Cameco Australia Pty Ltd

Exploration Licence EL 23461

MYRA PROJECT
ANNUAL EXPLORATION REPORT
for the Year Ending 24 July 2004

2nd Year of Exploration

CONFIDENTIAL

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Authors: M. Carter, Geologist II
(work conducted by D. Rosewall, 2003)

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SUMMARY

This report describes exploration activity on the Myra exploration licence (EL23461) for the year ending 24 July 2004. This is the second full year of exploration undertaken by Cameco Australia Pty Ltd (Cameco).

Exploration work statistics for reporting period are summarised in the table below.

Activity	**Timing**	**Statistics**	**Location**
Diamond Drilling	August 2003	4 holes for 1205.2 m	3 holes at Two Rocks (MRD-0103, MRD-0104, MRD-0106). 1 hole at Kyber Pass (MRD-0105).
RAB Drilling	September 2003	50 holes for 1234 m	All holes at Two Rocks
Outcrop Sampling	September 2003	n = 7	Mainly sandstone plateau north of Myra Camp
Thin Sections		n = 49	Two Rocks drill core

Table I. Exploration work statistics for Myra EL23461, for the year ending 24 July 2004.

At Two Rocks, diamond drilling obtained a best result of 0.5 m at 1.1 % U_3O_8 from 36.5 m in MRD-0104. This did not confirm strike continuity of vein-hosted mineralisation intersected during the previous year. At Khyber Pass, drilling failed to reach its prescribed depth due to difficult drilling conditions. No anomalous radioactivity was encountered.

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INTRODUCTION

Location and Access

Location Map - Myra Project

EL23461 is located in West Arnhem Land, Northern Territory. The centre of the tenement is 57 km east-northeast of Jabiru. Relevant topographic map sheets are 1:250 000 Alligator Rivers (SD-5301) and 1:100 000 Oenpelli (5573) .

Vehicular access is via a seasonally open dirt road from Jabiru, a total distance of approximately 100 km.

All drilling during the 2003 field season was conducted using truck-mounted rigs. A helicopter based out of Myra camp was used to support outcrop sampling on the rugged sandstone plateau.

Tenure

Cameco Australia Pty Ltd (Cameco) was granted EL23461 on the 25 July 2002 for a period of six (6) years. Tenure expires on 24 July 2008.

The tenement area totals 46.8 km^2 and comprises 14 sub-blocks. A partial reduction in tenement area is usually required upon completion of two years of exploration, although a waiver may be approved by DBIRD. In May 2004 Cameco applied for a Waiver of Reduction. Approval to retain all 14 sub-blocks was granted in a letter from DBIRD dated 11 June 2004.

GEOLOGY

Regional Geology

The Myra project area lies in the Alligator Rivers Uranium Field (ARUF) in the northeastern eastern part of the Pine Creek Geosyncline. This is an intracratonic sedimentary basin containing Lower Proterozoic metasedimentary rocks (with local volcanics) overlying a gneissic and granitic Archaean basement (Needham 1988). Regional deformation and metamorphism of the sedimentary succession took place during the 1870-1850 Ma Barramundi Orogeny (Page and Williams 1988). The orogeny involved multiple fold generations and emplacement of I- and S-type granites.

The Lower Proterozoic sequence is unconformably overlain by the undeformed Middle Proterozoic Kombolgie Subgroup. This is a package of quartz-rich sandstones and lesser basic volcanics, and has a thickness up to several hundred metres (Needham 1988).

Main post-Kombolgie structural features include the northwest trending Bulman Fault Zone, and several interpreted east-west trending structures including the Ranger Fault Zone.

Comprehensive descriptions of the regional geology of West Arnhem Land and the ARUF are in Needham (1988) and Carson et al. (1999).

Geology of the Myra Tenement

Geology of the Myra Tenement

EL 23461 straddles the north-central part of the Myra Falls Inlier, an exposed window of Lower Proterozoic metasedimentary basement rocks within Middle Proterozoic Kombolgie sandstone (Mamadawerre Formation). Rock types, as they are present within the tenement, are described below.

