



**FINAL SURRENDER REPORT**  
**1 January 2019 to 21 April 2019**  
**EL 29669 “Jervois South”**

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**Date:** 18 June 2019  
**Tenement Holders:** DBL Blues Pty Ltd (100%)  
**Tenement:** EL 29669  
**Reporting Period:** 1 January 2019 to 21 April 2019  
**Distribution:** Core Lithium Ltd (1)  
Northern Territory Department of Primary Industry and Resources (1)  
**Map Sheet:** Huckitta 1:250,000 sheet (SF5311)  
Jervois Range 1:100,000 sheet (6152)  
**Target Commodity:** Copper, Gold, Base Metals  
**Keywords:** VTEM, CSIRO, RAB Drilling, Copper, Base-metals, Geological mapping, Soil Geochemistry

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## 1. SUMMARY

This is the final surrender report of EL 29669, which was part of Core Lithium Ltd.'s (CXO) Jervois Domain Project (GR 348). EL 29669 was held 100% by DBL Blues Pty Ltd, a wholly owned subsidiary of CXO and was in its sixth year of tenure (granted 22 April 2013).

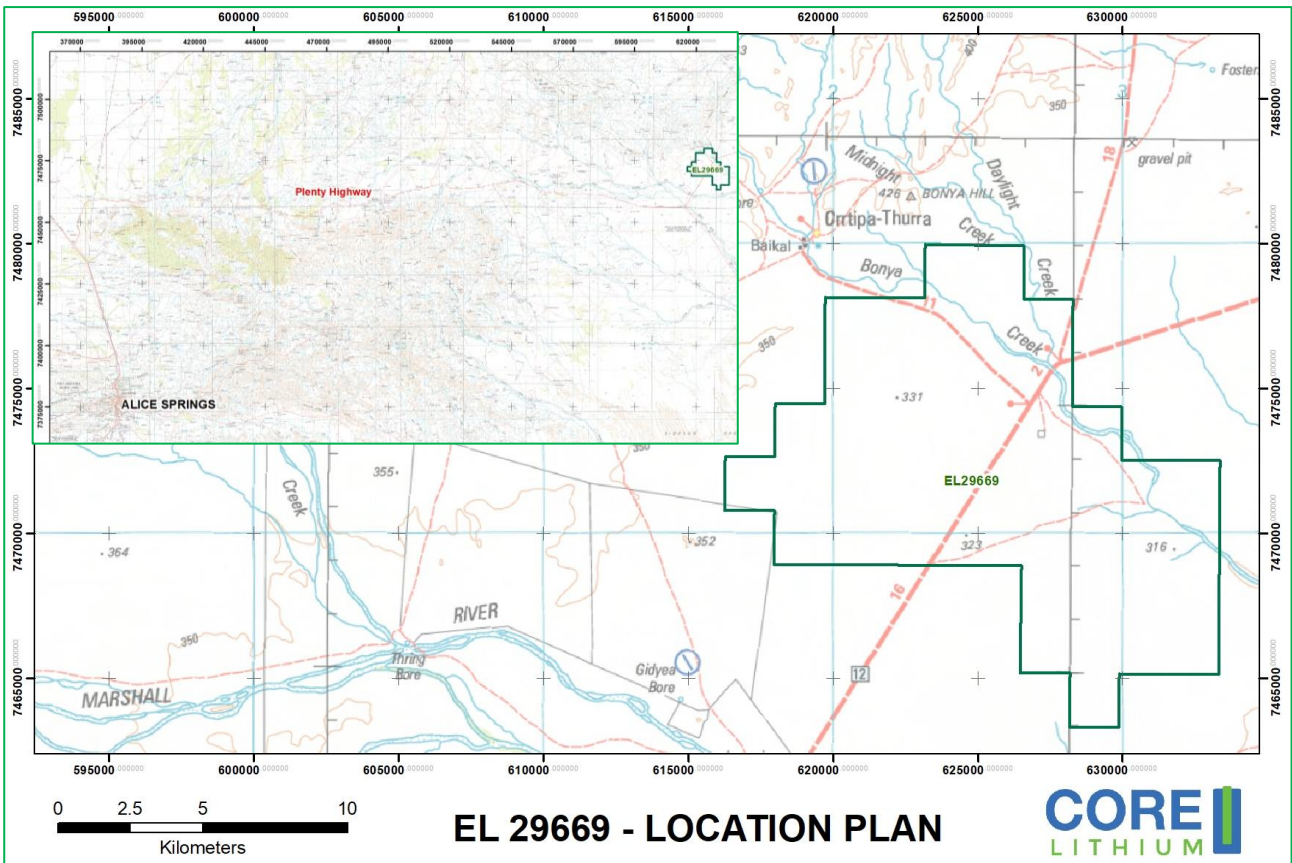
EL 29669 (and the Jervois Project area) is dominated by parts of the Aileron and Irindina Provinces as well as the Georgina Basin. The basement in the area consists of sedimentary and igneous rocks of the Aileron Province of Paleo-Proterozoic age (1865 – 1500 Ma). The rocks have been metamorphosed to upper green-schist to lower amphibolite facies during the Strangways Orogeny (1740 – 1690 Ma).

