



Cameco Australia Pty Ltd

NABARLEK PROJECT

Exploration Licences 10176, 24371 & 24372

NORTHERN TERRITORY

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SUMMARY

Exploration Licences (ELs) 10176, 24371 and 24372 with a total area of 423.07 km² comprise the Nabarlek tenements located in west Arnhem Land about 250 km east of Darwin. The tenements were granted on 1 September 2004 for six years to Cameco Australia Pty Ltd (Cameco).

The exploration program in the 2nd year of tenure comprised:

- data compilation, evaluation and target generation;
- rock chip sampling, core re-logging and sampling (NAUAD0004), mapping and radiometric prospecting at several prospects previously discovered by Queensland Mines Pty Ltd (QML). Thirty-six rock chips were taken for geochemical analysis;
- a TEMPEST survey completed over the southern half of EL 10176.
- Re-processing and re-interpretation of a 2001 TEMPEST survey over the northwest corner of EL 10176.
- a combined airborne radiometric / magnetic survey over prospects S27/N84.
- A review of historical prospects by consultant John Fabray (Fabray, 2005).

Table 1: Nabarlek 2005 Exploration Summary

Activity	Details	Location
Outcrop Sampling, prospecting, geological reconnaissance	38 field stations visited 36 geochemical samples 26 petrographic samples	S27, SMLB, Data Acquisition No 9, U65, S26, S25, S14 East
2001 TEMPEST surveys	Re-processed, reinterpreted historic survey	NW corner of EL10176
TEMPEST survey	E-W lines, 120 line km 808 line km area	S27, N84 prospect area
Airborne radiometrics and magnetics	E-W 50m line spacing Flying height 30m for 405 line km	S27 N84 prospect area
Re-log and sample NAUAD0004	25 geochemical samples 1 petrographic sample	U65

The best geochemical results are:

- 49.8 ppm U in Cahill Formation at N84.
- 29.9 ppm U in NA050019 in sandstone at U65.
- 21.4 ppm U in NA050014 in sandstone at S27.

There are no new high priority targets evident in TEMPEST data. The detailed radiometric-magnetic survey failed to reveal new radiometric anomalies or structural targets.

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INTRODUCTION

This report describes activities carried out over the Nabarlek project tenements during the second year of tenure by Cameco Australia Pty Ltd (Cameco). The Nabarlek Project comprises ELs 10176, 24371 and 24372, which were granted on 1 September 2004 for a period of six years. The tenements are located on the 1:250 000 map sheets of Alligator Rivers (SD-5301) and Milingimbi (SD-5302) and the 1:100 000 map sheets of Oenpelli (5573) and Goomadeer (5673).

The project encloses the rehabilitated Nabarlek uranium mine, however the mining lease area is outside the Cameco tenements. The exploration licences are located within the Arnhem Land Aboriginal Reserve and as such, the exploration work program was carried out under the terms of the consent documentation agreed upon with the Northern Land Council, pursuant to the Aboriginal Land Rights (Northern Territory) Act.

Location and Access

The tenements are located in west Arnhem Land immediately to the southeast of Oenpelli and are wholly within Aboriginal Land. Energy Resources Australia's Ranger uranium mine is situated approximately 40 km to the southwest and the tenements surround the rehabilitated Nabarlek mine site. Access from Darwin is via the Arnhem Highway to Jabiru, northeast to Oenpelli then east towards Nabarlek.

Access within the tenements is variable and dependent upon topography. In general, most of the country is flat lying and can be traversed relatively easily by four-wheel drive during the dry season. Exceptions are the heavily dissected sandstone escarpments that are best traversed by foot and accessed by helicopter. Several pre-existing tracks in variable condition cut north-south and east-west across the tenement.

Figure 1: Location Plan

Tenure

Cameco lodged the application for EL 10176 on 9 June 1999. The application covered former EL 2508 and ERLs 150, 151 and 152. Grant of title was delayed due to No-Go zones within the tenement being classed as 'non-consent' land by the Justice Department. As original tenement applications must be over contiguous blocks, the original area of EL 10176 was divided into three discrete portions.

Grant of title was issued on 1 September 2004 for EL 10176 and the two smaller portions, EL 24371 and EL 24372. The area termed as non-consent has passed into moratorium and is subject to a separate application. A single Consent Deed covers all three Licences. On grant, the total area under licence was 423.07 km² (156 blocks).

Physiography

The tenements contain several outliers of dissected sandstone plateau, which form the eastern extension of the Oenpelli Massif. The remainder of the licence consists of gently undulating sandy plains covered by open woodland with patches of open

grassland and low shrub. Thin remnants of weathered and lateritised flat-lying Cretaceous sediments form tablelands in the northeastern portion. The main water systems are Birraduk Creek and Cooper Creek, which flow to the northwest.

REGIONAL GEOLOGY

The Nabarlek project area is located within the eastern margin of the Pine Creek Inlier (PCI), lies on the eastern boundary of the so-called East Alligator structural domain with the Nimbuwah structural domains to the east (Needham, 1988; Needham and Stuart-Smith, 1980).

Figure 2: Regional Geology and Structures

The Bureau of Mineral Resources (BMR) have carried out reconnaissance mapping of the PCI since 1946, with more detailed work in the 1950's and 60's following the discovery of uranium at Rum Jungle. The Alligator Rivers region was systematically mapped by the BMR during the period 1972 to 1983, resulting principally in the publication of two 1:250 000 scale geological and metallogenic maps (Needham, 1990; Needham et al., 1983) and a detailed report (Needham, 1988). Cobourg Peninsula was also mapped at this time (Hughes, 1973). Relevant 1:100 000 scale compilation maps were published in colour and/or black and white format. Related publications are numerous (Hughes, 1978; Needham et al., 1980; Needham and Stuart-Smith, 1985; Stuart-Smith and Ferguson, 1978; Stuart-Smith and Needham, 1982; Stuart-Smith and Needham, 1984; Warren and Kamprad, 1990). In more recent years, the Northern Territory Geological Survey (NTGS) has remapped the central parts of the PCI and the Milingimbi sheet (Ahmad, 1998; Carson et al., 1999; Ferenczi and Sweet, 2004). It has also begun focussed geochronological studies aimed at developing a better stratigraphic framework, in collaboration with Geoscience Australia (GA) (Worden et al., 2004).

