UXA Resources Limited
ABN 65 112 714 397

NABARLEK WEST PROJECT

EL24564 Nabarlek West

Annual and Final report for the period

27 September 2010 to 24 October 2012

Author: Michelle Walter

Contact Details: mwalter@uxa.com.au

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Bibliographic Data Sheet

Project Name:	Nabarlek West
Tenement Number(s):	EL 24564
Tenement Holder:	UXA Resources Limited 51% & RIL (Australia) Pty Ltd 49%
Tenement Operator:	UXA Resources Limited
Report Type:	Annual and Final
Report Title:	Nabarlek West Annual and Final Report for the period 27 September 2011 to 26 October 2012
Report Period:	27 September 2011 to 26 October 2012
Author:	Michelle Walter
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1:250,000 map sheet:	Alligator River (SD53-01)
1:100,000 map sheet:	OENPELLI (5573)
Target Commodity:	Uranium
Geological Province:	Nimbuwah Domain, McArthur Basin, Pine Creek Orogen
Geological Units:	Kombolgie Subgroup, Lower Cahill Formation, Myra Falls Metamorphics (lit-par-lit gneiss zone), Zamu Dolerite, Oenpelli Dolerite and Nungbulgarri Volcanic member, Nimbuwah Complex
Keywords:	Nimbuwah Domain
Abstract:	This report details activities for the Nabarlek West tenement, EL24564 for the period to 26 October 2012. The Nabarlek West tenement is subject to a Joint Venture agreement between UXA Resources Limited 51% and RIL (Australia) Pty Ltd 49% where UXA has been appointed as the project operator. The tenement is considered prospective for unconformity style uranium mineralisation analogous to known unconformity related uranium deposits located throughout the Alligator Rivers Uranium Field.
Work Completed:	During the third year of tenure no exploration activities took place.
Recommendations:	The Nabarlek West tenement is considered prospective for unconformity style uranium mineralisation since it comprises similar tectonic setting, lithology and structure to known deposits within the region, but no exploration was carried out and the tenement will be relinquished.

Executive Summary

This report details exploration activities for the Nabarlek West tenement, EL24564 for the period from 26 September 2011 to 26 October 2012. The Nabarlek West tenement is subject to a Joint Venture agreement between UXA Resources Limited 51% and RIL (Australia) Pty Ltd 49% where UXA has been appointed as the project operator.

The tenement is considered prospective for unconformity style uranium mineralisation analogous to known unconformity related uranium deposits located throughout the Alligator Rivers Uranium Field.

Key criteria for uranium mineralisation within the region include reduced basement lithologies in unconformable contact with overlying oxidized, quartz-rich sandstones that provide an ideal environment for the accumulation and transportation of uranium-bearing fluids.

Within the Nabarlek West tenement, Neoproterozoic Kombolgie Subgroup sandstone provides a suitable cover sequence, while the most prospective basement lithologies include reducing units within Lower Cahill Formation, Myra Falls Metamorphics (lit-par-lit gneiss zone) and possibly Zamu dolerite, Oenpelli Dolerite and Nungbulgarri Volcanic member.

Palaeoproterozoic basement sequences within the Nabarlek West tenements are mostly concealed either by sandstone, volcanics and conglomerate of the Kombolgie Formation or Tertiary and Quaternary laterite, silt and sand.

During the third year of tenure, no exploration activities were conducted and the tenement will be relinquished.

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EL24654_2012_AS_01_Reportbody	PDF
EL24654_2012_AS_02_AEM	GDF
EL24654_2012_AS_03_Hyperspectral	BIL

1 Introduction

This report encompasses the Nabarlek West tenement, EL24564, for the period 27 September 2011 to 26 October 2012. The report is prepared on behalf of the joint venture collaboration between UXA Resources Limited and RIL (Australia) Pty Ltd. The tenement is still considered prospective for unconformity-style uranium mineralisation analogous to the Ranger, Jabiluka and Nabarlek deposits.

2 Tenure

The Nabarlek West tenement was issued to UXA Resources Limited on 27 September 2010 for an initial period of 6 years. Subsequently, 49% ownership of the tenements was transferred to RIL (Australia) Pty Ltd on 31 March 2011 and UXA remains the nominated tenement operator (Table 1). EL24565 was surrendered on 24 October 2012.

Table 1: Tenement Details

EL No/Name	Registered Holder	Area (km2)/ blocks	Grant Date	Expiry Date	Annual Expenditure Commitment
24564 Nabarlek West	UXA 51% RILA 49%	26 (13 blocks)	27/09/2010	24/09/2012	$5,000

2.1 Location and Access

The Nabarlek West tenement is located approximately 250km east of Darwin and approximately 60km northeast of Jabiru (Figure 1) and occurs within the Arnhem Land Aboriginal Land Trust.

