied.	•	For the reporting of the Mineral Resource Estimate, a 0.75 Li <sub>2</sub> O% curoff has been used after consultation with Core Lithium.
Mining factors or assumptions	•	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	•	It has been assumed that the traditional open cut mining method of drill, blast, load and haul will be used. No other assumptions have been made.



Metallurgical factors or assumptions	<ul> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous.</li> <li>Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	No metallurgical recoveries have been applied since the material is expected to be shipped as DSO or a simple concentrate if mined.
Environmenta I factors or assumptions	<ul> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	No environmental assumptions have been made during the MRE.
Bulk density	<ul> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	• Water immersion and pychnometer density determinations have been undertaken by NAL on samples from 6 diamond core drill holes spread across the BP33 deposit. Analysis of this data was used in the determination of the fresh pegmatite density for assignment in the Mineral Resource estimate. A bulk density value of 2.74 g/cm³ has been applied to the fresh pegmatite and has been coded into the model. This value is considered to be conservative and lower than a theoretical value based on the pegmatite mineralogy.
Classification	The basis for the classification of the Mineral Resources into varying	• The resource classification has been applied to the MR estimate



	<ul> <li>confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul> <li>based on the drilling data spacing, grade and geological continuity, and data integrity.</li> <li>The classification takes into account the relative contributions of geological and data quality and confidence, as well as grade confidence and continuity.</li> <li>The classification reflects the view of the Competent Person.</li> </ul>
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	<ul> <li>This Mineral Resource estimate has not been audited by an external party.</li> </ul>
Discussion of relative accuracy/confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul> <li>The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code.</li> <li>The statement relates to global estimates of tonnes and grade.</li> <li>No production records have been supplied as part of the scope of works, so no comparison or reconciliation has been made. Historically, only a small amount of tin/tantalum has been produced from weathered pegmatite from shallow pits by Greenbushes in the 1980's. This is well above the top of fresh rock reported in the current resource estimate.</li> </ul>



## Section 4 Estimation and Reporting of Ore Reserves Grants & BP33

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	<ul> <li>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</li> <li>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>	<ul> <li>The Ore Reserve Estimate is based on the Grants and BP33         Mineral Resource released to the ASX on the 22<sup>nd</sup> October and 6<sup>th</sup> November 2018, by Core Lithium, competent persons: Mr. Graeme McDonald (Consulting Geologist to Core Lithium Ltd) &amp; Mr Blair Duncan (General Manager Project Development Core Lithium Ltd). The Minerals Resources are reported inclusive of the Ore Reserves. Mr. Duncan has relied on the integrity and accuracy of the Mineral Resource for this Ore Reserve estimate.</li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul> <li>The Competent Person is currently the General Manager Project Development and has visited the site on numerous occasions. Whilst preparing this estimate the Competent Person has satisfied himself that the data and analysis used in this estimate is appropriate for the proposed operating conditions for the project.</li> </ul>
Study status	<ul> <li>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</li> <li>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</li> </ul>	<ul> <li>This maiden Ore Reserve estimate has been produced during the April 2019 Definitive Feasibility Study (DFS). The Ore Reserve considered only the Measured and Indicated Resources published as part of the Mineral Resource estimated announced for Grants and BP33 deposits on the 22<sup>nd</sup> October and 6<sup>th</sup> November 2018 respectively.</li> <li>It should be noted that there is an additional 14% contained metal as Inferred resources within the Ore Reserve pit designs which has been assigned zero revenue for the purposes of this Ore Reserve estimate.</li> <li>The project is considered technically achievable and</li> </ul>



