Cameco Australia Pty Ltd

ARNHEM LAND WEST

GUNBATGARRI PROJECT
EL 2857 and EL 4012

ANNUAL REPORT

CONFIDENTIAL

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SUMMARY

This report describes exploration work undertaken on the Gunbatgarri project for the third year of tenure. The tenements were formerly 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. Cameco, in 2002, attained management then ownership of the project when PNC withdrew from exploration activities in Australia.

A large portion of EL2857 was relinquished on the anniversary date 2004.

Field activities during the report period consisted of five days of helicopter assisted sampling, mapping and reconnaissance of structural targets, and areas of interest. An airborne electromagnetic survey (Tempest) was conducted over the southern portion of EL2857.

Anomalous U was discovered within sandstone samples to the south of the basement window in conjunction with minor structural disruption. Further work is recommended in the area of the basement window, and sampling areas of structural disruption, as these may provide fluid conduits necessary for U mineralisation. Drilling is recommended to the south of the basement window, proximal to the sampled sites of anomalous geochemistry.

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INTRODUCTION

This report describes exploration activities carried out from 19 March 2004 to the anniversary date. The work was initially performed on behalf of the Arnhem Land West Joint Venture, (AWJV) a joint venture between Cameco Australia Pty Ltd, PNC Exploration (Australia) Pty Ltd (PNC) and the Ngalangak Aboriginal Corporation. Cameco acquired full ownership of the project in early 2002 when PNC withdrew from uranium exploration in Australia. Since the Exploration Licence is located on Aboriginal Land the exploration program was carried out under the terms of consent documentation agreed with the NLC pursuant to the Aboriginal Land Rights (Northern Territory) Act 1976.

The field program for the third year consisted of ground based field activities, comprising sampling of areas of structural disruption, mapping and geological reconnaissance, and an airborne electromagnetic survey (Tempest).

Some areas of U enrichment were identified within the sandstone coincident with structural disruption and also proximal to the sandstone basement unconformity.

Location and Access

Exploration Licences 2857 and 4012 are located in central western Arnhem Land. The project area is centred about 40 km southwest of Maningrida and 140 km east of Jabiru.

The main Oenpelli to Maningrida Road traverses the area with secondary service tracks to various Outstations within and beyond the tenement.

Location Map

Tenure

ELs 2857 and 4012 were granted on the 19 March 2002 for an initial period of six years. On granting, the total area covered by the licences is 1253 km^2 (23.4 km^2 for 4012). Approximately two thirds of the original area of EL 2857 was designated as 'no-go' and was excluded from exploration. This relinquished area of EL 2857 comprised 885.5 km^2 and reduced the retained area to 372.2 km^2.

A waiver from reduction was applied and granted for EL 4012.

Physiography

The tenement consists principally of heavily incised sandstone plateau merging northwards into coastal plains and river estuaries. Vegetation varies with geology and topography but generally consists of eucalyptus woodland and scrubland with remnants of monsoonal forest confined to deep gorges and mangroves along watercourses.

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), outcropping rocks within the tenement are dominated by the Kombolgie Subgroup of the Palaeoproterozoic Katherine River Group. These overlie basement rocks assigned to the Nimbuwah Complex. The latter is present as a small elongated 'window' and was once thought to be intrusive into the overlying sandstone ('Gunbatgarri Complex'). The Kombolgie Subgroup is represented by the fluviatile Gumarrirnbang and Marlgowa Sandstones.

Stratigraphically, these sandstone formations are located at the top of the Kombolgie Subgroup. Depth to the unconformity from the top of the Marlgowa Sandstone on the Milingimbi sheet area is estimated to be at least 700 metres as calculated from the measurement of sections through the various sandstone units by the NTGS.

Extrusive volcanic rocks of the Nungbalgarri Volcanics and the Gilruth Volcanic Member are present. The former conformably separates the Mamadawerre (basal member of the Kombolgie) from the Gumarrirnbang while the Gilruth forms a thin lateritised or saprolitic surface separating the latter from the overlying Marlgowa Sandstone.