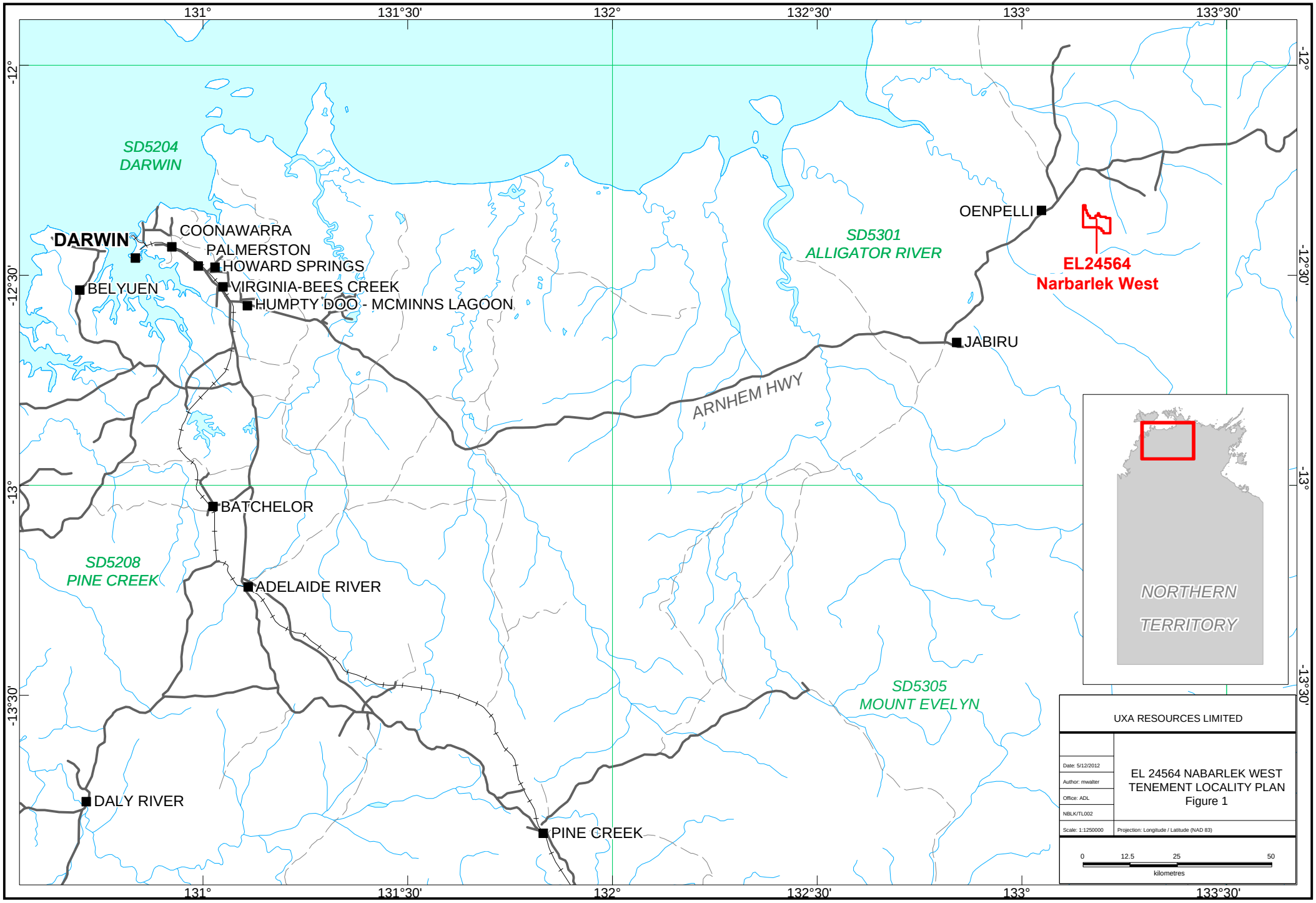
Access to the tenement is via sealed Arnhem Highway from Darwin to Jabiru, then sealed/unsealed road from Jabiru via Oenpelli. The principal access to EL24564 is via the Nabarlek mine road however access within this tenement is limited due to rugged and incised topography.

2.2 Climate and Physiography

The wet season lasts from November through to March, and is responsible for virtually all the 1,350mm mean annual rainfall received in the region. The dry season lasts from May through to September, during which grass fires are prevalent (Needham, 1984).

The Nabarlek region is dominated by the Arnhem Land Plateau, undulating sandy plains and coastal and estuarine plains. The Arnhem Land Plateau comprises spectacular sandstone escarpments typically 200-300m above sea level, and up to ~500m. The surface of the Plateau is typically dominated by bare rock or shallow sandy soils which support spinifex and low scrub. Woodland and rainforest can dominate over well developed soil profiles associated with interbedded volcanic units, or within gorges and areas where there are permanent springs (Needham, 1984). Previous explorers have noted the difficulties in navigating this terrane using vehicles, with a lot of work required to be conducted on foot.

The undulating sandy plains are the most extensive topographic unit, supporting woodland to tall forest with tall grasses. The sandy plains form over many different rock types ranging from recent


131°
131°30'
132°
132°30'
133°
133°30'
-12°
-12°30'
-13°
-13°30'
SD5204
DARWIN
DARWIN
COONAWARRA
PALMERSTON
HOWARD SPRINGS
VIRGINIA-BEES CREEK
HUMPTY DOO - MCMINNS LAGOON
BELYUEN
SD5301
ALLIGATOR RIVER
OENPELLI
EL24564
Narbarlek West
JABIRU
ARNHEM HWY
BATCHELOR
SD5208
PINE CREEK
ADELAIDE RIVER
SD5305
MOUNT EVELYN
DALY RIVER
PINE CREEK
NORTHERN
TERRITORY
UXA RESOURCES LIMITED
Date: 5/12/2012
Author: mwalter
Office: ADL
NBLK/TL002
Scale: 1:1250000
EL 24564 NABARLEK WEST
TENEMENT LOCALITY PLAN
Figure 1
Projection: Longitude / Latitude (NAD 83)
0
12.5
25
50
kilometres

Tertiary sediments to Archaean and Palaeoproterozoic granite and gneiss. The coastal and estuarine plains typically occur between the sandy plains and the coast, and are mainly developed on estuarine sediments deposited in former drowned river valleys (Needham, 1984).

3 Historic exploration

Mineral exploration in the Alligator Rivers Uranium Field (ARUF) has focused almost exclusively on uranium (and associated gold mineralisation, i.e Jabiluka 2), with minor lead-zinc mineralisation documented in quartz-breccia-filled faults in the Nanambu Complex and minor alluvial tin associated with the Tin Camp Granite.

Uranium exploration within the ARUF commenced in 1969 following the release of geochronological data from the Nanambu Complex and mapping work by the Bureau of Mineral Resources. The majority of available exploration licences were taken up by four companies; Geopeko Ltd, Pancontinental Ltd, Noranda Ltd and Queensland Mines Ltd. Regional radiometric surveys conducted by each company and subsequent follow-up work led to the discovery of Ranger 1 (Geopeko), Jabiluka 1 (Pancontinental), Koongarra (Noranda) and Nabarlek (Queensland Mines Ltd). By 1972, resources had been defined at Ranger, Nabarlek and Koongarra, with the resource at Jabiluka defined in 1973. Mining at Nabarlek took place in 1979 over a 5 month period, with the stockpiled ore processed between 1980 and 1988. Mining at Ranger 1 commenced in 1980 and is on-going, with recent delineation of the Ranger 3 Deeps ore body (~34,000t contained U_3O_8) likely to extend the mine life by several years.

Exploration work conducted on historical exploration licences relevant to the Nabarlek West tenements is summarised below.

