

Core Uranium Pty Ltd

**Exploration Licence for Minerals (EL33014)
“Stringercut Project”
6 June 2023 – 24 July 2024
Final Report**

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Abstract

Core Uranium Pty Ltd (Core Uranium) is a mineral exploration company established for the purpose of exploring for uranium within the Northern Territory.

Core Uranium undertook first pass exploration over EL33014 sampling selected termite mounds and outcrop and undertook assaying of selected samples. We also utilised a scintillometer to search for uranium signatures.

Minerals Sought

Core Uranium will naturally assess prospectivity for other minerals, however, our primary focus is uranium.

Targets and Methodology

The majority of the application area contains rocks of the McArthur Basin, overlaying rocks of the Pine Creek Orogen, providing the potential for unconformity-related or Westmoreland-Murphy-type deposits.

Most uranium production in the NT has been from the Alligator Rivers Uranium Field in the eastern Pine Creek Orogen. The Alligator Rivers field contains unconformity-related uranium deposits including Ranger, Jabiluka, Koongarra and Nabarlek, and are typically hosted within the Palaeoproterozoic basement of the Cahill Formation (Pine Creek Orogen), close to the unconformity with the MacArthur Basin, serving here as our exploration model.

Initial studies would comprise further desktop work, including more thorough and comprehensive interpretation of available geophysical and geochemical data to further refine potential exploration targets. This desktop work would be followed by fieldwork such as mapping and geochemical sampling and an appropriately designed geophysical survey to further refine drilling targets.

Regional Geology

The Pine Creek Orogen (PCO) is exposed over 47,500 km² and comprises a thick (>4 km) succession of Palaeoproterozoic clastic, carbonate and carbonaceous sedimentary and volcanic rocks, unconformably overlying Neoarchaeon (ca 2670–2500 Ma) granitic and gneissic basement..

The application area is within the described 'Central Domain' (JA, 2013), dominated more specifically by carbonate, carbonaceous, clastic, and volcanoclastic sedimentary rocks with subordinate mafic and felsic volcanic rocks.

The rocks are a deformed and metamorphosed succession, which was intruded by syn- to late orogenic granite batholiths, is unconformably overlain by the Palaeo- to Mesoproterozoic McArthur Basin.

Regional deformation and metamorphism produced tight folding and penetrative structural fabrics. Regional metamorphic grades ranged from lower greenschist across most of the orogen to upper amphibolite in the eastern and western regions. High temperature metamorphism and deformation in the eastern PCO occurred prior to 1847 Ma. This period of deformation and metamorphism is termed the Nimbuwah Event and is correlated with the Barramundi Orogeny, recognised across the North Australian Craton.

Widespread felsic intrusive magmatism (Cullen Event) occurred after the Nimbuwah Event. Granite batholiths were emplaced in the period 1850–1820 Ma and produced thermal metamorphic aureoles in country rocks that overprinted regional metamorphic mineral assemblages. Synchronous with the waning of this event in the South Alligator Valley region was the development of two consecutive rift-controlled volcanic and clastic sedimentary graben-fill successions, the El Sherana and Edith River

groups (1830 Ma and 1822 Ma, respectively). They are bounded by unconformities and were folded prior to deposition of McArthur Basin sedimentary rocks (ZU, 2006).

The Palaeoproterozoic to Mesoproterozoic McArthur Basin is a ~5–15 km-thick platform-cover sequence of mostly unmetamorphosed sedimentary and lesser volcanic rocks deposited on the North Australian Craton (Rawlings, 1999). Exposures of the basin cover an area of about 180,000 km² in a roughly northwest trend from the Queensland – Northern Territory border, along the west coast of the Gulf of Carpentaria, to the north coast of Arnhem Land. It is bounded by older Palaeoproterozoic rocks of the Murphy Inlier in the southeast, the Pine Creek Inlier in the northwest, and the Arnhem Inlier in the north.

The <5km thick Cretaceous to Jurassic Carpentaria Basin is an intracratonic basin sporadically exposed across the north eastern Northern Territory, and offshore under the Gulf of Carpentaria. It unconformably overlies the sedimentary rocks of the McArthur Basin, Georgina Basin, Murphy Inlier, South Nicholson Basin and Daly Basin. It consists of unmetamorphosed sandstones, mudstones and limestone.

