COMPASS RESOURCES LTD
ABN 51 010 536 820

**HEAD OFFICE**
Level 5
384 Eastern Valley Way
Roseville NSW 2069
Telephone: 02 9417 3588
Facsimile: 02 9417 8750
email: admin@compassreources.com.au
website: www.compassresources.com.au

# EL 24770 – Litchfield

## Annual Report for the period

## 4 April 2014 to 3 April, 2015

Author: G. Johansen
(garry.johansen@compassresources.com.au)

May 2015

Batchelor & Reynolds River 1:100,000 Sheets
MGA 94 Zone 52

## CONTENTS



### List of Figures

## EXECUTIVE SUMMARY

Compass Resources is exploring in the Batchelor area for sulphide basemetal deposits and uranium. The tenement was flown with EM, magnetic and Falcon gravity survey. Our geophysical consultant has processed this data and targets have been identified for further exploration. Further funding is expected to be available from mid-2015 to progress exploration.

## 1. INTRODUCTION

This tenement hosts zones of extensive structural deformation and is considered prospective for uranium, gold and base metal sulphide mineralisation. During the reporting period the detailed airborne Falcon gravity survey data was processed and targets for further exploration selected.

## 2. TENEMENT DETAILS

An application this exploration licence of 15 blocks (35.8 square kilometres) was made on 16 June, 2005. This area was granted as EL 24770, effective 8th April 2006. Ownership was originally Compass Resources NL 90% and Guardian Resources Pty. Ltd. 10%. Compass now owns Guardian Resources Pty Ltd, and as such has effective 100% ownership of the tenement.

A 50% reduction (7 sub-blocks) was undertaken in January 2011.

The tenement is located on the Pine Creek 1:250,000 map sheet (5270), Batchelor 1:50,000 and Rum Jungle 1:50,000 topographic maps (5171-4 and 5071-1 respectively).

## 3. ACCESS

Access to the general area is by following the old railway route south from Batchelor, or via the unsealed Camp Creek road from Adelaide River. Only minor tracks exist in

the tenement. As the tenement is in the Litchfield National Park access will be by foot or confined to existing vehicle tracks.

## 4. GEOLOGICAL SETTING

This tenement is located approximately twenty kilometres south-south-west of Batchelor on the southern side of the Archaean Waterhouse complex, mostly covering the middle and upper sedimentary sequence, including the Namoona Group and the Mt. Partridge Group. Large areas are mapped as Burrell Creek Formation (Finniss River Group) which is a mixture of shales and sandstones. Areas of brecciated ferruginous rocks and sandstones, variably referred to as the Geolsec Formation and/or the Depot Creek Sandstone of the Tolmer Group have been re-interpreted to be of structural origin and this represents a major change to the exploration potential of the tenement.

Outcrop is fair in the area, with some lateritisation and recent alluvium obscuring parts of the underlying rocks.

The tenement covers the Burnetts, QML2 and QML3 uranium prospects, and a radiometric anomaly named Danni. Most of these prospects were originally located by Uranerz in 1980-1981 or Queensland Mines in the 1970.

The most recent published data of this area is from Lally et al 2002 (Rum Jungle 1:100,000 Mineral Field Map).

## 5. PREVIOUS EXPLORATION

During the period 1950-1974, most of the regional exploration in this area was conducted by the BMR as part of a regional programme aimed at locating uranium deposits.

The most recent uranium exploration in this region was undertaken by Uranerz in the late 1970s and early 1980s. This involved extensive drilling programmes and ground geophysical surveys in the north of the EL. 4 of those holes were drilled as part of the

South East Kylie prospect; 82SEK16, 17, 19, and 21. 4 more holes were drilled at the Burnetts prospect in the tenement, 82CB01-4. These Burnett holes were collared with an RC rig then finished with diamond, totalling 465.3m and intersecting uranium mineralisation in two holes (82CB01 and 82CB02). Marathon also explored the area in the late 1970s.

Aztec Mining last held a northern portion of the area in the period 1992-1998. Work by Aztec included stream sediment sampling, soil and rock chip sampling and a drill program in 1995 that consisted of 4 RC holes totalling 157m (HTRC01 - HTRC04). They also completed a large detailed aeromagnetic survey of the general region to the north that covered only 20% of the northern portion of EL 24770.