Regional and deposit scale metallogenic research, including uranium, has also been carried out in the PCI by a number of organisations, including the BMR (and subsequently AGSO and GA), Queens University, Johns Hopkins University, Bas-Becking Laboratory, Australian National University, CSIRO, USGS and NTGS (Ahmad, 1998; Browne, 1990; Carville et al., 1990; Crick, 1981; Crick et al., 1980; Dunn et al., 1990; Ewers et al., 1985; Ferguson et al., 1980; Ferguson and Goleby, 1980; Fraser, 1980; Garven and Raffensperger, 1996; Hancock et al., 1990; Holk et al., 2003; Johnston, 1984; Maas and McCulloch, 1988; Mernagh, 1992; Needham, 1985; Needham and De Ross, 1990; Needham and Roarty, 1980; Needham and Stuart-Smith, 1980; Raffensperger and Garven, 1995a; Raffensperger and Garven, 1995b; Rossiter and Ferguson, 1980; Snelling, 1990; Solomon and Groves, 1994; Stuart-Smith et al., 1993; Stuart-Smith et al., 1980; Sweet, 2001; Tucker et al., 1980; Wilde et al., 1989; Wilde and Noakes, 1990; Wyborn, 1990).

The oldest rocks exposed in the Alligator Rivers region, the 2500 Ma (late Archaean) Nanambu Complex; crop out sparsely in Kakadu National Park and comprise paragneiss, orthogneiss, migmatite, granite and schist (Needham, 1988). The Archaean complexes form structural domes that are unconformably overlain by metasediments and minor metavolcanics of the Palaeoproterozoic Pine Creek Succession or Supergroup (PCS), which constitutes the Pine Creek Orogen tectonic unit (formerly the Pine Creek Geosyncline). In the Alligator Rivers region, the PCS initiates with meta-psammitic and quartzose rocks of the Mount Howship Gneiss and Kudjumarndi Quartzite (both Kakadu Group). These are laterally

equivalent to the Mount Basedow Gneiss and Munmarlary Quartzite respectively (Ferenczi et al., 2005). This Group appears to onlap the Archaean basement highs, but gneissic variants are also reported to be transitional into paragneiss of the Nanambu Complex (Needham, 1988).

The Cahill Formation and Masson Formation of the Namoon Group (Ferenczi et al., 2005) conformably overlie the Munmarlary Quartzite, the Cahill Formation being informally mapped as two subunits or members (Needham, 1988). The Lower Cahill Formation hosts the main uranium ore bodies in the region (e.g. Nabarlek, Ranger and Jabiluka) and consists of a basal calcareous marble and calc-silicate gneiss unit that is overlain by pyritic, garnetiferous and carbonaceous schist (meta-pelite), quartz-feldspar-mica gneiss (meta-arkose) and minor amphibolite. The Upper Cahill Formation is more psammitic, comprising feldspar-quartz schist (meta-arkose) and quartzite, lesser mica-feldspar-quartz-magnetite schist (meta-pelite), and minor conglomerate and amphibolite. It also contains the mafic to intermediate Stag Creek Volcanics, which have a SHRIMP U-Pb age of 2048 ± 13 (Ferenczi et al., 2005). The Cahill Formation is notably magnetic, in particular the base of upper psammitic unit (also known as 'hangingwall sequence'), due to the presence of mafic sills and/or magnetite, providing a means of spatially distinguishing it from underlying and overlying less magnetic formations (Kendall, 1990). The Masson Formation is generally considered to be the lower grade metamorphic equivalent of the Cahill Formation.

The unconformably overlying Nourlangie Schist is a monotonous succession of argillaceous to quartzose phyllite and quartz-mica schist that locally contains garnet and staurolite. Nourlangie Schist is interpreted to be the eastern temporal correlative of the combined interval – Mundogie Sandstone and Wildman Siltstone (Mount Partridge Group), and Koolpin Formation, Gerowie Tuff and Mount Bonnie Formation (all South Alligator Group) (Needham, 1988). Some authors argue that temporal equivalents of the Mundogie Sandstone are absent east of the South Alligator River (Ferenczi et al., 2005), but it may not be possible to distinguish facies variants at the Cahill Formation-Nourlangie Schist level. Wildman Siltstone is characteristically composed of silty carbonaceous phyllite, sandy ferruginous siltstone and shale, which is consistent with the 'protolith' predicted for the Nourlangie Schist.

Early stratigraphic columns also included the Kapalga Formation as a lateral equivalent of the Nourlangie Schist (Needham et al., 1983), however, outcrops formerly mapped as this unit in the Mount Evelyn sheet are now re-assigned to South Alligator Group (Ferenczi and Sweet, 2004). As a result, the name Kapalga Formation will probably be abandoned and various outcrops throughout the eastern PCI re-assigned to other units. Lithological descriptions of the Kapalga Formation (Needham et al., 1983) – ferruginous, pyritic and carbonaceous chert-banded metasiltstone (slate/phyllite) or biotite schist, garnetiferous schist and quartzite – are consistent with the lower metamorphic grade Koolpin Formation, which hosts a number of gold prospects and deposits in the central PCI (Ahmad, 1998). However, calcareous and dolomitic lithologies (including stromatolites) and banded iron formation that are also common in the Koolpin Formation are not documented in the Kapalga Formation. The overlying Gerowie Tuff and Mount Bonnie Formation in the central PCI comprise variously interbedded massive silicic-potassic tuffaceous chert, carbonaceous clayey siltstone, coarse 'greywacke' and lithic sandstone. Metamorphosed equivalents of these lithologies have not yet been recognised in the Nourlangie Schist, suggesting either facies variation, onlap/pinchout, erosional removal or a lack of definitive exposure in the east.

The age of the Nourlangie Schist is only constrained by its inferred correlatives. The Wildman Siltstone is about 2025 Ma and the Gerowie Tuff is 1863 ± 2 Ma, based on SHRIMP U-Pb zircon dating (Worden et al., 2004). Large time breaks are obviously present in the succession.

Mafic sills and dykes including the Goodparla and Zamu Dolerites intrude the PCS, with the former common in the upper Cahill Formation and the latter prolific in the South Alligator Group (Warren and Kamprad, 1990). Lower metamorphic grade rocks have typical dolerite textures, but in the Alligator Rivers region, they are generally amphibolite *sensu stricto*. Regardless, these dykes impart a magnetic signature to their respective hosts where they contain residual magnetic phases.

