

# CORPORATION

# Charley Creek North Project Partial Relinquishment Report EL33008

05 August 2022- 22 August 2024

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### Abstract

The relinquished portion of Exploration License EL33008 is located approximately 160 km northwest of Alice Springs, Northern Territory, beneath the pastoral land of Narwietooma Station. This area is accessible via primary routes like the Tanami and Kintore Roads, with additional access through secondary station tracks. The landscape is predominantly flat, featuring a mixture of shrubs, mulga, gum trees, and spinifex across expansive alluvial plains.

The geology of EL33008 is characterised by quaternary alluvium overlying thick tertiary sediment cover. Alluvial fans sourced from the MacDonnell Ranges and Strangways Metamorphic Complex drain through the area, contributing to its potential for rare earth elements (REEs), uranium, and heavy mineral sands. Within the Aileron and Warumpi Provinces of the Proterozoic Arunta Region, the tenement's underlying geology is complex, featuring Paleoproterozoic metamorphic rocks and extensive alluvial systems that create favourable conditions for diverse deposit styles, including sediment-hosted REEs and uranium, IOCG-U and polymetallic metamorphic-related deposits.

During its tenure, URO Corporation advanced exploration on EL33008 through desktop studies, surface sampling, and field campaigns aimed at evaluating the area for REEs, uranium, and base metals. A total of 92 surface samples were collected, and geochemical analysis was conducted using portable XRF and laboratory assays. Although challenging terrain limited sampling to existing tracks, URO was able to identify several zones of interest, including a two-kilometre-wide zone of residual soils along a ridgeline dividing two drainage systems.

Despite logistical challenges, URO's exploration efforts provided valuable data for ongoing analysis, although no significant anomalies were identified in the relinquished area. Rising tenement costs led URO to rationalise its portfolio, relinquishing the eastern portion of EL33008 to focus on higher-priority zones within its other tenements. Nevertheless, the retained portion of EL33008 remains prospective, particularly for REEs and sediment-hosted uranium, with potential in the crystalline basement for polymetallic deposits.

### 1 Introduction

#### 1.1 Location, Access and Physiography

The relinquished part of EL33008 lies entirely below Narwietooma Station pastoral land and are situated approximately 160 km North-West of Alice Springs (Figure 1). The region benefits from Alice Springs' role as a crucial hub for transportation and services, with the Alice Springs airport facilitating access to the exploration area. The Tanami and Kintore Roads provide the main routes from Alice Springs to the project area, while generally well-maintained secondary roads and station tracks grant access to the exploration area. The landscape is characterised by flat land, partially covered with shrubs, gumtrees, mulga, termite mounds, and spinifex.



Figure 1: Location Map of EL33008 - relinquished area highlighted in green.

#### 1.2 Mineral Titles

Tenement EL33008, the subject of this Final Relinquishment Report, was granted to URO Corporation Pty Ltd on 05 August 2022 (Table 1). The Company holds a 100% interest in the retained area of the tenement.

Title	Grant Date	Partial Relinquishment Date	Period	Blocks Relinquished	Blocks retained
EL33008	5 <sup>th</sup> August 2022	22 <sup>nd</sup> August 2024	2 Years	124 blocks	123 blocks

Table 1: Mineral title information EL33008

### 2 Geological Setting

#### 2.1 Regional Geology

The project area lies within the Arunta Region, on the southern margin of the North Australian Craton, partially within the Aileron and the Warumpi Provinces.

The southern margin of this block is marked by a high strain zone, the Redbank Thrust Zone, generated from the continental collision during the Anmatjira uplift phase (1500-1400Ma).

The most extensive hard rock geological feature in the area is the MacDonnell Ranges, to the south of the block. The ranges are primarily made up of mid-late Paleoproterozoic mid to high grade, amphibolite to granulite facies metamorphic rocks. The rocks of the MacDonnell Ranges have undergone several stages of uplift, the most recent being the Alice Springs Orogeny (400-300MA). The metamorphic sequence that makes up the ranges have been later intruded by units such as the Teapot Granite. The Teapot Granite is known to be characterised by numerous late pegmatite and aplite phases. Secondary uranium minerals have previously been identified within the Teapot Granite outcrops (Warren & Shaw, 1995).

The Paleoproterozoic (1850 to1800Ma) Strangways Metamorphic complex is predominantly composed by Felsic and mafic gneiss metavolcanics and metapelites. These are overlain by the Narwietooma Metamorphic Complex, inclusive of the Mt Chapple Metamorphics (Warren & Shaw, 1995).



Figure 2: Charley Creek North Geology Map - NT Government Geology, Hermannsberg 250k.

