Cameco Australia Pty Ltd

KING RIVER PROJECT

EXPLORATION LICENSE 5891

NORTHERN TERRITORY

ANNUAL REPORT 2002 FIELD SEASON

CONFIDENTIAL

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DBIRD
Northern Land Council
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SUMMARY

This report describes exploration work undertaken within Exploration Licence 5891 (EL5891) during the seventh year of tenure ending 12 May 2003. The licence area is located in north western Arnhem Land and was granted in May 1996.

Renewal of the licence area was required under the Mining Act at the cessation of the six year period. An application for renewal accompanied by supporting documents was forwarded to DBIRD in February 2002. Granting of the renewal for a further 2 years commencing 13 May 2002 was approved

The exploration program was managed by Cameco Australia Pty Ltd on behalf of the Warrga Joint Venture partners, Cameco Australia Pty Ltd and the Warrga Aboriginal Corporation.

The primary exploration target is unconformity related uranium deposits similar to the nearby Ranger, Jabiluka and Koongarra deposits and the now depleted Nabarlek mine.

The current years' exploration program concentrated on further systematic diamond drilling on and adjacent to the Aurari North Prospect, including holes designated as 'exploration holes' to evaluate beneath Schist and Laterite uranium prospects. Additionally, the Kuroikin Prospect (410 Area), some five kilometres south of Aurari North, was revisited after three years with two holes being drilled.

Airborne geophysics consisted of an airborne electromagnetic survey (TEMPEST), which covered the southern extension of the prospective Aurari Fault Zone including the Kuroikin prospect.

Several significant results were achieved from the 2002 diamond drilling program:

- The Aurari North mineralisation was extended an additional 150 metres south from the last intersection along the Aurari Fault Zone and further data was gained on the width of the mineralised body.

- An intersection at depth beneath Laterite Prospect has been deemed a new discovery.

- High grade, though narrow intercepts were located in both drill holes at shallow to moderate depths at Kuroikin.

Airborne TEMPEST, which has exhibited an ability to assist in the imaging of lithological/structural/alteration boundaries, was utilised again to complete the subsurface evaluation of the Aurari Fault Zone environs and adjacent Kombolgie sandstone.

Based on the success of the 2002 program, exploratory diamond drilling is recommended in the vicinity of the Black Rock Fault, between Schist and Laterite anomalies. Step-out holes will also be required to evaluate the Kuroikin environs both along strike of the 410 structure and to the east adjacent to the trace of the Aurari Fault.

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INTRODUCTION

This report describes program activities carried out during the 2002 field season on behalf of the Warrga Joint Venture, a joint venture between Cameco Australia Pty Ltd (Cameco) and the Warrga Aboriginal Corporation. Exploration on this licence is presently being conducted simultaneously with that on the adjoining King River tenements, EL734 and EL5890. Since the Exploration Licences are located on Aboriginal Land the exploration program was carried out under the terms of consent documentation as agreed with the Northern Land Council pursuant to the Aboriginal Land Rights (Northern Territory) Act and dated 1 March 1996.

Clearance for the program was given by the Northern Land Council following the Exploration Committee Meeting held in May at Warruwi (South Goulburn Island).

Fieldwork commenced after re-establishment of the base camp in mid-June. With the completion of core drilling the camp was demobilised in mid-September.

Diamond core drilling constituted the major portion of the work program. Geophysics included a fixed wing airborne TEMPEST (EM) survey, which covered the southern extension of the prospective Aurari Fault Zone, thereby completing the coverage commenced in 2001. Contract down-hole logging of several diamond drill holes was also completed.

Location and Access

The tenement is located in western Arnhem Land immediately to the north-east of the Aboriginal settlement of Gunbalanya and is wholly within Aboriginal Land. The Ranger uranium mine is situated approximately 100 km to the south-west and the rehabilitated Nabarlek site is within tenements immediately south of the project area. Access from Darwin is via the Arnhem Highway to Jabiru then north to Gunbalanya. The Gurig National Park road traverses the western edge of the licence area. Two pre-existing tracks, the Waminari and King River roads provide good access to the more remote sections.

Off-road access is variable. The country ranges from flat lying woodland, river estuary, coastal mangroves and swamps to heavily dissected sandstone plateau. Where flat lying, the country is easily traversed by four-wheel drive vehicle.

Location Plan

Tenure

EL5891 was granted on 13 May 1996 for an initial period of six years. On granting, the total area under licence was 957.5 square kilometres of which 234 square kilometres (15%) was excluded from exploration by the Northern Land Council. The current area available for exploration is 355 square kilometres.

