CORE EXPLORATION LTD

LITHIUM-RICH PEGMATITES OF THE BYNOE FIELD, NT

David Rawlings

AusIMM Lithium Conference

Perth June 2018

ASX code: **CXO**

DISCLAIMER

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Stephen Biggins (BSc(Hons)Geol, MBA) as Managing Director of Core Exploration 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. Biggins consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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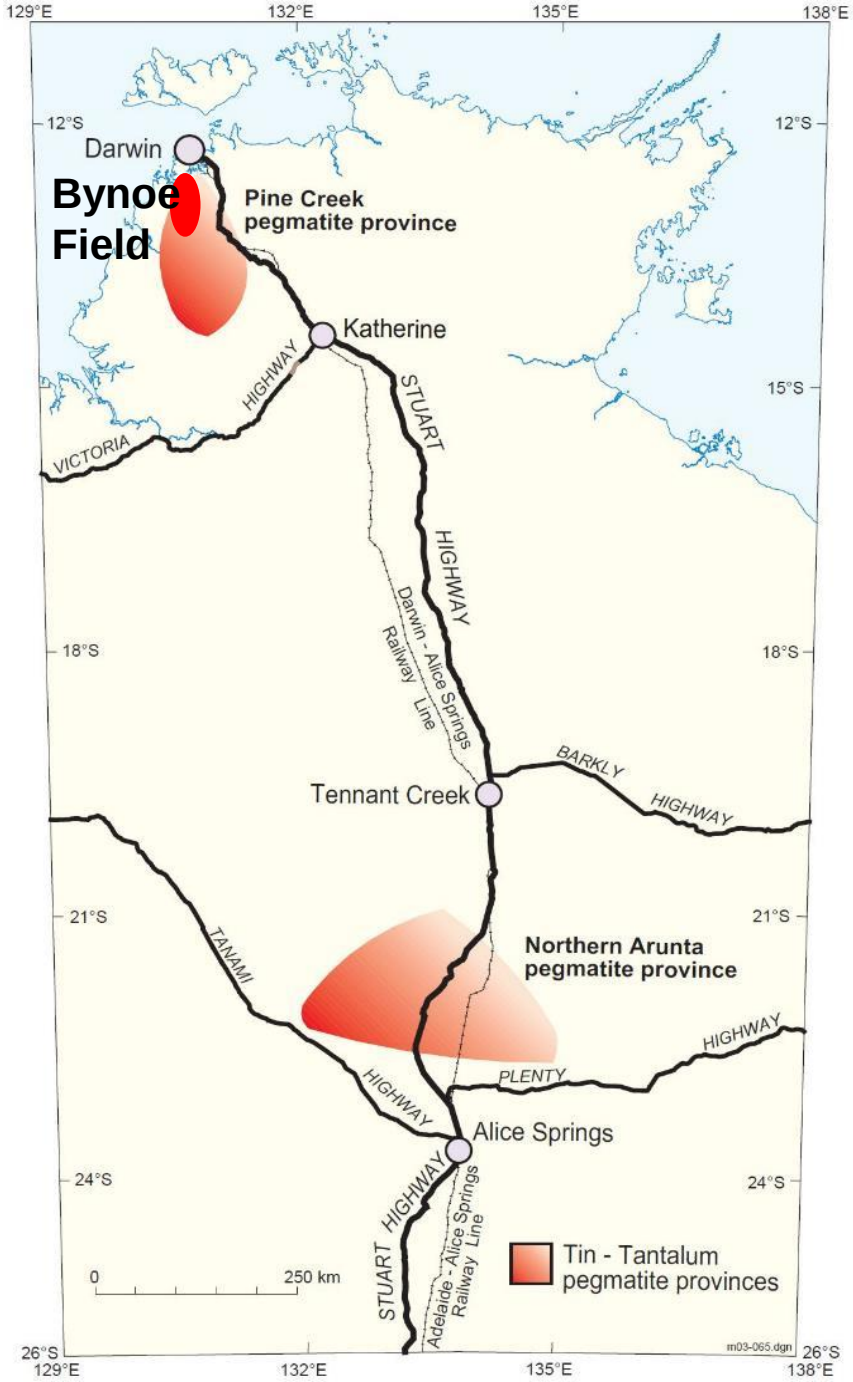
BACKGROUND

- **Bynoe Pegmatite Field**
- **15 km south of Darwin**
- **Historic Sn-Ta Production from 1886 until late 1990's**
- **Now re-cast as a Lithium District**
- **Current activity dominated by Core Exploration Ltd**
- **NTGS Sn-Ta Studies**
  - **Ahmad, 1995**
  - **Frater, 2005**



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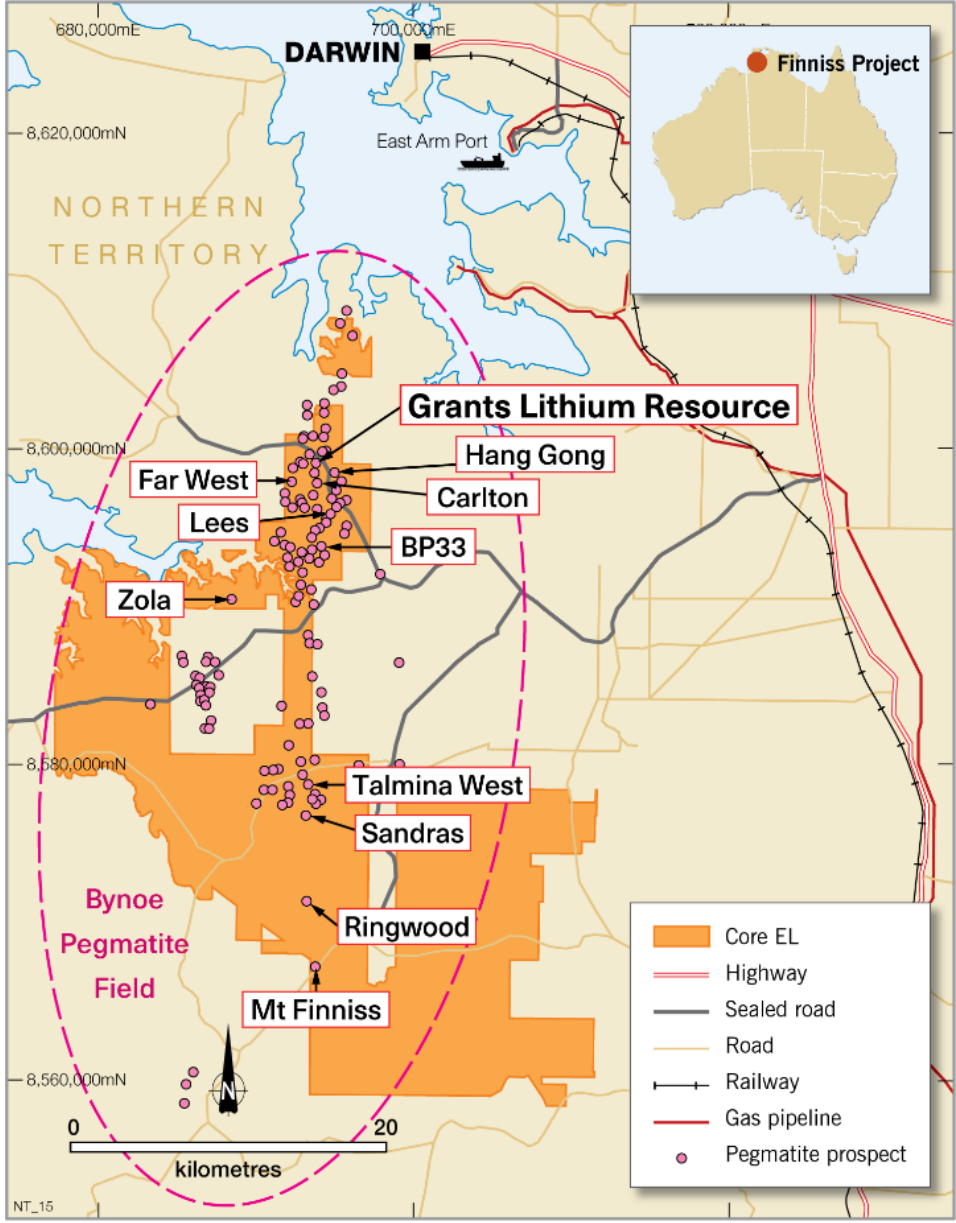
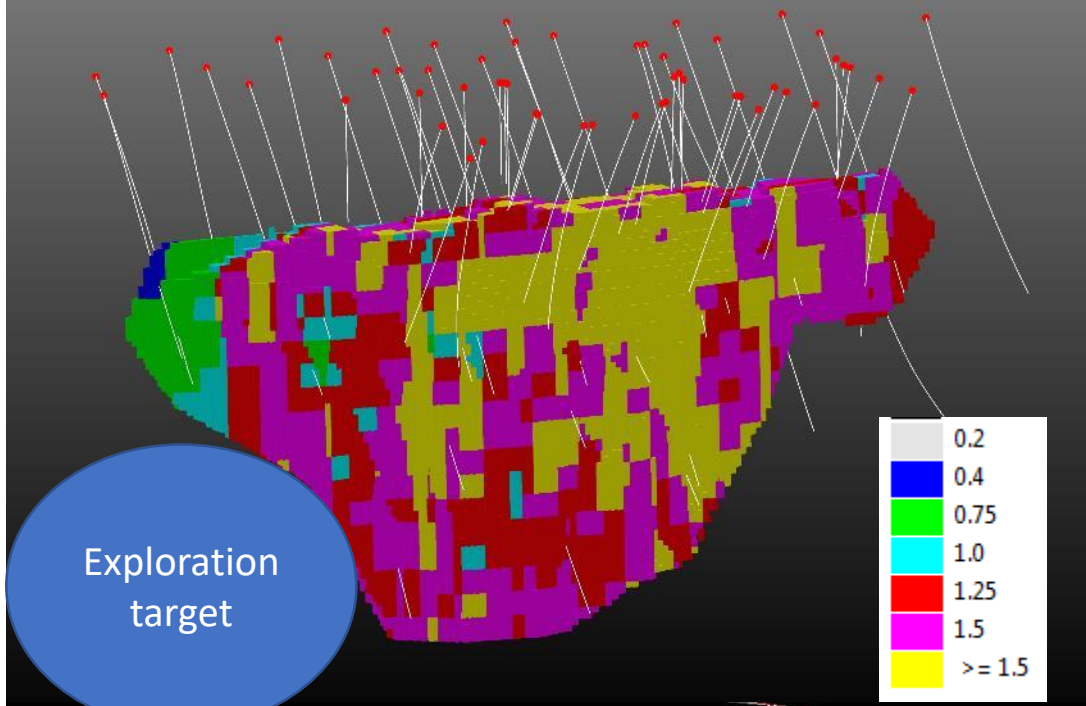
CORE'S FINNISS LITHIUM PROJECT