Oenpelli Dolerite intrudes both the Nimbuwah Complex and the Kombolgie. Exposures are restricted to linear incised fault traces within the sandstone.

The Cambrian Wessel Group comprising the Buckingham Bay Sandstone, underlies the coastal plains to the north of the sandstone escarpment. Recent cover comprising sands and clay, gravel and cemented ferruginous deposits mostly obscure any outcrop.

Tenement Geology Map

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.

Major regional faults, which affect the early Proterozoic, have northwest (Bulman), north-north-west and northerly (Goomadeer) strikes. Another significant set trends to the east and includes both the Ranger and Beatrice faults.

Dating by AGSO (now Geoscience Australia) has constrained the time of deposition of the mid-Proterozoic Kombolgie Subgroup to between 1822 and 1730 Ma. A significant hiatus existed between the Nungbalgarri volcanic event and deposition of the Gumarrirnbang.

A more intense concentration of structures traverse the mid Proterozoic and younger rocks and include northwest, east, northeast and north trends. Both faulting and jointing with displacements ranging from a few metres up to 100 metres dissect the Kombolgie.

In a regional context, the Gunbatgarri project area is located at the northern extent of the McArthur Basin. The tectonic environments that existed during deposition of the Katherine River Group varied, ranging from extension and local basin formation with probable fault-controlled sedimentation, 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.

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

Historically, McIntyre Mines explored the region for uranium during the late 1960s and early 1970s. Records are sketchy but it appears that airborne surveys with limited ground follow-up was carried out. There is no indication that any mineralisation was discovered within the tenement boundaries.

Cameco Australia conducted regional airborne geophysical surveys during the first year of tenure in 2002. Coverage consisted of an airborne magnetic and radiometric survey, and Hymap Mk1 hyperspectral survey. In 2003 project wide-spaced regional outcrop sampling was performed with 169 outcrop samples collected from 180 stations; this includes 48 samples from 57 stations following up airborne radiometric anomalies. No uranium mineralisation was identified.

EXPLORATION PROGRAM

The 2004 exploration program consisted of more detailed outcrop sampling of areas of structural disruption, and an airborneTempest survey. The sampling program was conducted over five days from 3 June to 10 June 2004. The Cameco King River Camp was utilised as the base for field operations during the work program. Two Traditional Owners, based in Oenpelli, assisted with the field activities.

Outcrop Sampling

In total, 25 samples were collected from 26 stations; the outstanding stations being mapping locations. The stations were selected from mapped NTGS geology, Landsat and Hyperspectral imagery on the basis of fault interpretation and intersection of lineaments that could represent faulting or brecciation. The premise behind these site selections being that post-sandstone faulting and brecciation is required for U mineralisation, by way of fluid mixing, and these structural sites may contain trace geochemistry which can be used to vector towards mineralisation.

Work Summary

The outcrop sampling and processing were performed using Cameco standard methodology. This methodology is shown is the Cameco Outcrop Standard Procedures.

Cameco Standard Outcrop Sampling and Processing Procedures

The 2004 outcrop-sampling program was designed to test for lithogeochemical and clay mineralogical anomalies of structurally disrupted sandstone outcrops within the exploration area. These samples were then compared with the regional sample dataset collected as part of the 2003 program, that defined a basis for recognition of regional sandstone geochemical and clay characteristics.

Of the total 25 outcrop samples collected from the Gunbatgarri tenements, 9 samples were collected from the Marlgowa Sandstone, 1 sample from the Gilruth Volcanic Member, and 18 samples from the Gumarrirnbang Sandstone. No samples were collected from the Nimbuwah Complex basement rocks

Mapping and reconnaissance of the basement window in the southeast quadrant of EL2857 was also conducted.

The following figures detail the data and results from samples collected during the program.

Sample Locations

Sample Descriptions

Outcrop Lithology and Physical Properties

Outcrop Alteration and Structural Measurements

Sample Location Map - Geology

Sample Location Map - Landsat

All samples were analysed at NTEL in Darwin using techniques outlined in Cameco Standard Outcrop Sampling and Processing Procedures.