Local Geology

Sub-surface geology of the area is interpreted to consist of unmetamorphosed sedimentary and igneous rocks of the McArthur Basin, overlying the variably deformed and metamorphosed Palaeoproterozoic metasedimentary and intrusive rocks of the Pine Creek Orogen. As well as some Carpentaria Basin, as described above and seen in Figure 1.

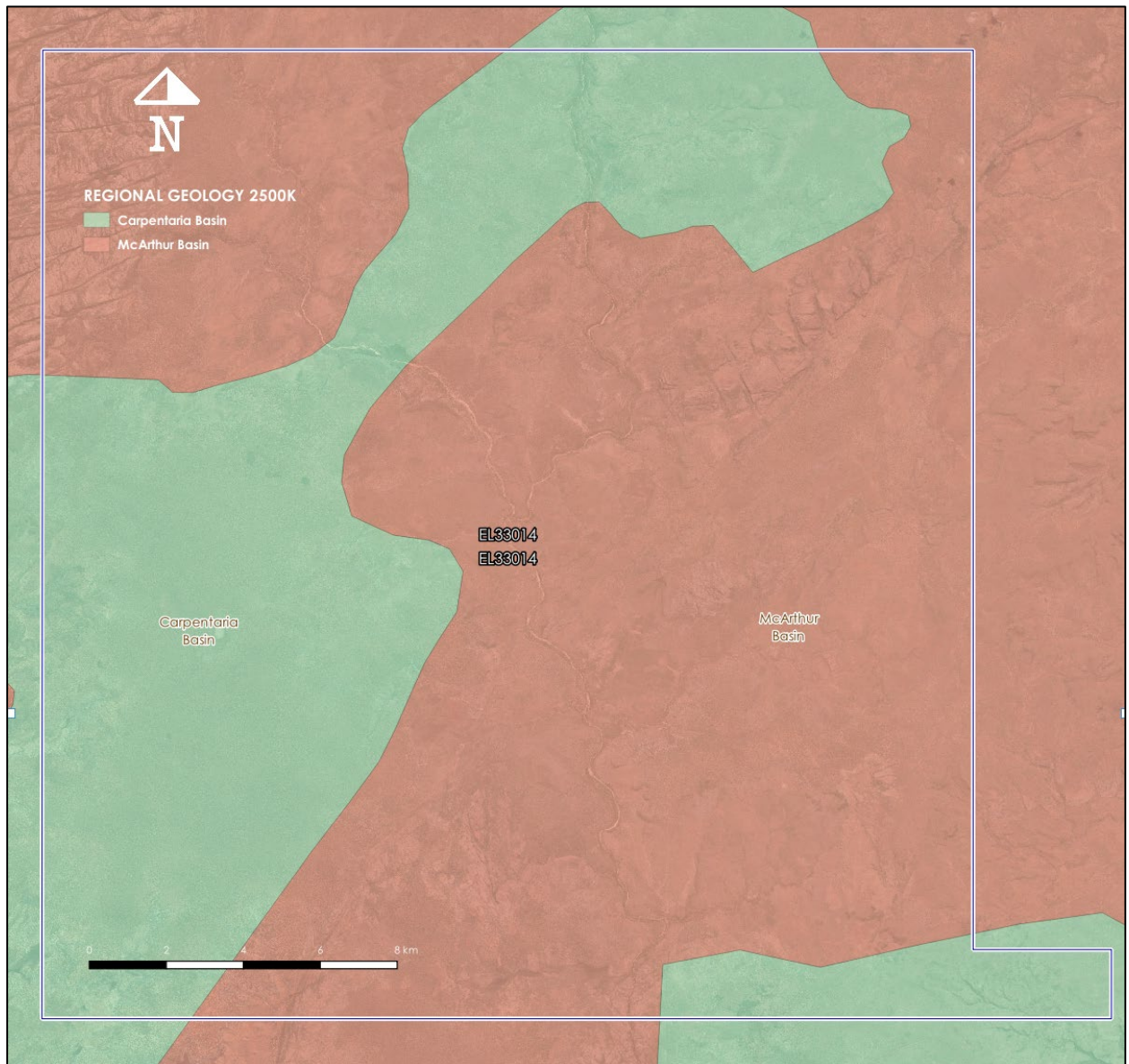


Figure 1: Basic Geology in EL33014.