ROCK TYPE	AGE
Residual sand cover, silt and alluvium. Less than 5 m thickness	Quaternary-Tertiary
Oenpelli Dolerite – intrusive sills and dykes.	Mesoproterozoic 1688 Ma
Mamadawerre Sandstone – quartz arenite, quartzite and conglomerate. Greater than 150 m thickness.	Mesoproterozoic 1730 – 1822 Ma
Tin Camp Creek Granite – altered granites and trondhjemites.	Mesoproterozoic
Zamu Dolerite– dolerite and gabbro intrusive bodies, dykes and sills	Palaeoproterozoic
Myra Falls Metamorphics - Lit-par-lit gneiss, garnet-biotite schist, minor quartzite, amphibolite and marbles	
Lower Cahill Formation – banded calc-silicate gneiss, mica-quartz-feldspar gneiss and schist, tremolite-dolomite marble. Garnetiferous calc-pelitic schist at the Two Rocks Prospect are locally termed the Two Rocks Unit. Contact with Kudjumarndi Quartzite is conformable	
Kudjumarndi Quartzite – quartz-rich meta-arkose with minor orthoquartzite, extensively interlayered with foliated amphibolites. Conformably overlies Mt Howship Gneiss (Needham 1988).	
Mount Howship Gneiss - quartz feldspar gneiss, biotite gneiss, sillimanite gneiss, and amphibolite	

Rock types of the Myra Tenement (modified from Otto et al 2003).

Main post-Kombolgie structural features include the north-south-trending Khyber Pass Fault Zone and the east-west-trending Myra Fault Zone. In the western part of the tenement north-northwest-trending faults in sandstone may be analogous in style and timing to mineralised structures at the Jabiluka II and Ranger deposits (Thomas 2002).

PREVIOUS EXPLORATION

Early Exploration: 1970s

Esso Minerals and Queensland Mines Ltd (QML) carried out uranium exploration within the current EL23461 tenement in the early to mid 1970s. Work included:

- Regional airborne geophysical surveys conducted by QML along 1.5 km spaced lines. More detailed surveys were conducted by Esso.
- Soil sampling by Esso. Work statistics are unknown, but this work outlined several anomalous zones (Figure 2 in Bruneton 1991).
- Follow-up drilling took place in a single area: Two Rocks. This program was designed to investigate bedrock geology beneath a sandy cover sequence. Percussion drill holes were on 250 metre-spaced lines with drill hole spacings of 125 m. Two anomalous zones were drilled on 50 x 62.5 metre centres, and encountered up to 110 ppm U over 1.5 m (Hole 34) (Figures 2 and 3 in Bruneton 1991). A total of 2538 m was drilled.

Further details of this early exploration are contained in Coles (1988) and Bruneton (1991).

Recent Exploration: 1986 - 1993

Exploration Work Statistics: 1986 -1993

EL23461 (formerly EL3418 and ERLA127) was subject to extensive exploration during this period. Comprehensive summaries of this work are in Becker et al. (1990) Bruneton (1993) and Johnston (1997).

1986 - 1991: Uranerz Australia Limited (UAL) conducted extensive drilling, outcrop sampling, and geophysical surveys. UAL was operator of the Alligator River Joint Venture (ARJV) which comprised UAL and the Japanese construction and resources company, Kumagai Gumi, as equal partners. Drilling concentrated on the Two Rocks zone (1997-1988) and the Kudjumarndi/Khyber Pass area (1988-1989). Total diamond drilling exceeded 4000 m.

At Two Rocks RAB drilling outlined two mineralised pods (U_3O_8 > 25 ppm). Best intersections were:
12 m at 480 ppm U_3O_8 and 1% Cu (RAB)
1 m at 0.11 % U_3O_8 (Percussion)

In the Kudjumarndi/Khyber Pass area, drilling outlined a broad zone of hyrdothermal alteration and minor uranium enrichment (up to 5 ppm U over 0.1 m in MRD028).

1991 - 1994: UAL ceased active operations in Australia in 1991. Afmeco Pty Ltd subsequently became operator of a restructured ARJV (Afmeco 50%, Uranerz 25%, Kumagai Gumi 25%). Work focussed on drilling at the Two Rocks and Kudjumarndi Prospects. No drilling was undertaken in the Khyber Pass area. Diamond drilling totalled 2,323 m.

A best result of 7 m at 155 ppm U, including 6 m at 1600 ppm Cu, was obtained in MRD061 at Two Rocks (Drill core).

In March 1994 discontinued their involvement in the ARJV and relinquished EL3418. Uranium Australia NL, then a subsidiary of Saracen Minerals NL, lodged application for the Myra-Kukalak project, but did not conduct any field exploration activity. In 2001, Cameco acquired all interests held by Uranium Australia NL in Arnhem Land.

