



ARAFURA RESOURCES NL

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**SOIL SAMPLING PROGRAMME RESULTS, NOVEMBER 2005
EL 9709 ELKEDRA
NORTHERN TERRITORY, AUSTRALIA**

by

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INTRODUCTION

BACKGROUND

Application for EL9709 was lodged in 1996 to secure basement rocks which belong to the same units as those which host gold mineralisation and possible Ni-PGE mineralisation at Kurinelli, and Ni-Cu mineralisation at Barrow Creek.

In the Independent Consulting Geologists Report that was prepared to support Arafura Resources' IPO in 2003, Drummond, (2001, 2003), considered that the following were valid targets in the area:

- Kurinelli-type Au
- Hatches Creek-type tungsten
- Barrow Creek-type nickel/Cu
- diamonds in primary intrusions.

Following Arafura Resources' successful application of systematic wide-spaced reconnaissance soil sampling at Kurinelli in 2004-2005, (Goulevitch 2005; McGilvray 2006), the same exploration technique was conducted over similar basement rock units at Elkedra, (EL9709), in 2005. This report details the results of that investigation.

LOCATION AND ACCESS

Elkedra is located 90 kilometres ESE of Murray Downs and 150 kilometres ESE of Wauchope in the Northern Territory (Figure 1).

Northern access to the area is via the unsealed Davenport Loop Road and Elkedra Station Road which leaves the Stuart Highway 150 kilometres south of Tennant Creek. A vehicle track to Fitz Bore and the licence area leaves the unsealed road 7km before Elkedra Station. Elkedra Homestead is located ~40 kilometres NNE of the licence area.

Southern access is via an unsealed road which leaves the Sandover Highway at Ammaroo Homestead. Ammaroo Homestead is located 30km south of the licence area. Some bush tracks and graded fence lines provide access across EL9709 and cross-country 4WD vehicle passage is possible to many areas.

The area is generally inaccessible between January and April as seasonal rainfall, though scattered, regularly disrupts passage on roads and tracks.

TOPOGRAPHY AND DRAINAGE

Topography within EL 9709 is characterised by low relief in the central, eastern, northern and southern areas and open sandy country in the west (Figure 2).

Creeks drain from the central and eastern areas of EL 9709 northwest into George Creek and east into Newlands Creek. Both creeks flow for short periods in the summer discharging into the Elkedra River. Several waterbores exist in the area although water quality is poor and fit for stock consumption only.

CLIMATE AND VEGETATION

The Elkedra Region has a semi-arid, tropical climate. Rainfall data from the Bureau of Meteorology, taken at Ali Curung and Barrow Creek, indicates the mean yearly rainfall is 350mm. The bulk of rainfall occurs during summer, from November to March, and is sourced from monsoonal tropical low pressure systems and occasional cyclones. Maximum temperatures of over 40°C are common during summer and minimum temperatures of less than 10°C are common during winter.

Vegetation in the area is dominated by a variety of grasses, mulga/gidgea trees and occasional eucalypts. Spinifex is the dominant grass species which grows on hills, valleys and open plains. Mulga and gidgea tree stands grow on plains and valley floors. Eucalypts are generally found along watercourses (Blake & Horsfall 1987).

SUMMARY

The first phase of soil sampling was carried out in Elkedra, (EL 9709), during November, 2005, by AERS (Figure 3 & 4). Sample protocols used for initial exploration at AC 74 Kurinelli, (Goulevitch 2005), were employed.

No elevated gold values were obtained. From the 141 sites sampled:

- 47 sites returned a value above the detection limit of 1ppb;
- 0 sites returned a value above 2ppb;

None of the results are considered anomalous.

Peak results for base metals were;

Cu – 36 ppm – average 13 ppm;
Pb – 34 ppm – average 6 ppm;
Zn – 86 ppm – average 29 ppm;
Ni – 51 ppm – average 11 ppm;
Co – 13 ppm – average 3 ppm;
Ag – 1 ppm – average <1 ppm.