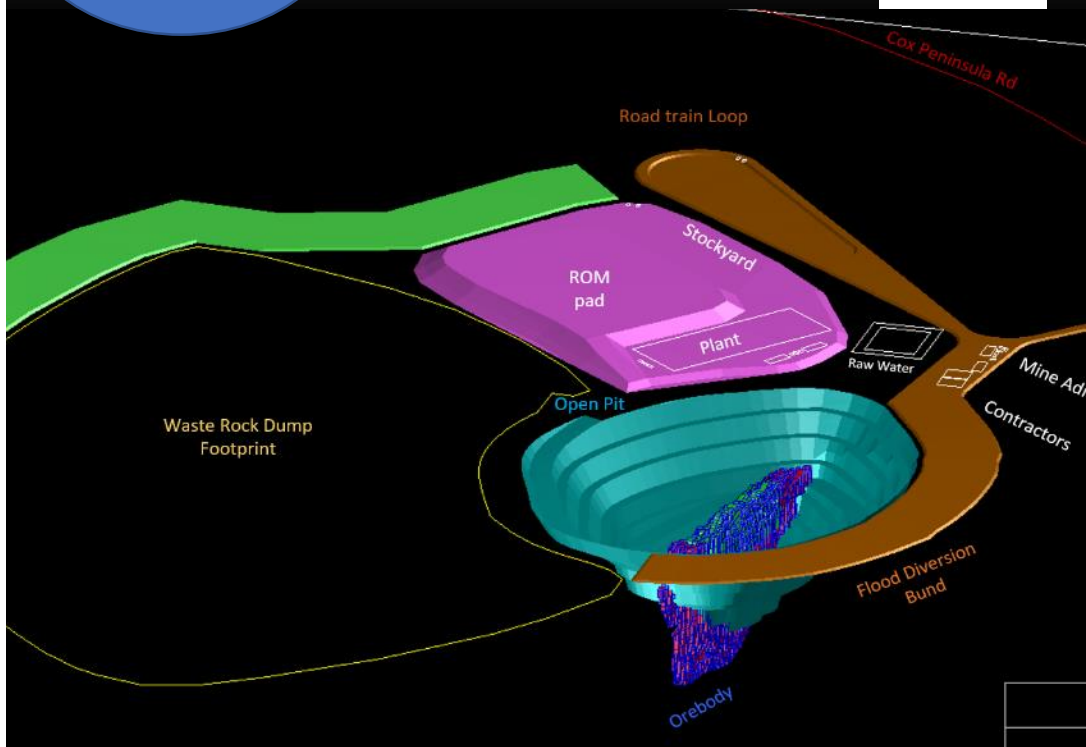
- **500 km² of tenure**
- **Two of Australia's highest grade lithium resources – Grants & BP33**
- **High grade Spodumene drill intersections at multiple prospects in first drill program in 2016**
- **100's of historic pegmatite prospects/mines**
- **100's more likely under thin cover**
- **Is it the "Tip of the Iceberg"?**



GRANTS DEPOSIT

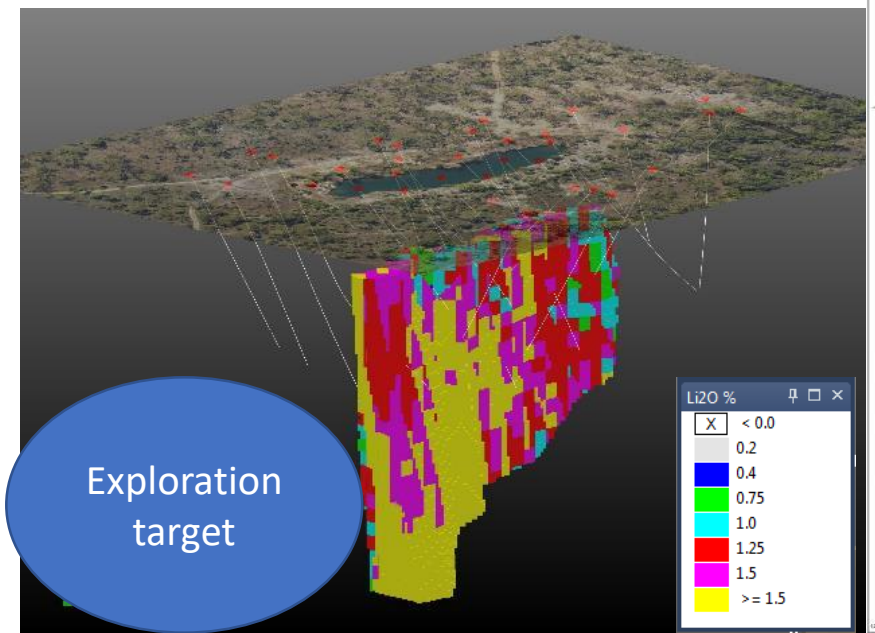
- **Discovery hole: 49m @ 1.78% Li_2O from 71m (FRC006)**
- **>220m long and 20-40 m wide**
- **Single continuous body with consistent grade**
- **Resource of 2Mt at 1.5% Li_2O, 60% Indicated**
- **Exploration upside down-plunge to south currently being tested**
- **PFS recently published with NPV_{10} of A$140m & IRR 142% (pre-tax)**
- **Development Feasibility Study & EIS underway aimed at production in 2019**

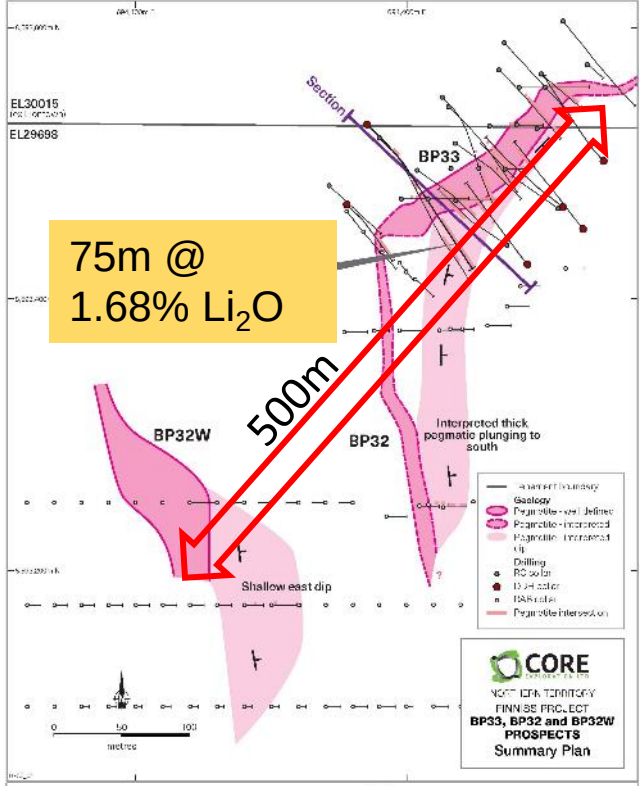


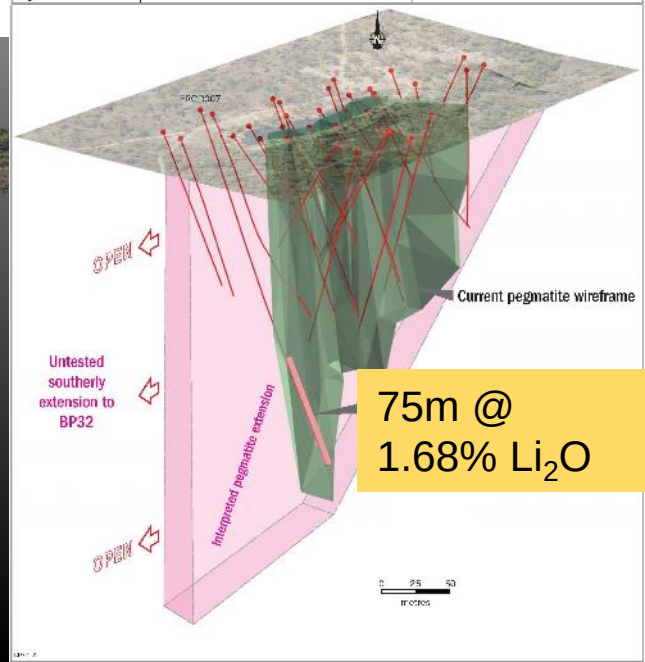


BP33 DEPOSIT

- **>140m long and 20-40 m wide**
- **Single continuous body with consistent grade**
- **Resource of 1.4Mt at 1.40% Li_2O**
- **Open directly south of intersection of 75m @ 1.68% Li_2O**
- **Connection to BP32 & BP32W?**
- **Current extension & infill drilling to expand resource and convert to largely Indicated**
- **Contribute to Project pipeline**