During 1 January 2019 to 21 April 2019, CXO has not undertaken any new exploration work on EL 29669. This is largely due to a substantial commitment of resources and funds by CXO to pursue an aggressive resource definition drilling campaign at the Finniss Lithium Project area, proximal to Darwin.

**2. INTRODUCTION**

This final surrender report covers the exploration activities within EL 29669 (Figure 1), during the reporting period 1 January 2019 to 21 April 2019. EL 29669 is located within the Jervois Range 1:100,000 map sheet and the HUCKITTA (SF53-11) 1:250,000 map sheet. Access from Alice Springs is north via the Stuart Highway then east along the Plenty Highway to the vicinity of the Jervois Mine (Figure 1). EL 29669 overlies the Jervois Pastoral Lease (PPL 962).

There has been no reportable on-ground exploration work conducted over EL 29669 during the reporting period.



**Figure 1: Location Map EL 29669**

**3. TENURE**

EL 29669 was granted to DBL Blues Pty Ltd on 22 April 2013 (Table 1).

Group Reporting of the Jervois tenure (EL 29669 and EL 29579, EL 29580 and EL 29581) was granted by NT DME on 14 August 2014 with a reporting year defined as the calendar year. An Expenditure Project Area (EPA) for GR 348 was granted on 27 May 2015 with a covenant of \$150,000 set for the 2015 reporting year. The EPA was withdrawn by DBL in October 2016 as DBL believed its purpose was not suitable for the 2016-onwards reporting period. Individual expenditure commitments were set by Department of Primary Industry and Resources due to the timing of the withdrawal.

**Table 1: Tenure Details for EL 29669**

Tenement	Owner	Date Granted	Tenure	Size
EL 29669	DBL Blues Pty Ltd (100%)	22/04/2013	6 Years	47 blocks/148.75 km <sup>2</sup>

#### 4. GEOLOGY AND MINERALISATION

EL 29669 (and the Jervois Project area) is underlain by parts of the Aileron and Irindina Provinces and the Georgina Basin. The basement in the area consists of sedimentary and igneous rocks of the Aileron Province of Paleo-Proterozoic age (1865 – 1500 Ma). The rocks have been metamorphosed to upper green-schist to lower amphibolite facies during the Strangways Orogeny (1740 – 1690 Ma).

The major Paleo-Proterozoic unit outcropping within the tenements is the Bonya Schist. This unit consists of pelitic, psammopelitic and calcareous meta-sedimentary rocks, with minor psammitic and quartzite facies. Felsic and mafic igneous rocks of intrusive and extrusive origin also occur within the unit. The entire sequence has been strongly deformed in the Strangways Orogeny. Magnetite-bearing andalusite and muscovite-biotite schists with minor calc-silicate rocks of the Bonya Schist host the base metal mineralisation of the Jervois District (see below). In the far western part of the area the Bonya Schist is underlain by the Mascotte Gneiss Complex consisting of quartzo-feldspathic gneiss, biotite schist and gneiss, amphibolite and hornblende gneiss (Figure 2).

The Attutra Metagabbro intrudes the Bonya Schist in the area to the east of the Jervois township. This unit includes metamorphosed gabbro, dolerite, norite and magnetite rock and has been dated at 1786 Ma.

Isolated outcrops of Paleo-Proterozoic rocks occur in the area south of the Plenty Highway and may be equivalents of the Bonya Schist or units of the Strangways Metamorphics. Large bodies of granite to grano-diorite outcrop poorly through the area and include the Jervois, Unca and Xanten Granites. These granites were intruded at about 1770 Ma (Yambah Event) and have been metamorphosed and deformed during the Strangways Event.