Renewal of the licence area was required under the Mining Act at the cessation of the six year period. An application for renewal accompanied by supporting documents was forwarded to DBIRD in February 2002. Granting of the renewal for a further 2 years commencing 13 May 2002 was approved. No further reduction in the land holding was sought.

Physiography

The tenement contains some remnant areas of dissected sandstone plateau, which form the eastern extension of the Wellington Range. The remainder consists predominantly of gently undulating plains covered by savannah woodland. Thin remnants of lateritised Cretaceous sediments form tablelands in the north-eastern and eastern parts of the tenement. The main drainage systems are the King River and Marligur, Angarlban and Angularli creeks.

Tenement Geology

Paleoproterozoic rocks, which have been intersected in drill holes along the Aurari Fault zone, have been equated with the Myra Falls Metamorphics (MFM). The MFM are considered to be the higher metamorphic grade equivalents of the Cahill Formation (the host rocks to the Alligator Rivers uranium deposits) and consist broadly of quartzofeldspathic gneiss, sometimes with garnet, quartz-mica-amphibole-garnet schist and amphibolite. No carbonates have as yet been identified but possible calc-silicate lithotypes are present as amphibole-rich schists and ?para-amphibolite.

The Myra Falls Metamorphics abut the granulite facies Nimbuwah Complex, which consist of gneiss and migmatite and various granitic intrusives. The most recent age determinations place the Nimbuwah within 1870-1850 Ma. The 'complex' has an I-type granite origin and is considered to be, in part, intrusive into the paleoproterozoic metasediments (Carson and others 1999). An anomalously magnetic unit marks the inferred contact with the MFM. It is a finely banded, fine grained quartz feldspar rock containing magnetite and almandine garnet and may be a transitional (contact) phase between the MFM and the Nimbuwah Complex. There appears to be a rapid regional progression of metamorphic grade increasing from west to east. Outcrop tends to be slightly more extensive in comparison to the MFM. Good exposures of both gneissic rocks and the intrusive granitic variants occur throughout.

The basement rocks are overlain by the Kombolgie Subgroup (formerly Kombolgie Formation), which form the base of the early Proterozoic Katherine River Group. The Mamadawerre Sandstone, the fluviatile basal unit of the Kombolgie, outcrops as the characteristic escarpment country of the Arnhem Land plateau. The sandstone outcrops as a series of east-west aligned outliers throughout the central parts of the tenement, which form heavily dissected low relief plateaus. In the vicinity of the Aurari Fault zone, the Kombolgie has been intersected to depths of several hundred metres. The age of the Mamadawerre has been constrained between 1822 and 1720 Ma and is probably closer to 1800 Ma (Sweet and others 1999).

Remnants of the Cretaceous outcrop in various parts of the tenement usually along the erosional fringes of lateritised tablelands. The Aurari Fault marks the approximate eastern limit of a localized north-south trending basinal structure which has been infilled with up to 120 metres of Cretaceous sandstone, siltstone and mudstone of the Marligur and Wangarlu mudstone members (Needham 1988). Marine fossils and some carbonaceous plant material has been noted in drill core. Outcrops of more resistant siltstone and sandstone are present several kilometres to the west and in cliff outcrops

along the coastline. The Cretaceous overlies both the MFM and Nimbuwah Complex rocks.

The Oenpelli dolerite is present throughout the tenement as an extensive network of mostly east-west trending intrusions. There is an apparent relationship between the dolerite orientation and the sandstone outcrop pattern. Drill hole intersections of dolerite show that they have exerted little effect on the intruded rocks apart from localized silicification and some chloritisation of the sandstone. Contacts tend to be sharp where preserved and have variable orientations. Chilled margins are generally only centimetres wide with much of the remaining dolerite having a homogeneous grain size. Several intersections, considered to approximate true width, show thicknesses ranging up to 250 metres.

Regional Geology and Major Structures Plan

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 (Aurari) and northerly (Anuru, 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 northerly trends. Both faulting and jointing with displacements ranging from a few metres up to 100 metres locally heavily dissect the Kombolgie.

The King River region occupies the north-western extension of the Arnhem Shelf in the northern McArthur Basin. Deposition of the Mamadawerre Sandstone took place in an environment of extension and local basin formation with probable fault-controlled sedimentation. Rapid thickening and thinning of the sequence imply this.