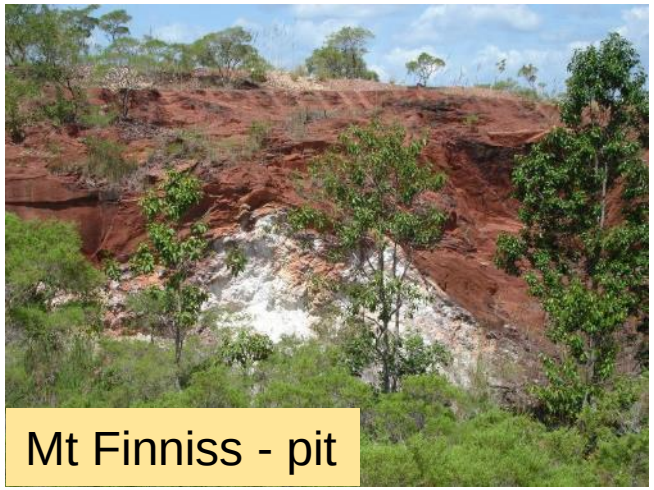




EXPLORATION HISTORY

- **Costeans, pits & shafts**
- **Mined/processed Sn-Ta in soft rock & alluvials**
- **Greenbushes centralised processing plant**
- **Lithium knowledge limited to amblygonite collectors**
- **No spodumene at surface**
- **Chemical weathering during Tertiary & recent**
- **Current slow exhumation of laterite/ferricrete**


Ah Hoys - costeans


Mt Finniss - pit


BP33 - pit

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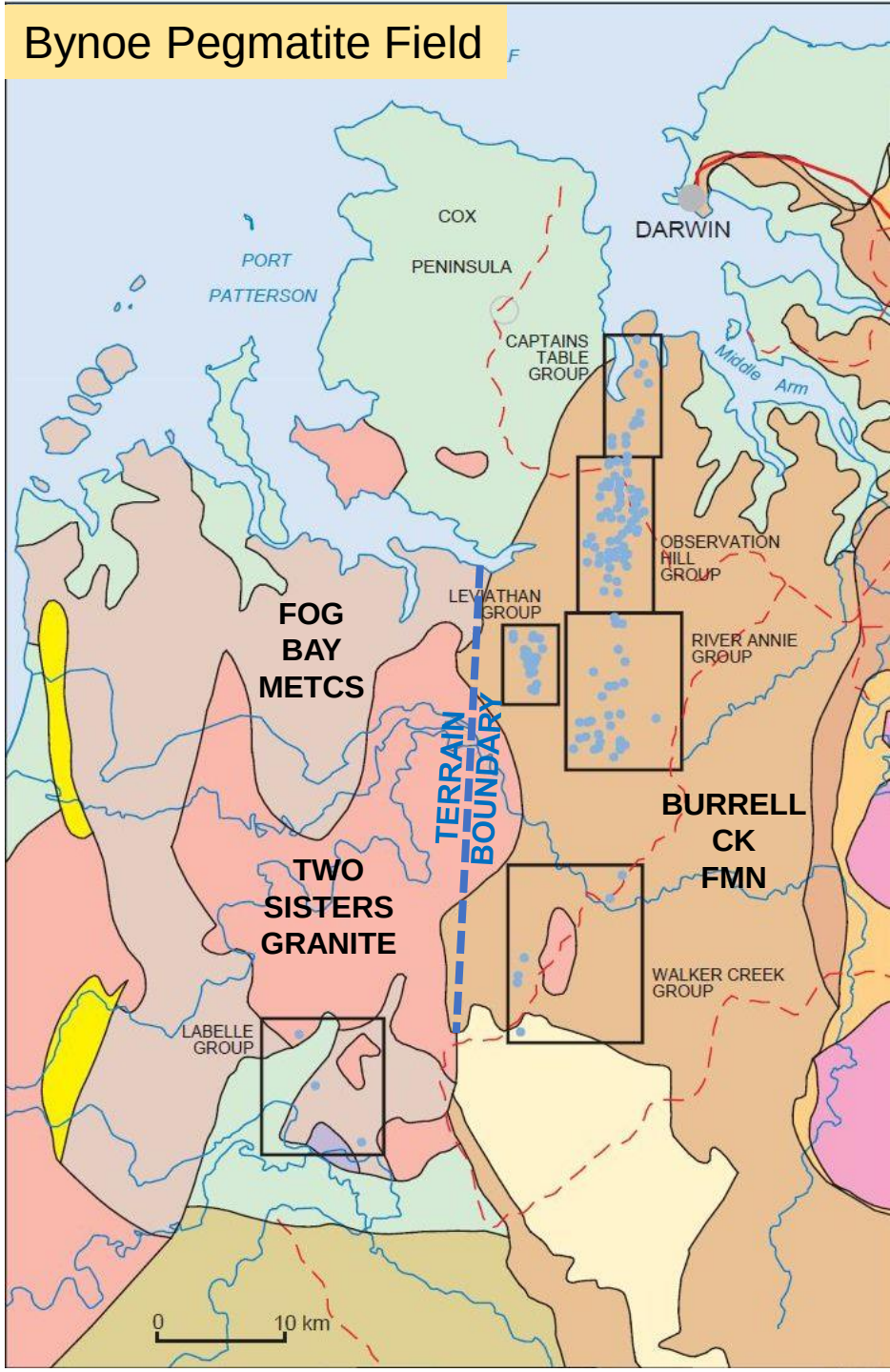
GEOLOGICAL SETTING

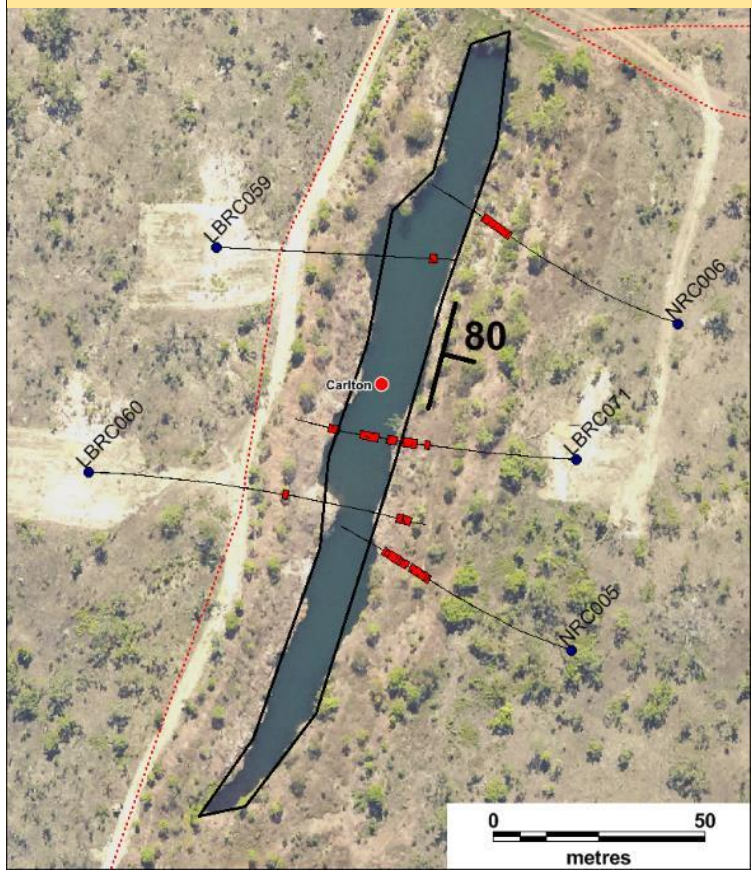
- **‘LCT Type’ (Li Cs Ta) pegmatites**
- **Source: Two Sisters Granite ~1850Ma**
- **Host: Burrell Creek Fmn turbidites (Pine Ck Province)**
  - **Greenschist facies**
  - **Isoclinal to tight folds**
- **Granite top dips east**
- **Regional fabric – sub-vertical NNE**