In the southwest corner of the area rocks of the Harts Range Group of the Irindina Province crop out. These sedimentary rocks of Neo-Proterozoic to Cambrian were metamorphosed to amphibolite/granulite facies during the 480 – 460 Ma Larapinta Event. There is a tectonic contact along the Mount Sainthill Fault zone with the Aileron Province to the north.

The Neo-Proterozoic Mopunga Group of the Georgina Basin unconformably overlies the older rocks throughout the area. These unmetamorphosed marine and terrestrial sedimentary rocks are in turn overlain by Cambrian age sediments to the north. Diamictite of the Mt Cornish Formation lies unconformably on the Proterozoic rocks in the south-eastern part of the area.

The southern portions of the project area are underlain by recent alluvium and aeolian sand which obscure the bedrock lithologies.

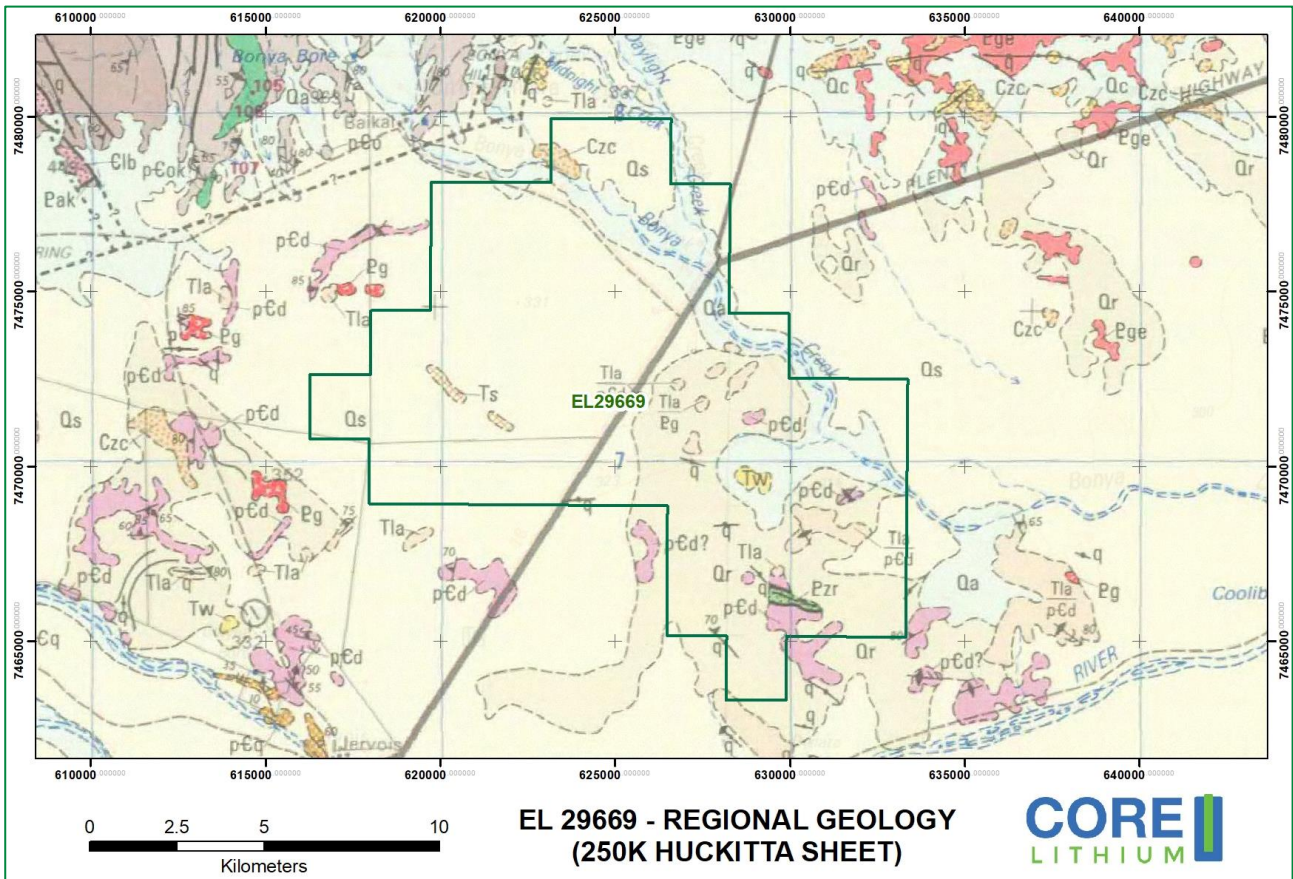


Figure 2: EL 29669 Geology (Extract from Huckitta 1:250,000 Geology)