3.1 EL 2508 (Afmeco & Queensland Mines Ltd)

EL 2508 was granted on 29th June 1988 to a joint venture comprising Queensland Mines Ltd and Afmeco Mining and Exploration Pty Ltd. The exploration licence covered an area of 580km^2 encompassing EL24564 and was considered prospective for unconformity style uranium mineralisation analogous to the Ranger, Jabiluka and Nabarlek deposits. Initial exploration activities during the first two years of tenure defined a total of 49 anomalies which were ranked and systematically followed up with work including geological mapping, soil and rock chip sampling, surveying and gridding, ground radiometrics, trenching, radon track etch surveys and drilling (RAB, >1580 holes for >30,000m; RC and diamond, >73 holes for >8,800m). Of these 49 anomalies, three occur within 5km of EL24564 (Q4, S21 & U11). Following 10 years of systematic follow-up, the majority of EL 2508 was relinquished in 1998 with the exception of three prospects (N147, SMLB & U65) which were retained under Exploration Retention Licences ERL 150, ERL 151 and ERL 152.

3.2 EL 3419 (Afmeco & Cameco)

EL 3419 was located within the current boundaries of EL 24564 and was explored by Afmeco and Cameco between 1997 and 2003. Exploration activities included 9 diamond drill holes (KUN001-KUN009), a helicopter-borne radiometric and magnetic survey, an airborne multispectral scanner survey, logging of drill core using PIMA II spectrometer and rock chip sampling. The aim of the exploration work was to test the geological nature of the basement beneath the sandstone cover and major structural zones.

A helicopter radiometric and magnetic survey was carried out in 1997, covering 651 line kilometres at 100m line spacing with a sensor height of 30m. No significant radiometric anomalies were identified from this survey.

Five diamond holes were completed in 1997 (KUN001-KUN005) and a further 4 completed in 1998 (KUN006-KUN009) targeting the unconformity between the Kombolgie sandstone and basement lithologies however no significant mineralisation was identified.

3.3 ERL 150 (Afmeco)

ERL 150 was one of three ERL's retained by Afmeco when EL 2508 was relinquished in 1998. It covers an area of 21.45km^2 and is located on the southern margin of EL 24868. The ERL was retained due to the discovery of uranium mineralisation in the SML Boundary (SMLB) area in 1992 during blind drilling of the interpreted extension of the Nabarlek Shear. The mineralised zone is associated with a northwest striking fault known as the Boundary Fault.

Exploration work carried out between 1999 and 2004 on ERL 150 included RC/diamond drilling of 9 holes for a total of 2,467m, airborne magnetic/radiometric and electromagnetic (TEMPEST) surveys and ground electromagnetic (EM) and induced polarization (IP) surveys.

During the first year of tenure, ground NanoTEM and Tensor IP (TIP) surveys were carried out over ERL 150, along with a microgravity survey. The NanoTEM method was employed to map the thickness of the Kombolgie Sandstone and help determine vertical movement in faults through the sandstone. Unfortunately due to the rugged terrane, the lines were too short to produce useable data. The TIP survey collected readings at 500m intervals and produced unexplained anomalous resistivity and phase responses in the central part of the survey area. The microgravity survey was employed to determine if this method could be used to detect mineralisation and/or alteration haloes and structures in sandstone covered areas. The results of this work suggested this method could be successful in mapping structures and lithological variations.

A detailed airborne magnetic/radiometric survey was flown in 2001 over ERL 150, focused on a structural corridor considered prospective for uranium mineralisation in order to provide detailed information on the structural features. Unfortunately it failed to resolve structural information beneath the sandstone, and produced several weak radiometric anomalies. The airborne EM (TEMPEST) survey flown in 2001 was a trial to test the effectiveness of the method in resolving depth to the unconformity, highlighting basement conductors and elevated conductivity in hydrothermally altered sandstone. The resulting conductivity depth image produced a narrow conductive horizon interpreted to represent hydrothermal alteration around the unconformity.

Drilling was conducted using both dual purpose truck mounted rigs (RC/DD) and helicopter supported drilling, comprising 9 holes for a total of 2,467m.

4 Geological Setting

The Nabarlek West tenement is situated within the north-western portion of the Pine Creek Orogen and fall within the Alligator Rivers Uranium Field (ARUF). The following summary is drawn from Lally & Bajwah (2006), Needham (1984), Sweet et al (1999), Wilde & Noakes (1990) and Wilde & Wall (1987) and detailed geology is shown on 1:100,000 Special Geology Publication "Geology of the Nabarlek Region".

Nabarlek area comprises Archaean to Mesoproterozoic Nanambu Complex which has been subdivided based on age and lithology, comprising un-metamorphosed Archaean granite, metamorphosed Archaean granite (now mainly gneiss) and Mesoproterozoic metamorphics.

The un-metamorphosed granite is white to light grey, medium-coarse grained and comprises quartz, microcline, plagioclase and biotite with accessory muscovite and opaques. Outcrops form mainly scattered domes and pavements on the eastern side of the South Alligator River floodplain. The granite has been dated at 2504 ± 22Ma. The metamorphosed Archaean granite is strongly foliated and comprises quartz, feldspar (mostly potash) and biotite. They typically comprise granuloblastic texture characteristic of almandine-amphibolite facies.

The Mesoproterozoic metamorphics comprise pegmatoidal leucocratic paragneiss, schist and migmatite dated around 1800Ma and appears to be consistent with the timing of late Mesoproterozoic regional metamorphism. Isotopic ratio work has suggested a meta-sedimentary origin for this sequence of rocks.

Kakadu Group units overlie the Nanambu Complex gneiss and comprise the Mount Howship Gneiss and Kudjumarndi Quartzite. The Mount Howship Gneiss (potentially up to 1000m thick) is coarse, granular quartzofeldspathic gneiss which is typically massive to faintly foliated. Quartz forms 30-75% of the rock, with microcline, plagioclase and muscovite (up to 10% of the rock) with subordinate biotite and accessory apatite and monazite.

Kudjumarndi Quartzite (up to 150m thick) comprises an ortho-quartzite which ranges in composition from monomineralic to muscovite-biotite-hornblende, biotite-muscovite and feldspathic gneiss. It can be distinguished from the underlying Mount Howship Gneiss by its higher quartz content (>75%).

Cahill Formation units conformably overlie the Kakadu Group units and comprise a lower member (carbonate and carbonaceous schist) passing transitionally into a more psammitic upper member. The Cahill Formation is for the most part poorly exposed, confined mostly to a belt 5km wide surrounding and folded into the Nanambu Complex, as well as within the Myra Falls Inlier. The poor exposure tends to be due to the typically micaceous nature of many of the rock units, making them less resistant and friable, with silicified dolomite ridges providing the best outcrop. The lower member of the Cahill Formation is interpreted to be between 300-600m thick.