In the last couple of years Compass Resources compiled all historical exploration data for the Rum Jungle Mineral Field into a true GIS system. Exploration drilling data was collated and entered into the Datashed database and evaluated using ARC GIS and Micromine. In addition all historical maps relevant to EL 24770 were geo-referenced in ARC.

The database contains a total of 31 historical drill holes within the Litchfield tenement. The extensive shallow RAB drilling programs undertaken in the 1990s by Aztec/Nicron/Normandy covering the northern part of the tenement were not entered due to time constraints though geo-referenced maps of this data were registered.

Detailed aeromagnetic and radiometric surveys flown in the 1990s were merged with the regional geophysical data sets and reprocessed.

One of the prime benefits of compiling so much historical exploration data is that it generates a better understanding of both the regional geology as well detailed geology of individual prospects. At Rum Jungle this has resulted in a complete re-think of the timing and controls to mineralisation.

Based on the review of the historical exploration data there are two distinct primary mineralisation events at Rum Jungle:

(a) Lower Proterozoic stratiform base metal event (Browns, Area 55, possibly Mt Fitch sulphides)

(b) Mid Proterozoic structurally controlled uranium-gold-platinoid-base metal event (all other prospects).

The mid Proterozoic event is associated with a series of stacked, essentially bedding parallel thrust surfaces. These surfaces are characterised by extensive zones of brecciation and variable but often intense hydrothermal alteration. Alteration includes silicification, haematite dusting, specular haematite, apatite, chlorite and disseminated pyrite.

Within the Litchfield tenement these thrust surfaces start to merge generating zones of semi continuous brecciation and variable alteration up to 2.5km across that trend to the NE and NW. Recent published mapping has mis-identified this brecciation/alteration as Geolsec Formation and/or the Depot Creek Sandstone of the Tolmer Group. The structural event has effectively destroyed the Proterozoic stratigraphy within the northern part of EL 24770 (see Figure 3).

Extensive sills and non-concordant bodies of Zamu dolerite intrude along the thrust sheets and these are also variably altered and provide some age constraints on the structural and mineralising events.

The extent of brecciation has been confirmed through field checking and reviewing historical drill logs.

Given the improved understanding of the prospectivity of EL 24770 it was decided to fly the northern half of the tenement (along with all other Compass tenements at Batchelor) with helicopter borne aeromagnetics and EM. The survey was completed by GPX Surveys in late 2010 with flight lines at 150m spacing, orientated north-south and with a terrain clearance of 30m. East-west tie lines were spaced at kilometre intervals. This generated approximately 90 line kilometres of data within EL 24770.

Fugro flew the tenement with a Falcon gravity survey (as part of a survey covering all tenements at Batchelor). The survey consisted of N-S lines at 200m spacing with a nominal terrain clearance of 20m (see Figure 2 for flight lines). An aeromagnetic survey was completed at the same time as was a LIDAR survey to provide the detailed

topographic data for processing the gravity data. Survey data was provided to the department in late 2013.

A consultant geophysicist processed the data and based on the EM, magnetic and gravity surveys has selected targets for further exploration.

## 6. WORK COMPLETED THIS YEAR

A consultant geophysicist processed the data and based on the EM, magnetic and gravity surveys has selected targets for further exploration. Ground IP traverses were selected as the most appropriate exploration tool to further refine exploration targets. This work was not completed in the 2014 field season as the focus was on resolving the funding of the Browns Basemetal Project at Batchelor.

## 7. PLANS FOR NEXT YEAR.

The geophysical data, combined with the historical drilling compilation and georeferenced historical maps will be used to generate a 3-D geological model of the tenement to assist in ranking the anomalies.

The various geophysical surveys will be integrated with the geological model to identify anomalies for further follow up. Surface checking and IP traverses of the high priority anomalies will be undertaken with possible drilling of the best anomalies.

Given the small size of the Compass tenements at Batchelor it is proposed to simplify the holdings by amalgamating EL 24770 with five adjoining tenements.

Expected expenditure is anticipated to exceed $23,000.