## 5. PREVIOUS EXPLORATION

Prospectors discovered the Jervois Mineral Field in 1929; minor exploitation of the outcropping secondary copper mineralisation was undertaken. Exploration by New Consolidated Goldfields in the early 1960's led to the discovery of significant copper and silver-lead-zinc mineralisation.

Exploration for tungsten (scheelite) and base metals was carried out by Petrocarb Exploration NL and others under AP 3161, EL 128, EL 584 and EL 740 during the early 1970's. Minor scheelite prospects were found in the Bonyo Schist near Unka Bore. Drilling at the Jervois Mine area outlined an ore resource of about 4 Mt at 2.8 % Cu and 60 g/t Ag.

Otter Exploration NL and CEGB explored for scheelite and uranium through the area under EL 1583, EL 1584 and EL 1585 from 1987 to 1989 (Kojan, C.J. and Fortowski, D., 1980). Work carried out included airborne radiometric surveys, ground scintillometer surveys, mapping and rock chip sampling. Minor occurrences of scheelite were discovered in the vicinity of the Jervois mine. No significant uranium prospects were discovered.

EL 3317 covered the central part of the area and was explored by Petrocarb Exploration NL in joint venture with Geopeko from 1981 to 1983 (Turley, 1983). The exploration targeted Molyhill-style skarn hosted tungsten-molybdenum mineralisation. Airborne radiometric and magnetic surveys were flown, and 40 magnetic anomalies were checked by ground reconnaissance. 11 magnetic anomalies were chosen for testing by shallow RC percussion drilling (maximum depth 61 m). No scheelite was found in the drilling samples which were of biotite gneiss and minor granite.

In 1981, Plenty River Mining Company acquired the leases over the Jervois mine, 3 exploration licences (EL 3202, EL 3203 and EL 3204) were also taken up to the south and east of the leasehold. An airborne magnetic survey was flown over the area.

Anaconda Australia entered into a joint venture with Plenty River Company and undertook an airborne INPUT EM survey in 1983 over the 3 EL's. Ground follow-up on 26 EM anomalies was undertaken with disappointing results (Ypma, 1987). Surface and trench sampling were carried out over 3 copper prospects – Wards, Van Gils and Anaconda. These prospects are located outside of the Core project area.

Hunter Resources Ltd took up EL 5171 to explore for platinum group elements (PGE) in the Attutra Metagabbro to the east of the Jervois Mine (Hunter Resources, 1989). Reconnaissance mapping, rock chip and stream sediment sampling, and ground magnetic were carried out. Most of the rock chip samples were taken from magnetite-rich rocks that were known to be vanadium-rich. Best results were 28 ppb Pt and 215 ppb Pd, which Hunter concluded were too low to warrant further work.

Normandy Poseidon explored the central and eastern part of the area EL 6993, EL 7287 and EL 7505 between 1990 and 1996. Normandy targeted the area as being prospective for Broken Hill style base metal mineralisation. Initial exploration in 1990/1991 consisted of orientation soil and rock chip sampling, bedrock auger drilling on widely spaced traverses and an airborne EM (Questem) survey (Cozens and Booth, 1992). In subsequent years lag sampling was carried out over 2 areas; east of the Jervois mine site (Hamburger Hill prospect) and in the south near the Marshall River. Soil sampling was undertaken over several anomalies generated from the Questem survey. Vacuum and RAB drilling were done over several anomalies including Hamburger Hill. A few regional RAB traverses and grids were undertaken to determine the bedrock beneath transported cover with mixed success.

A drilling programme consisting of 5 diamond holes and 5 RC percussion holes was undertaken to investigate the geochemical anomaly at Hamburger Hill. Minor sulphide mineralisation (chalcopyrite, sphalerite, galena and bornite) was intersected in veins in garnet psammopelites. 1 diamond drillhole was completed to test an airborne EM anomaly – AEM3N. The hole intersected strongly sheared gneiss and did not explain the EM anomaly.

Fixed loop ground EM surveys were used to check some of the airborne EM anomalies. A regional gravity survey was undertaken in the final year (Price, 1996).