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. A characteristic mineral assemblage of prehnite-pumpellyite-epidote has formed in quartzofeldspathic Nimbuwah gneiss and migmatite adjacent to the intrusions.

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

Union Carbide Exploration Corporation

During the period 1970-1972 Union Carbide Exploration Corporation undertook substantial exploration, principally for uranium. This work comprised airborne magnetics and radiometrics with follow-up geochemical surveys and geological mapping. Core and deep auger drilling was undertaken at the Black Rock prospect, which included Schist and Laterite anomalies. Significant, but subeconomic uranium mineralisation was intersected in schistose quartz-feldspar gneiss at Schist anomaly. Minor uranium mineralisation in saprolitic gneiss was located by auger drilling at the nearby Laterite Anomaly. Several other radiometric anomalies were investigated.

Union Carbide's exploration work was curtailed in early 1973 by a federal Government imposed moratorium on exploration pending a resolution on the issue of Aboriginal Land Rights.

Previous Joint Venture Exploration

1996 Field Season

Grant of title was given in May 1996. Initial reconnaissance work included regional and prospect scale outcrop mapping, orientation soil geochemistry over the Schist-Laterite prospects, lithogeochemical sandstone outcrop sampling and regional drainage BLEG in conjunction with diamond indicator sampling (Mackie, 1997). Airesearch Mapping carried out aerial photography. A regional fixed wing airborne survey at 200 metre line spacing was conducted and included magnetics, spectrometrics and VLF. In addition, a helicopter DIGHEM survey at 150 metre line spacing covered the Kombolgie sandstone. Both were carried out by Geoterrex (now Fugro Airborne Systems). A consultant was used to conduct the regional stream sampling program.

1997 Field Season

The 1997 program consisted of airborne anomaly follow up, further geochemistry (soil, rock, stream and BLEG), lithogeochemical sandstone sampling, geological mapping and systematic RAB drilling. A limited program of shallow diamond drilling was carried out at Marligur Pass with one traverse across the Aurari Fault Zone (immediately west of Schist anomaly) and one adjacent to sandstone anomaly

MP2. In addition, two shallow holes were collared at the Schist and 46N anomalies to obtain sections of altered and mineralized core. (Melville and others 1998).

1998 Field Season

The 1998 program consisted of ongoing geological mapping and interpretation, regional RAB, BLEG and regional stream sediment sampling, evaluation of selected airborne anomalies by auger sampling and/or RAB drilling and further core drilling along the Aurari Fault Zone. Associated work included lithogeochemical sandstone sampling, petrophysics, and PIMA infrared spectrometry. (Williams et. al., 1999).

1999 Field Season

The principle activity was the continuing assessment of the Aurari Fault Zone by diamond drilling and ground magnetics. Universal Tracking Systems Pty Ltd (UTS) of Perth flew heliborne EM over an area coincident with the southward extension of the Aurari Fault Zone, where probable Lower Cahill equivalents exist.

2000 Field Season

Diamond drilling continued along the Aurari Fault Zone. A total of 9 holes were drilled. Geophysical activities included a low level, close spaced airborne magnetic-radiometric survey over the southern and central portions of the Aurari Fault Zone, and some orientation ground-based Gravity across the Aurari fault. Further sandstone outcrop sampling took place along the Wellington Range outliers to supplement earlier programs.

2001 Field Season

Field activities during the 2001 season consisted of follow-up core drilling of the Aurari North mineralisation. Geophysical surveys included a TEMPEST survey, fixed wing magnetic, radiometric and DTM survey and ground gravity, all concentrating on the Aurari Fault Zone. Other activities included finalising the Kombolgie Sandstone lithogeochemical sampling, ground follow-up of some airborne radiometric anomalies and structural mapping along the western edge of the sandstone outliers.

King River Exploration Summary

PROGRAM ACTIVITIES

Field activities during the 2002 season consisted of diamond core drilling and airborne geophysics. The diamond drilling program had threefold objectives; to further investigate the Aurari North mineralised environment, to explore beneath historical uranium anomalies (Schist, Laterite) and to duplicate and enlarge upon the mineralised intersection of KRD0410 (Kuroikin Prospect). An airborne fixed wing TEMPEST (EM) survey was extended south along the Aurari Fault Zone and adjacent areas to determine depth to unconformity and define other features, which may be useful in the exploration effort. Further ground radiometric prospecting in the vicinity of airborne anomaly MP3-0401, located on the

southern edge of the MP3 sandstone outlier (Melville and others, 2001), led to the discovery of a thin veinlet of Pitchblende in basal Kombolgie sandstone.