## COPYRIGHT

## REFERENCES

Ahmad, M., 1971
Rum Jungle Area, Annual Report. *Unpublished Report for Queensland Mines Ltd. NTDME Library Open File Record No. CR71/115*

French, D.J.,1974
EL 610 - Area J - Rum Jungle, Results of Exploration - 1973 Part 1 - Waterhouse No. 4 *Unpublished Report for CRA Exploration Pty. Ltd. NTDME Library Open File Record No CR 74/166A & B.*

Johnson, K., Hone, I.G., Ingram T.A & Crick, I.H., 1979
Stratigraphic Drilling in the Rum Jungle Area N.T. 1973-74. Geological and Geophysical Results. *BMR Record No. 1979/89*

Lau, G.C. 1971
Geochemical and Radiometric Investigation, Stapleton, Rum Jungle District, Northern Territory, 1973. *BMR Record No. 1971/98*

Lally, J. H., 2002
Stratigraphy, structure and mineralisation, Rum Jungle Mineral Field,
Northern Territory. NTGS Record 2002-005

Ruxton, BP. 1961
The testing of electromagnetic anomalies by diamond drilling at Waterhouse No. 2 Uranium Prospect, Northern Territory. *BMR Record No. 1961/161*

Taylor, K.S., 1980
Annual Report on Exploration Licence No. 1857, Rum Jungle Area, Northern Territory. *Unpublished Report for Uranerz Australia Pty. Ltd. NTDME Library Open File Record No. CR 80/49*