Peaks and averages are consistently lower than Kurinelli determinations, except for Zn, (Goulevitch 2005; McGilvray 2006). None of the base metals appear anomalous.

The results are discouraging and it is proposed to terminate further exploration activities and relinquish EL 9709.

CONCLUSIONS

- The initial stage of regional exploration on EL9709 proved unsuccessful in defining Au anomalism or base metal anomalism over the Rooneys Formation.
- Gold and base metal results were consistently lower than regional results from Kurinelli.
- The Cobalt Bloom identified by Rio Tinto is not in the vicinity of EL9709.

RECOMMENDATIONS

- Terminate further exploration and surrender EL9709.

TENURE

MINING/MINERAL RIGHTS

Exploration Licence 9709, originally of 420 blocks (1343 sq. km), was granted to McCleary Investments Pty. Ltd. on the 23rd December, 2001, for a period of six years. The licence was transferred to Arafura Resources NL on the 4th of March, 2002.

EL 9709 was reduced to 210 blocks, (671.70 sq. km), in the third year of its term, 22nd January, 2003, and further reduced to 56 blocks, (179 sq. km), at the start of the fourth year, on the 22nd January, 2004.

LAND TENURE

Background land tenure under EL 9709 is part of:

- Elkedra Station, Perpetual Pastoral Lease 1000 – NT portion 3431 via Alice Springs, NT 0870, owned by Roy Driver of Elkedra Station, via TENNANT CREEK 0861 (Ph/Fax – 89569889/870).
- Ammaroo Station, Perpetual Pastoral Lease 1105 – owned by D.A. & C.M. Weir, Ammaroo Station, PMB 154, Alice Springs NT. (Ph/Fax – 89569899/898).

NATIVE TITLE

A registered native title claim is in place to the west of EL9709 and does not impede exploration activities.

Details of the Native Title area are:

X1=135°24'21.31"

Y1=-21°25'26.15"

X2=135°33'38.03"

Y2=-21°29'28.63"

Area: 18606.124 square metres

Tribunal No.: DC01/69

Location: Sandover River

FC No.: NTD6069/01

NNTT No.: DC01/069

Effective: 19/12/01

ABORIGINAL SACRED SITE CLEARANCES

Prior to commencement of soil sampling activities an Aboriginal sacred sites survey was conducted over the area of intended activity by members of the relevant Native Title Group on the 9th of November, 2005. The survey was coordinated by Anthropologist, Mr Olaf Geerken, and Mining Officer, Ms Julie-Ann Stoll, of the Central Land Council. The CLC advised Arafura Resources NL of the location of two new exclusion zones within EL 9709, one sacred site outside of EL 9709, and two sacred sites that were unlocated.

The sacred sites clearance issued by the CLC is effective for Phases 1 & 2 of exploration at Elkedra as defined in correspondence from Arafura to the CLC, dated 30th September, 2005. Phase 1 soil sampling was completed in November-December, 2005. Phase 2 is detailed infill soil sampling, gridding, rock sampling and mapping in one or more campaigns down to 50m x 25m line and sample spacing. Phase 3 is RAB or RC

drilling of identified targets. Prior to the commencement of Phases 2 and 3 detailed location plans and work programmes have to be submitted to the CLC in accordance with the provisions of the Exploration Agreement.

A number of registered/recorded sites defined by the AAPA were found to be inaccurate during the sacred sites clearance and subsequent meeting with the CLC. CLC representatives stated they did not have the authority to change site coordinates and until the AAPA amended site locations, both sets of coordinates were to be avoided.

GEOLOGICAL SETTING

REGIONAL GEOLOGY

Prospective basement rocks in the Elkedra Project Area belong to the Palaeoproterozoic Ooradidgee Group within the Davenport Province of the Tennant Creek Region in central Northern Territory. The geology of the Davenport Province was first described in detail by Blake *et al.* (1987) but their description and maps have been modified since that time, most recently by Donnellan (2004) and Donnellan and Johnstone (2002, 2004) after close-spaced low level airborne geophysical surveys were completed over the region. The following summary is written mainly with reference to the 1:500 000 scale Tennant Creek Region maps of Donnellan (2002) and Donnellan and Johnstone, (2004) and to a lesser extent with the 1:250 000 scale Davenport Province map of Blake *et al.* (1988), the NTGS 1:250,000 Elkedra Map Series of Stidolph *et al.* , (1988), and the 1:100 000 scale Elkedra map series by Blake & Horsfall, (1987).