Criteria	JORC Code explanation	Commentary
		economically viable. The resulting mine plan considered material Modifying Factors such as dilution and ore loss, various project boundary constraints, processing recoveries and all costs associated with mining, processing, transporting and selling the product to be produced by the operation.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	<ul> <li>The Mineral Resource provided was a geologically domained resource; this geological model was modified for ore loss and dilution and evaluated to determine which blocks produced cash surplus when treated as ore. The Ore Reserve was estimated using a 0.75% Li<sub>2</sub>O cutoff. The cut-off grade contemplates all pre-tax costs associated with the processing and selling of a Li<sub>2</sub>O concentrate product. The following costs:         <ul> <li>Incremental ore haulage to the process plant RoM</li> <li>Stockpile re-handle</li> <li>Processing</li> <li>Road transport</li> <li>Ship loading</li> <li>Royalties</li> <li>General overhead cost and administration</li> </ul> </li> <li>are all easily paid for by the 0.75% Li<sub>2</sub>O cutoff. The revenue was determined using an average price for Li<sub>2</sub>O concentrate of US\$687 per tonne and an exchange rate of US\$0.70 per AU\$1.00. Process recoveries were applied as outlined below under "Metallurgical Factors or Assumptions".</li> </ul>
Mining factors or assumptions	<ul> <li>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</li> <li>The choice, nature and appropriateness of the selected mining</li> </ul>	<ul> <li>Pit optimisations &amp; sensitivity analysis were completed using     Whittle software to produce a range of pit shells using     recommended slope design criteria, mining dilution, ore loss and     processing recoveries together with mining, processing,     transport and sales cost estimates, and revenue projections to</li> </ul>



## Criteria JORC Code explanation Commentary

method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.

- The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.
- The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).
- The mining dilution factors used.
- The mining recovery factors used.
- Any minimum mining widths used.
- The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.
- The infrastructure requirements of the selected mining methods.

- form the basis for detailed pit designs and subsequent mining and processing schedules.
- A conventional open pit mine method was chosen as the basis of the DFS. Ore occurs approximately 50m below surface meaning pre-stripping is required. Pre-stripping has been allowed for. Selective mining methods of the ore zone have been assumed with a Smallest Mining Unit (SMU) size of 5m x 5m x 2.5m (XYZ) applied to the resource block model regularisation process to produce a diluted mining model. This SMU size was selected as the most appropriate block size considering the mining fleet and mining methods proposed by the preferred Mining Contractor Tender submission. Selective ore mining will also be supported by machine guidance systems, production blasthole grade control processes, and the highly visual nature of ore in comparison to the waste material.
- Pit slope design criteria is based on a DFS geotechnical study completed by SRK consultants in September 2018. Design sectors are based on the weathered, transitional and fresh rock zones as they occur vertically through the mining sequence. The slope design criteria selected for pit designs is based on a nondepressurised slope.
- The mine schedule is based on a processing plant nameplate capacity of 1.0Mtpa (dry) and the mining excavator fleet proposed by the preferred Mining Contractor that has an average annual mining capacity of 16 Mtpa (dry) over the mine life. Grants will be mined in two stages with an initial pit followed by a final cutback, with BP33 mined in one stage. The diluted mining model has been used to develop the equipment based mine schedule and assumes effective operation of the mining



Criteria JORC Code explanation Commentary

fleet and is based on realistic utilisation estimates.

• Ore loss and Dilution factors are based on the diluted resource block models developed from the regularisation process. Global ore loss and dilution results for both pits are:

Grants Resource	Ore (dry tonnes)	Li <sub>2</sub> O%	% Ore Tonnage
Undiluted	2,884,603	1.48	-
Ore Loss (OL)	268,133	1.30	9.3%
Dilution (D)	160,390	0.09	5.6%
Diluted (Undil - OL + D)	2,776,860	1.42	-3.7%
BP33 Resource	Ore (dry tonnes)	Li <sub>2</sub> O%	% Ore Tonnage
Undiluted	2,143,955	1.51	-
Ore Loss (OL)	262,735	1.22	12.3%
Dilution (D)	96,946	0.14	4.5%
Diluted (Undil - OL+D)	1,978,166	1.48	-7.7%

- Ramp widths for pit designs vary from 19m for single to 26m for double lane at a maximum operating gradient of 10%.
- Minimum mining widths for the pit design are 40m with tight digging areas and "good-bye" cuts at the base of the pit a minimum of 20m.