The sedimentary and igneous rocks of the PCS are structurally complex, having undergone at least three recognisable phases of deformation (Thomas, 2002) related to Top End Orogeny (1880 to 1780 Ma). They have also undergone high-temperature low-pressure prograde metamorphism, including local migmatisation and remobilisation, during the ~1850-1860 Ma Nimbuwah Event of the Barramundi Orogeny (Page and Williams, 1988). The intensity of metamorphism and deformation varies across the region, with the western and eastern margins of the Pine Creek Inlier (Litchfield Province and Nimbuwah Domain respectively) showing the most pronounced effects. In the Nimbuwah Domain or Alligator Rivers region, there is a broad trend of increasing grade from southwest to northeast. This gradient clearly reflects synchronous emplacement of the 1865 Ma Nimbuwah Complex granitoids in that area. Distinctions based on metamorphic grade and protolith type have been made on regional maps (Needham, 1988) and are summarised below.

Greenschist to amphibolite facies metasedimentary rocks in the southwest can generally be distinguished stratigraphically and are assigned to specific formations and groups.

1. Amphibolite to granulite facies metasedimentary rocks that lie between the Nimbuwah Complex in the northeast and the areas of better-defined stratigraphy in the southwest are mapped as Myra Falls Metamorphics. They incorporate outcrop that cannot be distinguished from the Zamu Dolerite and Kakadu, Mount Partridge, Namoonna or South Alligator Groups, but where a sedimentary precursor can be demonstrated (Needham, 1988). Rocks with a likely felsic igneous protolith are assigned to the Nimbuwah Complex (see below).
2. Magmatic rocks (mostly I type granodiorite) and felsic to intermediate migmatite and granulite in the northeast are distinguished as the Nimbuwah Complex. These rocks have a relatively simple isotopic character (Page and Williams, 1988) that suggests an entirely igneous protolith. However, there is some doubt about this distinction, as much of the mapped Nimbuwah Complex around King River appears to have a sedimentary protolith (e.g. lit par lit zones).

Metamorphic, igneous and sedimentary rocks of the PCS have been intruded by later Palaeoproterozoic 'post-orogenic' granites of the Cullen Batholith, including the Jim Jim and Mount Bunday Granites (Jagodzinski and Wyborn, 1997).

The PCS and Cullen Batholith are locally overlain by felsic volcanic rocks belonging to the Edith River and El Sherana Groups, which are comagmatic with the Cullen Batholith

(Jagodzinski, 1992). These units are thickest in the south in the South Alligator Fault Zone and are generally absent in the Alligator River region due to Palaeoproterozoic erosion.

The various basement units are unconformably overlain by the Kombolgie Subgroup, the basal unit of the late Palaeoproterozoic Katherine River Group, McArthur Basin (Sweet et al., 1999a; Sweet et al., 1999b). This subgroup consists of a series of sandstone formations (Mamadawerre, Gumarrirnbang and Marlgowa Sandstones), which are divided by thin basaltic units (Nungbalgarri and Gilruth Volcanics). The minimum age of the Mamadawerre Sandstone is 1725 Ma based on geochronology of the Oenpelli Dolerite (see below). Detrital zircon SHRIMP data from the GA OZCRON database constrain the maximum age as ~1810 Ma. The true age is probably close to 1800 Ma (Rawlings, 2002). The sandstones form a flat-lying or shallow southeast-dipping strongly-jointed platform, called the Arnhem Land Plateau. The eroded edge of the Mamadawerre Sandstone forms the characteristic Arnhem Land escarpment and the isolated sandstone mesas and ranges on the coastal plain. The middle to upper part of the Katherine River Group is exposed ~50 km further to the southeast near Mount Marumba (Sweet et al., 1999b).

The Oenpelli Dolerite is the most pervasive mafic intrusive suite to affect the Alligator Rivers region and is the youngest Precambrian rock unit exposed. It intrudes various levels of the stratigraphy, including the PCS and Kombolgie Subgroup, forming highly magnetic sills, dykes, lopoliths and laccoliths. Intrusions can be either concordant or discordant with Palaeoproterozoic stratigraphy. This unit is currently constrained by a SHRIMP baddeleyite date of 1723 ± 6 Ma (Ferenczi et al., 2005), however, geochemical and geophysical data suggest several phases of intrusion throughout the region. At least one phase correlates with emplacement of the Nungbalgarri Volcanics at about 1780 Ma (Rawlings, 2002). These intrusive events had a pronounced thermal effect within the Kombolgie Subgroup, with the promotion of fluid flow and aquifer/aquitar modification. Localised effects in the sandstone include silicification, desilicification and introduction of chlorite, muscovite and pyrophyllite in active aquifer systems. A characteristic mineral assemblage of prehnite-pumpellyite-epidote has formed in the quartzofeldspathic basement rocks adjacent to the intrusions.

Field relationships between the Tin Camp Creek Granite and Kombolgie Subgroup are locally ambiguous. Although some outcrops show the Tin Camp Granite unconformably overlain by Mamadawerre Sandstone, locally pervasive silicification and up-doming of the sandstone above this granite is more consistent with emplacement as a sill at the basement-sandstone unconformity and subsequent thermal metamorphism of the sandstone. These observations may also be explained by long-lasting radiogenic-driven fluid flow and silicification above the granites and vertical structural displacement of the granite (i.e. isostatic uplift or solid state diapirism).

Deformation since deposition of the Katherine River Group includes transpressional movement along steep regional-scale strike-slip faults and possibly some shallow thrusting. These regional faults follow a pattern of predominantly north, northwest, north-northwest and northeast strikes, giving rise to the characteristic linearly dissected landform pattern of the Kombolgie plateau. Another significant set trends east-west and includes both the Ranger, Caramal and Beatrice Faults. The Bulman Fault Zone is a principal regional northwest feature and is considered to represent a long-lived deep crustal structure, with a large lateral component in rocks of the PCS. However, it is clear that post-Kombolgie displacements along this and other faults have not been great, because the Arnhem Land Plateau is essentially coherent and offsets along lineaments are generally minor. Field investigations of

many interpreted ‘faults’, including those with a marked geomorphic expression, show no displacement, and are best described as joints or lineaments (Thomas, 2002).

Erosional remnants of flat-lying Palaeozoic Arafura Basin and Cretaceous Carpentaria Basin are present as a veneer throughout the coastal zone of the Top End. Various regolith components are also recognised in the region.