Outcrop G400 Geochemistry

All outcrop samples were processed using PIMA and TSG, with results in the following tables and figures.

Outcrop Samples TSA Analysis (Identified Mineral Species)

Outcrop PIMA TSA Clay Distribution Map

Outcrop Sampling Discussion

Anomalous U was discovered within Gumarrirnbang Sandstone samples with associated metals with a structural affinity to the south-east of the basement inlier in the southern portion of EL 2857. Samples GG04C10200 and GG04C10201were chemically analysed with U values of 15.3 and 12 ppm U and 35.5 and 29.9 ppm sum of metals (sum of As, Co, Cu, Mo, Ni, Pb, V, Ni and Zn) respectively. The

location pf samples were from a five metre wide recessive linear along the top of a sandstone ridge.

Gridded Uranium Map

Gridded Metals Map

GG04C10206 and GG04C10207 are also anomalous in respect to U and metals. These samples were of the Gilruth Volcanic Member and the underlying Gumarrirnbang Sandstone, and as such the anomalous results of the chemistry are most likely due to near surficial enrichment and scavenging of metals from circulating ground waters.

The general pattern of the U and metals distribution map reflects the geology of the area with chemical enrichment associated with the Gilruth Volcanic Member and also some influence of the basement Nimbuwah Complex Inlier. The relatively high number of samples influenced by the Gilruth Volcanic Member is due to the high number of airborne radiometric anomalies proximal to this unit.

Reconnaissance mapping (2003 and 2004 seasons) of the Gumarrirnbang Sandstone surrounding the basement window in the southern portion of EL 2857 identified an amalgamation of large blocks of Kombolgie sandstone, conglomerate and quartz cobbles and pebbles present in outcrop (refer to Photographs GG04Z30308). This has now been identified as the basal portion of the Gumarrirnbang Sandstone, not Cretaceous as earlier postulated. The reworked sandstone conglomerate forms an uneven unit directly overlying the unconformity, with rapidly varying thicknesses from 10cm to 1.2m over 30cm horizontal distance, and is observed as up to 3m thick. This conglomerate horizon is overlain by flat lying planar bedded sandstone and trough cross bedded sandstone more commonly associated with the Gumarrirnbang Sandstone. The sandstone-reworked conglomerate may be one phase of the basal conglomerate which grades laterally into the more commonly observed basal pebble conglomerate. The unit is most likely spatially localised proximal to the outcropping Nimbuwah Complex basement window.

Photograph GG03Z20280

Photograph GG03Z30280

The PIMA clays show a general correlation with stratigraphy. Clay distribution mapping of the PIMA results shows a dominance of illite surrounding the sampled areas of the Gilruth Volcanic Member indicating that illite clays respectively dominate the upper and lower portions of the Gumarrirnbang and Marlgowa Sandstone formations. Higher within the Marlgowa Sandstone, dickite clays dominate the stratigraphy. It can be interpreted that the dickite is associated with the more silicified stratigraphic horizons in the Marlgowa Sandstone, and that this horizon is less prone to weathering indicated by the higher topographical relief. A strong muscovitic phase is displayed within the Nimbuwah basement rocks. Kaolinite and halloysite are more widely spread and are interpreted as weathering products, particularly in those areas that have structural disruption.

Outcrop PIMA TSA Clay Distribution Map

A similar, yet more comprehensive pattern can be determined from the Hymap interpretational image. Zaluski, 2003, identified a general clay distribution pattern consisting of alternating illitic and dickitic zones. The basal illitic zone, in this case within the Gumarrirnbang Sandstone appears the same as that observed in the basal Mamadawerre Sandstone of other project areas. This is interpreted as a regional diagenetic or diagenetic/hydrothermal effect. This illitic clay signature is most intense in the sandstone directly adjacent to the Nimbuwah basement inlier. A dominantly dickitic zone overlies this unit, extending to the Gilruth Volcanic Member. Around the Gilruth Volcanic Member the most noteworthy clay is a muscovitic phase, similar to that observed in other projects in a similar stratigraphic position. The lower part of the Marlgowa Sandstone is dominantly illitic, with an overlying dickite zone. Kaolinite and halloysite are distributed widely but in relatively low abundance. These are generally interpreted as weathering products, with the exception of the locally more intense kaolinite signature with illite and pyrophyllite near the basement inlier.