Cameco Exploration: 2002 - 2003

Details of the first full year of exploration at Myra are contained in Otto et al. (2003). Work completed was:

- Diamond drilling: 3 holes for 1,323 m. All drilling took place at Two Rocks, including one hole drilled 500 m south of the main mineralised zone. Hole MRD-0101, intersected a pitchblende vein from 72.0 to 72.8 m grading up to 1.68% eU_3O_8.
- Outcrop sampling: total of 57 samples and 26 fracture samples, mainly from sandstone. Geochemical analyses indicate low order anomalism in the sandstone plateau north of Myra camp (up to 2.21 ppm U).
- Airborne geophysical surveys: (magnetics, radiometrics, DTM) providing 50 metre-line spacing coverage of the tenement.
- Airborne Time Domain Electromagnetics (Tempest), mapping the depth to unconformity beneath the sandstone column. Survey was conducted on 200 metre line-spacings.
- Ground gravity survey (341 stations spaced 100 m apart, 200 metre and 400 metre line-spacings). Residual gravity is dominated by three lows, including a northeast-trending low at the Two Rocks Prospect.

EXPLORATION FOR REPORTING PERIOD

Exploration focussed on RAB and diamond drilling at the Two Rocks prospect. A single diamond hole was drilled at Khyber Pass. Limited outcrop sampling took place in the western part of tenement. Locations of all drill holes and outcrop samples are shown in the following figures.

Exploration activity 2003 field season (A3 Plan)
Drilling - Two Rocks Prospect
Drilling - Khyber Pass Area

Collar details for all drill holes are listed in the following table.

Collar Details - RAB and Diamond Drilling 2003

Methodology and Rationale

Outcrop Sampling

Heli-supported sampling was conducted on the sandstone plateau north of Myra camp. Sampling targeted inferred north-northwest-trending structures and observed fault breccias and silica dissolution-related breccias. Five sandstone samples were collected.

Two samples were collected from basement rocks south of camp. These targeted an airborne radiometric anomaly within a calcsilicate unit of the Cahill Formation.

Cameco's standard practices for outcrop sampling, sub-sampling and collection of PIMA data are summarised in the following appendix.

Standard Procedures for Outcrop Sampling

RAB Drilling: Two Rocks Prospect

The RAB drilling program was designed to assist stratigraphic and structural mapping of basement rocks, and to test for near-surface uranium anomalism. Drilling was conducted on four east-west traverses with fifty metre-spaced holes. A total of 50 holes (MRB287 - MRB336) were drilled for 1,234 m. All holes were vertical. Hole depths ranged from 6 to 35 m and averaged 25 m.

As a routine, samples were taken from the bottom-of-hole metre. Additional samples were taken from zones of elevated radioactivity. A total of 53 samples were collected for geochemical analysis. For reference purposes, a chip tray was prepared for all holes.

Drilling took place in September 2003, and was undertaken by Port Lincoln-based contractors Johannsen Drilling Pty Ltd.

Diamond Drilling: Two Rocks Prospect

Three angled core holes were completed for a total of 1063.5 m. Holes MRD-0103 and MRD-0104 were designed to test continuity of uranium mineralisation in the south and north pods respectively. MRD-0106, drilled 250 m east of the north pod, aimed to test a possible fault contact between gneissic rocks to the east and the Two Rocks unit to the west.

All holes were sampled on a composite basis, according to lithological or alteration types. One 6 cm piece of half core was taken from the centre of each row of core over the sample interval (sample intervals were typically 5 to 7 m). The second piece of half core was used for PIMA and was retained for reference purposes.

Half-metre split or 'grade' samples were collected from zones of elevated radioactivity. Six split samples were collected from MRD-0104.

All diamond drilling was completed in August 2003 and was conducted by Underground Drilling Services (UDS) using a truck-mounted rig (UDR-1000).

Thin-section preparation and petrographic descriptions were made for 49 drill samples from the Two Rocks Area. This work was undertaken by Pontifex and Associates Pty Ltd.

Petrographic Report No. 8476 - Myra Drill Samples

Diamond Drilling: Khyber Pass area

A single diamond hole, MRD-0105, was drilled with a final depth of 141.7 m. Drilling aimed to test a conceptual structural target related to offsets in interpreted structural lineaments between the Khyber Pass sandstone and basement rocks to the south (Ted O'Connor, pers. comm.). If post-Kombolgie faulting involved a component of oblique slip movement, then dilationary or compressional zones may have been generated where the structural lineaments are offset.