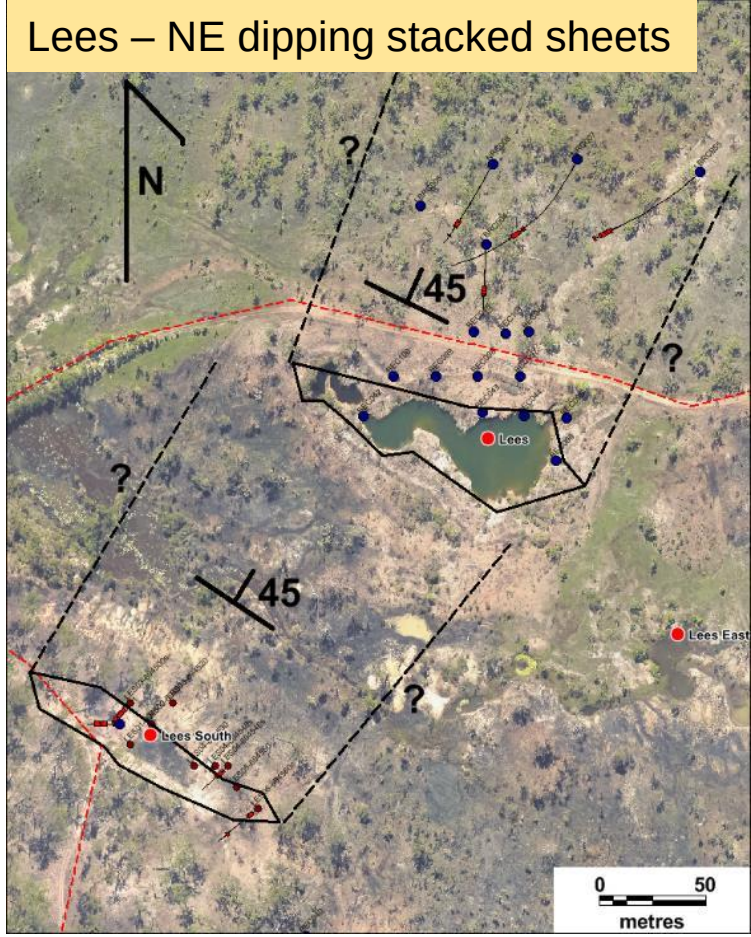
MORPHOLOGY

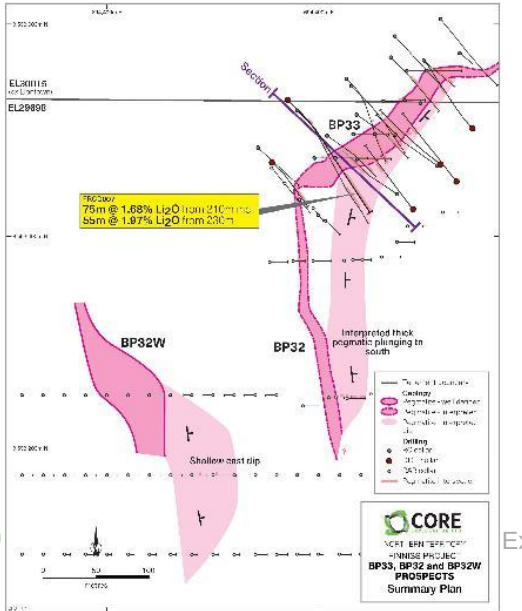
- **Narrow veins & lozenge shapes**
- **Up to 500m long & 60m wide**
- **Solitary or interconnected**
- **Most N to NNE trending & steep dip (~regional fabric)**
- **Discordant fault jogs & tension gashes with var dips/plunges**

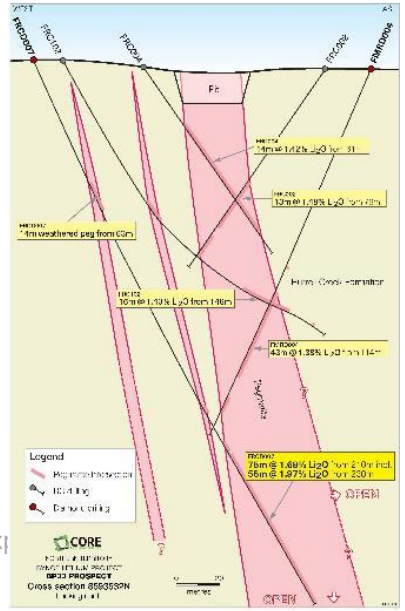
Carlton – NNE striking steep lozenge



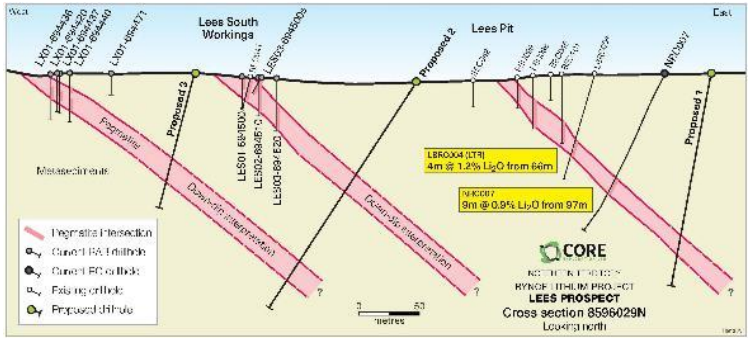
Lees – NE dipping stacked sheets







BP33 – NE striking sub-vertical lozenge



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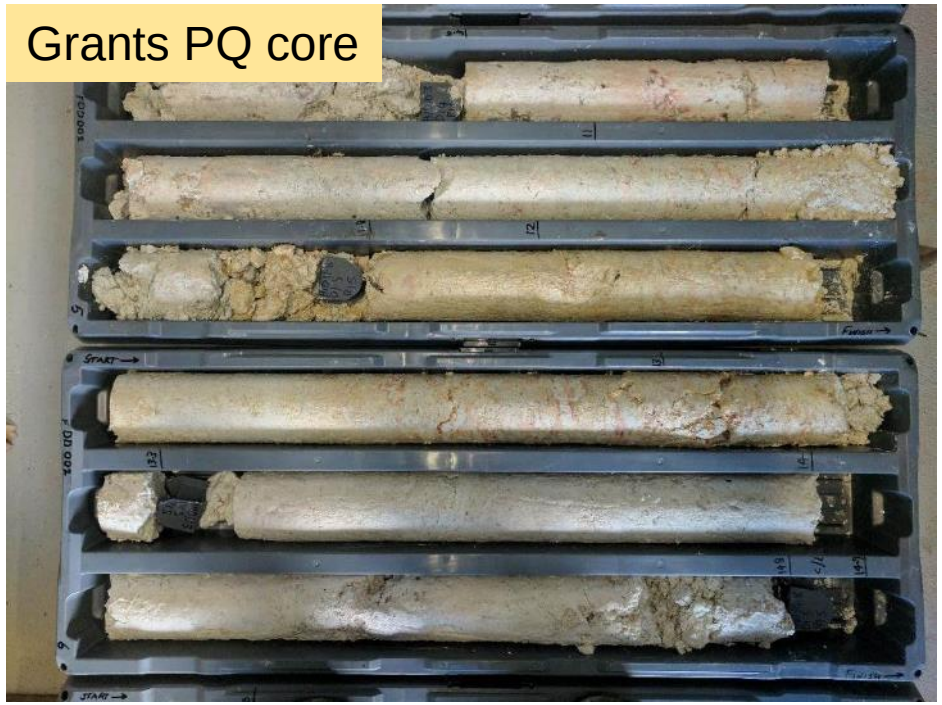
SURFACE EXPRESSION

- **Clay saprolite (smectite-kaolinite)**

Lees pit

Lees

Grants PQ core



BP33

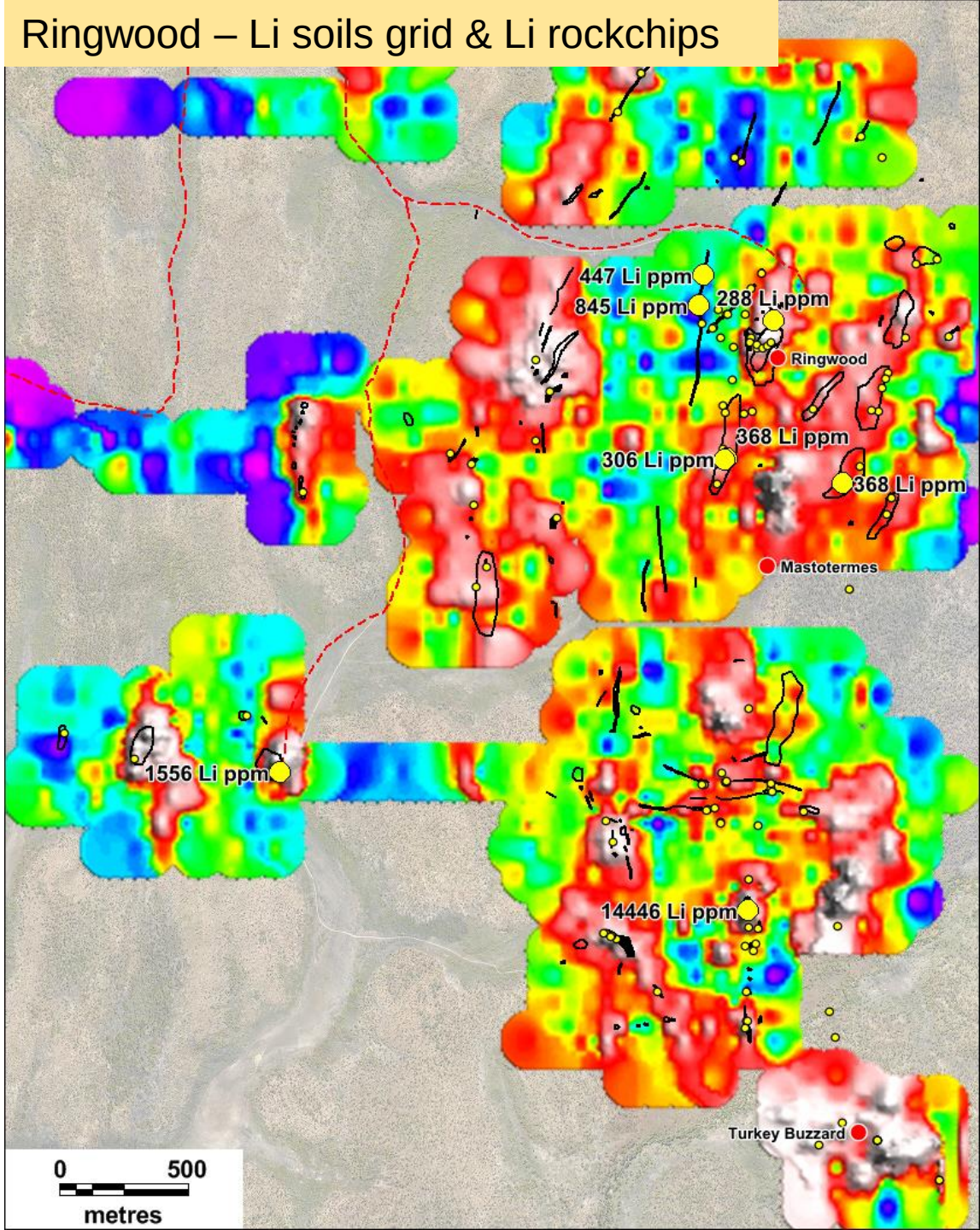
SURFACE EXPRESSION

- **Quartz float & blows**
- **Laterite iso-surface**
- **Blacksoil drainage**
- **Vegetation**
- **Soils/RAB**
  - **Li, Cs, Rb, Sn, Ta**