The upper member of the Cahill Formation comprises a sequence of interlayered feldspathic quartz schist, feldspathic schist and feldspathic quartzite, with minor mica schist and quartzofeldspathic gneiss. It conformably overlies and grades vertically into the lower member, and in the Koongarra area it is interpreted as being up to 2500m thick (this thickness is probably a result of repetition by folding and faulting).

The Nourlangie Schist is believed to overlie the Cahill Formation and is probably a metamorphosed stratigraphic equivalent of the Wildman Siltstone, which occurs elsewhere in the Pine Creek Geosyncline overlying correlatives of the Cahill Formation. It comprises amphibolite facies rocks in the north, upper Greenschist facies rocks through the southern portion of the ALLIGATOR RIVER map sheet to lower Greenschist facies rocks, mostly within the adjoining MOUNT EVELYN 1:250,000 map sheet.

To the east of the East Alligator River, the Nourlangie Schist grades into the Myra Falls Metamorphics, a sequence of differentiated gneiss and schist formed by progressive

metamorphism and migmatisation during the Top End Orogeny (~1800Ma). The sequence has been divided into two zones, the Transitional Zone and the Lit-par-lit Gneiss Zone.

The rocks of the Lit-par-lit Gneiss Zone are predominantly gneiss, although granuloblastic amphibolites are widespread and are typically retrogressively metamorphosed to an assemblage of radiating fibrous aggregates of actinolite, tremolite and chlorite. In some cases, relict ophitic texture of hornblende and plagioclase with accessory sphene, magnetite, granular quartz, apatite, garnet porphyroblasts and orthopyroxene are preserved. This relict texture and mineral assemblage suggests that these rocks are ortho-amphibolites derived via metamorphism from Zamu dolerite.

The Zamu Dolerite is comprised of a series of tholeiitic sills which intruded the Palaeoproterozoic sediment pile prior to regional deformation and metamorphism. The unit ranges from metadolerite in the west of the ALLIGATOR RIVER map sheet to amphibolite with occasional metadolerite cores in the east of the map sheet area, with an interpreted age of approximately 1884 ±3Ma.

The Nimbuwah Complex forms a large, roughly semi-circular body approximately 2600km^2 in the Nabarlek region, comprised of mesocratic to leucocratic granitoid migmatite with melanocratic migmatite and tonalite. The complex can be broadly divided into a northern group and a southern group as described below.

The northern group of the Nimbuwah Complex is present predominantly to the north of the Nabarlek project area and is consisting of migmatite and porphyroblastic granite.

The southern group of the Nimbuwah Complex is present predominantly within the Caramal and Beatrice Inliers, approximately 25km and 40km south of the Nabarlek project area respectively. These areas contain the most mafic rock types of the Nimbuwah Complex, including melanocratic migmatite and tonalite.

The Tin Camp Granite and Nabarlek Granite within the ALLIGATOR RIVER map sheet are members of the late Palaeoproterozoic Jim Jim Suite, which is present throughout the eastern portion of Pine Creek Inlier and appears to be coeval with the Cullen Supersuite (~1825Ma). The Tin Camp Granite is present within the Caramal and Beatrice inliers approximately 25km and 40km south of the Nabarlek project area respectively. It intrudes the Nimbuwah Complex, is faulted against the Oenpelli Dolerite and appears to intrude the Myra Falls Metamorphics.

The Nabarlek Granite has been mapped approximately 7km east of the Nabarlek deposit, and has also been documented to occur below the Nabarlek ore body. In outcrop, the granite is cut by numerous quartz breccia-filled fault zones and is extensively altered.

Oenpelli Dolerite occurs throughout the eastern portion of the Pine Creek Orogen and is mapped predominantly in the eastern half of the ALLIGATOR RIVER map sheet in the vicinity of the Nabarlek West project areas. Regionally, the Oenpelli Dolerite forms large lopoliths up to 250m thick, as is the case below the Nabarlek ore body.

The Kombolgie Formation is a thick, predominantly sandstone sequence which unconformably overlies Archaean to Mesoproterozoic basement rocks within the Pine Creek Orogen. It is divided into upper and lower sandstones, each containing a distinctive volcanic unit (the Gilruth and Nungbalgarri volcanic members respectively). The entire sequence of sandstone and associated

volcanic units forms part of the Katherine River Group. Recent work has constrained the age of the Kombolgie Subgroup to between 1822Ma and ~1730Ma.

Sporadic outcrops of the Late Jurassic Petrel Formation occur throughout the ALLIGATOR RIVER map sheet, and have a limited presence in the northeast corner of ELA 24868. This sequence comprises coarse sandstone, conglomerate, minor siltstone and claystone and sits unconformably on older rocks. Cainozoic sediments include laterite, late Tertiary sand, silt and sandstone, talus, Quaternary continental deposits and coastal sediments.

Refer to Figures 2 and 3 for the ALLIGATOR RIVER geology overlain with the Nabarlek EL's and stratigraphic column/map units.

4.1 Structure

Palaeoproterozoic deformation took place primarily during the Top End Orogeny (~1880-1800Ma), with the basement units divided into two main structural/metamorphic terrains. The Nimbuwah Domain, east of the East Alligator River, comprises gneissic and schistose, medium to high grade rocks with shallow dipping (<35°) foliation and flat lying, west-verging recumbent folds. To the west of the East Alligator River, The Nanambu Domain, medium grade schist with steep dipping foliation predominate with folds ranging from recumbent to steeply inclined, facing both east and west. At least four phases of deformation are attributed to the Top End Orogeny.