All digital data has been submitted on CD with this report. In some cases data over culturally sensitive "nogo" zones have been excised from figures and data in accordance with requests by Traditional Owners.

Diamond Drilling

Core drilling was undertaken during the period 11 July to 27 August with the completion of nine drill holes totalling 3539.3 m. This comprised 3013.2 m of coring and 526.1 m of roller bit precollaring.

Drilling was carried out by Underground Diamond Drilling (UDD) based in Gympie, southern Queensland using a truck mounted UDR 650 rig and support vehicles. The program was conducted on a double shift basis with an average drilling rate of 36.86 m per shift. The averaged all-up cost was $106.67 per metre, which includes chargeable categories such as mob/demob, consumables, core orientation and hole survey equipment hire etc. This figure is considerably less than the previous two programs, which averaged around $150 per metre. The lower cost can be principally attributed to a more reasonable schedule of charges as well as a more efficient operation.

All holes were drilled on a westerly azimuth (mostly 250^0 magnetic) and angled steeply, mainly at 80^0. Orientations were run on most holes using a variation of the Ballmark system although for the most part it failed to provide meaningful results. Equipment changes were made into the program without much success. The steep angles of the holes might have been a factor in influencing the behaviour of the gear. Hole locations were originally positioned using a Garmin GPS. At the completion of the program, drill hole collar positions were re-established with a Trimble DGPS. Holes were either back-filled with cement or left open and capped for future use. A plaque detailing hole number and co-ordinates was set in cement at each collar.

2002 Diamond Drilling Statistics

Hole Number	AMG E	AMG N	Bearing	Declination	Precollar (m)	Coring (m)	Total Metres
KRD0768	Abandoned precollars				144	25.3	169.3
KRD0768	304310	8693280	250	80	74.3	315.7	390
KRD0769	305020	8693060	250	80		402	402
KRD0770	305053	8693750	250	80	2.5	408.5	411
KRD0771	305954	8692657	270	70		405	405
KRD0772	304356	8693434	250	70	61.8	287.9	349.7
KRD0773	304250	8693905	250	80	58.2	316.8	375
KRD0774	304450	8693150	250	80	72	318.3	390.3
KRD0775	305150	8687900	250	80	65.5	254.5	320
KRD0776	305054	8687463	250	80	47.8	279.2	327
Totals					526.1	3013.2	3539.3

Core Drill Hole Location Plan

Radiometric Logging

Natural radiation was logged down-hole by Cameco personnel using an Auslog digital down-hole logging unit. Ground conditions in many of the holes, specifically those along the Aurari Fault, precluded open hole logging and were therefore logged inside the rods. Several holes located away from the fault zone were drilled in comparatively competent ground and were suitable for open hole logging.

Core Logging & Sampling Methodology

The drill core was geologically logged using the new database system DH Logger, which was introduced in 2002 to replace Unilog. The systematic logging measures lithological, structural and alteration features. Results are displayed graphically using a series of strip plots from the DHExplorer program to display all features logged and measured. The Codes for DHLogger appendix lists the codes and parameters that were used during the logging process and the DHLogger Drill Core Data appendix contains the entire drill hole log information.

Analytical Methods
Codes for DHLogger
DHLogger Drill Core Data KRD0768
DHLogger Drill Core Data KRD0769
DHLogger Drill Core Data KRD0770
DHLogger Drill Core Data KRD0771
DHLogger Drill Core Data KRD0772
DHLogger Drill Core Data KRD0773
DHLogger Drill Core Data KRD0774
DHLogger Drill Core Data KRD0775
DHLogger Drill Core Data KRD0776

Routine sampling was completed for every row of core. A representative 5 cm sample was collected and halved using a core saw. One half was read for magnetic susceptibility and density measurements were taken on one sample per core tray. The same sample was measured for spectral parameters using the PIMA II infrared spectrometer. Interpretation of the spectra was achieved utilising TSG with occasional reference to the PimaView system for comparative purposes. These samples are retained within the Cameco storage facility at the Darwin warehouse. The other half of the representative sample was used for lithogeochemical analysis. The samples were combined to form approximately 5 metre composites for sandstone and basement, and 15 metre composites for dolerite.

Samples were also collected for petrographic description and forwarded to Pontifex and Associates in Adelaide. Other sampling for petrographic and alteration studies, including ore mineral identification and age dating was carried out by Dave Thomas, Cameco Corporation and Queens University personnel Kurt Kyser and Paul Polito.