JORC Code explanation Criteria Commentary Inferred Mineral Resource for the purpose of the Ore Reserve estimate is treated as waste which has been economically carried by the Ore. In addition, Inferred Resources were included in several pit optimisation runs to ensure infrastructure and waste dumps were not located on potential future economic resource. Mining Infrastructure required to support the mine plan includes waste rock dumps, ROM pad, haul roads, crusher and processing plant, tailings storage facility, explosives storage facility, water storage, workshops and other buildings required for a contract mining operation. For Lithium ore the DFS economics considered processing comprising Metallurgical • The metallurgical process proposed and the appropriateness of that dense media gravity separation (DMS) of the 0.5mm to 6.3mm fraction process to the style of mineralisation. factors or after P100 crushing to 6.3mm. This process is considered lowest risk • Whether the metallurgical process is well-tested technology or novel assumptions methodology for the ore type comprising zoned, very coarse grained, in nature. • The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and to be placed in a purpose built tailings storage facility (TSF) but the corresponding metallurgical recovery factors applied. • Any assumptions or allowances made for deleterious elements.

• The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. • For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?

spodumene- $\alpha$  pegmatite. The rejects will be stockpiled for possible future use, but nil revenue was attributed to them. The minus 0.5mm fines are essentially thrown away. Four generations of metallurgical test work was used to arrive at the final process flowsheet & the competent person visited comparable operations in WA to satisfy himself that the flowsheet of a full scale plant is applicable. The introduction of a re-crush facility on DMS middlings was key to consistently producing grades of 5.5% or better at acceptable recoveries of over 70%. This necessitated a primary and secondary DMS circuit on the coarser +2mm fraction, so that the secondary coarse DMS floats could be re-crushed and recycled. Separating the -2mm +0.5mm fines and incorporating a separate fines DMS circuit was considered to be necessary to ensure the plant design



Criteria	JORC Code explanation	Commentary
		was sufficiently robust to cater for any unexpected variability in the ore body.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	<ul> <li>Appropriate environmental studies have been completed over the project area. No issues have been identified that would material impact the proposed location of the pit, infrastructure or waste rock dumps (WRDs). Backfilling of the pit has not been proposed to avoid potential sterilisation of future extensions to the ore reserve. Sterilisation drilling of some WRD footprints has been undertaken with further programs proposed and to be completed prior to the confirmation of the location of the proposed WRD locations. No issues have been identified that will materially impact on the proposed locations. Preliminary waste rock characterisations studies have been completed to a sufficient level of confidence. Further characterision work is currently being completed to bring the project into line with the Department of Mines and Petroleum, Western Australia Guidelines for Preparing Mine Closure Plans, 2015 (which is the NT Governments standard). Management of top soil material including pre-stripping prior to mining and storage for future incremental rehabilitation was allowed for in this estimate. The Notice of Intent for the project was decided upon by the NT EPA &amp; an Environmental Impact Statement (EIS) was required. There are no high risk environmental elements identified.</li> <li>The draft EIS has been assessed by the NTEPA following the public comments period. A supplementary was requested &amp; this has been prepared &amp; submitted. NTEPA advice is that the assessment report</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>will be finalised on April 26, 2019. This will result in the project achieving approval under the Environmental Assessment Act.</li> <li>The Mining Management Plan (MMP) is advanced &amp; will be submitted during April 2019 to DPIR. The DPIR continue to advise that their expected time frame for assessment is 30 days. Once the MMP is assessed &amp; accepted the security estimate is to be agreed between Core &amp; DPIR. Once agreed &amp; the deposit is paid the Mining Authorisation can be issued.</li> <li>As such there are reasonable grounds to expect that all remaining secondary approvals will be received within the timeframes required for project development</li> </ul>
Infrastructure	• The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	<ul> <li>Sufficient land exists to locate all proposed infrastructure, tailings storage facilities (TSF) and waste rock dumps required for the project.</li> <li>Product export will be via Darwin Port facilities, 88 km by road &amp; an entirely sealed road. A formal application for Access has been made. Darwin Port is now conducting a Feasibility Study on the projects access requirements.</li> <li>Power will be generated on site to meet the needs of the crushing plant, process plant and supporting infrastructure.</li> <li>A water balance assessment has determined the water resources from the existing Observation Hill dam will need to be augmented by a second dam to the east of the project &amp; both of these dams will be sufficient to meet the needs of the operation. An ancillary Mineral Lease over the Observation Hill dam area is under application.</li> <li>The workforce required for the operation will be engaged on a</li> </ul>