Geochemical Analyses

Geochemical analyses for all outcrop and drill samples were conducted by Northern Territory Environmental Laboratories Pty Ltd (NTEL). Descriptions of analytical procedures, as documented by NTEL, are contained in the following appendix.

NTEL Analytical Procedures

The suites of elements analysed and their detection limits are summarised in the table below. Details are contained in the appendix below.

NTEL Code	Elements Analysed	Units
G400 Rolls Digest	47 Multi-element suite + 4 Pb isotopes	ppm
G950 M	4 Pb isotopes, U	ppb
FA	Au, Pt, Pd	ppb
G140	B*	ppm
C110	LOI	%
G950	ppb detection of 58 multi-element suite incl. 4 Pb isotopes, ppm detection of 10 major elements	ppb, ppm

*Note: Boron was not analysed for 2003 field season samples.

Details of NTEL G400 and G950 methods

Results

Outcrop Sampling

MR03_Outcrop_Station_Details
MR03_Outcrop_Sample_Properties
MR03_Outcrop_Alteration_and_Structure
MR03_Outcrop_Geochemistry_G400_G950
MR03_Outcrop_PIMA_TSA

Sandstone Samples

Five sandstone samples taken from the Myra North area yielded total counts of around 50 cps (Urtec), and do not indicate any anomalous radioactivity. PIMA readings indicate interstitial clay is of illitic or kaolinitic composition. Uranium values for all samples do not exceed 1 ppm U (total acid digest), and U/Th ratios are significantly less than one.

Basement Samples

Sampling aimed to follow up small but distinct airborne radiometric anomalies adjacent to the track south of Myra Camp. Field investigations indicated this area, known as the 'calcsilicate anomaly' is related to a localised occurrence of calcsilicate rocks (Cahill Formation). This unit conformably overlies Kudjumarndi quartzite and mimics the gently sloping topography. While the calcsilicate samples yielded elevated total counts (up to 904 cps - Urtec), at this locality the unit is of limited lateral and vertical extent (less than 5 m).

Geochemical analyses indicate anomalous values of 13 ppm U and 53 ppm U (total acid digest). While both samples have U/Th ratios < 1, both are associated with elevated Au-PGE values (up to 10 ppb Au, 2 ppb Pd, 2.5 ppb Pt) and zinc (up to 148 ppm Zn). PIMA data indicate these rocks are amphibole-bearing (actinolite and tremolite). This is consistent with 1:15000 mapping and lithological interpretation undertaken by Uranerz in the same area. Sampling during 2003 provided on-ground substantiation of the airborne radiometric anomalies, but the limited spatial extent of the anomalous unit downgrades the importance of this area.

The calcsilicate anomaly is located within a gravity low that trends north-south over a minimum distance of 2 km. The gravity features is of greater intensity, but similar orientation to a gravity low in the Two Rocks area. However, unlike at Two Rocks, there is no coincident conductivity feature.

RAB Drilling: Two Rocks Prospect

MR03_RAB_Major_Lithological_Intervals
MR03_RAB_Minor_Lithological_Intervals
MR03_RAB_Alteration
MR03_RAB_Spectrometrics
MR03_RAB_Analytical_Geochemistry

MR03_RAB_PIMA_TSA_Exotics
MR03_RAB_PIMA_TSA_Majors

Most of the fifty RAB holes successfully penetrated fresh- or transitional basement rock. Six holes ended in clays, which reflect difficult drilling conditions. Aircore drilling probably would have provided better penetration through sticky, wet clays. Bottom-of-hole lithologies are consistent with previous mapping and lithostratigraphic interpretations at Two Rocks. Quartzite (Kudjumarndi Quartzite) is intersected on the westernmost holes of three of the four traverses. Progressively east, chloritised schists and amphibolites of the Two Rocks Unit are encountered.