Tenement Geology

The Nabarlek tenement is about 40% covered by the outcropping sandstone escarpments and dissected pavements of the Spencer Range. In the far west of the tenement, these escarpments form part of the Oenpelli Massif. This sandstone is basal Mamadawerre Sandstone of the Katherine River Group. Most of the remaining 60 % is lateritic and sandy regolith overlying metamorphic basement rock and intrusive Oenpelli Dolerite.

Figure 3: Local Geology

The oldest rocks on the tenement are the Kudjumarndi Quartzite, which crops out in the central northern part of the tenement. An inferred migmatitic contact between Cahill Formation and Nimbuwah Complex Granitoids is in the far east of the tenement. Intrusive Nabarlek Granite outcrops and subcrops over a larger area in the central part of the tenement. An amphibolitic unit up to about 70 m thick, locally associated with minor graphite occurs widely in the eastern part of EL10176 e.g. S27. There is some conjecture as to whether this unit is Zamu Dolerite. It is shown as such on several maps, but in places appears to be a banded para-amphibolite rather than an orthoamphibolite. This unit was considered prospective by previous explorers as the Nabarlek mineralization was hosted in amphibolite. Previous explorers have interpreted most of the meta-sedimentary basement of the tenements as Cahill Formation.

A sulfide and graphite rich Cahill Formation horizon, known elsewhere as the Two Rocks Unit has been intersected at the N7 Prospect in the northeast of the tenement, and contains minor copper mineralization. It is not known how widespread this horizon is within the Nabarlek tenement.

Exploration Target

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

Despite local variations in geological setting (structure, host rock, element association), all the occurrences appear to have a common position relative to the base of the middle Proterozoic unconformity, or its erosional margin. In several examples, down-faulted blocks of Kombolgie sandstone (reverse faults), as at Ranger No 3 orebody and the

Hades Flat Prospect between Ranger and Jabiluka, are present adjacent to the mineralisation. These and other recognised features are considered to be indicative of a favourable setting for the concentration of mineralising fluids.

The deposits of the South Alligator Valley (SAV) and the Rum Jungle-Waterhouse region also exhibit a spatial relationship to Proterozoic sandstone cover. Where undisturbed, the SAV deposits are 'capped' by the Coronation Sandstone as at Coronation Hill, or are in faulted contact with it in as is the case at El Sherana. Of note is the igneous affiliation of these deposits with the presence of rhyolitic volcanics, volcano-sedimentary rocks and, in the case of former, dolerite. Another distinguishing feature is gold enrichment and are the characteristic presence of palladium and platinum selenides. The Sargeants and Kylie styles of mineralisation, located south of Rum Jungle on the fringe of the Archaean Waterhouse Complex, have some similarities to the SAV with Au-PGE enrichments in association with uranium. The Depot Creek Sandstone, the basal unit of the Tolmer Group, unconformably overlies the host rocks to these deposits, which are hosted in a carbonate-carbonaceous schist sequence.

PREVIOUS EXPLORATION

Previous historic exploration prior to Cameco is described in detail in the 2004 Nabarlek Annual Report (Potter, 2005), and will not be repeated here.

In the first year of Cameco tenure extensive data compilation was completed. An airborne hyperspectral survey was flown over the entire tenement and interpreted. Fieldwork included reconnaissance and outcrop sampling of previously identified prospect areas (mainly S27, SMLB and N84) with twenty-six rock chip samples collected. Review and selected sampling of the drill core from those areas was also carried out. These prospects were prioritised as it was considered they had not been adequately tested and further work was warranted to determine the potential for mineralisation.

Reconnaissance and sampling was conducted on 13 airborne radiometric anomalies.

WORK COMPLETED 2005

Work completed in the second year of tenure included ongoing data compilation and review, geochronological dating, airborne geophysics consisting of TEMPEST and radiometric-magnetic surveys over southern portions of EL10176, reprocessing and reinterpretation of a 2001 TEMPEST survey, and reconnaissance and sampling of selected priority target areas.

Drilling originally proposed for S27 was not conducted, as further work was deemed necessary to better define drill targets. The drilling was postponed, pending results and interpretation of the airborne TEMPEST electromagnetic geophysical survey.

Data Compilation and Review

The majority of lithological and geochemical data has been entered into a digital database, further compilation and review is ongoing.

John Fabray, who previously worked for QML and AFMEX, was contracted to assist Cameco with familiarisation and reconnaissance of previously identified prospects. A

summary report synthesizing the exploration work conducted previously and remaining potential of known prospects in the Nabarlek tenements is provided in the following report.

[Appendix 1: Geology and Exploration of the Nabarlek Area](#)

Target Reconnaissance and Outcrop Sampling

Several historically identified prospects were reconnaissance mapped and re-sampled to elucidate possible controls on mineralisation and determine any remaining mineralisation potential. A total of 34 radiometric anomalies were identified during 2004 (numbered nana_arad04_01 to 36). Thirteen were ground checked in 2004 and a further two (35 and 36) were checked in 2005.

[Table 2: Radiometric Anomalies 2005](#)

[Figure 4: Nabarlek Prospects and Targets](#)

A total of thirty-eight field stations (NA050001-NA050031, NA050400-NA050406) were visited, data recordings made and thirty-six of the stations were sampled. This work was mostly helicopter supported but some localities near the main road to the Myra Camp were accessed by vehicle/foot. An Exploranium GR-120 scintillometer was used to collect radiometric data

[Figure 5: Outcrop Sample Locations](#)

[Table 3: Outcrop Field Descriptions](#)

[Table 4: Outcrop Descriptions](#)

[Table 5: Sample Descriptions](#)

The outcrop sampling and processing was performed using Cameco standard methodology, as outlined in Appendix 2. This appendix also details methodologies used for reflectance spectroscopy, laboratory techniques and methods, and analysed elements.

[Appendix 2: Sampling – Standard Procedures and Methodology](#)

PIMA data for each sample is contained in the following table. PIMA FOS files for outcrop and drilling samples are located in the data folder for this report.

[Table 6: Outcrop Pima Results](#)

Geochemistry Methodology

All samples were sent to NTEL for multi-element analysis. In total, four separate methods were used to analyse up to 65 elements and four isotopes as follows.