Criteria	JORC Code explanation	Commentary
		residential basis.
Costs	<ul> <li>The derivation of, or assumptions made, regarding projected capital costs in the study.</li> <li>The methodology used to estimate operating costs.</li> <li>Allowances made for the content of deleterious elements.</li> <li>The source of exchange rates used in the study.</li> <li>Derivation of transportation charges.</li> <li>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</li> <li>The allowances made for royalties payable, both Government and private.</li> </ul>	<ul> <li>Capital costs: Capital estimates are based on the current forecast project capital costs of A\$76.5 million (inclusive of contingency and pre-production operating costs). Operating Costs: Mining costs are based on Mining Contractor tender submissions with a preferred contractor announced to the ASX on the 24th January 2019. Mining Costs also consider activities for mining team operating costs, management and maintenance, mobile plant maintenance infrastructure, ore rehandle and crusher feed, clear and grub, top soil management, and rehabilitation and mine closure criteria. The life of mine average mining cost was estimated to be \$9.90 per bcm of material mined. The processing costs was estimated to be \$20.36 per tonne of ore treated and based upon tender submissions for Crushing &amp; Screening and Operating &amp; Maintenance proposal from Primero Group for the DMS plant. General and Administration costs were prepared by Core Lithium and estimated to be \$4.32 per tonne of concentrate produced. Transport costs were derived from Qube Bulk who have been awarded preferred contractor status. The accepted tender rate is \$8.54/t of product.</li> <li>NT royalties in accordance with prevailing legislation has been modelled with the help of KPMG. The modeling results in an effective Royalty of 8.2% of Revenue. There are no Third-party royalties associated with the project.</li> <li>Total costs per tonne of concentrate produced are estimated to be A\$509 excluding pre-strip costs which are included in the capital cost noted above.</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>All capital and operating costs have been estimated to a DFS level of confidence +/-15%</li> </ul>
Revenue factors	<ul> <li>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>	<ul> <li>Core Lithium commissioned Benchmark Mineral Intelligence to provide Li2O price forecasts. The commissioned forecasts provided forecast data well beyond the duration of the project in Real &amp; Nominal terms for a 6.0% spodumene concentrate. A factor of 91.67% was used to derive the price for a 5.5% Spodumene concentrate.</li> </ul>
Market assessment	<ul> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> <li>Price and volume forecasts and the basis for these forecasts.</li> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	<ul> <li>Core has entered into off take agreements for the sale of up to 30% of battery grade Li<sub>2</sub>O concentrate production. This cornerstone offtake agreement is with Sichuan Yahua Industrial Group Co Ltd (Yahua). The executed agreement was announced on the ASX on 1 April 2019. The Yahua agreement is for approximately 40% of annual concentrate production.</li> <li>Strong interest from China, Japan &amp; Korea continues to suggest that there will be no sales risk for the Spodumene concentrate.</li> </ul>
Economic	<ul> <li>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</li> <li>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>	<ul> <li>Lerchs-Grossman analysis of the deposit, via Whittle software, has been conducted to focus development around the economic portion of the deposit. Discounting interest rate of 10% was applied. Sensitivities conducted indicate the project is most sensitive to direct revenue factors such as price, metallurgical recovery, mining cost, wall angles and processing cost. These were completed using either +/- 20% from assumed values or in the case of wall angle ± 5°. Net Present Value (NPV) for all sensitivities examined for the project is positive.</li> <li>Financial modelling of the project following optimization, mine design &amp; scheduling has demonstrated the following financial</li> </ul>