“The Tennant Creek Region is a composite term used for the pre Barramundi basement (Warramunga Province) and the unconformably overlying Palaeo- to Mesoproterozoic North Australian Platform Cover successions of the Davenport and Ashburton provinces to the south and north respectively. To the east and west the Palaeozoic Georgina and Wiso basins overlie the Tennant Creek Region.” (NTGS website, February, 2005)

In the central Tennant Creek Region, volcanoclastic/volcanic rocks and flysch sediments of the Warramunga Province were intruded by granites and deformed by the Tennant Orogeny at ~1850 Ma. These units and intrusives are unconformably overlain by relatively undeformed and predominantly sedimentary successions of the Ashburton Province to the north and mildly deformed and metamorphosed sedimentary and volcanic successions of the Davenport Province to the south. (after NTGS website, February, 2005)

The basal unit in the Davenport Province, the Ooradidgee Group, crops out predominantly in a discrete inlier (here termed the “Kurinelli Block”) some 85 x 50 kilometres in extent centered on the Kurinelli area. The Kurinelli Block, which is evident as a discrete magnetic/gravity domain in geophysical images (Donnellan, 2004; Donnellan and Johnstone, 2004), is bounded to the south by the overlying sequences of the Hatches Creek Group and to the north and east by Cambrian, Cainozoic and Recent sediments. An intrusive plug of “Devil’s Suite” granite (1710 Ma, Donnellan and Johnstone, 2002), some 10-15 x 25 kilometres in extent (obscured for the most part by a veneer of the younger sediment listed above), largely defines the eastern limit of the lower Oorididgee Group units in the Kurinelli Block but upper Oorididgee Group rocks have been mapped to the east of the granite. The presence of the Hanlon Creek Granite is clearly demonstrated on aeromagnetic images of the region by a domain of uniformly even magnetic character with coincident low Bouguer gravity response (Donnellan, 2004; Donnellan and Johnstone, 2004).

Lesser exposures of the Ooradidgee Group occur in major anticlinal domes near Kurundi and Wauchope in the Murchison and Davenport Ranges, 50-80 kilometres west of Kurinelli; at Hatches Creek, Skinner Pound and Murray Downs in the Davenport Range, 30-50 kilometres south of Kurinelli; and at Newlands Creek, 100 kilometres to the southeast of Kurinelli. It is only in the Kurinelli Block and at Newlands Creek that the oldest sediments of the Ooradidgee Group, the Rooneys Formation, are exposed. EL9709 covers the exposures at Newlands Creek.

In the Kurinelli Block, the lowest exposed units of Ooradidgee Group are the Epenarra Volcanics and the Rooneys Formation. According to Blake *et al.* (1987), the Rooneys Formation is conformable on and interfingers with the Epenarra Volcanics but the relationship between these units is not clear on published maps of the area where they are shown to be separated by, and overlain by the Kurinelli Sandstone. Elsewhere in the Kurinelli Block the Epenarra Volcanics are separated from the Kurinelli Sandstone by the Edmirringee Volcanics, and the Kurinelli Sandstone is overlain by the Taragan Sandstone and the Treasure Volcanics. Map codes, thicknesses (Blake *et al.*, 1987) and descriptions of rock components of these units are listed in Table 1.

In EL 9709, the lowest exposed units of the Ooradidgee Group is the Rooneys Formation. The Rooneys Formation are the core sediments of the Tosca Anticline/Dome younging to the north, east and west. Younger sequences to the south are completely obscured by flat lying Cambrian strata. Ooradidgee Group members are conformable from the Rooneys Formation to the Treasure Volcanics. Members are intruded by the Elkedra Granite, dolerite and dacitic granophyre. The Unimbra Sandstone, the basal member of the Wauchope Group, lies conformably and unconformably upon the Treasure Volcanics.