Hymap Clay Interpretation with PIMA clays

As expected from other project surveys, the correlation between the Hymap clay interpretation and the results derived from the surface sampling PIMA interpretation is quite strong. PIMA clays may be more biased to specific samples that cannot be resolved in the six metre pixel resolution of the Hymap, and the 10nm sampled wavelengths within the reflectance spectra.

GEOPHYSICS

Airborne Electromagnetics - TEMPEST

Fugro Airborne Surveys Pty Ltd (Fugro) undertook a TEMPEST airborne electromagnetic survey over the project. The flight line spacing is oriented 133^{o}, with a spacing of 200 m, flying height of 120 m, totalling 1785 line km. Tempest is a high-powered time-domain system with a broad bandwidth, which enables good resolution of variations in resistivity and penetration through relatively thick sandstone. In addition, the airborne platform allows electromagnetic data to be acquired over areas where ground geophysics is impractical due to rugged topography. The survey was flown with the aim of providing 3-D electromagnetic data over a broad area to assist with the identification of basement graphite, structural offsets, alteration and to infer the depth to the unconformity below sandstone.

Fugro has supplied grids of the time windows, grids of the time constants and CDIs (Conductivity Depth Images) for each flight line. At the time of writing the interpretation of the TEMPEST data is still pending and will therefore be submitted with next annual report.

TEMPEST Logistics Report by Fugro

TEMPEST Location Map

TEMPEST Time Constant Map

TEMPEST RGB=CH1,4,7 Map

CONCLUSIONS AND RECOMMENDATIONS

The basement window on the Gunbatgarri Project is somewhat unique in the Arnhem Land area. The exposure of Nimbuwah rocks with the unconformable onlapping contact of the Gumarrirnbang Sandstone suggests that the Nungbalgarri Volcanic Member thins rapidly. Carson *et al*. (1999) suggests that the volcanics do not exist to the east of basement window. With the absence of this large aquiclude and stratigraphic reductant, the regional fluid flow would be significantly altered in this area.

The large amount of structural disruption recognised, together with the reduced stratigraphic sandstone thickness and granitoid basement rocks makes this region a highly prospective target.

Further sampling is recommended for the anomalous geochemical areas proximal to the outcropping Nimbuwah Complex rocks. Drilling is recommended in the area of the anomalous U samples (GG04C10200 and GG04C10201), to determine the nature of the structural element and the source of the anomalous U within the sandstone.

EXPENDITURE

A summary of the expenditure for the reporting period is given in the following table. A total reportable expenditure for EL's 2857 and 4012 is $162,865.23.

Summary of Expenditure EL2857

Summary of Expenditure EL4012

WORK PROGRAM

A summary of the proposed exploration activities, timing and contractors under consideration for Year 4 of the project is tabulated below.

- Follow up favourable results from 2004 sampling. Additional reconnaissance of areas of structural complexity and the basement window.
- Drilling of the anomalous U sample site.

The budget to complete the program as planned is expected to be $100,000.

Location and Scheduling of Activities

Activity	Duration of Activity	Timing	Amount	Approximate Location
Follow - up Investigations	1-2 days	Late May – mid June	Dependent upon result of investigation	Closer spaced sample collection surrounding basement window
Helicopter supported drilling	7 days	Mid to late August	Minimum 300m depth, targeting unconformity	GG04C10200 to the south of the basement window

Listing of On-Site Personnel Requirements

Activity	Equipment	Personnel	Potential Contractor
Sampling investigations		2 - 3	1-2 Cameco personnel and one Traditional Owner possible
Transportation to Project area	Bell Jetranger helicopter	1 pilot	Jayrow Darwin
Helicopter-supported drilling	Heli drill rig	Up to 7	Titeline Drilling

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