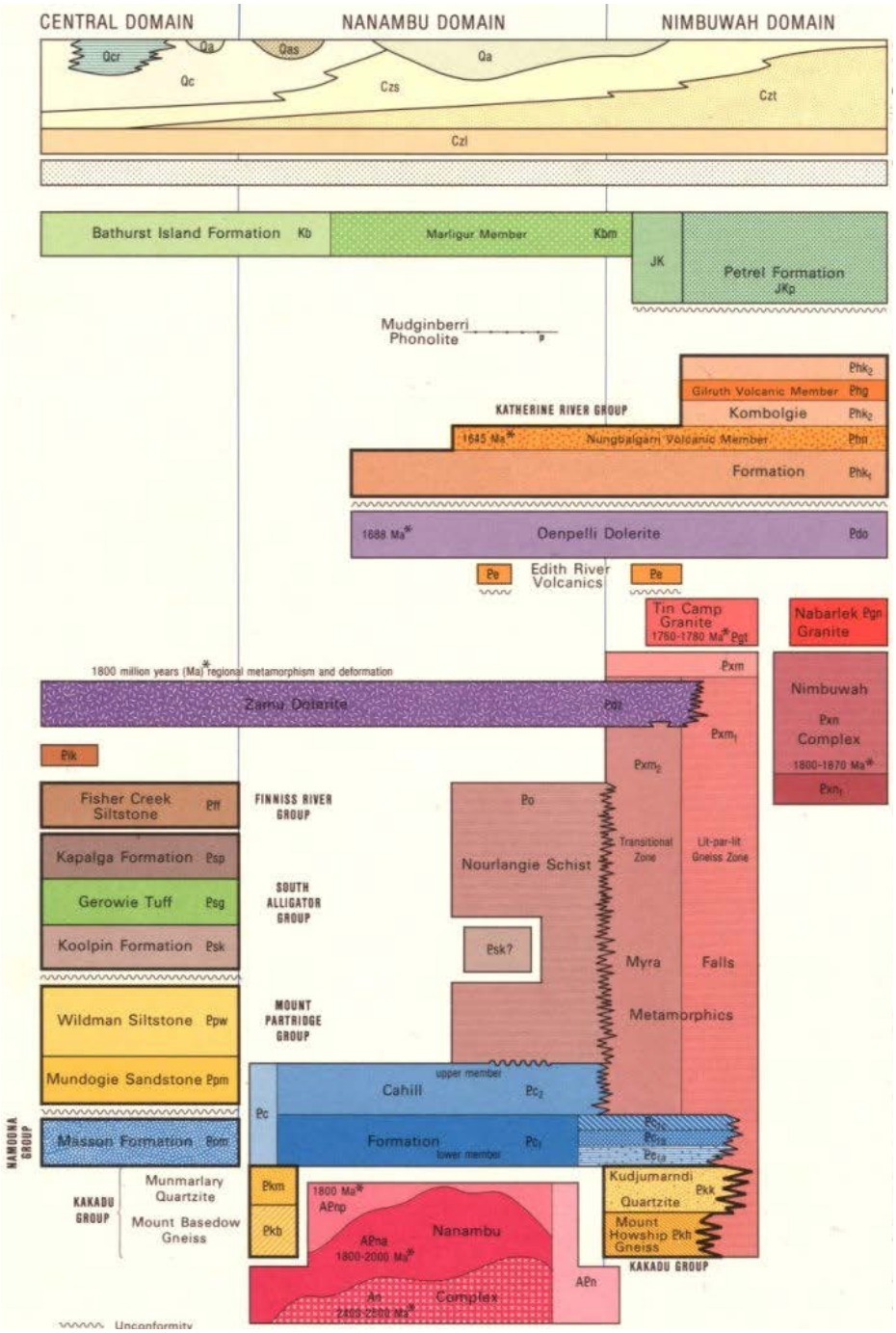


Figure 3: Map units within the ALLIGATOR RIVER map sheet

4.2 Mineralisation

The Alligator Rivers Uranium Field (ARUF) contains over 60 known uranium occurrences, including the Ranger, Jabiluka, Koongarra and the historic Nabarlek uranium mine (Figure 4).

These uranium deposits and occurrences are related to fracture, fault and breccia zones within Palaeoproterozoic basement rocks, and proximal to an unconformable contact with overlying Neoproterozoic sediments.

4.2.1 Nabarlek

The Nabarlek uranium deposit was discovered in 1970 by Queensland Mines Ltd while investigating a significant airborne radiometric anomaly. Mineralisation is hosted within chlorite schist, biotite-muscovite-quartz-feldspar gneiss and amphibolite within the Myra Falls Metamorphics. These rocks are faulted against Palaeoproterozoic Nabarlek Granite and are intruded by a thick (~220-250m) discordant sheet of Oenpelli Dolerite (Figure 5). The ore body was approximately 250m in length, 7m wide and tapered to a maximum depth of 85m where it was truncated by an Oenpelli Dolerite sill. Mineralisation is intimately associated with the Nabarlek Fault breccia, which contains the high grade core (>1% U_3O_8) surrounded by a lower grade (0.1% U_3O_8) envelope, extending up to several metres into the country rock. The primary ore mineral is uraninite (with rare brannerite), with secondary ore minerals comprising coffinite and yellow-green phosphate phases. Minor sulphide phases (including chalcopyrite, galena with rare pyrite, chalcocite and bornite) are present, typically comprising less than 1% by volume of the ore assemblage.

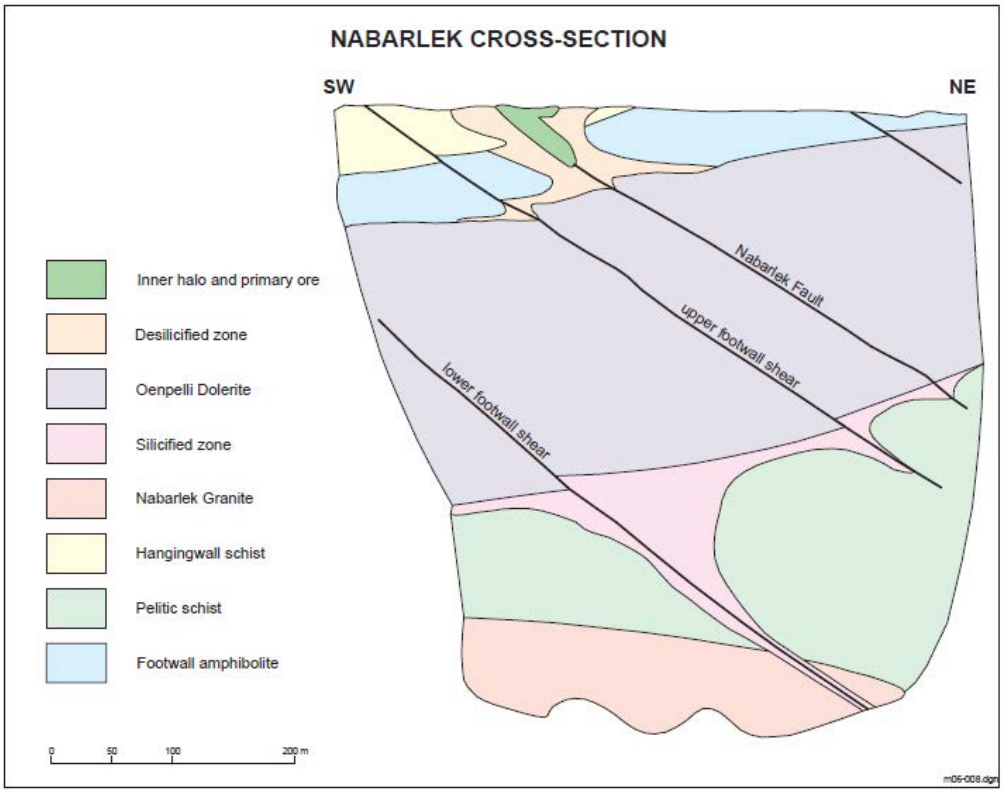


Figure 5: Cross section of the Nabarlek deposit. After Lally & Bajwah (2006)

