THUNDELARRA EXPLORATION

# ANNUAL REPORT

# ALARA JV PROJECT
# EL24929

## FOR THE PERIOD
## 21 AUGUST 2008 TO 20 AUGUST 2009

## NGALIA BASIN
## NORTHERN TERRITORY

| | |
|---|---|
| REPORT NUMBER: | EK/206/ALA |
| DATE: | SEPTEMBER 2009 |
| AUTHOR: | MARTIN MOLONEY |
| DISTRIBUTION: | NTDPIFM/NTGS<br>THUNDELARRA EXPLORATION LTD |

**BIBLIOGRAPHIC DATA SHEET**

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|---|---|
| PROJECT NAME: | Alara JV |
| REPORT TITLE: | Annual Report, Alara JV Project; EL24929, for the period 21 August 2008 to 20 August 2009, Ngalia Basin, Northern Territory |
| REPORT TYPE: | Annual |
| TARGET COMMODITY: | U |
| KEYWORDS: | Data compilation, helicopter-assisted ground gravity survey. |
| PROSPECTS DRILLED: | None |
| HOLDER: | Strike Resources Limited (100%) |
| OPERATOR: | Thundelarra Exploration Ltd |
| TENEMENT: | EL24929 |
| REPORT PERIOD: | 21 August 2008 to 20 August 2009 |
| 1:250,000 SHEET AREA: | MT DOOREEN (SF5212) |
| 1:100,000 SHEET AREAS: | DOOREEN (5313) & VAUGHAN (5053) |
| AUTHOR: | Martin Moloney |
| DATE OF SUBMISSION: | September 2009 |

**ABSTRACT:**

**Location:** The Alara JV Project comprises granted Exploration Licenses 24879, 24928 & 24929 and the application EL24927. EL 24879 is located approximately 330km northwest of Alice Springs.

**Geology:** The tenement is located within the Ngalia Basin, a Neoproterozoic to Palaeozoic intracratonic basin approximately 300km long and 70km wide within the Northern Arunta Province of the Arunta Inlier, in central-south of the Northern Territory. Uranium mineralisation has been detected in the uppermost unit of the Basin – the Mt Eclipse Sandstone, and this forms the target of the current exploration within EL24929.

**Work done:** On 14th May, 2009 Thundelarra entered into a Joint Venture with Alara Resources to manage exploration on ELs 24879, 24928 & 24929 and the application EL24927. Exploration work during the tenure period comprised data compilation and a helicopter-assisted ground gravity survey.

**Results:** A vast amount of historical data has been retrieved, and compilation is in progress. Historic work of relevance that has been identified to-date includes seismic surveys by Magellan and the BMR. Compilation is ongoing and the results of the helicopter-assisted gravity survey remain to be interpreted.

**Conclusions:** The work program for the coming year will involve interpretation of the gravity survey results, along with structural and stratigraphic mapping. The results will be integrated into Thundelarra's basin-wide uranium exploration efforts.

# TABLE OF CONTENTS

## LIST OF FIGURES



## LIST OF TABLES



## APPENDICIES



## DVD

# 1. INTRODUCTION AND TENURE

Exploration License (EL) 24879 covers 26 blocks (approximately 57km$^2$) located approximately 330km northwest of Alice Springs on the Mt Doreen pastoral lease, immediately east of the Vaughan Springs homestead (Figure 1). On 14th May, 2009, Thundelarra entered into a formal joint venture with Alara Resources Limited to earn a 70% interested in EL24929.

**TABLE 1: TENEMENT DETAILS FOR EL24929**

| Project | Tenement | Approval date | Expiry date | Graticular Blocks | Expenditure Commitment |
|---|---|---|---|---|---|
| Alara JV | EL24929 | 28/08/2005 | 14/08/2012 | 26 | $25,000 |

# 2. GEOLOGICAL AND STRUCTURAL SETTING

The Ngalia Basin is a Neoproterozoic to Palaeozoic intracratonic basin approximately 300km long and 70km wide within the Northern Arunta Province of the Arunta Inlier, in central-south of the Northern Territory. The Ngalia Basin is an asymmetric syncline with a steep tectonised northern boundary and a shallow northerly dipping unconformity forming the southern basin boundary. The northern boundary is defined to the east by low angle thrust faults over the Arunta Inlier and to the west by high-angle reverse faults that have thrust the basement rocks several kilometres over the sediments.

The region has been tectonically active since before 1880Ma with several tectonic events and phases of granitic intrusions up to 1000Ma. Granites and metamorphic rocks have provided the source material for subsequent sedimentation.

The younger post-tectonic granites, particularly the Southwark Granite Suite dated at 1567Ma are believed to be the origin of the uranium for the known uranium mineralisation in the region. Wholerock chemical analysis of 18 samples from these late granites are recorded as having uranium contents varying from 1.5-22.5ppm, thorium ranged from 3-175ppm and vanadium typically from 3-57ppm. In contrast, 8 samples from the older granites ranged in uranium content from 1.5-10ppm and vanadium from 20-90ppm. In general the geochemistry of these late granites is consistent with other high-heat production group (i.e. radiogenic) granites of the Arunta Inlier.