The units of the Oorididgee Group are intruded by dolerite (Pdl) and dioritic to rhyolitic granophyre (Pgy). According to Blake *et al.* (1987) the mafic intrusions consist of fine grained dolerite ranging to coarse gabbro, they are generally altered, and they are not present any higher in the sequence than the lower part of the Wauchope Sub-Group (lower Hatches Creek Group) which unconformably overlies the Oorididgee Group. Outcrop and magnetic patterns suggest that some of the dolerites consist of folded stratiform sheets (Donnellan and Johnstone, 2002) and this is especially the case where the dolerite (?sills) intrude the Rooneys Formation in the middle of the Kurinelli Block. It would seem from this that intrusion of dolerite sills in the Kurinelli Block preceded regional deformation and metamorphism of the Oorididgee Group and some may have been associated with "Treasure Suite" volcanism in late Oorididgee times (1820 Ma, Donnellan and Johnstone, 2002).

The units of the Oorididgee Group are intruded by felsic igneous rocks at three locations along the Wauchope Fold Belt and one location in the Taragan Block in the Devonport Province. The Elkedra Granite (Pge) in the southeast of the Wauchope Fold Belt consists of medium- to coarse-grained, equigranular to megacrystic monzogranite. Granite intrusions are generally homogenous however small areas vary in composition to tonalite and granodiorite, i.e. outcrop at Tosca Mine, contain tourmaline and are cut by zones of greisen, quartz-feldspar-tourmaline pegmatite and quartz-tourmaline veins. The granite was isotopically dated by the Rb-Sr method at 1660 Ma (Stidolph *et al.* 1988).

TABLE 1: Description of Oorididgee Group units in the Elkedra Region.

OORIDIDGEE GROUP UNITS	THICKNESS (m) Blake <i>et al.</i>, 1987	CODE Stidolph <i>et al.</i>, 1988	CODE Donnellan, 2004	DESCRIPTION Donnellan, 2004
Treasure Volcanics	0->1800	Pht	Pot	rhyolitic to dacitic lava and pyroclastics including ignimbrite, felsic intrusives, feldspathic/lithic arenite, quartz arenite, minor basaltic lava
Taragan Sandstone	0->1000	Pho	Poa	feldspathic/sublithic arenite, quartz arenite and conglomerate, minor siltstone, mudstone and altered felsic lava
Edmirringee Volcanics	0-2500	Phg	Pog	basaltic lava, minor volcanoclastic arenite and felsic lava
Kurinelli Sandstone	0-2600	Phk	Pok	subarkosic/lithic arenite, quartz arenite, siltstone and minor felsic and mafic lava and tuff
Epenarra Volcanics	0->3000	Phr	Por	felsic lava and pyroclastic rocks including ignimbrite and lapilli tuff, volcanoclastic arenite and conglomerate, minor mafic lava
Rooneys Formation	0->1200	Phn	Pon	greywacke, siltstone, subarkosic/sublithic/lithic arenite, minor felsic porphyry; locally schistose

LOCAL GEOLOGY

(from Blake & Horsfall, 1987)

EL 9709 occupies the southwestern area of the Elkedra 1:100,000 map sheet, (Figure 4). The geology consists of Palaeoproterozoic basement rocks of the Rooneys Formation (Phn), Kurinelli Sandstone (Phk), Treasure Volcanics (Pht), Unimbra Sandstone (Phs), an unnamed dolerite, (Pd), and felsic granophyre, (Pgy), and the Elkedra Granite, (Pge). An anticlinal core exposes the Rooneys Formation in the central part of the licence and successive formations young to the north, west and east boundaries of EL 9709.