4.2.2 Ranger

The Ranger Uranium Mine is located approximately 55km southwest of the Nabarlek West and includes the Ranger 1 and No 3 ore bodies (Figure 6). Mineralisation is hosted within the Lower Cahill Formation and comprises a total of 148,082t contained U_3O_8 at an average grade of 0.25% U_3O_8. Mineralisation is characterised by intense chloritisation, sericitisation and hematite alteration, which in some cases completely obliterates primary mineral fabrics. Several periods of brecciation with associated chloritisation and uranium mineralisation are described within the ore zone. The primary ore assemblage comprises uraninite, with minor brannerite and amorphous

mixtures of pitchblende with titanium and phosphates. Pyrite, chalcopyrite and galena (predominantly radiogenic) are associated with pitchblende mineralisation.

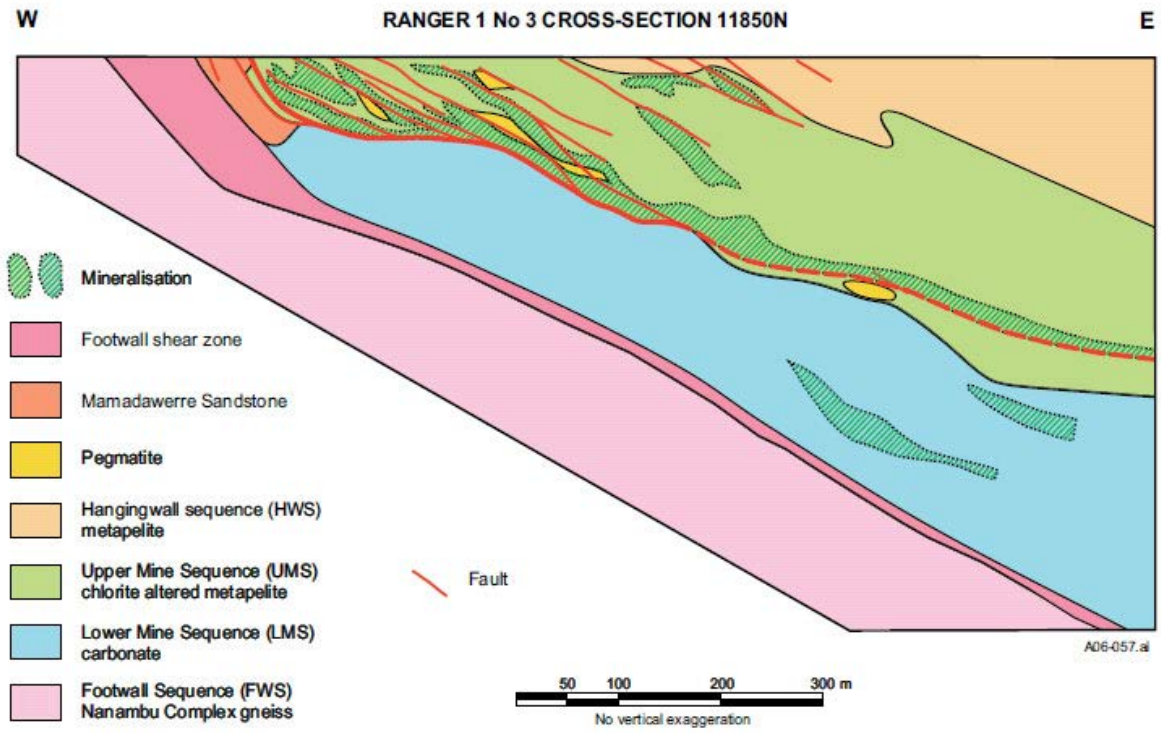


Figure 6: Cross section of the Ranger 1 No 3 ore body (after Lally & Bajwah 2006).

4.2.3 Jabiluka

The Jabiluka deposit is located approximately 24km southwest of the Nabarlek West project area and comprises two separate ore bodies, Jabiluka 1 and 2, which contain a combined uranium resource of 166,250t contained U_3O_8 at an average grade of 0.39% U_3O_8. Uranium mineralisation is hosted by Lower Cahill Formation schists. The bulk of the mineralisation (163,000t contained U_3O_8) at a grade of 0.53% U_3O_8 is contained within the Jabiluka 2 ore body (Figure 7). Uranium mineralisation is typically confined to zones of brecciation within graphitic schist and commonly associated with chloritisation, sericitisation and hematite alteration. The primary ore mineralogy comprises predominantly uraninite with minor brannerite, coffinite and organo-uranium minerals. Sulphides present include pyrite with lesser galena and chalcopyrite. Economic gold mineralisation is also reported within graphite horizons from the Jabiluka 2 ore body.