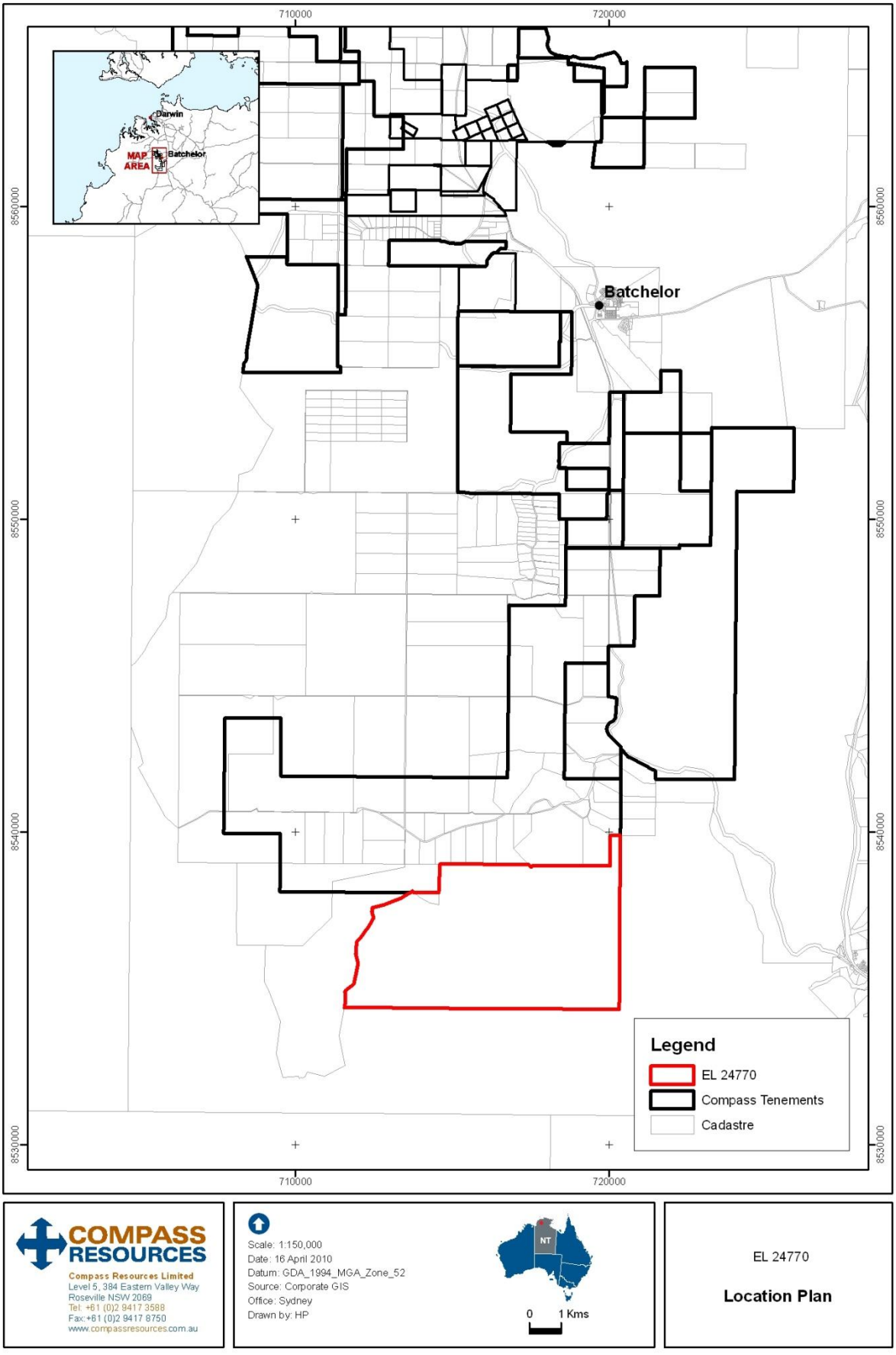
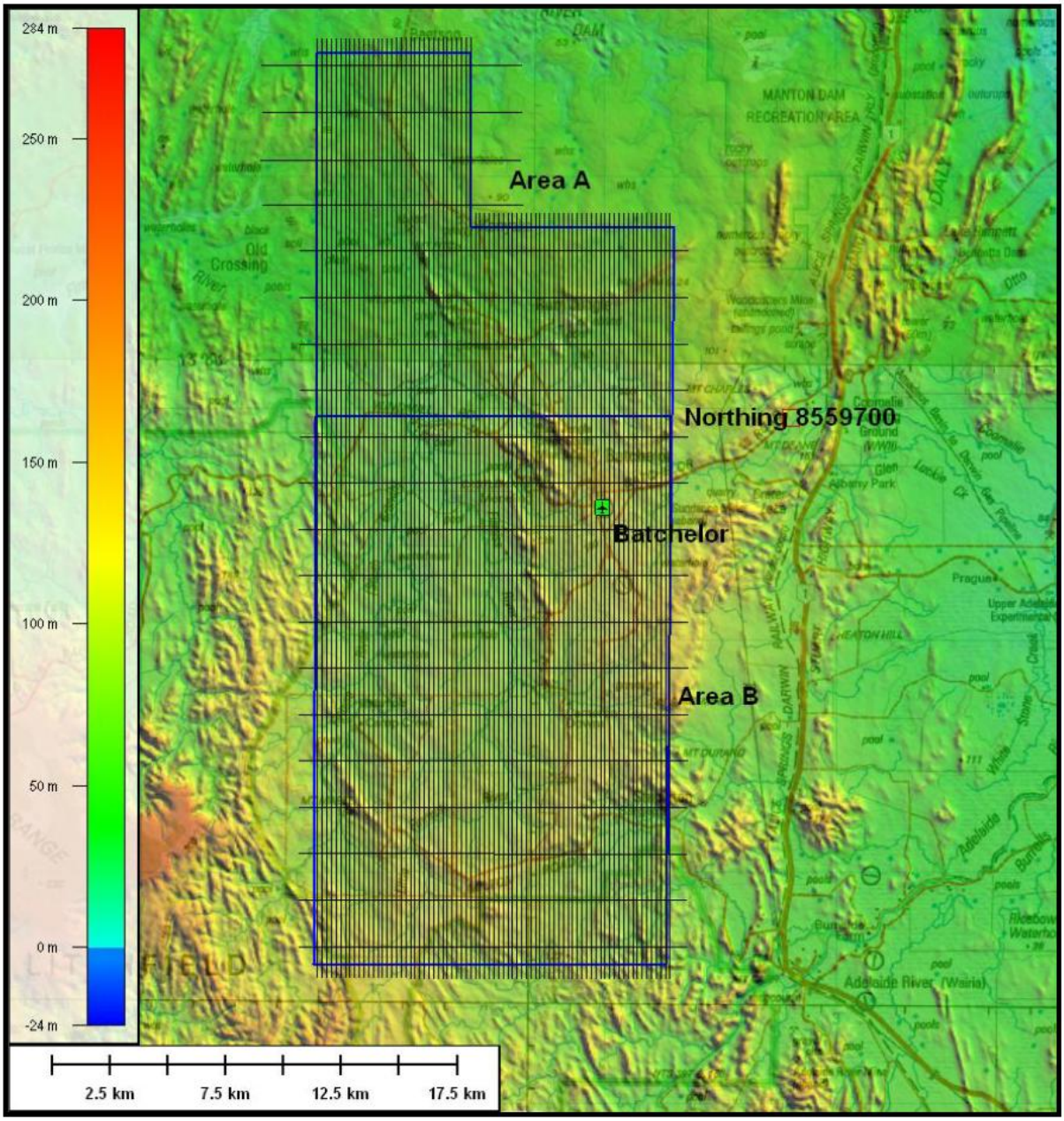



Figure 1. Tenement location map for EL 24770.




| Area | A | B |
|---|---|---|
| Line spacing | 200m | |
| Tie line spacing | 2,000m | |
| Line direction | 0° | |
| Tie line direction | Perpendicular to line direction | |
| Area line km | 1,050 line km | 2,092 line km |
| Total Project km | 3,142 line km | |

Figure 2. Flight Line diagram of Falcon survey.