Dolerite and felsic granophyre intrusions crop out in the east along the apparent boundary between Rooneys Formation and Kurinelli Sandstone, and in the west in Unimbra Sandstone. Based on descriptions from Blake & Horsfall, (1987), the two exposures of dolerite are petrographically different. Dolerite intrusions in Rooneys Formation and Kurinelli Sandstone are medium- to fine-grained and foliated with ophitic textures, composed of altered plagioclase laths, greenish-brown biotite, chlorite, epidote, calcite and quartz. The dolerite intrusion in Unimbra Sandstone is a quartz dolerite with sodic plagioclase phenocrysts, clots of fine-grained biotite, epidote, opaque minerals, apatite and interstitial quartz and alkali feldspar.

The type area for the Elkedra Granite, (Pgy), occurs in the east of EL9709. The Juggler tungsten mine is situated in this area. The granite is described by Blake & Horsfall, (1987), as equigranular, medium- to coarse-grained leucogranite composed of equal proportions of quartz, oligoclase and microcline feldspars, up to 10% muscovite and subordinate biotite, and accessory apatite. Contact metamorphosed rocks occur within a 100 metre radius of granite consisting of spotted schist and hornfels.

An unnamed granite, (Pg), occurs in the south of EL9709 composed of granodiorite and leucocratic microgranite. The granodiorite is grey, fine-grained and contains small feldspar phenocrysts. The leucocratic microgranite consists of fine-grained, equigranular quartz and microcline with sparse, weakly aligned muscovite and biotite. Veins of medium-grained leucogranite cut the intrusion and are believed to be related to Elkedra Granite.

Two Cambrian units occur in the south of EL9709 and across the Elkedra 1:100,000 map sheet. The Early Cambrian Andagera Formation, (€), ranges in thickness from 1 metre to possibly 50 metres. The dominant lithology is a conglomerate consisting of well rounded to subangular pebbles sourced from local Hatches Creek Group rocks. Minor beds and lenses of poorly sorted, friable/silicified sandstone with cross-bedding and ripple marks are present. The formation represents fluvial and scree deposits.

The Sandover Beds, (€), occur in the south of EL9709. The unit ranges from 120 metres to 180 metres thick and consists of medium-bedded to laminated, friable/silicified, variably micaceous siltstone/sandstone and finely banded chert, which is commonly brecciated and contorted. Trilobites and brachiopods are found in arenaceous beds and hyolithids are found in chert. Cambrian units are sub-horizontal and unconformably overlie the folded Palaeoproterozoic lithologies and intrusives.

Quaternary alluvial, mixed colluvial and Aeolian sediments, (Qc), are well represented in the central area of EL9709. Sediments are representative of erosional deposits from the low-lying hills and mesas in the east, north and south. Fluvial deposits, (Qa), occur on Qc sediments where stream water flow rates decrease into creeks.

PREVIOUS INVESTIGATIONS – ELKEDRA PROJECT AREA

(From Drummond 2001-03)

PRIOR TO 1996

The application area has a poor mining history. According to the BMR (Blake & Horsfall 1987) :

"A few small abandoned mines and prospects of unknown production are located in Elkedra region. At the Juggler tungsten mine in the south, wolframite occurs in a narrow quartz-tourmaline vein, bordered by greisen, within the Elkedra Granite. At a small prospect pit nearby, secondary Cu minerals impregnate sheared schistose sedimentary rocks of the Rooneys Formation. Detrital scheelite is present in stream sediments in the vicinity of the Elkedra Granite"and...."Turquoise has been mined at the Tosca mine. It occurs in weathered Cambrian sediments close to the unconformity with underlying Proterozoic rocks."

Possibly because of its lack of outcropping mineralisation, the area has received a comparatively low degree of exploration attention. Open File Records at the NTDME disclose the following information.