Gneissic intervals of quartz-biotite composition are described in four holes (MRB333-336), all of which are located at the eastern end of the northernmost drill traverse. These intervals are most likely part of the unit mapped as Mt Howship Gneiss by previous workers. This suggests the contact between the Two Rocks calcpelitic unit and Mt Howship Gneiss is located east of the drill traverses completed further south. In turn, this suggests the lithological contact trends north-northeast. This orientation is consistent with 1:5000 mapping completed by Afmeco in 1991, and provides further evidence of the overall north-northeast structural grain of the Two Rocks area. Neither the 2003 RAB drilling, nor diamond hole MRD-0106, indicate whether the Two Rocks Unit/ Mt Howship Gneiss lithological contact is fault-related. There is no indication of anomalous uranium geochemistry across or proximal to this contact. The easternmost six holes of this traverse encountered a maximum uranium value of 4.56 ppm U (total digest) and all holes have U/Th values << 1.

The most significant uranium anomalism encountered was in MRB315 which intersected 4 m at 29.7 ppm U (total digest) from 16 m. This hole is located immediately north of the mineralised north pod (Two Rocks Drill status plan). The mineralised interval is associated with elevated Li (up to 95 ppm) and Cu (up to 1620 ppm). These associations are typical of near- surface mineralisation at Two Rocks (e.g. Coles 1988). Some degree of chloritisation is suggested by high MgO contents (up to 11.8 percent).

Host rock is recorded as a mica-limonite schist. The presence of limonite suggests this interval has been affected by near-surface weathering processes, and the zone of elevated uranium is probably related to supergene-type remobilisation and concentration processes. The intersection in MRB315 extends the envelope of mineralisation of the north pod approximately 50 m to the north. However, continuity further north of near-surface mineralisation is cut-off by a traverse of 25 metre-spaced RAB holes drilled by Uranerz in 1988. Maximum down-hole values for these holes are less than 25 ppm U_3O_8 (Figure 3, Coles 1988).

The final metre (22-23 m) in MRD315 records an anomalous value of 48 ppm U (total digest), and exhibits a similar Li-Cu-MgO association as described above. Host rock is recorded as a mica-chlorite schist. Deeper RC drilling in this area would further test the vertical continuity of any mineralisation. However, Uranerz RAB holes immediately to the north reached final depths in excess of 30 m. In addition, an angled RC hole collared 50 m north was drilled to 74 m final depth (MRR054, Afmeco 1992). Further drilling is not considered a priority.

Identification of mineral species via PIMA and TSG software indicate bottom of hole clay compositions are, in decreasing order of overall abundance, kaolinitic, illitic and montmorillonitic. The mineralised interval in MRB315 is distinguished by the presence of ankerite and Mg-chlorite. These assemblages reflect hydrothermal chlorite alteration of the Two Rocks unit where carbonates exist as primary minerals.

(Note: The TSA factor error was taken into account when reviewing the PIMA data. Only readings with an error factor less than 150 were reviewed. This point represents an arbitrary point of inflexion in the error values.)

Diamond Drilling

MR03_DDH_Major_Lithological_Intervals
MR03_DDH_Minor_Lithological_Intervals
MR03_DDH_Alteration
MR03_DDH_Interval_Structure
MR03_DDH_Point_Structure
MR03_DDH_Magnetic_Susceptibility_Data
MR03_DDH_Analytical_Geochemistry
MR03_DDH_PIMA_TSA_Exotics
MR03_DDH_PIMA_TSA_Majors

Diamond Drilling: Two Rocks Prospect

Holes MRD-0103, MRD-0104 and MRD-0106 all intersected the sequence of lower amphibolite grade metasedimentary rocks previously defined at the Two Rocks area: fine-grained, thinly laminated, strongly foliated calc-pelitic schists (Cahill Formation, also known as the Two Rocks Unit), conformably overlying quartz-rich meta-arkose extensively interlayered with foliated amphibolites (Kudjumarndi Quartzite) conformably overlying foliated quartz-feldspar-biotite gneiss (Mt Howship Gneiss). All holes penetrated through Mt Howship Gneiss and ended in a second, stratigraphically repeated zone of Kudjumarndi Quartzite. This is consistent with previous interpretations that the area has undergone west-directed recumbent folding. Minor rock types include pegmatites and post-tectonic dolerite intrusions (Oenpelli Dolerite).

The most significant mineralisation encountered was in MRD-0104 which intersected 0.5 m at 1.1 % U_3O_8 from 36.5 m (analytical geochemistry of half-metre of half-core, total acid digest). This compares with an intercept of 0.93 % eU_3O_8 from 36.3 m recorded from a BQ gamma probe.