The Neoproterozoic to Carboniferous sedimentary sequences of the Ngalia Basin range in age from 850 - 350Ma. The Basin rests unconformably over the Arunta Inlier. The sediments of the Neoproterozoic are 2-3km in thickness and composed of dominantly fluvial to shallow marine quartz sandstones, shales, mudstones, conglomerates, dolomites and tillites. The transition from the Neoproterozoic to the Cambrian occurs within the 700m thick Yuendumu Formation of sandstone and arkosic sandstone formed in shallow marine conditions. Three further sequences of shallow marine to fluvial sediments, each unconformable upon the underlying sediments, were deposited during the Cambrian, Ordovician and Devonian periods.

The youngest and thickest Palaeozoic sedimentary sequence is the thick Devonian to Carboniferous Mount Eclipse Sandstone, up to 2.4km thick, which is deposited unconformably on all underlying Ngalia Basin units. In the region around the Bigrlyi uranium deposits the Mount Eclipse Sandstone overlies the Neoproterozoic age Vaughan Springs Quartzite, the oldest unit in the Ngalia Basin overlying the rocks of the Arunta Inlier.

Uplift and erosion of the Arunta Inlier rocks to the north of the Ngalia Basin between 350-370Ma initiated the deposition of the Mount Eclipse Sandstone. This deposition was terminated

at the peak of the Alice Springs Orogeny, possibly about 300-320Ma. At this time the Yuendumu, Waite Creek, Patty Hill, Napperby and Hann Range thrust faults were active, thrusting the Arunta Inlier rocks southward over the Ngalia Basin rocks. This overthrusting is associated with the asymmetric folding of the Mount Eclipse Sandstone sequence with east to west axes and steep north-facing limbs.

The Mount Eclipse Sandstone consists of arkoses, conglomeratic sandstones, greywacke and minor conglomerates deposited in piedmont to subaerial-fluvial environments. The sequence contains a significant carbonaceous component with common plant fossils.

Uranium mineralisation of the Ngalia Basin is hosted in piedmont-style sedimentary channels, composed of carbonaceous arkoses located towards the base of the Mount Eclipse Sandstone. The primary source of the uranium is inferred to be the younger granites of the Arunta Inlier.

Since the end of the Alice Springs Orogen, the Ngalia Basin has been part of the stable Australian Craton with terrestrial sedimentation of sands, silts, aeolian sand, calcrete, silcrete, lateritic ironstones and playa lake sediments; however sedimentation appears restricted to the Tertiary. These unconsolidated sediments obscure parts of the prospective Mount Eclipse Sandstone within the Alara tenement block.

### 2.1. STRUCTURE

Shallow, south-dipping, small scattered outcrops of Mt Eclipse Sandstone cover approximately 5-10% of the Bigrlyi South Project area. The remainder is covered by a thin cover of Recent to Quaternary sands, silts, calcrete, silcrete, lateritic ironstones and playa lake sediments.

A curvilinear low angle thrust, known as the Yuendumu Thrust, has been interpreted to intersect the easternmost portion of EL24929 (Figure 1). The Yuendumu Thrust has a total length of 100km and joins up with another major northeast thrust fault on the western margin of the Basin.

## 3. MINERALISATION AND EXPLORATION MODELS

The shallow cover of Recent to Quaternary sediments obscures much of the geology and also inhibits any radiometric response from the area. The asymmetric folding and the extensive thrust faulting, plus faulting within the Bigrlyi deposit suggests that carbonaceous horizons within the Mount Eclipse Sandstone, considered favourable for hosting the uranium mineralisation, may have repetitions within the tenements. In addition faults would have provided excellent channel ways for the movement of uranium bearing oxidising fluids.

## 4. HISTORICAL WORK

A number of historic exploration licenses coincide with the present area of EL24929. Most of the work on these historic licenses did not involve exploration within EL24929. The eastern-most portion of EL24929 is approximately 300m south of drilling conducted by AGIP at the Camel Flat North prospect, which is centered some 3.65km to the northeast of the license boundary.

Within EL24929, a number of seismic lines were surveyed by the BMR between 1967-1969 (2 lines) and by Magellan in 1971 on OP165 (5 lines).

## 5. EXPLORATION PROGRAM

The work conducted on EL24929 between 21 August 2008 and 20 August 2009 is detailed below.

### 5.1. Data Compilation & Processing

Data compilation has commenced with collation activities that aim to result in a digital database of all the relevant open-file exploration data available. This work is ongoing.

### 5.2. Helicopter Assisted Ground Gravity Survey

A total of 47 gravity stations were acquired within EL24929 between the 28th-29th July 2009. This data has been supplied as Appendix 1.