Work completed

An Initial scintillometer survey was undertaken focusing on selected areas, farm tracks and few selected areas based on the Sentinel U2/Th ratio. During the survey a selection of termite mounds and rock grab samples were taken for follow up assay. An initial 10 samples were sent to the lab for a full element analysis some of the data indicated that the region could have some potential elevated minerals. A second batch of 173 samples were sent to ALS for analysis pending result, see Figure 4.

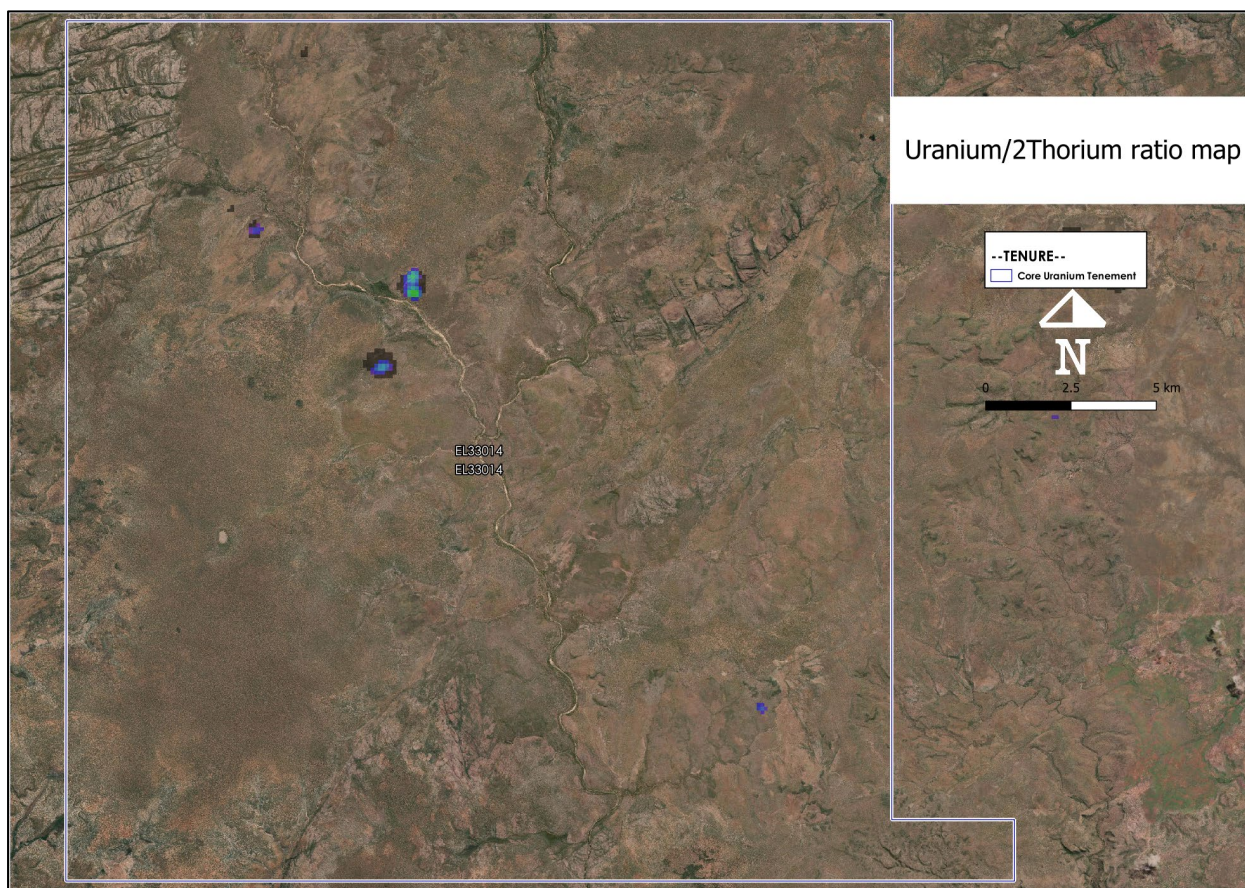


Figure 2 U/2Th ratio map of EL33014

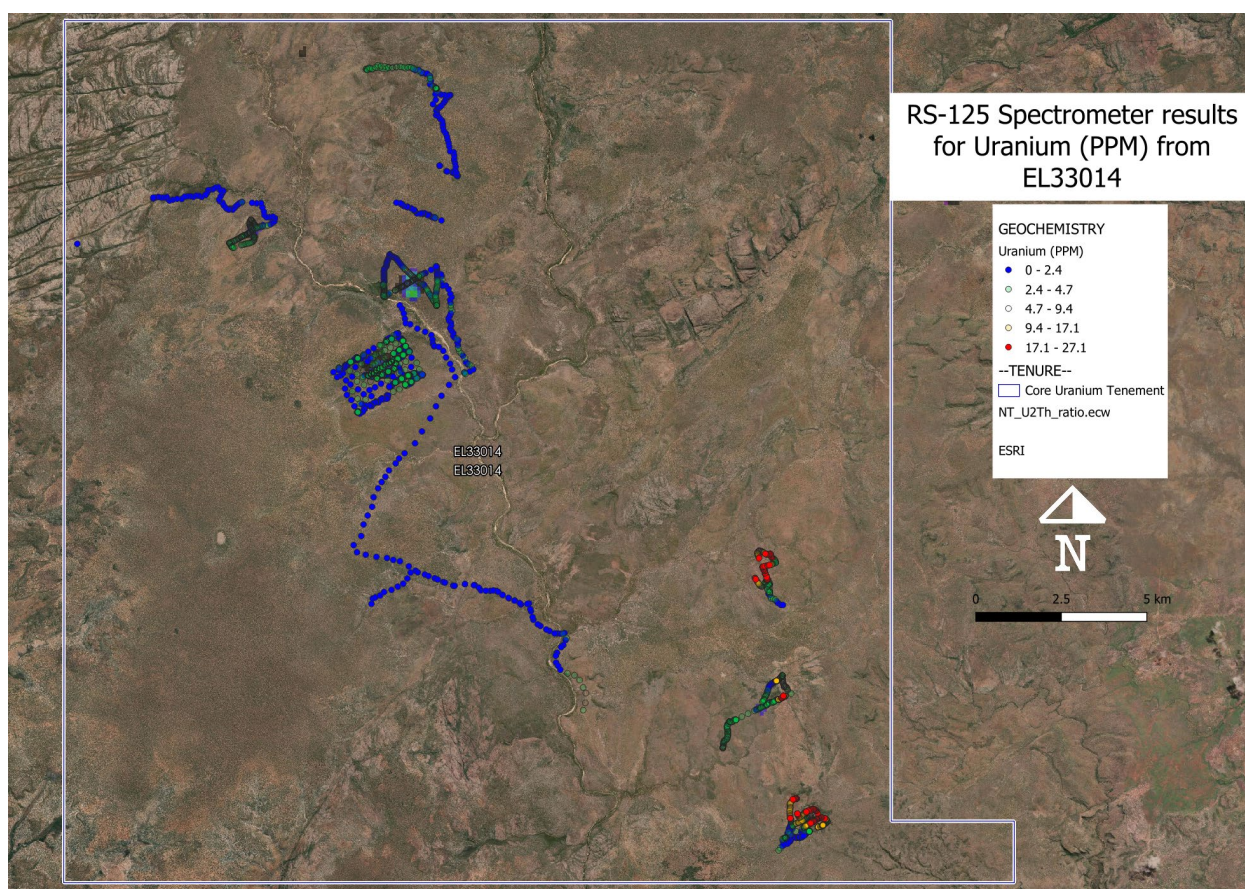


Figure 3 RS-125 Spectrometer Uranium (ppm) results

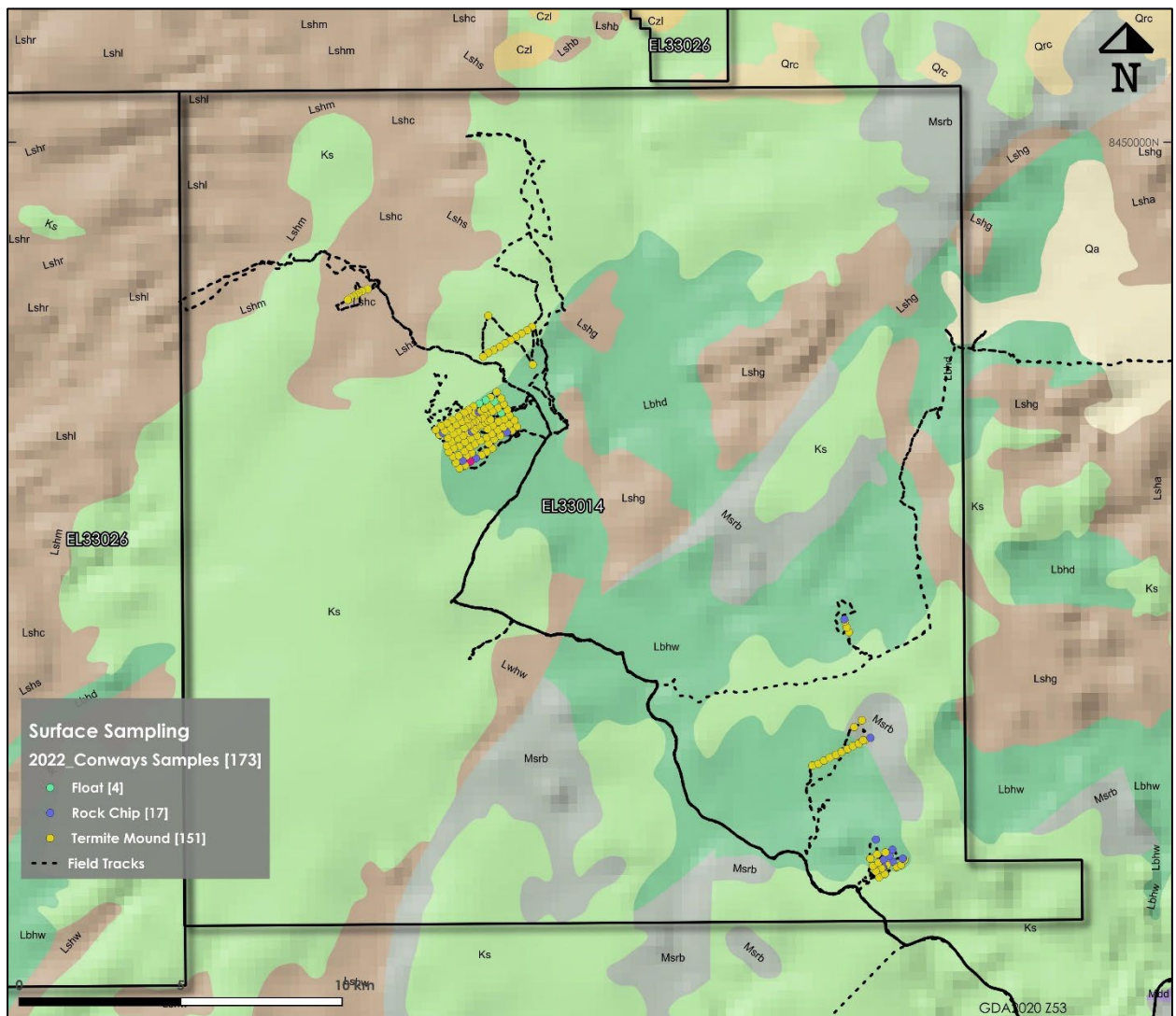


Figure 4: Sample Locations.

Granted Area

Core Uranium was granted 198 sub-blocks.

Land Owner Details

The area is over one parcels of cadastral land, CONWAY, NT Por 6517, PPL1187.

Conclusions and Recommendations

The batch of 173 samples were sent to ALS for analysis pending result, see Figure 4.

The results from this analysis were supposed to determine where Core Uranium will focus their efforts over the next 12 months, however, difficulty in securing investment for the project forced the company to struggle maintaining the tenure commitments.

Works Cited

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