MRD-0103

MR03_DDH_Downhole_Gamma_Probe_MRD-0103 (NQ)

The downhole probe records three spikes in the 15 to 43 m interval. Maximum total counts is 1773 cps. This anomalous zone lies within pervasively chloritised calc-pelitic schist, the upper part of which is affected by surficial weathering.

Lithogeochemistry:
MRD-0103_U_Cu
MRD-0103_U_Au+PGE
MRD-0103_U_Li
MRD-0103_U_MgO
MRD-0103_Al2O3_Na2O

Analytical geochemistry confirms the gamma probe readings with five composite samples recording uranium values greater than 2 ppm U (partial digest) over a similar downhole interval. A maximum value of 11.3 ppm U (partial digest) was recorded over 5 m from 12.5 m.

Cu values are sympathetically elevated with U (maximum of 3880 ppm Cu). This further confirms the Cu-U association of the south pod at Two Rocks. Au-PGE values are higher within the Cahill Formation and appear to correlate with elevated U values. This is particularly the case in the upper more-oxidised zone and at the saprolitic clay-saprock interface where a maximum value of 5 ppb Au was recorded. An isolated spike of elevated Pt and Pd (6.5 and 8 ppb respectively) occurs in Kudjumarndi Quartzite from 299 - 305 m. This is not readily explainable but is not associated with any increase in U content.

MgO is more elevated overall in the Cahill Formation relative to Kudjumarndi Quartzite, and reflects pervasive choritisation of the calcpelitic metasediments (maximum of 18.3 wt % MgO). Prominent peaks in the latter unit probably reflect intense, stratigraphically controlled chloritisation of amphibolitic layers. Lack of MgO in the fold-repeated lower-limb of Kudjumarndi Quartzite suggests strong chlorite metasomatism is restricted to structurally higher levels.

PIMA reflectance spectra, as categorised by TSA software, are consistent with geochemical and drill logging data. Clay mineralogy of the anomalous interval in the calcpelitic unit is dominated by Mg-chlorite with lesser intermediate- and Fe-chlorite.

Lithium concentrations vary similarly to MgO. It is overall more elevated in the Cahill Formation and sporadically elevated in Kudjumarndi Quartzite. There is not a direct MgO-Li-U association; in some zones the relationship is antithetic (e.g. from 28 to 55 m). This suggests MgO and Li may be mesoscopically present as zonal alteration haloes to uranium mineralisation.

Mt Howship Gneiss is geochemically distinguishable by its elevated Na_2O content (up to 3.7 weight percent), reflecting the presence of Na-bearing feldspars.

MRD-0104

MR03_DDH_Downhole_Gamma_Probe_MRD-0104 (NQ)
MR03_DDH_Downhole_Gamma_Probe_MRD-0104 (BQ)
Lithogeochemistry:
MRD-0104_U_Cu
MRD-0104_U_Au+PGE
MRD-0104_U_Li
MRD-0104_U_MgO
MRD-0104_Al2O3_Na2O

This hole was collared 50 m north-northeast of MRD-0101 which intersected vein related mineralisation up to 1.68 % eU_3O_8 at a hole depth of 72 m (Otto et al. 2002). MRD-0104 encountered strongly anomalous radioactivity (>22000 cps BQ probe) at a depth of 36 m. Radioactivity is associated with a 10 cm wide interval in strongly chloritised foliated amphibolite about 5 m below the clay-rich laterite profile (Thomas 2003). Fresh sulphides are also noted within this interval. Unlike MRD-0101 there is no vein-like feature associated with the mineralisation. Apart from a few minor reddish brown haematitic fractures subparallel to the foliation, intense alteration is not apparent (Thomas 2003). The foliation and fractures are angled 60 degrees to the core axis.

A concentration of 9400 ppm U (total digest) was recorded in a split sample from 36.5 to 37.0 m. Unlike hole MRD-0103 this zone is not coincident with elevated Cu content. As in MRD-0103, the anomalous zone is coincident with elevated MgO, Li, and Au-PGEs. PIMA indicates the mineralised zone contains chlorite of intermediate- or Mg-rich composition. In contrast to MRD-0103, Na_2O values in Mt Howship Gneiss do not exceed 2 weight percent, suggesting the gneissic unit has variable feldspar composition and/or proportion.