(a) Vam Limited (1968-1971) AP2000. CR71-070

Initially, phosphate in the basal Georgina Basin was the target and although Vam discovered some, that commodity is understood not to be of interest to Arafura. During 1968 it also undertook a strong drilling and evaluation programme over the Tosca turquoise deposit, which is excluded from EL9709. It points out potential for further discoveries at the same stratigraphic level. In 1971 following air photo interpretation, IP surveys were carried out. Two areas south and east of the Tosca mine were recommended for further work in the Cambrian sandstones and ground reconnaissance was undertaken. No mineralisation of any significance was encountered. By 1971 an additional target was volcanogenic or sediment-hosted base metal deposits but it seems that no actual field exploration was actually carried out before the tenement was relinquished.

(b) Metals Investment Holdings N L (1971) AP3228. CR71-083

The south-eastern corner of that tenement covered the north-west part of Arafura's tenement. While it seems that the target was base metal mineralisation in, or proximal to, porphyry intrusives and/or volcanics, it seems that little field work was done.

(c) Amoco Minerals Australia Co (1983-84) EL4043. CR84-095

Amoco considered that the Frew River Formation was a potential host for stratabound W and base metal mineralisation and its 1983 work was primarily designed to evaluate this formation, particularly its calcareous horizons. This is a generally recessive unit. Nonetheless, outcrops were located and a limited stream sediment and rock chip sampling programme found the "Cobalt Bloom" Prospect (Figure 11.1). Anomalous Cu, Zn, Co and Ba were found in a 250m wide zone. Manganiferous breccia zones returned values up to 9300 ppm Cu, 1250 ppm Zn, 4800 ppm Co and 2.55% Ba.

BHP also joint ventured into EL4043 so as to search for diamonds. It carried out a wide-spaced, helicopter-supported, heavy mineral and silt stream sediment sampling programme over the EL. A total of 32 samples in each category was collected. BHP found no indications of kimberlites and withdrew from the venture.

(d) Shaft & Tunnel Pty Ltd (1994-95) EL8607. CR95-532

This tenement was centred around the Tosca turquoise deposit and was taken up for the purpose of exploring for additional turquoise deposits and of developing enhancement techniques for the Tosca gemstones. However the existence of an Aboriginal sacred site did not allow field assessment. Regional studies, including Cu assay of water bore drill hole cuttings, highlighted the potential for further turquoise discovery in the district.

(e) MIM Exploration Pty Ltd (1990 - 1994). CR92-660, 93-515, 94-073, 94-137, 94-488

Initial exploration concentrated on the Au potential in the Hatches Creek sequence. A Pine Creek Inlier metallogenic province model was proposed as the Davenportes are early Proterozoic low grade metamorphics intruded by granites. An initial helicopter supported stream sediment sampling programme was carried out over the whole of the EL: 289 samples were collected at a sample density about three per square kilometre. Samples were assayed for BLEG Au, and a minus 80 mesh split was also assayed for a variety of other elements. No Au assay exceeded 0.6 ppb. Other elements assayed were uniformly low, even where collected close to known surface mineralisation. It considered that the base metal results may have been very subdued because of the sandy nature of the streams and Drummond considers this may also be the case for Au.

A 1992 lag sampling programme in an area close to the Elkedra Granite failed to source anomalous float rock chip samples collected in 1990. Rock chip sampling of manganiferous lateritic cappings at Amoco's Cobalt Bloom locality reported high surface enrichment of Cu, Zn, Co and Ag over one km of strike length. The Cobalt Bloom locality was selected for detailed exploration during 1992. The area was mapped at 1:2500 with rock chip sampling of manganiferous and ironstone outcrops. Ten soil lines and three lag sample lines were completed over a strike length of 2 km. Results from all surface sampling defined an anomalous Cu and Co zone which could be traced for nearly 1.5 km. A combined IP and SIROTEM survey was then completed and a number of shallow anomalies were defined.

Eleven percussion holes and one diamond hole tested both the surface and geophysical anomalies. All holes intersected an oxidised sequence of fine grained siltstones, dolarenites and arenites. Although moderately anomalous the values for Cu, Co and Zn were disappointing.