Ringwood

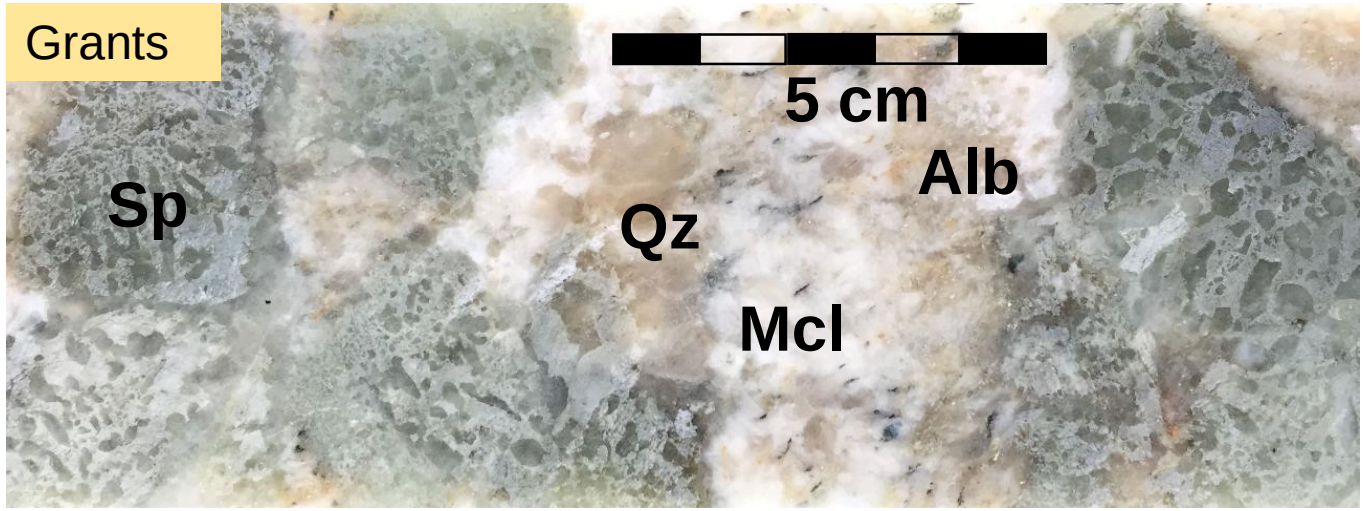
Zola

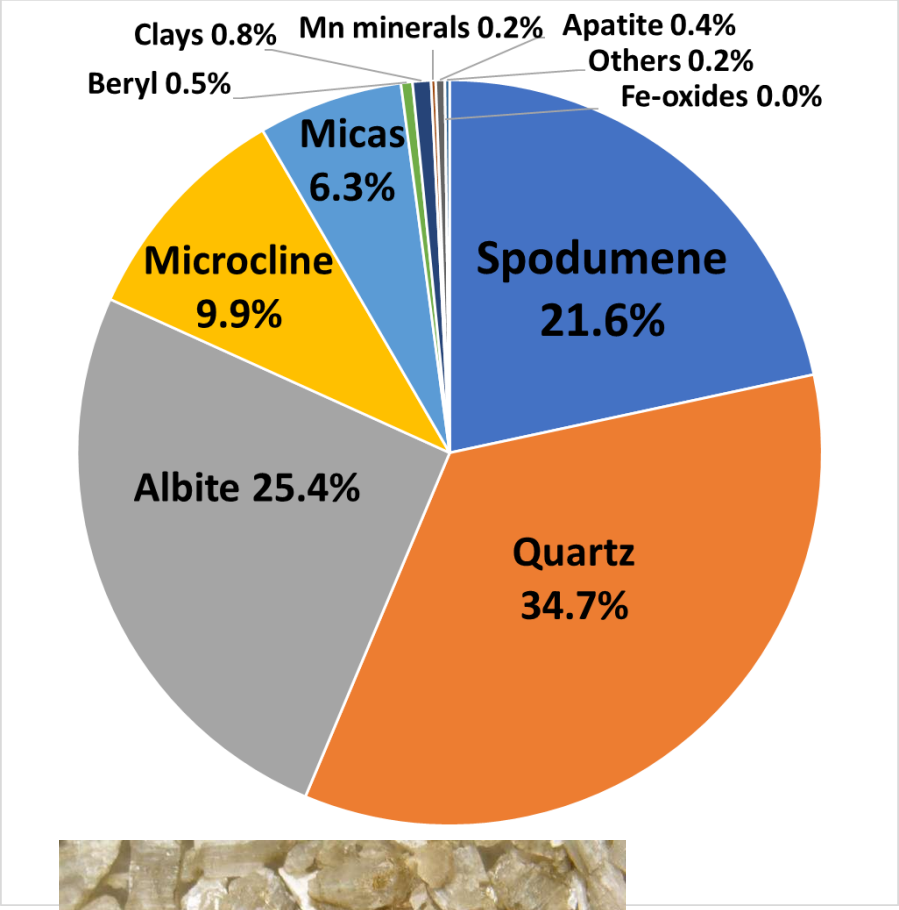
Ringwood – Li soils grid & Li rockchips



PEGMATITE MINERALOGY

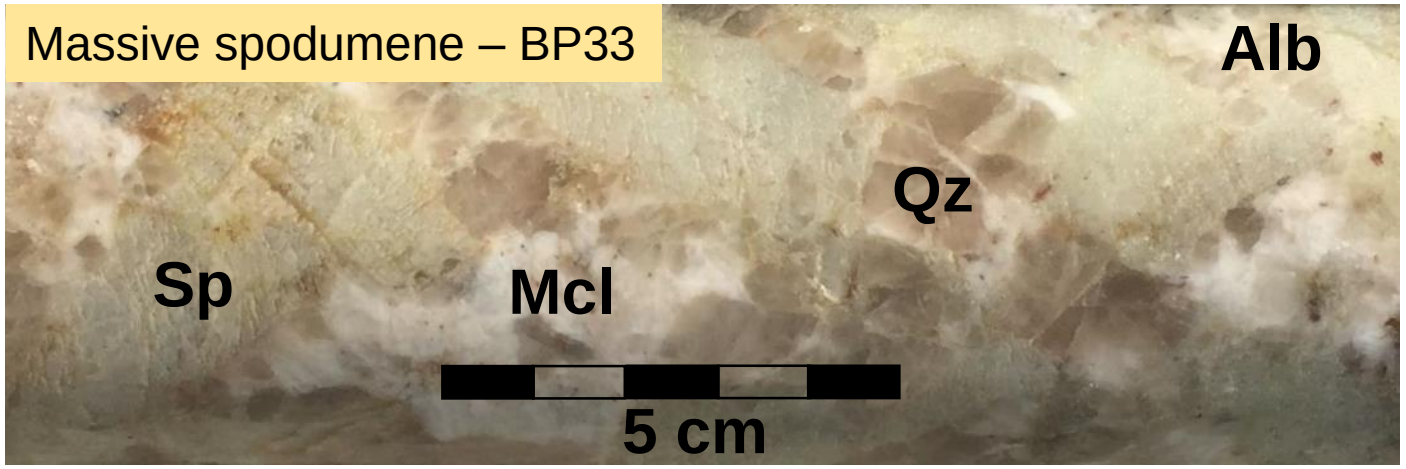
- 666 kg DDH Metallurgical sample, Petrology, QEMSCAN
- Spodumene (15-40%) - Lithium clinopyroxene - $LiAl(SiO_3)_2$
  - Poikilitic (quartz) & Massive (inclusion free) – 2 to >10 cm
  - Pale green/grey & lesser pink (Grants vs BP33)
- Quartz (20-40%) - translucent & inclusions in spodumene
- Albite & Microcline (25-45%) - pink & white



