



Cameco Australia Pty Ltd

**ARNHEM LAND WEST JOINT VENTURE
LIVERPOOL PROJECT
EL 2855
ANNUAL REPORT FOR PERIOD 25 JULY 2000 TO 24 JULY 2001
CONFIDENTIAL**

Date: July 2001

Report No.: LP01-07

Period: 25 July 2000 to 24 July 2001

**Authors: P Melville, Senior Project Geologist
G Beckitt, Geophysicist**

**Copies: Cameco Corporation (1)
Cameco Australia Pty Ltd (1)
PNC Exploration Australia Pty. Ltd. (1)
Northern Territory Dept. of Mines (1)
Northern Land Council (1)**

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SUMMARY

This report describes exploration work undertaken for the Arnhem Land West Joint Venture (AWJV) on the Liverpool project during the 2001 field season. The tenement forms part of the Arnhem Land West Joint Venture, a joint venture between Cameco Australia Pty Ltd (Cameco), PNC Exploration Australia Pty Ltd (PNC) and the Ngalangak Aboriginal Corporation.

The current year's exploration activities were confined to a fixed-wing airborne magnetic and radiometric survey. The survey, which was scheduled for October 2000, was postponed by the contractor due to aircraft problems.

INTRODUCTION

This report describes program activities carried out during the 2001 field season on behalf of the Arnhem Land West Joint Venture, (AWJV) a joint venture between Cameco Australia Pty Ltd (Cameco), PNC Exploration (Australia) Pty Ltd (PNC) and the Ngalangak Aboriginal Corporation. Since the Exploration Licence is located on Aboriginal Land the exploration program was carried out under the terms of consent documentation agreed with the Northern Land Council pursuant to the Aboriginal Land Rights (Northern Territory) Act 1976.

The program as described, represents the initial year of exploration on the tenements by the Joint Venture. To date there has been no ground-based exploration activities.

The only activity for this year was the flying of a fixed wing airborne survey by UTS Geophysics of Perth. The survey, which was originally planned for October 2000, was postponed and eventually flown in June 2001.

Location and Access

Exploration Licence 2855 is located in central western Arnhem Land. The tenement is centered about 70 km southeast of Nabarlek and 100 km east of Jabiru. It is situated approximately 120 km southeast of the King River project.

The project area is virtually inaccessible to vehicular traffic. A four-wheel drive track is indicated as traversing the extreme south east of the tenement and another accesses the Marlgora Outstation on the Mann River.

Location Map

Tenure

EL 2855 was granted on the 25th July 2000 for an initial period of six years. On granting, the total area covered by the licence is 1255 km² with 213 km² being excluded from exploration.

Physiography

The tenement consists predominantly of relatively flat-lying sandstone plateau covered by savanna woodland and scrubland. The plateau is dissected by numerous, mostly north flowing drainages including the Liverpool and Mann Rivers. Gorges and waterfalls have developed in places.

Tenement Geology

Based on the NTGS mapping of the Milingimbi 1:250000 geological series (Carson and others 1999), the tenement is dominated by the Kombolgie Subgroup (formerly Kombolgie Formation) of the Paleoproterozoic Katherine River Group. The latter forms an extensive area of platform cover sediments in western Arnhem Land. The Marlgora Sandstone, which is the stratigraphically highest unit of the Kombolgie, predominates with lesser exposures of the McKay Sandstone. The former consists of coarse to occasionally pebbly white-grey quartz arenite and was formed in a fluvial

depositional environment. The McKay, which lies conformably on the Marlgowa, consists of interbedded fine to medium grained white-grey quartz arenite and red-brown to purple ferruginous sandstone, occasionally pebbly. The depositional environment varied from fluvial to shallow tidal marine.

The Gilruth Volcanic Member is present over a very limited area in the extreme southwestern corner of the tenement. This unit, represented by ferricrete and saprolite rubble, separates the Marlgowa from the underlying Gumarrinbang Sandstone. Isolated outcrops of Oenpelli dolerite have been mapped within the tenement. Stratigraphically, these sandstone formations are located at the top of the Kombolgie Subgroup. Depth to basement from the top of the Marlgowa Sandstone on the Milingimbi sheet area is estimated to be at least 700 metres. This figure was calculated from the measurement of sections through the various sandstone units by NTGS geologists.