Best values were as follows :

Hole	From m	To m	Width m	Cu ppm	Pb ppm	Zn ppm	Co ppm	Mn %
SP2	12	32	20	1522	34	239	347	2.86
SP8	0	28	28	927	239	701	78	0.60
SP9	8	24	16	828	234	465	38	0.08

As there was little correlation between drill results and the IP-SIROTEM survey, a more detailed IP survey was carried out in late 1993. It was then concluded that the chargeability sources were due to the surficial Mn in outcrop and the tenement was relinquished.

(f) Luina Pty Ltd (1993 - 1995) EL7987. CR94-375, 95-898

The area was selected by Luina following a review of the geology of the area in which it interpreted geological similarities between the felsic volcanics in the early Proterozoic Hatches Creek Group and similar rocks in the Drummond Basin in central Queensland. There, several significant epithermal-style Au deposits (Wirralie, Pajingo, Yandan, Twin Hills) were located using BLEG geochemical search techniques which are well suited to

searching for fine Au in weakly metamorphosed areas. It established the Newlands and Arabulja Volcanics and interlayered sediments in the Wauchope Sub-group and, to a lesser extent, the Treasure and Edmirringee Volcanics in the Ooradidgee Sub-group as potential targets for epithermal systems and associated Au mineralisation.

Observations by the BMR (Blake 1988) reinforced Luina's model as the former considered it recognised hydrothermal alteration and silicified fumarolic deposits. The BMR also interpreted volcanic centre. Most of Luina's tenement lay north-west of EL9709. However BLEG sampling of the Newlands Volcanics in the Whisky Creek Anticline in EL9709 was carried out and returned anomalous Au values.

(g) North Exploration (1993-1994) EL8146. CR94-620

North targeted stratiform base metal deposits within sediments of the Hatches Creek Group, especially the recessive Frew River and Lennee Creek Formations. EL8146 was coincident with a wedge of sediments along the Erldunda Syncline on the northern edge of EL9709, and a few kilometres east of Luina's tenement.

North's sampling density was relatively low but it remarked that it found no evidence of significant base metal mineralisation. It also pointed out that extensive deposits of aeolian sand over the recessive units reduce the effectiveness of soil geochemistry. To conclusively test the recessive units, it concluded that a programme involving shallow RAB/aircore drilling accompanied by airborne EM may be required.

(h) BHP Gold (1991)

BHP Gold's major stream geochemical appraisal of the Davenport Province included coverage of Supplejack. The base metal anomaly associated with the Cobalt Bloom Prospect was found to be considerably more extensive than had been indicated by AMOCO. Its orientation does not necessarily coincide with the inferred disposition of only the Frew River Formation, and a structural input can be presumed.

A significant anomaly occupies the central north part of the tenement. No follow-up of the anomalies was undertaken by BHP Gold/Newcrest and, as results were not reported to NTDME, the subsequent explorers were not able to utilise the data.

NORTHERN TERRITORY GEOLOGICAL SURVEY

The Elkedra Region was included in a high-quality, semi-regional airborne magnetic and radiometric data collection program, (400m line spacing), along with Bonney Well and Frew River Regions undertaken by the NTGS in 1999. Magnetic and radiometric data and geological mapping information were integrated with 11km spaced BMR gravity data to produce an interpreted 1:500,000 scale Palaeoproterozoic geology map of the Tennant Region, (Donellan and Johnstone, 2004).

WORK COMPLETED NOVEMBER, 2005

SOIL SAMPLING

The area of the survey was selected on the basis of published geology, aeromagnetic patterns and total count radiometrics. Aeromagnetic patterns and geological mapping define prospective basement rocks, i.e. Rooneys Formation. Total count radiometrics provide some indication of the distribution of basement derived soil not obscured by thick alluvium or Aeolian sand.

Soil sampling protocols employed during programmes at Kurinelli which were considered successful, (Goulevitch 2005; McGilvray 2006), were employed for Phase 1 soil sampling at Elkedra (EL 9709).