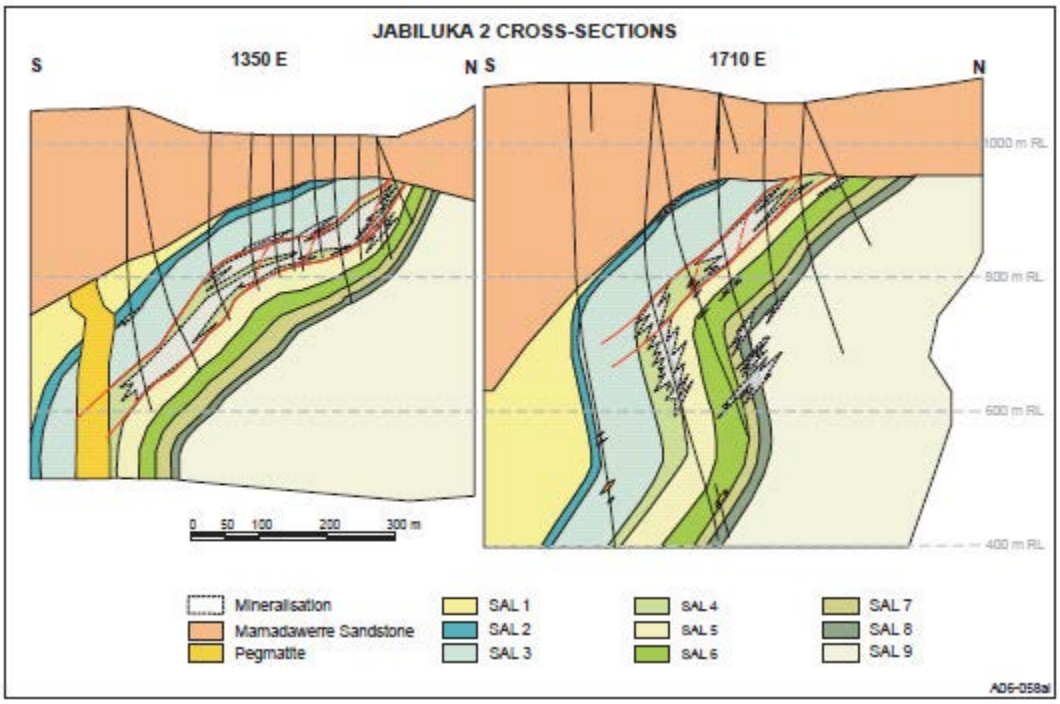


Figure 7: Cross section of the Jabiluka 2 deposit (after Lally & Bajwah 2006).

4.2.4 Koongarra

The Koongarra uranium deposit is located approximately 70km southwest of the Nabarlek West project area. The deposit comprises two discrete ore bodies, separated by ~100m in plan (Figure 8), and contains an estimated resource of ~16,541t contained U_3O_8. Uranium mineralisation is hosted by Lower Cahill Formation schists. The Koongarra 1 ore body extends ~450m along strike and to ~100m depth, with a secondary mineralisation zone present within the weathered schists overlying the main ore body. The Koongarra 2 ore body has a strike length of ~100m and occurs between 50-250m depth. Primary uranium mineralisation is hosted predominantly by quartz-chlorite schist. Primary ore comprises crystalline uraninite veins and veinlets, with sooty amorphous uraninite masses present within host schists, while secondary mineralisation includes sklodowskite, kasolite, renardite, metatorbernite, saleeite and curite.

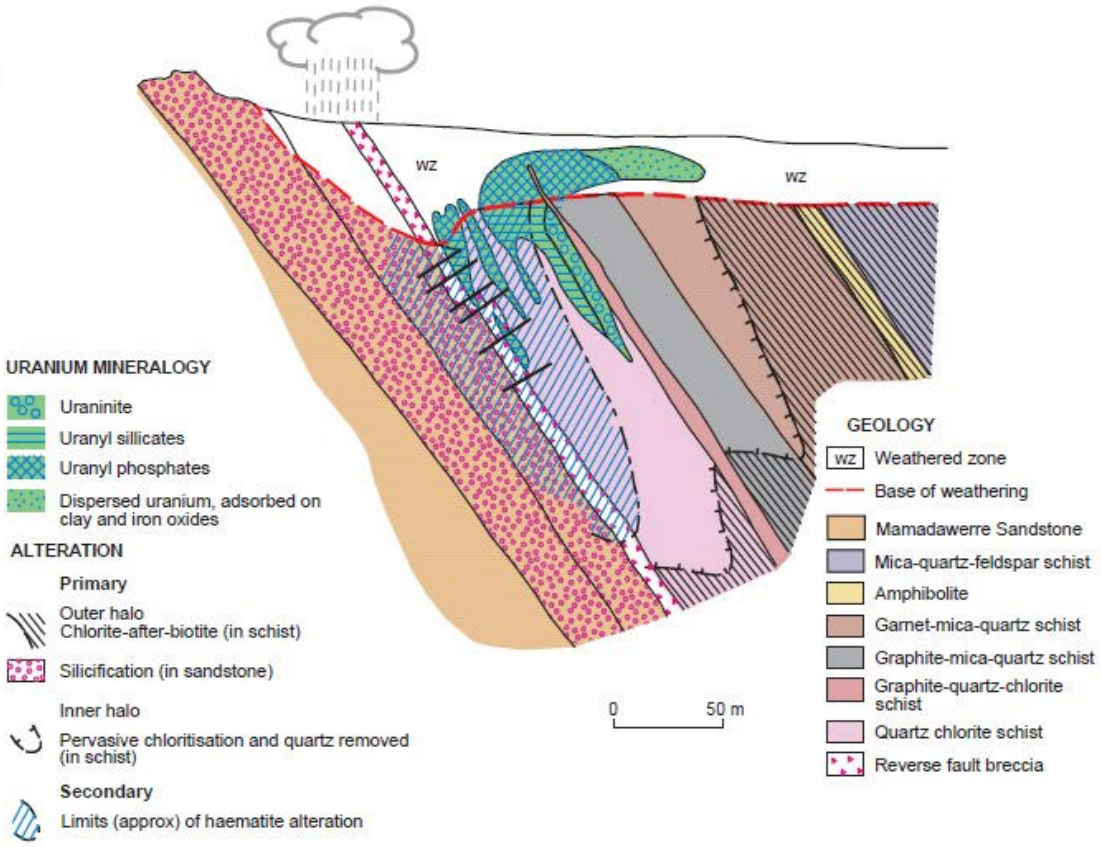


Figure 8: Cross section of the Koongarra deposit (after Lally & Bajwah 2006).

4.2.5 Other Occurrences

The Ranger 68 deposit is located approximately 44km west-southwest of the Nabarlek project area and contains resources of approximately 5000t contained U_3O_8 with an average ore grade of 0.35% U_3O_8. The geology is broadly similar to that at the main Ranger deposit, with mineralisation hosted by chloritised breccia and to a lesser extent quartz-sericite-chlorite schist within the Lower Cahill Formation.

Hades Flat uranium prospect is located ~42km southwest of EL24868 and comprises an estimated resource of 726t contained U_3O_8. Mineralisation is found within the Lower Cahill Formation and is comprised predominantly of pitchblende, which occurs both within fractures and breccia in chlorite-feldspar schist.