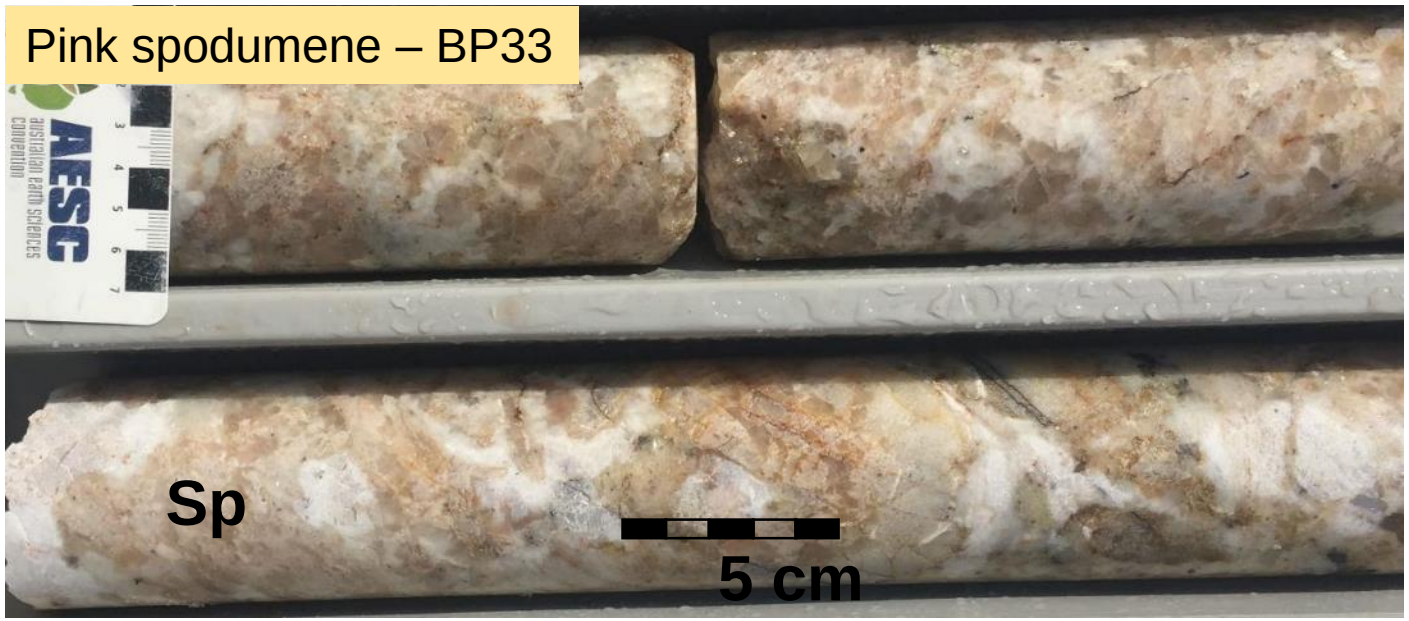


PEGMATITE MINERALOGY & FLUORESCENCE

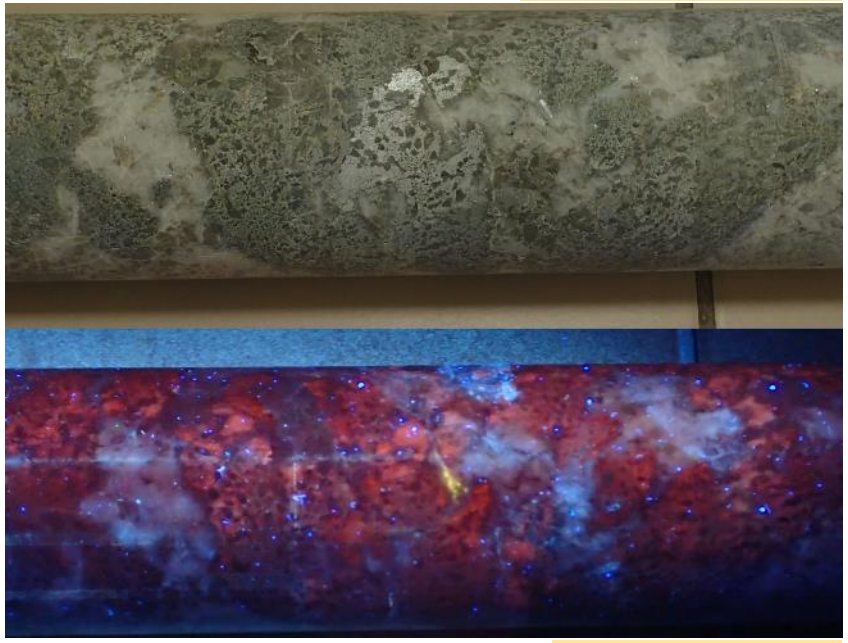
Massive spodumene – BP33



Pink spodumene – BP33



Natural light



UV light

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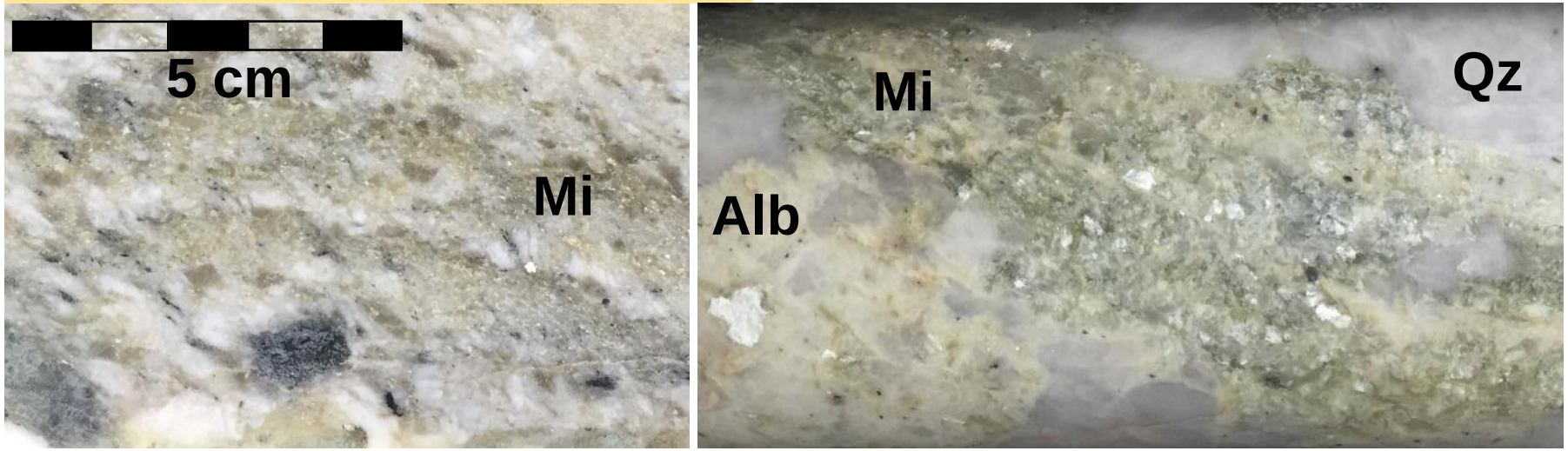
PEGMATITE MINERALOGY

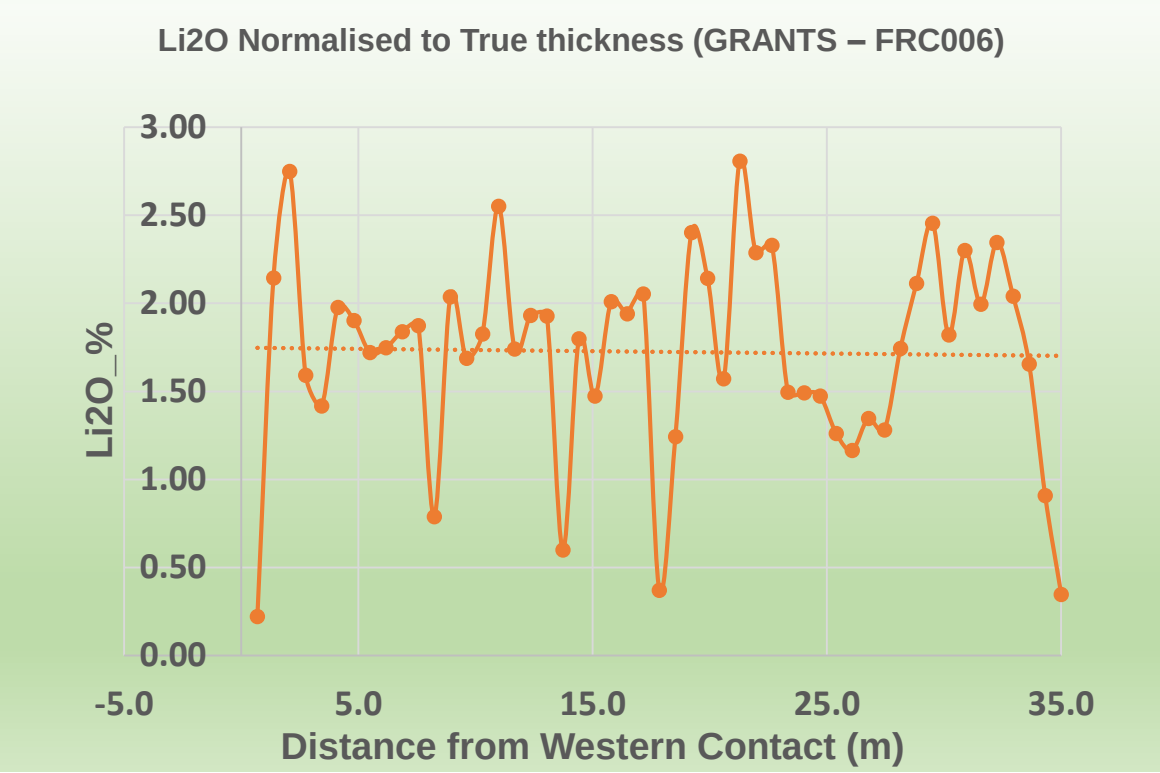
- **Muscovite (5%) – pale green with minor Li in lattice**
- **No Lepidolite recognised**
- **Accessories: amblygonite, apatite, cassiterite, ilmenite & rutile**
- **Rare: columbite, tantalite, tourmaline (elbaite), fluorite, topaz & beryl**

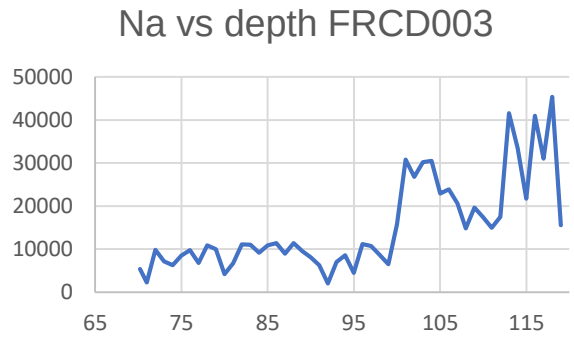
Quartz-mica-albite margin – Grants

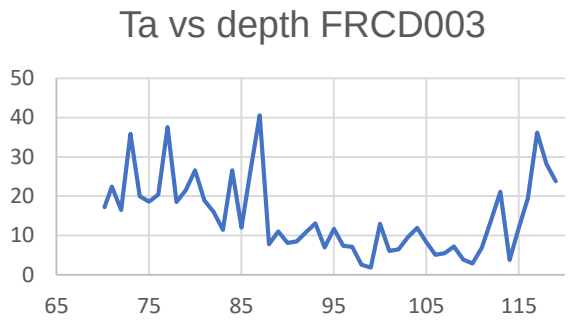


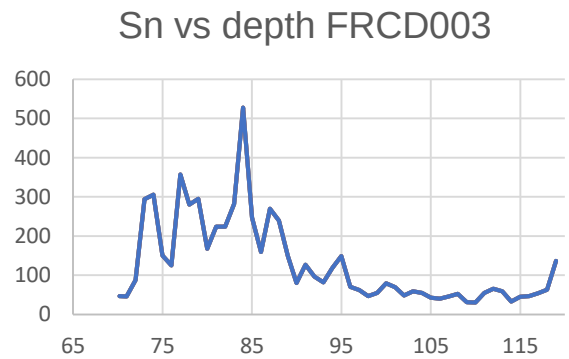
PEGMATITE ZONATION

- **Limited or subtle zonation – consistent Li grade**
- **Other geochemical trends not symmetrical**
- **Quartz-mica-albite margin 0.5-2 m thick**