MRD-0106

MR03_DDH_Downhole_Gamma_Probe_MRD-0106 (NQ)

Drilling did not intersect any major fault structures. The Two Rocks Unit was intersected to a depth of 94 m and included thinly laminated (calc)pelites and compositionally differentiated psammopelites, some of which exhibited 'gneissic' textures. Rocks were visibly less altered relative to MRD-0103 and MRD-0104. This hole was collared west of the possibly faulted lithological contact between the Two Rocks Unit and Mt Howship Gneiss.

The gamma probe (NQ) does not record any significant radioactivity. A series of irregular, narrow spikes all have total counts less than 700 cps.

Composite samples for MRD-0106 were misplaced at the end of the field season. As a consequence nil geochemical data is available for this hole. Resampling will take place in the coming year.

Diamond Drilling: Khyber Pass area

MRD-0105

MR03_DDH_Downhole_Gamma_Probe_MRD-0105 (NQ)

Lithogeochemistry:
MRD-0105_U_Th_Li
MRD-0105_MgO_P2O5_La

This hole was terminated at a depth of 141.7 m due to difficult drilling conditions, including broken ground, large voids and running sands. Core loss in the final 40 m of the hole exceeds 55 percent. As a consequence the hole failed to test a structural target below the sandstone-basement unconformity.

Drilling intersected Mamadawerre Sandstone which displays evidence of substantial silica dissolution and volume loss, including drusy quartz-lined cavities and breccias. No significant radioactivity is present (maximum 120 cps at 101.42 m, NQ probe). Maximum U value is 2 ppm (total digest) with U/Th ratio << 1.

Th, Li, La, P_2O_5 and MgO are elevated towards the bottom-of-hole, and provide geochemical confirmation the hole has terminated immediately above the unconformity. Identical downhole trends are apparent in a series of holes drilled by Uranerz in the Khyber Pass area (Becker et al. 1990). The bottom 40 m of the drillhole has been affected by some degree of hydrothermal alteration, causing elevated concentrations of the above elements and incipient chloritisation as indicated by elevated MgO contents.

It is probable MRD-0105 would have intersected the unconformity at a depth of approximately 150 m. This is consistent with the depths-to-unconformity obtained by Uranerz drilling. These demonstrate the unconformity surface dips approximately 40 degrees to the north in this area (Fig. 13 in Becker et al., 1990).

Clay species, as identified via PIMA and TSA, are ubiquitously kaolinitic, although there is an overall downhole increase in kaolinitic crystallinity. This probably reflects hydrothermal activity of the lower part of the sandstone column.

Expenditure

Eligible exploration expenditure for the reporting period was $AUD 405,316.45

EL23461 Myra Project - Exploration Expenditure 07/2003_07/2004

CONCLUSIONS & RECOMMENDATIONS

Diamond drilling at Two Rocks in 2003 did not confirm along-strike continuity of a mineralised vein intersected at Two Rocks during 2002. Drilling 50 m north of this area obtained a best result of 0.5 m at 1.1 % U_3O_8 in foliated amphibolic rock. Mineralisation is not vein-related and is not accompanied by intense hydrothermal alteration. Diamond drilling at Two Rocks did not upgrade the potential of the prospect, but did confirm U-Li-MgO±Cu lithogeochemical associations.

A conceptual structural target east of the main prospect remains untested. A series of three or four 50 metre-spaced angled RC holes would adequately test this area (317000 mE, 8621250 mN). Final hole depths of 80 -100 m are recommended.

A single diamond hole at Khyber Pass failed to meet its prescribed depth and was terminated immediately above the unconformity. No significant radioactivity was encountered.

Limited outcrop sampling did not confirm low-order anomalism in sandstone north of Myra camp. Further sampling and field investigations are required to evaluate the significance of north-northeast trending breccias and faults in this area.

PLANNED WORK FOR 2003 - 2004

Planned work includes:

- detailed review of Two Rocks Prospect (geochemical, alteration, lithostructural and geophysical characteristics). This will involve reviewing and resampling historical drill holes for geochemical analysis (approximately 150 samples). The review will aim to develop a model for mineralisation at Two Rocks, and determine whether any further drilling is required.
- review of the Khyber Pass target and resampling of Uranerz holes drilled in the same area (approximately 50 samples).
- outcrop sampling in the sandstone plateau north of Myra camp, and in basement rocks where fault-related structures are interpreted to continue south (approximately 50 samples)

Total eligible exploration expenditure is estimated to not exceed $ 120,000.

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