riteria	JORC Code explanation	Commenta	iry				
		result	s:				
			NPV <sub>10</sub>	AU\$		\$ 98,190,7	764
			IRR	%		71%	
			Payback	Months		22	
				ts, Revenue, itive NPV. Do	_		
					Costs		
		NPV	-20%	-10%	0%	10%	20%
		DMS	\$155	\$126	\$98	\$68	\$38
					Revenue		
		<u>NPV</u>	-20%	-10%	0%	10%	20%
		DMS	\$33	\$65	\$98	\$128	\$159
				Ex	kchange Ra	te	
		NPV		0.65	0.70	0.75	
		DMS		\$121	\$98	\$76	
				D	iscount Ra	te	
		<u>NPV</u>		8%	10%	12%	
		DMS		\$104	\$98	\$90	
ocial	<ul> <li>The status of agreements with key stakeholders and matters leading to social licence to operate.</li> </ul>	to • Th	gaining a so	as not identi cial license to ease was gran	o operate.		



Criteria	JORC Code explanation	Commentary
		• The project was issued an Aboriginal Areas Protection Authority certificate on 29 March 2019.
Other	<ul> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</li> </ul>	<ul> <li>The project area is located on Vacant Crown Land. The underlying tenure EL29698 is owned 100% by Core. The mineral lease ML31726 is granted.</li> <li>The Darwin area is prone to cyclone activity throughout December, January, February, March &amp; April each year. Production estimates have considered the impact of such events.</li> <li>No naturally occurring material risks have been identified.</li> </ul>
Classification	<ul> <li>The basis for the classification of the Ore Reserves into varying confidence categories.</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</li> </ul>	<ul> <li>Only Measured and Indicated Mineral Resource within the final pit designs were considered and were classified by application of the appropriate mining modifying factors to a Probable Ore Reserve in accordance with the JORC Code (2012). The Competent Person considers that, based on experience with projects of a similar nature, the Ore Reserve Estimate reflects a reasonable expectation of selective mining from a Spodumene pegmatite deposit.</li> </ul>
		Deposit /R Classification Tonnes Grade Contained (Mt) (Li <sub>2</sub> O%) Metal (kt)
		Grants Proved 1.0 1.4 14.9
		Grants Probable 0.8 1.5 11.6



Criteria	JORC Code explanation	Commentary			
		Grants Sub-total	1.8	1.5	26.5
		BP33 Probable	0.4	1.3	5.7
		Total Reserves	2.2	1.4	32.2
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	<ul> <li>This Ore Reserve est estimate was compl +/-15%. There are n this statement that material impact on the</li> </ul>	eted to a leve o modifying fo are not accou the Ore Reserv	l of accuracy of actors identified nted for and the estimate.	considered to be: ed at the time of hat would have a
Discussion of relative accuracy/ confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</li> <li>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where</li> </ul>	inside the p  Mine planni detailed Min industry pra mineralizati Consideratio environmer project Cost estima 15% and is i AUSIMM Co As part of th contractors	Measured and it designs and sched hing Contract ctices suited on on of all other tal, statutory tes completed in line with the est Estimation are DFS, Core Lefor the Minin	d Indicated Muling assumpt tender submit to the style of mining, metal and financial d with a relative guidelines phandbook Multhium have e	ineral Resources ions based on ssion, and current deposit and allurgical, social, aspects of eth we accuracy of +/- ublished in the onograph 27 engaged preferred and EPC and Front



Criteria	JORC Code explanation	Commentary
	available.	There are no unforeseen modifying factors at the time of this statement that will have any material impact on the Ore Reserve estimate.