Pontifex DDH Thin Section Report

TSA PIMA Majors for Diamond Drilling
TSA PIMA Exotics for Diamond Drilling

Analyses were carried out by Northern Territory Environmental Laboratories of Darwin (NTEL). The principal analytical procedures included G400 (ppm), G950 'WAL' or Weak Acid Leach (ppb), and Fire Assay (ppb). Elements analysed for by the G400 and G950 methods (ICPOES and ICPMS) are Ag, Al, As, Ba, Be, Bi, Ca, Ce, Co, Cu, Dy, Er, Eu, Fe, Gd, Ho, K, La, Li, Lu, Mg, Mn, Mo Na, Nb, Nd, Ni, P, Pb (total and isotopes 204, 206, 207 and 208), Pr, Rb, S, Se, Sm, Sn, Sr, Ta, Tb, Th, Ti, Tm, U total (G400), U labile (G950), V, W, Y, Zn and Zr. In the case of Al, Ca, Fe, K, Mg, Mn, Na, P and Ti, the oxide is reported for the G400 series. Au, Pt and Pd are analysed by Fire Assay.

G400 Geochemistry for Diamond Drilling
G950 Geochemistry for Diamond Drilling
Fire Assay Geochemistry for Diamond Drilling

Drilling Targets and Planning

The 2001 program was largely unsuccessful in expanding upon the knowledge and extent of the Aurari North mineralisation due to the number of holes drilled. Of the four holes completed, three were designed to intersect any eastward extension of the mineralisation while one was collared northwards along its projected strike. Only one hole resulted in an intersection of any significance while another located a zone of weak mineralisation. The overall result was not a satisfactory basis for the planning of the 2002 program.

For 2002, twelve sites were initially considered with various options in mind. Of these at least nine would be drilled including a minimum of two at Kuroikin and one each at both Laterite and Schist Prospects. Four holes were then allotted to further explore Aurari North, two as 'infill' holes and two for "aggressive" extensions. The remaining hole would be exploratory and placed somewhere in the Aurari area.

The **Aurari North** holes are targeting the body of basement-hosted mineralisation, which is confined to a structurally disturbed zone adjacent to the regional Aurari Fault. The mineralisation is contained within a gneiss-schist-amphibolite 'basement' package and is mostly confined to an area immediately beneath a thick sheet of Oenpelli dolerite. The two infill holes were designed to (a) confirm continuity of mineralisation between KRD664 and 666 (i.e. along 'strike') and (b) to explore the ground between the intensely mineralised 666 and the poorly mineralised (and prematurely abandoned) KRD0665 ('across strike'). The latter was to confirm continuity between the two existing intersections and determine whether the intensity of mineralisation found in 666 was maintained westwards. The extension holes were aggressively placed at locations 150 metres north and south of previously drilled fences.

Two holes were planned to test beneath the historical **Schist** and **Laterite** prospects. Both holes were sited on the main surface anomalies at each prospect. Depth to, and thickness of the dolerite was known in both cases from recent and historical drilling.

The remaining hole would be placed at a location approximately midway between the Aurari and Black Rock faults and adjacent to the interpreted Aurari sub-basin, a structurally controlled 'depression' infilled with several hundred metres of Kombolgie sandstone. The hole was sited to target an area considered to be coincident with the northern boundary of the sub-basin where the sandstone, in faulted contact with dolerite and basement, might produce an environment conducive to the concentration of mineralising fluids. The closest drilled holes include KRD0663 (drilled 2000) and the '46N fence'. All of these holes traversed the sub-basin without locating mineralisation beneath the unconformity.

Exploration of the MP2 (Marligur Pass sandstone anomaly 2) environs, now including the **Kuroikin Prospect** / 410 Structure, was commenced in 1997. The first program consisted of several regional RAB traverses and a fence of shallow diamond drill holes, which were sited on the western side of the Aurari Fault. KRD0248 intersected a coarse grained, foliated, mafic granitoid containing anomalous uranium. Deep drilling (up to 420 metres) during the 1998 and 1999 seasons were concentrated mainly on the eastern side of the fault, intersecting Kombolgie sandstone and dolerite sills, the latter over 200 metres thick. KRD0409 was sited on the fault zone and reached basement at around 370 metres, above which a 10 metre section of chloritic sandstone intruded by thin mafic dikes contained an array of anomalous elements including U, Cu, Ni, Co and Mo (ALWJV Annual Report 1999). KRD0410, which discovered the mineralised vein system within the mafic granitoid, was located approximately 2.5km to the north-west of where most of the holes have been drilled.