Caramel prospect is located ~22 south of the Nabarlek mine site and contains an unconfirmed estimated resource of 2500t contained U_3O_8. Primary uranium mineralisation occurs within a ~80m wide elongate zone within altered metasedimentary schist and carbonate rocks of the Myra Falls Metamorphics.

A number of uranium occurrences have been reported proximal to the Nabarlek West tenements (Figure 4), including:

- U40 (200m south of EL24868), currently being evaluated be Cameco in joint venture with Uranium Equities Limited.
- *Tadpole* (~12km north of EL 24564), described as a vein occurrence.

- *Mordijimuk* (~2km east of EL 24564), described as “surficial enrichment”.
- *Gorrunghar* (~2km south of EL 24564), described as “unconformity-related”.
- *Gurrigarri* (~4.5km southeast of EL 24564), described as “unconformity related”.
- *Anomaly N84* (~2.3km east of EL 24564), described as “surficial enrichment”.
- *Anomaly N7* (~6km southwest of EL 24868), described as “surficial enrichment”.
- *Stevens* (~15.5km southeast of EL 24868), described as “vein gold, platinum, palladium, uranium”.
- *King River* (~12km west of EL 24868), described as “unconformity-related”.
- *00128* (~7km east of EL 24564), described as “surficial enrichment”.

5 Exploration Rationale

The model proposed for unconformity-style uranium deposits in the Alligator Rivers area comprises an intracratonic basin setting, where a thick, oxidized and quartz-rich cover sequence unconformably overlies metamorphic basement containing suitable reductants. Fluids produced during basin diagenesis transport uranium along basement penetrating faults where they may come into contact with reducing lithologies that precipitate uranium minerals. Key criteria for a deposit of this type are:

- A thick, oxidized quartz-rich sandstone cover sequence, preferably free of organic matter, which can facilitate the transport of uranium bearing fluids.

- Basement rocks comprising suitable reducing lithologies such as graphitic schists, carbonates (marble etc), hydrocarbons or inorganic reductants (eg sulphides or ferric Fe2+ iron rich rocks).

- Burial of the basin accompanied by diagenesis creating a moderate temperature (~150-200°C) with oxidizing saline fluid capable of transporting uranium.

- A leachable source of uranium which could include uranium-rich felsic rocks either rimming or underlying the sedimentary basin, lithic fragments of felsic rocks (including volcanic ash) within aquifers or leachable detrital U-rich minerals such as zircon, monazite, allanite and apatite within the sandstone sequence.

- Significant fault structures which penetrate both the cover sequence and basement rocks form pathways for fluids. Structures within the basement (particularly those associated with reducing lithologies) provide further conduits for mineralising fluids and form depositional sites.

The characteristics of unconformity style uranium deposits in the Northern Territory can be summarised as follows (after Mernagh et al, 1998 & Beaufort et al, 2005):

- Typically an oxidized, thick cover sequence of quartz-rich sandstone overlying reduced basement lithologies.

- Significant fault/structural feature bisecting both the covering sequence and basement rocks, to allow passage of fluids.
- Clay alteration (kaolinite-illite) in covering sandstones proximal to the fault structure.
- Elevated Th in stratigraphic units above the unconformity (areas of high Th but low U/K may indicate mineralization at depth).
- Phosphatic breccias above the unconformity and areas of silicification proximal to the fault structure at higher stratigraphic levels with strong desilicification at the unconformity.

Previous exploration in and around the Nabarlek West tenements suggests the Kombolgie Formation sandstone has been subjected to diagenetic processes with illite alteration commonly reported and silicification and chlorite-hematite alteration also suggestive of fluid flow.

The most prospective basement lithologies in the Nabarlek project area include the Lower Cahill Formation (host to the Ranger, Jabiluka and Koongarra deposits) and the Myra Falls Metamorphics (in particular the lit-par-lit gneiss).

6 Previous UXA exploration

In 2011, during the first year of tenure exploration activities comprised a desk top review of historical works completed by previous explorers and research on known uranium deposits within the region, a 1,395.4 line kilometre fixed wing airborne GEOTEM electromagnetic survey and a hyperspectral remote sensing survey.

Results from the airborne EM survey were non-conclusive in delineating the unconformable contact, highlighting conductors and delineating detailed structure. The hyperspectral survey failed to identify any zones of significant chlorite alteration or intense argillic alteration considered as strong indicators of potential mineralisation.

7 Exploration Activities for the period ending 26 October 2012

During the third year of tenure no exploration activities were carried out.

8 Environmental Management Activities

Environmental rehabilitation was unnecessary as no ground was disturbed.

9 Expenditure Statement

An expenditure statement for the reporting period was submitted to the Northern Territory Department of Resources on 29 October 2012.

Table 3 summarises expenditure for the Nabarlek West tenement.

Table 3: Summary of Expenditure during the Reporting Period

EL #	Covenant	Expenditure
EL24564	$5,000	$5,458

10 Conclusions and Recommendations

The Nabarlek West tenement is considered prospective for unconformity style uranium mineralisation since they comprise similar tectonic setting, lithology and structure to known deposits within the region, but as no exploration was carried out the tenement will be relinquished.

11 References

Biswal, D. & Powell, S. (2011) Nabarlek Group Project Annual Report for the period 27 September 2010 to 26 September 2011. *UXA Resources Ltd*.

Lally, J.H. & Bajwah, Z.U. (2006). Uranium deposits of the Northern Territory. *Northern Territory Geological Survey, Report 20.*

Needham, R.S. (1984). ALLIGATOR RIVER, Northern Territory (SD/53-1). 1:250,000 Geological Series Explanatory Notes. *Bureau of Mineral Resources, Geology & Geophysics*.

Sweet, I.P., Brakel, A.T. & Carson, L. (1999). The Kombolgie Subgroup – a new look at an old "formation". *AGSO Research Newsletter 30, pp. 26-28.*

Wilde, A.R. & Noakes, J.S. (1990). Nabarlek uranium deposit. In Geology of the mineral deposits of Australia and Papua New Guinea (Ed. F.E. Hughes), pp. 779-783. *The Australian Institute of Mining and Metallurgy.*

Wilde, A.R. & Wall, V.J. (1987). Geology of the Nabarlek uranium deposit, Northern Territory, Australia. *Economic Geology*, vol. 82, pp. 1152-1168.