Basement samples and sandstone samples are separated in order to minimise contamination from the generally abrasive sandstone samples in the mills (quartz and quartzite samples are prepared as for the sandstone samples). Samples are dried at 110°C then weighed and crushed to –2mm through a Boyd crusher. The sample is divided using a Rotary Sample Divider to give a split of 300-400g before being milled in a whisper ring mill to a nominal –75µm. The pulp is digested using a mixed acid digest (G400) nitric, hydrochloric, perchloric and hydrofluoric with a double dehydration with perchloric acid. The digest is then read for a suite of elements listed in the appendix including total U, Th, Pb- isotopes chalcophile and rare-earth elements (REE) using either ICPMS (G400M) or ICPOES (G400I) depending on the element. A portion of this sample is analysed for Au Pt, Pd using a Fire Assay and an ICPMS or ICPOES finish (either method is suitable). LOI is measured at 1000°C. Boron is measured following peroxide fusion digest. A portion of each sample is then subject to a weak acid digest (Method G950), which is a dilute nitric acid digest. The sample is read using ICPMS for labile uranium and lead isotopes. It is important to note that with these weak partial leaches the data should not be used in an absolute sense (i.e. a small speck of uraninite in the sample will result in a very high result), but should only be used relatively and are only used to determine lead isotope ratios, and to determine from the relative concentration of labile uranium if radiogenic lead has been lost or added to the sample. This can then theoretically be used as a vectoring tool. Details of analytical methodology can be found in Appendix 2: Sampling – Standard Procedures and Methodology.

[Table 7: Outcrop Geochemistry Results](#)

Petrography

Twenty-six outcrop samples were submitted for petrography. Petrography was carried out by Pontifex and Associates, South Australia.

[Appendix 3: Petrography Report](#)

Historic Drilling

Drill hole NAUAD0004 was completed by AFMEX to test the U65 target, however the basement was never geochemically analysed. The hole intersected hematite fault breccia over a 45 m interval that is part of an interpreted thrust fault. This hole was sampled and geochemically analysed in 2005 to determine whether it had intersected uranium indicator geochemistry.

Sampling Methodology

Mineralized intervals are sampled as nominal 0.5 m 'SPLIT' samples. The remainder of the hole is composited over nominal 5 m intervals (10m for dolerite). Sample intervals for the 'COMPOSITE' and to a lesser extent the grade samples are determined from lithological and/or alteration boundaries by the geologist logging the hole. Routine sampling from every row of core involves selecting a 10 cm section that is most representative of the rock in that row and preferably avoids all veins and faults etc that might bias the results. This 10 cm section is halved using a core saw. One 5 cm half-core sample contributes to the 'Composite' geochemical sample and the adjacent 5 cm sample along hole is used for magnetic susceptibility and PIMA measurements. PIMA methodology is the same as that described in the Targets and Outcrop Sampling section. The core portion that is subject to PIMA is retained and transported to be stored at the Cameco Darwin warehouse. All PIMA *.fos files are in the Data folder, and the mineralogy as determined using the Spectral Assistant are in the Appendices.

[Table 8: Drill Hole NAUAD0004 Pima Results](#)

Geochemical analyses were performed by NTEL using the same methods as described under Geochemistry Methodology. Both 'Composite' and 'Split' samples are analysed for the same suite of elements.

[Table 9: NAUAD0004 Geochemistry Results](#)

Geochronology

A single sample from NANND0207 was submitted to Australian National University (ANU) for Ar-Ar geochronology (refer Appendix 4: ANU Ar-Ar Age Dating Report). This hole intersected a quartz-hematite-uraninite-sulfide vein with up to 0.25 m at 1.7% U (Potter, 2005) from 141.5 m to 141.75 m. The sample selected for geochronology was from 176 m in the same hole and consists of an interpreted xenolith of Kombolgie sandstone within dolerite that also hosts the mineralized vein. The sandstone is unusual in that it contains minor disseminated white mica and there was some conjecture as to whether the mica could be detrital or hydrothermal in origin or even that the xenolith is Kudjumarndi Quartzite.

The Ar-Ar age of 1685 Ma for the mica may represent a cooling age of the Oenpelli Dolerite, which has an intrusion age of 1723 Ma (Ferenczi et al., 2005).

[Appendix 4: ANU Ar-Ar Age Dating Report](#)

[Figure 6: Age Spectrum Diagram](#)

[Figure 7: K/CA Plot](#)

Below is a photo of the core sample analysed.

Figure 8: NANND0207 Core Photo

Geophysics

TEMPEST

In May 2005, Fugro Airborne Surveys Pty Ltd (Fugro) undertook a TEMPEST airborne electromagnetic survey over the southern third of the project. The flight lines were flown west-east with a flying height of 120 m, totalling 808 line km. The survey was flown over N84, S27 and U65 prospects to extend to the south previous coverage located north of SMLB.

Figure 9: TEMPEST Location Map

TEMPEST is a high-powered airborne time-domain system with a broad bandwidth, which enables good resolution of variations in resistivity whilst maintaining reasonable ground penetration. In addition, the airborne platform allows electromagnetic data to be acquired over broad areas where ground geophysics is impractical due to rugged topography. The survey was flown with the aim of providing 3-D electromagnetic data to assist with the identification of basement graphite, structural offsets, alteration and to infer the depth to the unconformity below sandstone.

In 2001, AFMEX flew a 200 m line spaced TEMPEST survey over the sandstone north of the SMLB prospect. This data was subsequently utilized to generate drill targets followed up in 2002. The 2003 Annual Report states that: “Interpretation of the 2001 airborne TEM survey provided approximate location of the unconformity, and also highlighted a number of conductive anomalies proximal to, or below, the interpreted unconformity. Drilling during this reporting period was designed to target these anomalies. All drill holes intersected the conductive body they were targeting, and apart from minor radioactivity, significant mineralization was not encountered”. The 2001 TEMPEST survey was a relatively early application of the technology to the Arnhem Land environment and we can now make several observations about the SMLB survey:

- The survey was flown north-south and really should have been flown northeast, perpendicular to the prospective Nabarlek shears.
- It is now known that in rugged areas the height correction utilized by Fugro over-corrects for topography, so that it is mimicked by the conductive unconformity.
- In sandstone areas there is excellent depth of penetration beyond the default cut-off of 350 m.
- The conductive targets identified by AFMEX were subtle x-component targets, which are not regarded by Cameco as high priority.

During 2005, Fugro were contracted to reprocess the SMLB survey without the HPRG (height, pitch, roll and geometry) correction, which introduces topographic effects. They also calculated time-constant grids, which can be useful for identifying conductors and was not part of the original processing. All subsequent interpretations in this report utilize both the reprocessed 2001 and 2005 TEMPEST data.