CRA Exploration acquired EL 8116 covering the Georgina Basin sediments in the northern part of the area. The tenement was explored for unconformity related Cu-U-phosphate mineralisation during 1993 – 1994. Work was directed at the Middle Cambrian phosphatic Arthur Creek Formation. Reconnaissance percussion drilling failed to locate any mineralisation at the targeted stratigraphic level.

Arafura Resources explored the area under EL 10214 and EL 10215 from 2001 to 2008. Portions of these EL's are still held by Arafura and some of the reports have not been released to open file. Little work was done on EL 10214, which covered the southern part of the area (Hussey, 2008). 2 airborne magnetic and radiometric surveys were flown over portions of EL 10215 in 2005. 1 covered the Lucy Creek uranium anomaly the other covered the Unca magnetite-vanadium prospect, which is underlain by the Attutra Metagabbro. Drilling programmes were carried out on both prospects during 2006 (Hussey, 2007). The results from the Unca prospect were encouraging with reasonable Davis Tube recoveries of magnetite and vanadium. The results from the work completed at Lucy Creek were disappointing and no further work was done at this prospect. Arafura carried out a second-phase programme over portions of the Unca prospect in 2008, due to lack of funds the company did not assay any of the samples until 2010 (ASX release 29-7-2010). Further assay results were released in 2012 and highlighted anomalous gold and PGE values (ASX release 26-4-2012). This prospect is still held by Arafura Resources.

Ausquest Ltd under EL 25508 held the southern portion of the area from 2007 to 2009. The tenement covered 2 gravity anomalies identified by the NTGS East Arunta gravity survey that was completed in 2006. Ausquest interpreted these anomalies as being IOCG targets. Detailed gravity surveys were undertaken over the 2 targets. Soil and rock chip sampling were carried out over the target zones with disappointing results; no drilling was undertaken (Lee et al, 2009).

Minotaur Exploration Ltd (Minotaur) held the ground now covered by EL 29669 as EL 27733 and EL 28789. Ground EM traverses were undertaken over 13 target areas. No late-time conductive responses were identified which could be due to massive sulphide mineralisation.

Minotaur also completed detailed ground magnetic traverses over the Coolibah Bore anomaly. There is also a regional gravity anomaly coincident with the magnetic anomaly. Further work was recommended but not completed. Minotaur concluded that the area was not worth retaining due to the lack of deep conductive responses in the EM surveys (Flint, 2012A and 2012B).

## 6. 2013 – 2019 CXO EXPLORATION ACTIVITIES

During the first year of tenure (2013), CXO undertook literature reviews and collated previous exploration datasets.

During the second year of tenure (2014), CXO developed its exploration model for the Jervois Project Area which considers the mineralised host stratigraphy is repeated albeit under cover on the eastern side of the Jervois Domain as illustrated in the solid geology interpretation and schematic section of Figure 3. In addition, the Attutra Metagabbros that occupy the eastern margin of the Jervois Domain on EL 29580 have potential for Ni-PGE mineralisation.

During the latter part of 2014 extensive discussions were held with CSIRO and the Australian Government regarding the establishment of a Research in Business (RiB) Partnership with a major focus on CXO's Jervois Domain Project. The aim of this study was to leverage on the technical expertise of Australia's premier research organization and gain access to their software and super-computing resources. The collaboration CSIRO and CXO was to investigate the application of an integrated analysis of magnetics and airborne electromagnetic (AEM) data, tied into an understanding of the mineral systems that are present in the Jervois areas to aid exploration targeting.