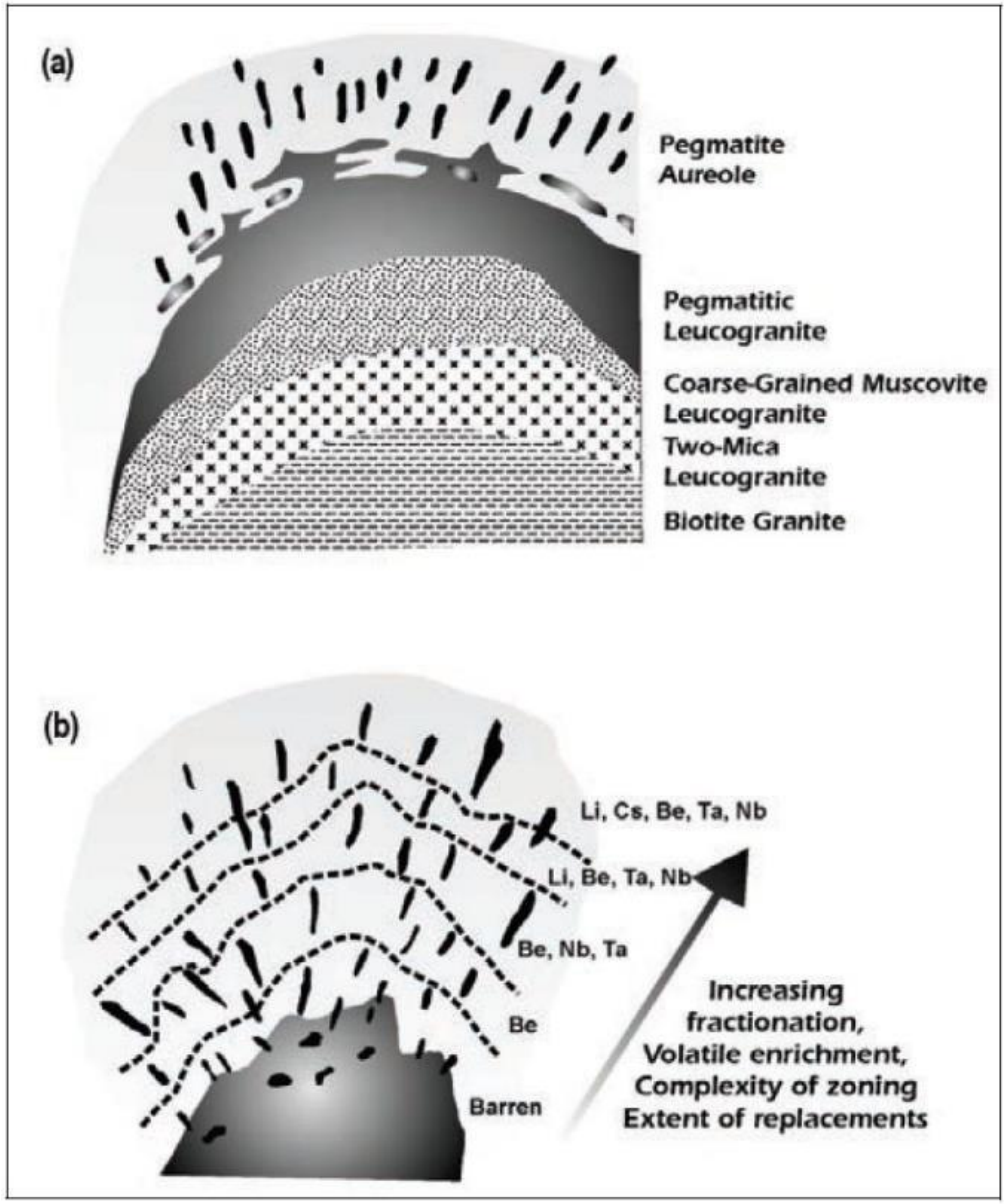






PEGMATITE MODEL

- **Injection of volatile-rich structurally-controlled pegmatite dykes into phyllite host**
- **Distal to Granite**
- **Crystallise at <500 degrees**
- **Confining pressure & homogeneity of host critical in focussing the fertile magmatic fluids**
- **Structural regime related to granite emplacement?**
- **Rapid crystallisation**
- **Granite cupola and greisen**