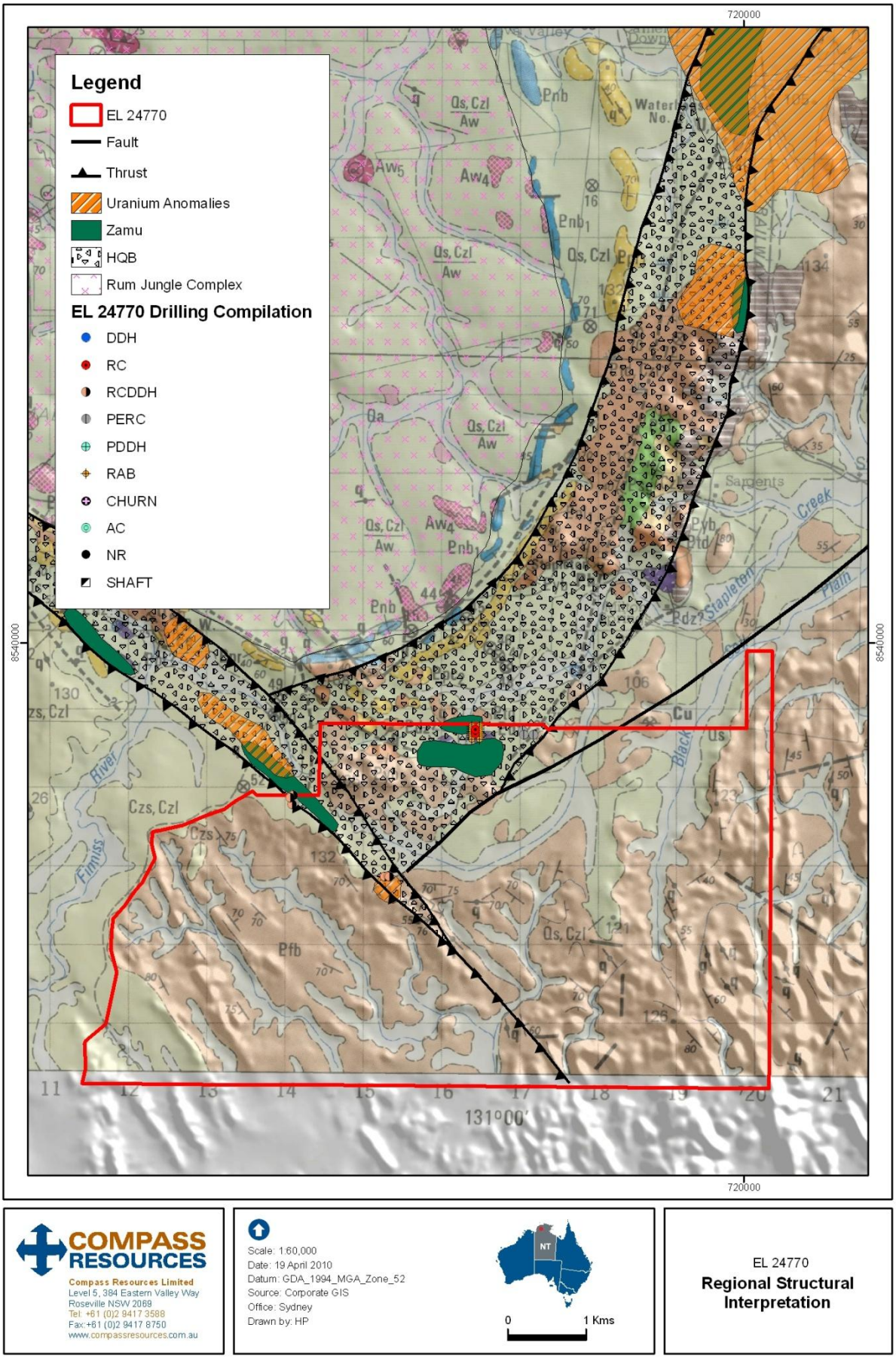



Figure 3. Regional structural interpretation for EL24770.