In 2000 six holes were planned to cover the northerly extension of the 410 fault, the adjacent section of the Aurari fault and a hole either side of KRD0410. None were drilled due to a rapid change in priorities following the discovery of the Aurari North mineralisation. Some of these planned holes were included in the 2002 program and others have been scheduled for 2003.

Drilling Results

Aurari North Prospect and the Kombolgie Sub-Basin

Further definition of the Aurari North mineralisation has been effected with the confirmation of an extension to the southeast of approximately 150 metres (KRD0774) and further sterilisation of ground to the north (KRD0773). The physical limits to the concentrated higher grade zone of mineralisation, which is confined to the hangingwall gneiss-schist assemblage, appears to have been established. In the vertical dimension, the zone is constrained between the upper dolerite and the footwall amphibolite. Horizontally, the Aurari Fault forms the westward boundary while the eastward limit has been set by a combination of structure and the interpreted convergence of dolerite intrusions. The overall grade of the zone has not been improved upon from the previous two years drilling, however the distribution of higher grade peaks within a larger low grade 'envelope' has been maintained.

There remains potential for extending the mineralisation up to a maximum of 150 metres south to south eastwards from the 774 intersection, however given the results to date, there seems to be little likelihood of an improvement in grade and width in the immediate area. The constraints on this extension are provided by the geological data contained within two holes: KRD407, 150 metres to the south west (footwall sequence intersections) and KRD663, 200 metres to the south east (Kombolgie sub-basin intersection with underlying basement). An east-west line drawn midway between these holes would establish an approximate southern limit to the prospective ground. A fence of deep diamond holes drilled several hundred metres to the south (PNC 1998) traversed the sub-basin without intersecting any mineralisation.

Laterite and Schist Anomalies

The success of KRD770 in discovering uranium mineralisation beneath Laterite anomaly has provided a new target area within the confines of the Aurari group of prospects. In contrast to the Aurari North style, initial observations on the mode of occurrence of the mineralisation suggests a structurally undisturbed system consisting of defined veins or vein networks without the severe fracturing, shearing and brecciation of the host rocks characteristic of the former. The setting of the mineralisation however bears similarities in that the host rock package is lithologically identical and confining dolerites intrude the sequence above and below. As at Aurari North, a regional structure (the Black Rock Fault) has a spatial relationship with the mineralisation (also at Schist anomaly). The continuing 'problem' is the apparent lack of recognisable widespread alteration that is normally considered to be indicative of uranium deposits. This was emphasised in 2001 (Annual Report King River) following comments by Thomas and Kyser on the freshness of mineral components of the host rock adjacent to the localised strong alteration surrounding the uraniferous structures.

The absence of indications of mineralisation at depth beneath Schist anomaly was disappointing but not conclusive. Further drilling should be of a more regional exploratory nature.

Kuroikin-410 Prospect

The expansion of the mineralised trend at Kuroikin by two holes approximately 450 metres apart (north-south) is a significant discovery. Also of significance is the lateral distance between KRD410 and 775 of 90 metres, which contributes to forming a preliminary three-dimensional view of the vein system and provides several directional options to expand any future exploration program.

The current interpretation is that the mineralised system is related to the NNE-SSW 410 structure with perhaps some input from a conjugate set striking approximately NW. All of these structural trends have been derived from the interpretation of regional magnetics and are as yet unproved. The most recent and a more localised airborne survey utilising EM (Tempest Survey 2002) has provided preliminary data defining a conductive zone, which coincidentally or otherwise corresponds to the area drilled so far. The Tempest data is best illustrated on CDIs (Conductive Depth Image), which enables the viewing of data in a cross-sectional format. The CDIs can

be produced for each flight line giving a progressive view of the principal features of the survey area. On the relevant CDI, the abovementioned conductive zone attains its greatest width near KRD776 but pinches out to both the north and south along the 410 structure. However it seems to maintain width to the north-west and possibly south-east, which implies the interpreted cross-cutting structures to be the cause of the response. Core orientations suggest that the mineralised veins parallel these interpreted linears.

Anomaly Investigations

MP3 sandstone Airborne Anomaly
Follow-up reconnaissance and prospecting was undertaken in the vicinity of an airborne radiometric anomaly, which was initially investigated in 2001. The anomaly is located on the south western edge of the 'MP3 Sandstone' outlier, about one kilometre east of the Aurari Fault zone at coordinates 309940E 8683860N, and is designated MP3-0401.