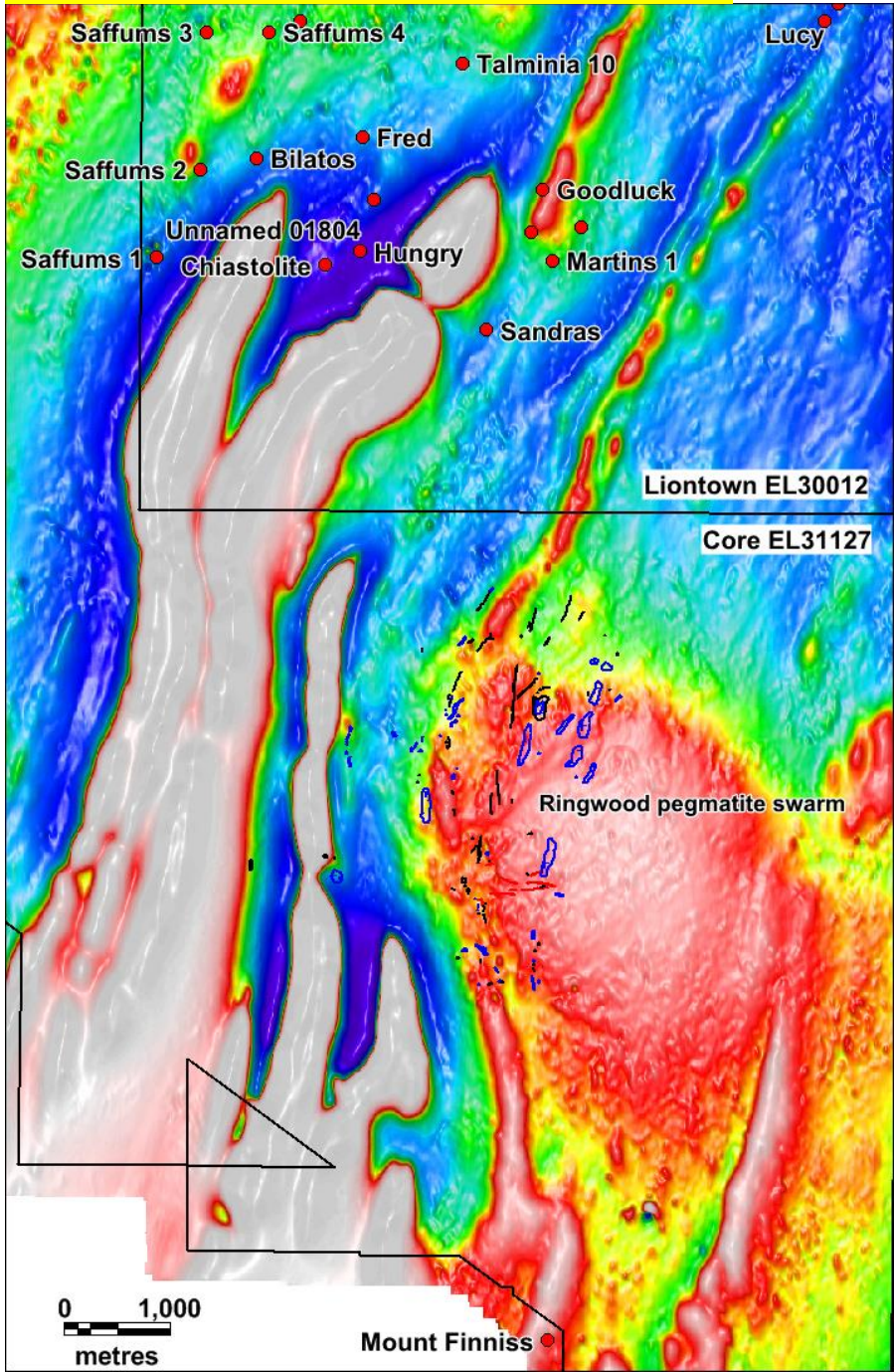


Selway et al 2005

EXPLORATION TECHNIQUES

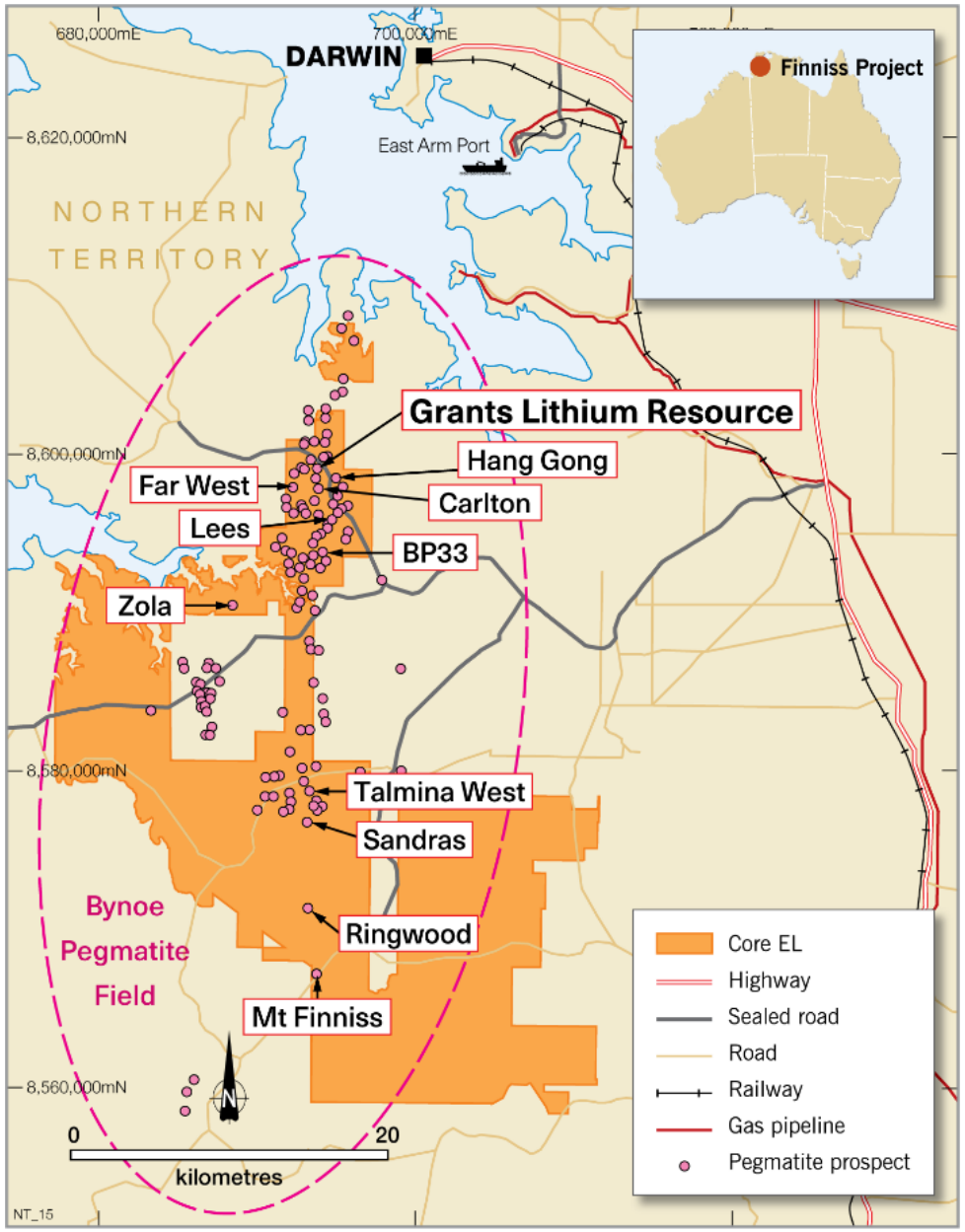
- **Historic maps – detailed**
- **Mapping – <10% float + outcrop, costeans, pits**
- **Geophysics – no established rock property contrast**
  - **Trials of gravity, ground mag, passive seismic (Tromino), EM34, remote imagery & Hylogger**
  - **Detailed Airborne Magnetics**
  - **Hymapper spectral data – clays & quartz**
- **Soils geochem – Laterite, Blacksoil & Lithium mobility**
- **Aircore/RAB/Auger - define surface expression & shallow geometry**
- **Deep RC, then DDH Drilling**

50m mag survey - RTP histogram equal



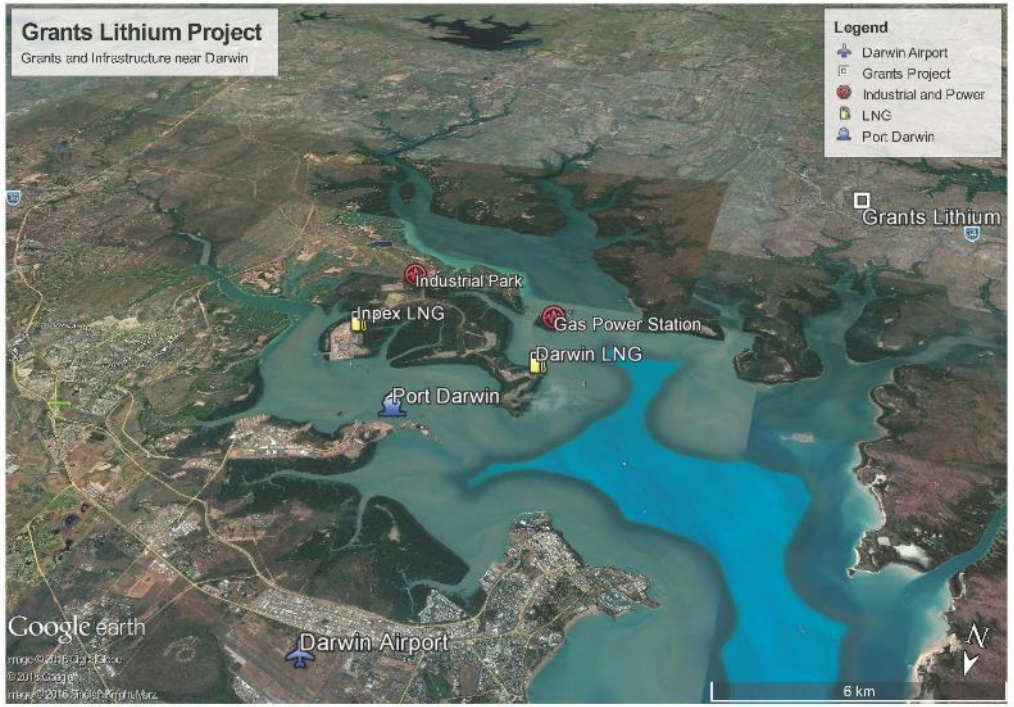
CURRENT EXPLORATION

- **Aggressive program supported by budget**
- **RC/DDH drilling at Grants & BP33 to expand resources**
- **RAB and RC drilling at dozens of historic pits and pegmatite occurrences:**
  - **inc BP32, Lee's, Booth's, Carlton, Hang Gong, Sandra's, Kelly's**
- **Mapping & prospecting/auger of Hymapper, geophysical & geochemical targets**
- **Objective: build a pipeline of high-grade resources to enable Finniss to be a robust project for 10 years plus.**



PROJECT ADVANTAGES

- **100% holding in Unexplored Lithium district**
  - **100's of historically-known pegmatites**
  - **Many un-recorded – low Ta/Sn ≠ low Li**
  - **New geochemical and geophysical targets**
  - **Drilling hit rate for fertile pegmatites is >50%**
- **High grade >1.5% Li_2O**
- **Simple coarse mineralogy & no petalite or lepidolite to date**
  - **Almost exclusive Li deportment to Spodumene**
  - **Minor amblygonite**
  - **Simple liberation & concentrate processing**
  - **DSO potential**
- **Infrastructure - nearness to road, port, grid power & stable workforce**
  - **Logistics chain to China**



The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Stephen Biggins (BSc(Hons)Geol, MBA) an employee of Core Exploration 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 Biggins consents to the inclusion in the report of the matters based on his 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 report that relates to Exploration Results is based on information compiled by Dr David Rawlings (BSc(Hons)Geol, PhD) an employee of Core Exploration 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". Dr Rawlings consents to the inclusion in the report of the matters based on his 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 has been compiled by Dr Graeme McDonald. Dr McDonald acts as an independent consultant to Core Exploration Limited on the Grants Deposit Mineral Resource estimation. 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.

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 Upgrade" dated 8 May 2018 and "Maiden Resource Estimate at BP33" dated 23 May 2018 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 all material assumptions underpinning production target and forecast financial information derived from the product target announced on 25 June 2018 continue to apply and have not materially changed.

The report includes results that have previously recently been released under JORC 2012 by Core as listed in the table below. The Company is not aware of any new information that materially affects the information included in this announcement.

25-Jun-18	Finniss Pre-Feasibility Study Points to Low-Cost Lithium Operation Generating Significant Surplus Cashflow
23-May-18	Maiden Estimate at BP33 increases Lithium Resources at Finniss Project by 70%
8-May-18	Grants Lithium Resource Upgrade marks major step towards Feasibility
6-Apr-18	High-Grade Lithium Assays to Upgrade Resource Confidence
8-Mar-18	Multiple High-grade Lithium Intersections at Grants
1-Mar-18	Wide High-grade Lithium Intersections Positive for BP33
19-Feb-18	86m Spodumene Pegmatite Intersected at BP33 Prospect
14-Feb-18	BP33 Extended by High Grade Lithium Intersections
5-Feb-18	High-Grade Lithium Intersected in New Spodumene Pegmatites
01-Feb-18	CXO Drilling Commenced to Upgrade Grants Lithium Resource
23-Jan-18	CXO Core Re-Commences Lithium Resource Drilling at BP33
19-Dec-17	Significant Widths and Grades of Spodumene at Sandras
13-Dec-17	New Assays Extend BP33 Intersection
1-Dec-17	Core Enters into Lithium Offtake and Prepayment Agreements
27-Nov-17	Wide High-Grade Lithium Drill Intersections at BP33
20-Nov-17	Bynoe Lithium Project Drilling Update
16-Nov-17	Widest Spodumene Pegmatite Intersections at BP33
9-Nov-17	Applies for Approval to Develop High-Grade Lithium Deposit
19-Oct-17	Core Applies for Mineral Lease to Develop Lithium Mine
29-Sep-17	Placement to Yahua to advance Finniss Lithium Project
14-Sep-17	Core acquires Bynoe Lithium Project from Liontown Resources
8-May-17	Core defines first Lithium Resource in the NT
30-Mar-17	Test work produces high quality 6% spodumene concentrate