Regional Structure and Geological History

The early Proterozoic rocks of the region have been affected by the Top End orogeny (1880 to 1780 Ma) which includes the initial Nimbuwah Event or Barramundi Orogeny at about 1870 Ma. This produced a prograde metamorphic effect with associated tight folding and faulting. The various 'domains' exhibited a variability of deformation and metamorphic grade with the western and eastern margins of the Pine Creek Inlier (Litchfield Province and Nimbuwah domain respectively) exhibiting the most pronounced effects.

Major regional faults, which affect the early Proterozoic, have north-west (Bulman), north-north-west and northerly (Goomadeer) strikes. Another significant set trends to the east and includes both the Ranger and Beatrice faults. The Bulman Fault Zone is the principle regional feature and is considered to represent a long-lived deep crustal structure, which has exerted a large lateral component in rocks of the Pine Creek Inlier.

A more intense concentration of structures traverse the mid Proterozoic and younger rocks and include north-west, east, north-east and north trends. The Kombolgie is heavily dissected by both faulting and jointing with displacements ranging from a few metres up to 100 metres locally.

In a regional context, the Liverpool project is located adjacent to the Arnhem Shelf at the northern extent of the McArthur Basin. The tectonic environments which existed during deposition of the Katherine River Group varied, ranging from extension and local basin formation with probable fault-controlled sedimentation (Mamadawerre Sandstone), to a basin-wide extensional setting. As noted above the exposed sandstone units illustrate spectacular eroded joint and fault patterns, however the near horizontal to shallow-dipping bedding would imply a tectonically inactive post depositional environment.

The widespread Oenpelli Dolerite intrusive event took place at about 1715 Ma. Localised effects in the sandstone include silicification, the introduction of magnesium-rich to intermediate chlorite and the formation of muscovite-illite.

Exploration Target

The focus of the exploration strategy is the discovery of unconformity-related uranium deposits. The nearby economic deposits at Ranger, Jabiluka, Koongarra and the now depleted Nabarlek Mine serve as models for this strategy. The presence of gold, palladium and platinum in these deposits plus the economic gold-platinum resource at Coronation Hill in the South Alligator Valley, indicates an additional potential for this deposit style.

Previous Exploration

No previous exploration activities have been recorded.

EXPLORATION PROGRAM

The only field activity to take place in the 2001 field season was the flying of a fixed-wing magnetic, radiometric and DTM (digital terrain model) survey over the entire project area.

Digital data for this survey has been submitted on CD with this report.

Location of Airborne Magnetic and Radiometric Survey

Airborne Geophysics

During July 2001, Universal Tracking Systems Pty Ltd (UTS) conducted a single detailed airborne magnetic, radiometric and DTM survey totaling 6860 line km. Survey specifications employed for this survey were 60m flight height, 200m lines flown in a west east direction.

The primary aims of the survey were to locate any surface uranium enrichment and to acquire data useful for future geological mapping. No anomaly identification or geology interpretation has been undertaken within the current reporting period.

Airborne Geophysics Logistics Report by UTS

Airborne Magnetics – Total Magnetic Intensity (TMI) with 1st Vertical Derivative (1VD)

Airborne Radiometrics – Total Counts (TC)

Airborne Radiometrics – Potassium (K)

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Airborne Radiometrics – Thorium (Th)

Airborne Radiometrics – RGB=U,Th,K

Airborne DTM – Height with NE Sun Angle

BIBLIOGRAPHY

Carson, L.J., Haines, P.W., Brakel, A., Pietsch, B.A., and Ferenczi, P.A. 1999. Milingimbi, Northern Territory. 1:25000 Geological Map Series. Northern Territory Geological Survey and Australian Geological Survey Organisation, Explanatory Notes SD 53-2.

Needham, R.S. 1988, Geology of the Alligator Rivers Uranium Field. Bureau of Mineral Resources Bulletin 224.

Sweet, I.P., Brakel, A.T., Carson, L., 1999, The Kombolgie Subgroup- a new look at an old 'formation'. AGSO Research Newsletter, 30; pages 26-28.