141 sites were sampled and two sets of 148 samples were taken, (two sets of 7 duplicates), by experienced personnel supplied by Arnhem Exploration and Rural Services Pty. Ltd. who are based in Tennant Creek. Samples were collected at 500 metre spacing on lines 1000 metres apart. Procedures followed by AERS are described below:

At the start of the program, the sample teams were briefed on exclusion zones and other issues as required by the CLC work program clearance dated 21 November 2005.

Sample spacing was 500m with line spacing at 1000m. The sample medium was the B/C horizon, recognised by either colour or texture change. Depth of hole was also recorded at each sample site. In some instances no change could be detected and this was noted in the sample sheets. No change in colour or texture was sometimes noted on hills: in these cases rocks were generally found in the hole and on the surface and were assumed to be in situ B/C horizon material.

At each location two samples were taken: an "A" sample of 100g, -80 mesh and a "B" sample of 500g, -2mm. Duplicates were taken at about one in twenty. Sample sites are marked with pin markers showing co-ordinates and sample numbers. Sample numbers run from 550001 to 550148 in an "A" and "B" series. In total, 141 sites were sampled to give 148 "A" and 148 "B" samples (including duplicates). All sample holes were backfilled.

The sampling method was mattock and shovel: a hole was dug to reach the colour or texture change, loose material removed, hole depth measured and a sample then taken from the bottom of the hole. Where no change was visible, the hole was excavated to about 50cm prior to sampling. Sieves were cleaned prior to sampling. Sample bag numbers and peg co-ordinates were checked against log sheets. Navigation was by GPS (WGS84 datum).

Samples were dispatched to NAL in Pine Creek on 29/11/05.

"A" samples were collected into Kraft soil sample packets and "B" samples into small calico bags.

AERS's field sample register is included as Appendix 4 in digital format only. The AERS report is included as Appendix 5.

GEOCHEMICAL ANALYSES

Soil Samples

Collected samples were sent to North Australian Laboratories, Tennant Creek, and forwarded to NAL in Pine Creek for preparation, firing and analysis.

After complete cleaning of sample preparation equipment, the entire -2 millimetre "B" samples were dried and pulverised by NAL to p80-100 microns in a Keegor mill after which blanks and standards were inserted in the batches as appropriate and fire assay prills prepared in new fusion pots from 50 gram assay charges. After firing prills were analysed using AAS after acid dissolution.

"A" samples were dried and digested using MA3 digestion, (HNO₃/HCl/HClO₄), and analysed for Cu, Pb, Zn, Ni, Co & Ag using an AAS finish.

Sample submission sheets for each phase of analysis are attached in Appendix 3. Analytical results sheets are attached as Appendix 1 and digital files are included on the accompanying CD.

RESULTS AND DISCUSSION

GEOCHEMICAL RESULTS

Primary Soil Samples

Analytical results sheets from NAL are attached as Appendix 1 and included on the attached CD as located data. Sample locations are displayed in Figures 2-4 and gold results are plotted on Figure 4.

No elevated gold values were obtained. From the 141 sites sampled:

- 47 sites returned a value above the detection limit of 1ppb;
- 0 sites returned a value above 2ppb;
- The highest value was 2 ppb.

None of the results are considered anomalous.

Peak results for base metals were;

Cu – 36 ppm – average 13 ppm;
Pb – 34 ppm – average 6 ppm;
Zn – 86 ppm – average 29 ppm;
Ni – 51 ppm – average 11 ppm;
Co – 13 ppm – average 3 ppm;
Ag – 1 ppm – average <1 ppm.

Peaks and averages are consistently lower than Kurinelli determinations, except for Zn, (Goulevitch 2005; McGilvray 2006). None of the base metals appear anomalous.

Duplicate Soil Samples

Results for the 14 duplicate samples are presented in Appendix 2. With consideration given to the low concentrations of metals, the results are within a reasonable excursion from a linear trend. Silver results are not plotted due to very low concentrations.

ASSESSMENT AND PROPOSALS FOR FURTHER INVESTIGATION

The Stage 1 soil sampling programme at Elkedra failed to define any significant gold anomalism or base metal anomalism that would require further investigation. The only available option is to discontinue exploration and surrender EL9709.

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