## 6. DISCUSSION AND RECOMMENDATIONS

No conclusions have yet been reached regarding the prospectivity of this license. Future work will involve interpretation of the gravity and other data (e.g. seismic/magnetics) and integration of these results into a basin-wide analysis.

## 7. REFERENCES

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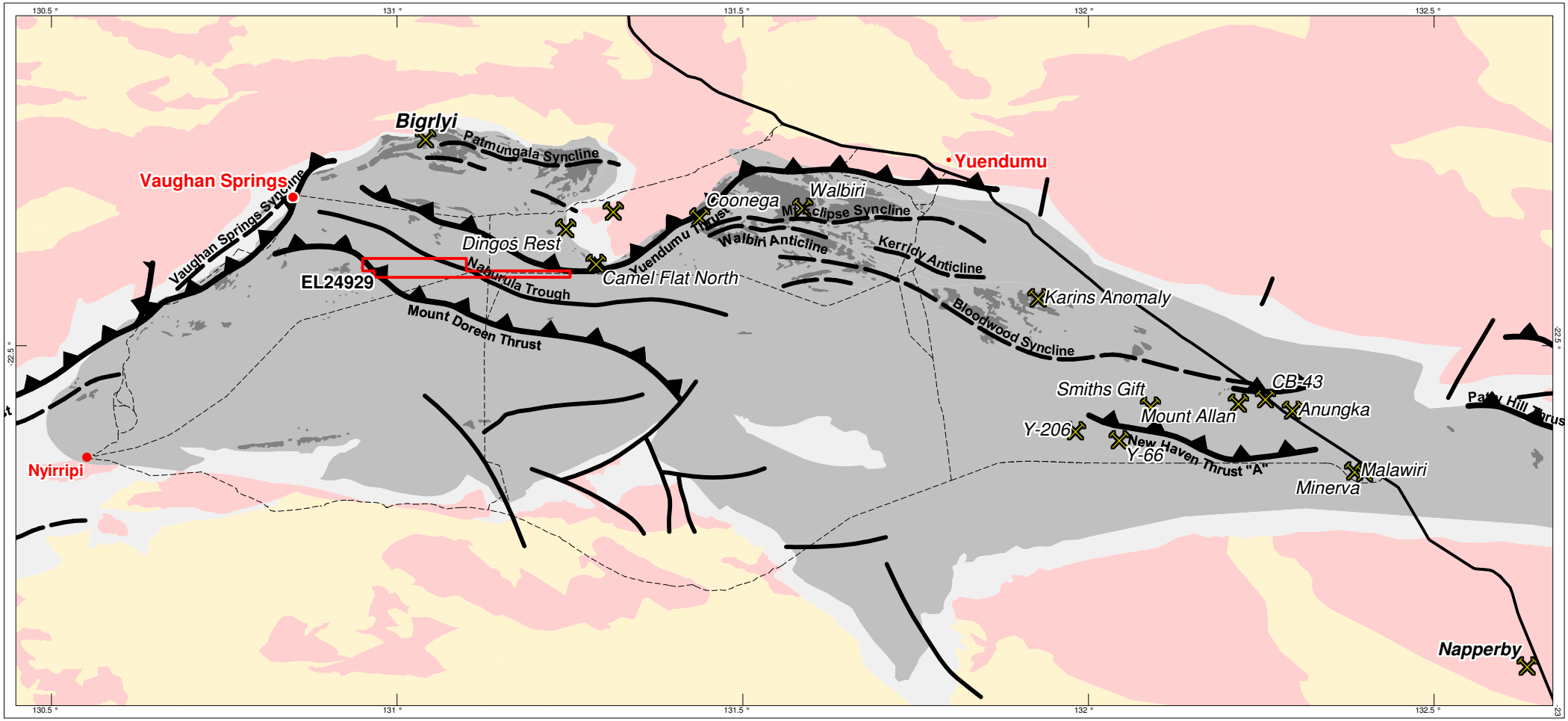


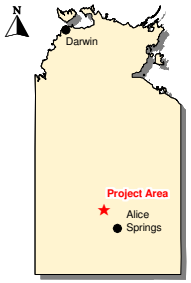


## LEGEND

U Deposits
(NTGS MODAT Database)

Tenure

**Geology (2.5 M)**

Ngalia Basin Sediments

Mt Eclipse Sandstone
(250k Compilation)

Phanerozoic seds undiff.

Proterozoic seds undiff.

Arunta Inlier

Granitic rocks undiff.

Metamorphic rocks undiff.

0 10 20
kilometres

THUNDELARRA EXPLORATION

# Figure 1
# EL24928 Location Map

| | |
|---|---|
| Author: MPM / NTGS | Date: 07/09/2009 |
| Drawn By: MPM | Revised: |
| Plan No.: THD0168a | Report No.: |
| Projection: GDA94 Lat/Long | Scale: 1:838,700 |