[Appendix 5: TEMPEST Fugro Logistics Report](#)

[Figure 10: TEMPEST X Time Constant Map](#)

[Figure 11: TEMPEST Z Time Constant Map](#)

[Figure 12: TEMPEST X RGB = Ch 8,5,2](#)

[Figure 13: TEMPEST Z RGB = Ch 8,5,2](#)

Background

Conductivity Depth Images (CDIs) are an important inversion product calculated by Fugro using EMFlow software (Encom Pty Ltd) and used to compare the TEMPEST with geology. Cameco has also utilised Profile Analyst software (Encom Pty Ltd) to calculate a 3D voxel, which can be used to investigate 3D features. This allows the depth to the first conductive layer to be extracted, referred to as the “conductive unconformity”. The 3D voxel has also been filtered to highlight maximum conductivities greater than 50 m below the surface (likely to relate to cover and weathering rather than features within the basement). A number of these 3D aspects have also been reprojected to plan view to facilitate comparison with ancillary datasets including geology. The z-component data has been used extensively since it is less prone to noise and couples best with sub-horizontal features such as the conductive unconformity.

The “conductive unconformity” is a term adopted to describe the first sub-horizontal conductive layer, commonly depicted in TEMPEST CDIs. In areas of Mamadawerre Sandstone this layer generally relates to the sandstone-basement unconformity contact and elsewhere it commonly relates to surface cover. Abrupt changes in the elevation of the TEMPEST conductive unconformity can sometimes be utilised to infer faulting and structure.

[Figure 14: Elevation of Conductive Unconformity from CDI's](#)

One of the primary objectives for the TEMPEST survey is to identify conductors associated with structure, since these could relate to clays, porosity or graphite; indicative of alteration and/or fluid-rock interaction with potential to precipitate uranium. Unfortunately, conductors can be difficult to reliably identify with 1D inversions due to artefacts and tails related to edge effects. Also, the conductive unconformity response or cover (+/- dolerite) may mask the response from underlying basement. Geometry, line-to-line consistency and x/z characteristics help to increase confidence that conductors are real, especially in the context of known

geology. Targets have been identified from the individual CDIs, elevation of conductive unconformity, time constants, time channels and voxel thresholds.

Magnetics and Radiometrics over N84 and S27

In August 2005, UTS Geophysics Pty Ltd of Perth conducted a joint magnetic, radiometric and DTM survey over the N84 and S27 prospect areas, totalling 405 line km. The survey was oriented west-east with a line spacing of 50 m and a flying height of 30 m.

The airborne survey was aimed at enhancing the resolution of radiometrics and magnetics to identify new uranium anomalies and infer structures.

Appendix 6: UTS Airborne Geophysics Logistic Report

Figure 15: Airborne Magnetics – Reduction to Pole (RTP) with 1st Vertical Derivative (1CD)

Figure 16: Airborne Radiometrics – Total Counts (TC)

Figure 17: Airborne Radiometrics – Potassium (K)

Figure 18: Airborne Radiometrics – Uranium (U)

Figure 19: Airborne Radiometrics – Thorium (Th)

Figure 20: Airborne Radiometrics – RBG = U,Th,K

Figure 21: Airborne DTM – Height with NE Sun Angle

DISCUSSION OF RESULTS

Target and Prospect Evaluation and Sampling

S27

S27 comprises flat lying plains of Cainozoic cover and sandstone subcrop surrounded by towering sandstone escarpments. The area is underlain by thin (<20 m) Kombolgie sandstone that has eroded in several areas to expose small windows of underlying schist and amphibolite. A weak GEOTEM conductor in the area, identified by QML, is likely amphibolite and underlying graphitic schists.

Station number NA050017 (refer Figure 5: Outcrop Sample Locations) is situated on a northeast trending fault zone in sandstone with south side up a few metres. On the north side of the fault the sandstone overlying the exposed unconformity (not radioactive) is apparently brecciated and looks similar to the sandstone overlying the unconformity on the north side of the east-west fault at Caramal.

Figure 22: Photo of Fault Structure NA050016

The fault was followed to the northeast where there is a valley in sandstone with strong red hematite alteration and minor specular hematite. This is the area where QML obtained anomalous uranium values in grid-based soil sampling. A total of twelve samples were collected (refer inset map within Figure 5: Outcrop Sample Locations).

Review of QML data shows uranium intersections in their drilling occur at the base of weathering and may be due to supergene processes. The northeast trending fault identified is a possible controlling structure and a target for drilling in 2006.

Data Acquisition No 9 (DAN9)

This target lies in Kombolgie sandstone where one sample was taken in 1989. Sample NA8953879 taken from a radiometric anomaly contained 48 ppm U. Six samples of sandstone were taken from localities around the previous sample site, plus one sample of a basaltic dyke. The dyke is poorly exposed and is pervasively hematised and limonitised. Station NA050007 contains sandstone with moderate druzy quartz veining and moderate purple hematisation. Prominent fracture sets were seen in the sandstone trending dominantly east-west and northwest and may reflect inferred faults in the area. A total of seven samples were taken with locations shown in:

[Figure 23: Data Acquisition 9 Area – Sample Locations](#)

S25 (Valley of Iron)

S25 (refer Figure 4: Nabarlek Prospects and Targets) was discovered by QML. It is another area where there is extensive secondary hematite in sandstone. Three samples were taken with a best result of 9.64 ppm U. All three samples however are associated with higher thorium than uranium in geochemistry, which downgrades the prospectivity.

U65

The discovery outcrop of prospect U65 (refer Figure 4: Nabarlek Prospects and Targets) was visited and one sample taken (NA050019). Fifteen RC/diamond drill holes were completed between 1992 and 1999. Several intersected weak uranium mineralisation in Oenpelli Dolerite however the basement was barren. U65 has affinities to the Nabarlek uranium deposit with an intrusion of Oenpelli Dolerite. The discovery outcrop was at the base of the sandstone escarpment and consists of a druzy quartz breccia with associated desilicification features such as caves. The druzy quartz breccias commonly have a hematitic coating. Geochemistry of the outcrop sample shows elevated uranium (29.9 ppm), P₂O₅ (11800 ppm) and Zn (242 ppm).