#### 2.2 Local Geology

The tenement is characterised by large flat areas believed to consist of quaternary alluvium, composed of aeolian, colluvial and floodplain sands and clays, which conceal a thick layer of Tertiary cover sediments. Within this area, multiple channel belts have formed, gradually transitioning into ephemeral streams characterised by sandy compositions. The Mount Chapple metamorphics, described as Mafic to intermediate granulite with accessory mudstone, dominate the massif, with small low outliers also identified in the alluvium, similarly mapped as the Mount Chapple metamorphics.

The alluvial fans, draining from the MacDonnell Ranges and the Strangways Metamorphic Complex, are prospective for alluvial rare earth elements, uranium, and heavy mineral sands.

### 3 Exploration Rationale

The area is located approximately 155km to 175km northwest of Alice Springs and primarily within the Aileron and Warumpi Provinces of the Proterozoic Arunta Region. As previous workers have shown, the area is prospective for REEs, uranium, and precious and base metals. Multiple mineral type targets and therefore multiple deposit style models were considered, including IOCG-U, felsic intrusion-related uranium and rare earths, palaeochannel-related calcrete and redox style secondary uranium, mafic intrusion-related nickel, copper, and polymetallic metamorphic-related deposits.

The area was previously untested by field work. Therefore, targeting was not only focused on newly identified anomalism but also tested opportunities that may exist due to a lack of work.

### 4 Previous Exploration

**EL755 – CRA Exploration, 1973:** 27 Auger drill holes failed to find any indication of significant calcrete development or of any anomalous uranium values. Uranium mineralisation of any grade was virtually eliminated due to the incorrect source rocks, insignificant U values in groundwater upstream and no major development of calcrete in the EL.

**EL2822** – **Alcoa of Australia 1981-82:** Explored for sedimentary uranium deposits. Work included ground resistivity surveying and rotary-mud drilling. Lack of suitable host rocks for uranium mineralisation downgraded potential and no further exploration was recommended.

**EL22616: BHP Billiton, 2002-2003:** Work was aimed at discovering polymetallic Ni-Cu magmatic sulphide mineralisation. No groundwork was completed. A thorough open-file review was completed including geological interpretations and re-processing of historical geophysical data. No target areas were defined.

**EL27283 – Crossland Strategic Metals, 2009-2017:** Crossland took over a large number of tenure in the project area as part of Group 86 which included 8 other licenses. Exploration focused on sedimentary uranium and REE's. An airborne radiometric/magnetic survey was flown in 2010 which covered a number of their licenses in the area. Stream sediment sampling programs for REE were conducted.

**EL31782 – Scriven Exploration, 2018-2020:** completed a thorough literature review and soil sampling program. Thought the area to be prospective for several minerals including Gold, Copper, Iron Oxide, Uranium and possible REEs. Area deemed to be mildly anomalous for gold.

# 5 Exploration Activities conducted within Reporting Period

During the reporting period, URO completed the following exploration work in the Charley Creek northeast Project:

- Desktop/office studies including geological and geochemical analysis of results
- Field work during multiple field campaigns.



Figure 3: Work completed on the relinquished area.

#### 5.1 Office Studies

Most of the office studies for EL33008 focused on past work and the geology of the area to understand the potential prospectivity and mineral systems. Likewise, preparation for fieldwork began with a comprehensive review of regional geology, deposit types, and prior exploration efforts within the project area. New equipment, including Thermo Scientific PRD4 "RadEye" handheld scintillometers and SciApps X555 portable X-ray fluorescence (pXRF) analyser, were tested in the office to ensure efficient sample analysis in the field. A detailed grid soil sampling program was initially designed for the first field campaign in September 2022. However, due to challenging terrain, field sampling was instead conducted along pre-existing tracks.

After fieldwork, visual inspection and pXRF measurements of samples were performed, with desktop analysis incorporating pXRF and assay data collected during the period. This data analysis guided the design of a more targeted field campaign in March 2023. Subsequent office-based interpretation of all soil and surface samples helped URO focus its August 2023 air-core (AC) drilling campaign on the western section of EL33008.

#### 5.2 Field work

URO conducted a geochemical sampling campaign across its EL33008 tenement, collecting a total of 92 samples: 84 soil samples and 18 rock chip samples. Due to challenging terrain, sampling was largely confined to existing tracks and predefined grids. The campaign aimed to evaluate the area for potential rare earth element (REE), uranium (U), and base metal deposits. Dense scrub and mulga wood made access difficult, with flat tires and vehicle wear rendering standard 4WD Land Cruisers impractical. Following the September 2022 campaign, URO adjusted its sampling approach to improve accessibility in remote areas, purchasing two agricultural (Ag) motorbikes to enhance field mobility and sampling efficiency.