Outcrops of hematite-sericite altered feldspar-biotite-quartz gneiss with a high radiometric background were found to extend over a distance of 400 metres in a northeast-southwest direction along the base of the sandstone. This lithotype is similar to other weathered gneiss outcrops observed at various investigated prospects at King River including ANG1, ANG3 and Angarlban as well as Schist Anomaly. Total count spectrometrics, which ranged from 236 to 385 cps, is considered to be a moderate to highly elevated response for this rock type.

Further investigation around the anomaly environs located thin quartz-hematite veining traversing intensely hematite-altered sandstone over a strike length of about 70 metres trending at 288^{o}. One location had a total count spectrometric reading of 19020cps. Other anomalies noted and sampled gave readings of 2050cps and 1377cps. Alteration in the surrounding sandstone includes desilicification vugs, red hematite coatings on drusy quartz crystals, intense interstitial clay (possibly illite or sericite), some limonitic staining and dravite growths in a sandstone bed higher in the sequence.

The proximity of outcropping basement to the anomaly indicates that the unconformity is present at a shallow depth. To date only one observation of the unconformity has been made, near the edge of the sandstone outcrop. Basement outcrop is sparse due to sand cover and the subcropping nature of the gneiss.

Eight samples of sandstone and basement gneiss were collected for analytical purposes, including three from the highly anomalous hematite-altered vein and two from quartz veins. Results of the sampling have confirmed a high grade uranium occurrence in the Kombolgie sandstone. A sample collected from the quartz-hematite veining, which cuts intensely hematite altered sandstone, assayed 1.06% U.

Pontifex OC Thin Section Report

Analytical Methods NTEL

G400 Geochemistry for Outcrop

G950 Geochemistry for Outcrop
G950 WAL Geochemistry for Outcrop
Fire Assay Geochemistry for Outcrop

Outcrop Sample Location Plan Sandy Point

Geophysics

TEMPEST

During 2001 and 2002, Fugro Airborne Surveys Pty Ltd (Fugro) undertook TEMPEST airborne electromagnetics at King River. This is a high-powered time-domain system with a broad bandwidth, which enables good resolution of variations in resistivity and penetration through relatively thick Kombolgie Subgroup sandstone. In addition, the airborne platform allows electromagnetic data to be acquired over areas where ground geophysics is impractical due to rugged topography. The 2002 survey extends the existing TEMPEST coverage south from Aurari North prospect, over the Marligur Pass sandstone. The survey was flown with the aim of providing 3-D electromagnetic data over a broad area that could be used to identify structure/alteration and in particular, infer the depth to the unconformity. The 2002 survey line spacing was 200 m and flying height was 120 m, for a total of 384 line kms. EMFlow has been utilised by Fugro to produce CDI's (Conductivity Depth Images), which have been combined by their CIN3D processing to produce various 3-D renditions.

Evaluation of the 2002 TEMPEST data led to refinements in the processing parameters. In particular, it was found the CDI depth cut-off should be increased from 300m to 400m and that the threshold for the CIN3D should be lowered from 10 mS/m to 1 mS/m. Subsequently, Fugro reprocessed the 2001 data and merged it with the 2002 data.

Location Map for TEMPEST

Logistics Report for TEMPEST

TEMPEST Conductivity Map – RGB = 175m, 225m, 275m
TEMPEST Conductivity Map - Conductance
TEMPEST Elevation of Conductive Layer's Top
AVI Slide Show – CDI's for Z-component
AVI Slide Show – Depth Slices
AVI Slide Show – Unit

Selected TEMPEST CDIs have been compared with drill hole sandstone, basement and alteration. From this comparison several observations can be made:

- A weakly conductive semi-horizontal feature is consistently identified from line to line below the sandstone. This feature has been named the "conductive unconformity" since its position is defined by a resistivity contrast caused by alteration surrounding the unconformity and may not in fact be the location of the true unconformity.

- Generally the TEMPEST conductive unconformity is within +/- 30 m of the true unconformity. However, the presence of Oenpelli Dolerite and cover may complicate the response since both of these units may actually be conductive or resistive.
- At this stage the increased conductivity at the unconformity cannot be related to a specific type of alteration observed from drilling (i.e. clay or hematite). Instead, we can merely assume that it is due to physical property changes at the unconformity, which could for instance be due to alteration or paleo-regolith.
- It is important when interpreting the TEMPEST data to:
    - Observe the x and z component data since these couple differently (z component is generally best for horizontal features),
    - Apply linear and log colour schemes due to the large and variable range in conductivities, and
    - Confirm the consistency of features from line to line to avoid errors introduced by the inversion.