[Figure 24: Quartz Dissolution at NA050019](#)

NAUAD0004 was drilled at U65 to a depth of 299.6m with sandstone to a depth of 178.6 underlain by intercalated gneiss, schist and amphibolite to EOH. Brecciation is present from the unconformity to EOH. AFMEX had sampled the sandstone interval. The remaining brecciated semi-pelitic unit was sampled over 5 m intervals by Cameco in 2005. The unconformity is sheared and contains strong sericite and hematite alteration. The hydraulic breccia is locally milled with strong, pervasive hematite throughout. Geochemistry analyses show no anomalous uranium in the basement rocks.

N84

One sample (NA050013) of Cahill Formation was taken from a trench excavated into a radiometric anomaly that was the discovery site of the N84 prospect. The trench is adjacent to a quartz breccia outcrop. Generally outcrop is poor through this prospect area with sand over dolerite and basement. This sample of brecciated quartz-mica-schist has the highest uranium value of the second year programme with 49.8 ppm U ($U/Th = 7.57$). The sample contains patchy hematite alteration and pervasive limonite. Increased uranium correlates with increases in total lead (39.4 ppm), bismuth (7.06 ppm), cobalt (77 ppm), copper (31 ppm), nickel (70.8 ppm), vanadium (410 ppm) and P_2O_5 (1450 ppm).

Miscellaneous Sample Sites

Two low priority radiometric anomaly sites were visited in the southeastern part of EL 10176. At both sites it was found the radiometric anomaly was related to Nunbalgarri Volcanics which was previously unmapped in the area. A sample was taken at both sites (NA050008 and -09).

Three samples were collected from the chlorite anomaly identified by G Zaluski in the hyperspectral data (NA050010-12) from the survey flown in 2004. This is one of the few chlorite anomalies to be identified in Arnhem Land. The anomalous area is a sandstone pavement next to concealed dolerite that had been drilled previously by AFMEX. The sandstone is reddened, hematitic with red spotting developed in some places. Close examination revealed minor brownish micaceous flakes in the rocks and it is interpreted the reddening and flakes are probably from weathering of chlorite. It is likely the chlorite is the result of the intrusion of Oenpelli Dolerite that outcrops 100 m to the south of the anomaly. All three samples however are devoid of uranium.

The highest uranium value from 2004 was 738 ppm U in a quartz breccia in Cahill Formation. This breccia was re-sampled in 2005 but geochemistry from three samples failed to replicate the result, with a highest value of 1.59 ppm U. There is no increased radioactivity (as determined using a scintillometer) at the sample locality, an observation also made in 2004. It now appears the 2004 result was due to contamination from an unidentified source.

PIMA

PIMA spectra returning null or spectral TSA values were rejected. Pima samples with a TSA Error greater than 200 in the table should be disregarded and are not discussed further. Based on current data illite, kaolinite, intermediate chlorite and muscovite are the most common clay minerals. SMLB prospect area was dominated by kaolinite in sandstone with minor illite and intermediate chlorite. Prospect S27 PIMA displays lithological differences. Intermediate chlorite is confined to a narrow strip of chloritised Zamu Dolerite. The northern sandstone is dominated by kaolinite whereas the southeastern section consists of kaolinite + muscovite.

Geophysics

TEMPEST - Comments and Examples

The majority of the airborne electromagnetic response relates spatially to occurrences of Oenpelli Dolerite and to a lesser extent Zamu Dolerite. Physical property measurements are less extensive for the Zamu Dolerite. However there are ample measurements for the Oenpelli Dolerite to show that fresh dolerite is highly resistive ($>> 15000$ ohmm) but much reduced if altered or weathered (< 100 ohmm).

Over the past two years Cameco has continued to digitise historical drill holes from the Nabarlek project. Eighty-seven of these have intercepted graphite, however, only holes drilled at S27 and N7 (Anomaly U51) prospects are considered to have significant amounts. N7 was a radiometric and radon anomaly whilst S27 was a soil geochemistry anomaly. N7 is not currently covered by TEMPEST but is within the 1991 GEOTEM survey, which shows a late-time electromagnetic response. Airborne GEOTEM and ground electromagnetic surveys were used to guide drilling at the S27 prospect, which lead to the discovery of weak uranium mineralisation and the identification of graphite. However, Cameco's review of the GEOTEM data (located and gridded) has failed to identify any significant response. Similarly, there is no TEMPEST response other than the usual flat-lying conductive unconformity.

The "Two Rocks" unit is thought to be a graphitic sulfide rich meta-sediment and this unit may be present at the N7 prospect, where there is an electromagnetic response. However, it is unknown whether the response is due to graphite or sulfides. In general, sulfides have been intersected by a number of drill holes at the Nabarlek project and a high proportion of these also have also intersected graphite. However, there is no electromagnetic response that can be attributed directly to sulfides.

In order to demonstrate aspects of the TEMPEST response, a section has been chosen 1 km east of the N147 prospect and 2 km east of the Nabarlek Deposit:

- As expected, sandstone relates to strongly resistive surface features in the TEMPEST dataset, revealing the true limits of sandstone below cover.
- The conductive unconformity can be used to predict the depth of the basement-sandstone unconformity (to within 10-50 m).
- There is no TEMPEST response associated with hole NANND005, which intersected minor graphite.

- There is a 100 m change in the elevation of the conductive unconformity across an inferred northeast fault, which is also related to dolerite.
- A coincident x/z TEMPEST conductor is located on the major northeast trending fault, which may represent a high priority target since the existing RAB drilling is very shallow. Other x-component features are present but are not associated with a z-component response and therefore less reliable indicators of basement conductivity.

Figure 25: TEMPEST, Geology, SPOT 5, 1km East of N147

In 2002, AFMEX drilled a number of holes north of SMLB targeting TEMPEST features. Cameco considers these to be low-order targets and they are not related to anomalies in the time constant grids recently produced by FUGRO. Graphite has not been intersected in any of these holes so the targets may not be fully explained. Hole NASMD009 (AFMEX hole SMLB009), was drilled 200 m east of an x-component time constant anomaly. This hole intersected significant fracturing and hematite alteration associated with weak mineralisation. The alteration and fracturing may explain the TEMPEST feature and therefore provide incentive to follow-up similar targets, which exist nearby and have not been followed up.

Conductive Unconformity and Structure

As expected, outcropping Kombolgie Subgroup sandstone, relates spatially to strongly resistive surface features in the TEMPEST dataset. This can allow the inference of covered sandstone, revealing its true limits. The sandstone extents and conductive unconformity southeast of N147 can be identified in this manner, although, in general there are few occurrences of covered sandstone.