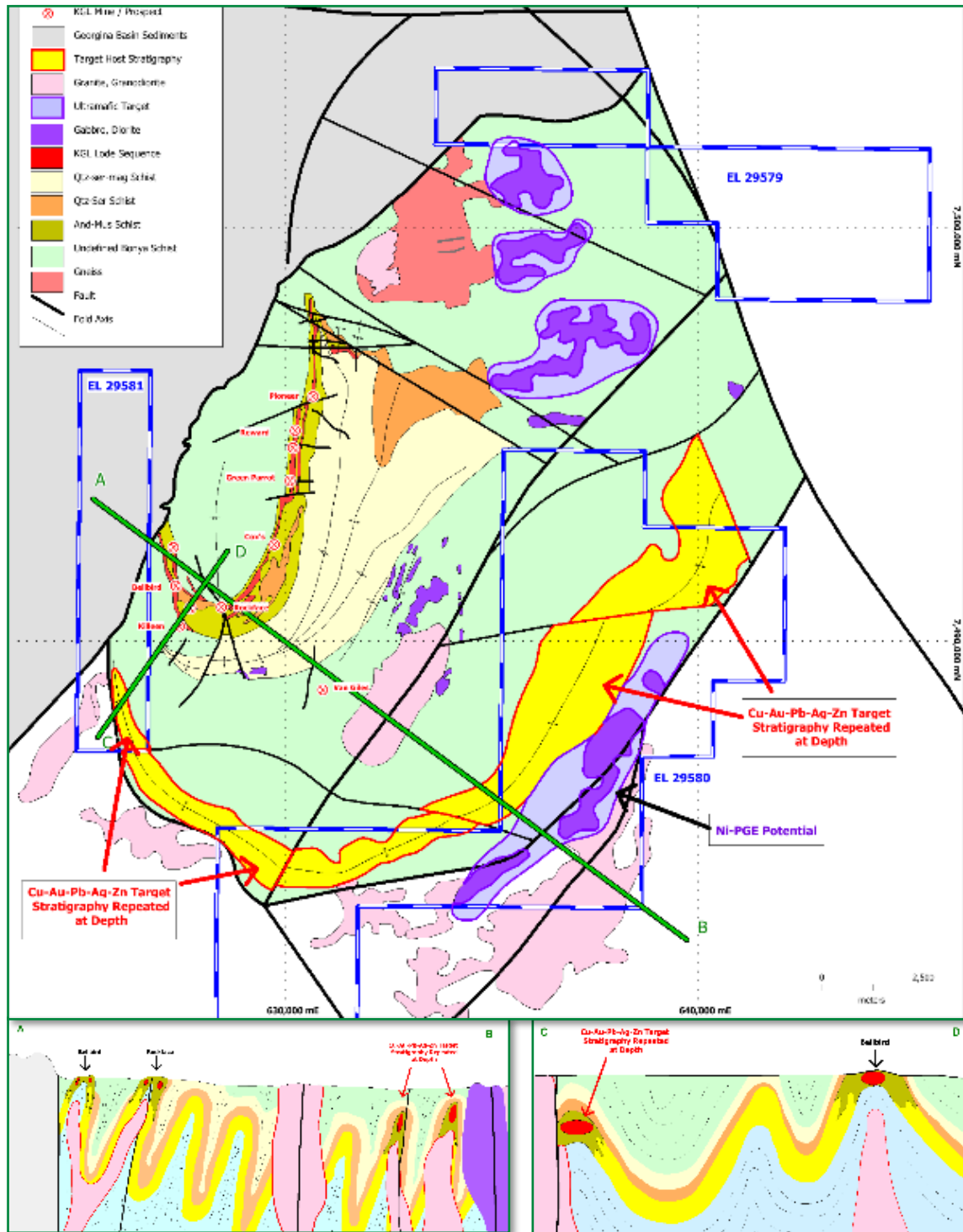
During 2015, CXO were very active exploring its Jervois Domain tenure, although none of this work was completed over EL 29669.

The following key activities were undertaken:

- Magnetic modelling and targeting by CSIRO
- AEM modelling and interpretation by CSIRO
- Geological mapping and surface geochemical sampling
- RAB drilling on the "Big J" feature located on EL 29580

Throughout 2017 to 2019, CXO continued to acquire and consolidate tenure position across the Finnis Lithium Project area, acquire detailed geophysical data and prosecute an aggressive resource definition drilling campaign. Consequently, on-ground exploration activities were not conducted on EL 29669.





**Figure 3: Interpreted Solid Geology and Schematic Cross Sections for the Jervis Domain illustrating target potential in the eastern side under CXO's tenure. (Adapted and expanded on from KGL's published geological plan)**

## 7. CONCLUSIONS AND RECOMMENDATIONS

Due to ongoing commitments at CXO's Finnis Lithium Project area, on-ground exploration activities were not conducted on EL 29669 during 2018 and the first quarter of 2019 and little to no work has been completed on the tenement in previous areas.

Future work is considered on EL 29579, EL 29580, and EL 29581 based on previous exploration results, however EL29669 shows less potential for base metals, REE and Lithium and has therefore been surrendered to allow for resources to be utilised in more prospective areas.

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