The primary interpretation results are:

- The shallow resistive response has been utilised to infer the presence of Kombolgie Subgroup sandstone and Cretaceous sand/sandstone where no outcrop is present.
- TEMPEST has been utilised to approximate the shape of the unconformity, albeit dependent on the assumption that the unconformity is the shallow and shallowly dipping weakly conductive response. Three areas within the sandstone have been identified as possibly warranting field investigations to determine whether they are structurally significant: western splay of the Black Rock Fault within the MP2 and MP 3 sandstone, and just northeast of the Sandy Point prospect.
- A conductor has been identified at Aurari North prospect using the conductance map. A similar response has also been identified 900 m to the north of the Kuroikin prospect that should be further investigated.

Down Hole Geophysics

In October 2002, Surtron Technologies Pty Ltd (Surtron) undertook down-hole geophysics on behalf of Cameco at the Laterite, Schist and Kuroikin Prospects. Drill holes KRD770 (400 m), KRD0771 (394 m) and KRD0776 (326 m) were logged for a total of 1120 m. Parameters surveyed included: natural gamma, magnetic susceptibility, density, inductive conductivity and multi-parameter resistivity. Upon mobilisation to site, the full waveform sonic tool was found to be unserviceable therefore no velocity data could be acquired.

The aim of the down-hole geophysical program was to increase the physical property database and to determine whether physical property changes could be associated with encountered uranium mineralisation.

Logistics Report by Surtron

KRD0770 - Down Hole Geophysics
KRD0771 - Down Hole Geophysics

KRD0776 - Down Hole Geophysics

As discussed in the above section on drill hole descriptions, veins of uranium mineralisation occur in KRD0770 and KRD0776 within quartz-feldspar-biotite-garnet gneiss and granodioritic to tonalitic granitoid respectively. In some places the gamma spikes can be related to inverse spikes in the density. However, it is probable that these density readings are actually spurious, resulting from natural gamma rays originating from the mineralisation rather than the tool. In several locations resistivity lows correlate with gamma spikes, which may relate to localised structure. However, this relationship is not consistent since several resistivity lows also exist that are not associated with gamma spikes.

Unfortunately, the down-hole geophysics has failed to identify any diagnostic physical property changes that can be utilised to identify the vein mineralisation encountered in the down-hole geophysics undertaken in 2002. This is not all that surprising considering that the mineralisation cannot be related to any broader alteration assemblages that would be likely to provided physical property changes. The down-hole geophysics has been merged with the ongoing Arnhem Land physical property database.

WORK PROGRAM EXPENDITURE 2002

Estimated expenditure for the year, as stated in the 2002 work program, was $819,000. Actual expenditure was $849,690. Details are contained in the link below 'Summary of Expenditure'.

Summary of Expenditure

WORK PROGRAM 2003

A summary of the proposed exploration activities, timing and contractors under consideration for Year 8 has been tabulated on the following page. Budgeted exploration expenditure for the tenement is $620,000. A further $76,000 will be expended on DBIRD and NLC costs.

Location and Scheduling of Activities

Activity	Duration of Activity	Timing	Amount	Approximate Location
Access & site preparation for diamond drilling	3 days	Late June, early July	Maximum 7 DDH sites, possibly 25 to 30 RAB	Aurari North area, Kuroikin prospect and Sandy Point.
Diamond Drilling and (possible) RC drilling.	50 days	Early July to late August	Approx 2000m including pre collars	Aurari North area, between Schist and Laterite prospects. Kuroikin prospect.
RAB Drilling	7 days	Mid July to early August	1000 metres (30 to 40 holes)	Traverses between Schist and Laterite ; Sandy Point anomaly
Geological Mapping	6 days	June	Area of about 4km^2	(Sandy Point anomaly)

Listing of On-Site Contractor Requirements

Activity	Equipment	Personnel	Potential Contractor
Track / Site clearing	Front End Loader	1	Gunbalanya Community Council / Wildman River Stock Contractors
Diamond and RC Drilling	UDR650 drill rig or equivalent, Rod & Water Truck, Toyota 4WD	6	To be confirmed
RAB Drilling	RAB rig, 4WD support vehicle	2	To be confirmed

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