Abrupt changes in the elevation of the conductive unconformity can be useful for identifying faults. Three faults have been identified in this manner, which are all located within 5 km of the Nabarlek deposit. Two demark the sandstone edge of the main Oenpelli lopolith, northwest and southwest of the Nabarlek deposit. The third fault is oriented north-northwest and located 5 km west of the Nabarlek deposit.

Inferred faults and covered sandstone derived from the TEMPEST have been integrated into the ongoing project geology interpretation.

Targets

Targets have been identified and assigned a priority rating (1 is highest) based on the electromagnetic response and geology. It is recommended that the targets (~20), ranked 1-3 should be followed up during 2006. RAB drilling might be considered in areas of cover, whilst areas of sandstone should first be checked in the field to identify alteration and kinematic indicators that would encourage further investigations such as drilling. Two targets are ranked one and are recommended for RC or diamond drill testing.

Figure 26: TEMPEST Targets On SPOT5 Image

Table 10: TEMPEST Targets

None of the targets generated from reprocessing of old data from the 2005 survey are considered to have an unequivocal conductor response. Unfortunately, no high-order targets have been identified at the S27, U65 and N84 target areas. The lack of a response at S27 is particularly enigmatic since there are historical electromagnetic responses and drilling has identified significant graphite.

Magnetics and Radiometrics over N84 and S27

The detailed magnetic / radiometric survey has failed to identify any new high priority uranium anomalies, however, a number of subtle anomalies will be followed up in conjunction with field prospecting planned for the sandstone surrounding S27. Oenpelli Dolerite dominates the magnetic response at N84. Elsewhere, the magnetic variation is extremely subtle, however, a number of new structures can be inferred and should be considered when planning drill programs in the area. There is no observable magnetic response associated with the S27 fault.

EXPENDITURE

Eligible expenditure on the Nabarlek project in 2005 was AUD\$99,026.

Table 11: Eligible Expenditure Statement

CONCLUSIONS AND RECOMMENDATIONS

Work completed during 2005 has highlighted the **S27** prospect area as a priority for follow-up in 2006. Shallow RC to test the extent of the identified mineralisation under sandstone and recent cover is recommended. Potential remains in the larger **SMLB** area, however precise targets have not been defined. Extensions of the Boundary fault do not appear to be conclusively tested by sampling or drilling to the northwest and further drill testing could be considered.

Historical prospects with remaining potential identified by John Fabray require a full data evaluation, ground evaluation and further sampling of core and /or outcrop as appropriate. The geology in the vicinity of the higher ranked TEMPEST targets needs to be evaluated on the ground to determine if there are any supporting structural or alteration features indicative of mineralization in the area. Higher ranked targets from these evaluations should then be drill tested.

A regional RAB programme is proposed to test areas with recent cover lateral to previously tested targets and to test inferred concealed prospective structures. Some of these areas are:

- **‘Contact’** located in the northeast of the tenement where there is an inferred contact between Cahill Formation to the southwest and Nimbuwah Complex to the northeast. It is unknown whether this contact is a major structure (and potentially mineralized) or

a migmatite zone. There are some historic uranium anomalies near this contact, which supports the former interpretation.

- Two samples in the **U101** region contain elevated U values (22 ppm each) in historical samples of sandstone. The samples are from near concealed inferred faults.
- At **S9** South there is a strong radiometric anomaly of U+K (RGB U Th K), possible east-west and northeast-southwest faults and a conductor was identified in the same area in the 2005 TEMPEST survey. One historical sample contains 74 ppm U from a kaolinite-hematite rock. The basement geology is under cover, however Nabarlek Granite and Zamu Dolerite or amphibolite are postulated to occur here under shallow cover. The radiometric anomaly occurs at the interface between steep sandstone escarpments and flatter basement. In addition other small radiometric anomalies occur in the region (UxU/Th).
- **S25** occurs at the base of the escarpment at the interface between sandstone and Cahill Formation. The Cahill is covered by Cainozoic cover. A single sample contained 52 ppm U in sandstone (?) at the base of the escarpment. Minor weak radiometric anomalies (UxU/Th and RGB U Th K) occur in the area.
- The **Q5** anomaly occurs at the interface between the Kombolgie sandstone escarpment and Cahill Formation. Minor weak uranium anomalies are present (RGB U Th K and UxU/Th). Several samples have been taken from this area, however there is Cainozoic cover which may have been sampled rather than the underlying bedrock
- **U65** north is an extensive area to the north and northwest of the U65 prospect area with faults inferred to extend under cover. The east-west Steven's fault also extends through the northern part of this area. There is up to 1000 ppm U intersected in RC and RAB holes on this structure at N23, There is also anomalous zinc, arsenic and nickel in RAB holes drilled near where the Steven's fault intersects the north-south Quarry Fault. However the majority of the strike of these concealed structures have not been drill tested.
- **U98** is located to the west of the Nabarlek deposit. For reasons not clearly stated neither QML nor AFMEX considered the western part of the tenements prospective and conducted little or no work in here. Areas with inferred concealed faults are readily tested by RAB in these areas.

A TEMPEST survey to cover areas of the tenements not covered by the two previous surveys is also recommended in order to reveal concealed faults and conductors.

A gravity survey (over selected areas due to the high cost) is also recommended as a means to better understand basement architecture, which may lead to identification of uranium targets.

The highest priority TEMPEST target (strong conductor) is located near N147 where QML identified a small uranium resource associated with dolerite. The target is at ~150 m and will require RC or core drilling. A Sub Audio Magnetic (SAM) survey is also proposed for this area to determine if other targets can be defined. Less prospective TEMPEST targets rated 4-5 are not recommended for immediate follow up. Rather, they should be assessed in conjunction with ancillary datasets as appropriate.

2006 WORK PROGRAM AND PROPOSED BUDGET

The proposed 2006 Work Program comprises 240 RAB holes for 4800 m, and a total of 1500 m of RC drilling to test the N147 and S27 target areas. Proposed geophysical surveys include a SAM Survey at N147, and TEMPEST over parts of the tenements not covered in existing surveys. Airborne gravity over part of the tenement is also proposed. Helicopter and ground supported sampling and reconnaissance will also be conducted. Drilling areas will require refurbishment of old tracks and new track construction for access by the drilling equipment.

The proposed expenditure for the Nabarlek Project for 2006 is AUD\$600 000

Tenement	Expenditure (AUD\$)
EL10176	\$560 000
EL24371	\$20 000
EL24372	\$20 000

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