All samples were scanned for radiation using scintillometers and analysed geochemically with a portable pXRF for 55 elements. A subset of 2 soil samples was sent to Intertek for multi-element chemical analyses (AR1/MS), while 1 rock chip sample was submitted to Gekko for multi-element analysis and fire assay for gold. Quality assurance and quality control (QA/QC) protocols included routine pXRF calibration checks, as well as the use of duplicates, blanks, and certified reference materials for lab-submitted samples.

A sampling traverse along Gary Junction Road identified a broad, two-kilometre-wide zone of residual soils along a ridgeline dividing two drainage systems, with no outcrops observed. Additional sampling on pastoral station tracks provided preliminary radiometric data suggesting that claypans may host higher mineral grades than adjacent sands.

Fieldwork also assessed the Derwent and Dashwood fluvial systems for alluvial REEs, with residual soils along the divide between these catchments showing potential for mineralisation. This area is of particular interest given its geological similarity to terrains to the east known for associations of gold and base metals.

Although no anomalous results of target commodities were discovered during geochemical analysis, the following anomalous measurements were made of several elements with pXRF: As 22 ppm; Ba 4798 ppm; Ce 147 ppm; La 79 ppm; Mg 7.24%; Nd 63 ppm, and from laboratory assays: Ag 11.5 ppm; Ba 4512 ppm; Mg >5%; Sb 55.5 ppm.

## 6 Conclusion and Recommendations

Exploration License EL33008, located in the mineral-rich Arunta Region, shows strong potential for base metals, rare earth elements (REEs), and uranium deposits. The region's complex geology, characterised by Paleoproterozoic metamorphic rocks and widespread alluvial systems, creates favourable conditions for diverse deposit styles, including IOCG-U, sediment-hosted uranium, REEs, and polymetallic metamorphic-related deposits.

During its tenure, URO Corporation advanced its exploration efforts through desktop studies and surface sampling. Although no significant geochemical anomalies were identified, much of the tenement remains underexplored, with considerable potential for discovery. Despite logistical challenges, including limited access to certain areas, surrounding drilling results have provided valuable insights that will inform future exploration.

In response to rising tenement costs, URO has streamlined its portfolio, relinquishing the eastern portion of EL33008 to focus on higher-priority areas. However, URO still considers this tenement highly prospective, particularly for REEs and sediment-hosted uranium. The deeper crystalline basement beneath the regolith and sedimentary cover also holds potential for polymetallic metamorphic-hosted deposits.

#### Recommendations for Future Work in the Retained Area:

**Surface Sampling and Field Reconnaissance:** Expand ground-based sampling to better delineate prospective zones for REEs, uranium, and base metals. Detailed mapping and sampling will be essential for refining exploration models and planning future drilling programs. Accessibility can be improved by using motorbikes and side-by-sides, allowing for more extensive grid sampling.

**Geophysical Surveys:** Conduct aero-electromagnetic (AEM) and ground-based gamma-ray spectroscopy (GRS) radiometric surveys to refine target areas. These surveys will help prioritise regions with the highest REE and uranium potential.

**Air Core (AC) Drilling Program:** AC drilling offers an efficient, cost-effective method for testing anomalies in up to 100 meters of sedimentary cover, reaching into the base hard rock. Future AC drilling should target previously inaccessible areas to assess REE, uranium and base metal potential fully.

**Data Integration and Analysis:** Combine results from desktop studies, geochemical analyses, and pXRF data with laboratory assays to enhance target generation following field sampling and drilling. This integration will improve the understanding of the mineralogical and geochemical characteristics of EL33008, supporting more effective exploration.

# 7 List of Digital Data Files

Table 2: List of digital files attached.

Attachment	Description
EL33008_2024_P_01.pdf	Report Body
EL33008_2024_P_02_SurfaceGeochemPXRF.txt	PXRF Results of surface sampling
EL33008_2024_P_03_SurfaceGeochemAssay.txt	Assay results of surface sampling
EL33008_2024_P_04_FileListing.txt	File Listing

### 8 References

Warren, R. G., & Shaw, R. (1995). *Hermannsburg NT 1:250,000 Geological series*. *NTGS*. *Explanatory Notes SF53-13*. NT: NTGS.

Open File mineral exploration reports:

CR19730214 CR82/11

CR2004-0184 EL27283\_2016\_P CR10802 CR2020-0409\_EL31782