



FINAL REPORT

EL 23682 CHILLING

Fergusson River 1:250,000 Geological Series

For The Period 18/09/2003 to 17/09/2011



Sandstone ramparts surround the Chilling area from the northern approach.

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Date of Report: 23 November 2011

TABLE OF CONTENTS

SUMMARY	1
1.0 INTRODUCTION	2
1.1 Background	2
1.2 The Target Area	2
1.3 Exploration Rationale	2
2.0 LOCATION AND GENERAL DESCRIPTION	3
3.0 TENURE	4
4.0 GEOLOGY	7
5.0 PREVIOUS EXPLORATION ACTIVITIES	7
6.0 CROSSLAND EXPLORATION ACTIVITIES	10
7.0 GEOPHYSICAL DATA	13
8.0 REFERENCES	19

List of Figures in Text

Figure 1	Tenement (original) Location Map	5
Figure 2	Tenement (reduced) Location Map	6
Figure 3	Tenement Geology and sample location	8
Figure 4	Geology Legend	9
Figure 5	Airborne Magnetics Image	10
Figure 6	Airborne Radiometrics Image	11
Figure 7	Airborne Survey Flight Lines	12
Figure 8	Airborne Survey Interp – Geology and samples	13

List of Figures in Folder

Figure 1	Exploration licence EL 23682 tenement location map	5
Figure 2	Regional geology map	6
Figure 3	Diamond & geochemical samples location map	9
Figure 4	Airborne geophysics selected survey flight lines	13
Figure 5	Digital terrain map	14
Figure 6	Total magnetic intensity image	15
Figure 7	First vertical derivative total magnetic intensity image	16
Figure 8	Reduced to pole magnetics image	19
Figure 9	First vertical derivative reduced to pole magnetics image	20
Figure 10	Radiometric total count image	21
Figure 11	Potassium radiometric count image	22
Figure 12	Thorium radiometric count image	23
Figure 13	Uranium radiometric count image	24
Figure 14	Pine Creek airborne EM survey flight plan	27

Appendices

Appendix 1 Analytical.

Appendix 2 Located Data – airborne geophysics; diamond samples; geochemical data

Appendix 3 Airborne Survey Logistics Report

Appendix 4 Expenditure Statements 2003-2010

SUMMARY

This report covers all exploration activities conducted on EL 23682 by Crossland Uranium Mines Limited (Crossland) for the seven year period commencing 18 September 2003. The licence expired on the 17th September 2011.

The licence is located in inaccessible country on the northern edge of the Wingate Plateau, an elevated, flat lying topographical feature formed by Cretaceous cover rocks. Rugged mountainous country forms foothills to the plateau. The diversity of rock types, including various intrusive units, and the structural complexity of the region attracted the interest of Crossland to the exploration potential. During the term of the licence only basic exploration activities were carried out. The remoteness, lack of access and difficulty of the terrain inhibited systematic ground exploration. In 2009 preliminary planning of a drillhole to test a bullseye magnetic anomaly was investigated. The hole was eventually cancelled. Activities for the operative years of the licence are tabulated on the following page.

A total of \$240,872 has been spent on the licence over the 8 year period from 2003 to 2011.

1.0 INTRODUCTION

1.1 Background

EL 23682 was selected because of the presence of a 'Primary Hub', which was identified using confidential technology supplied by Paradigm Geoscience (now Global Geoscience Limited). The aim of the technology is to identify targets for mineral exploration with the same signatures as major mineral deposits. The method offers a means to identify important mineral resources without the need to acquire title to broader areas, with the resultant demanding access and land use challenges. Because of the restricted areas selected, more intensive exploration than would be normal in greenfields exploration can be focused on the limited area by even junior mineral explorers such as the holders. The Hubs have responded to the selection process in a similar fashion to major mineral deposits. It is to be expected that in most cases the target deposits do not outcrop, or they would already have been discovered, so it will be necessary to penetrate the overburden to make discoveries. The selection technique does not permit identification of target commodities; these must be determined by consideration of regional metallogenic factors and field reconnaissance.

The acquisition of this tenement eventually led to further applications and the purchase of two licences, which now form the Chilling Project.

1.2 The Target Area

The region is situated at or close to a locus of important geological features including the Litchfield Province, the Fitzmaurice Mobile Zone, the Pine Creek Geosyncline and the Daly Basin. Some important intersecting bounding structural features are also present as are an unusual diversity of intrusive rocks.

The principal focus is on the paleoproterozoic basement and the unconformably overlying Mesoproterozoic platform cover, a combination which extends throughout much of the project area and covers a considerable strike length. The more recent licence acquisitions are considered highly prospective for the classic basement-hosted, unconformity-related uranium deposits and for structurally controlled deposits within or adjacent to granites.

There is also the multi metal-anomalous sedimentary succession within EL 22738, which has geochemical characteristics similar to the Rum Jungle Mineral Field. The direct proximity of the hydrothermally affected Soldiers Creek (and Allia Creek) granite to this succession and to the Fletchers Gully gold deposit is considered significant.

1.3 Exploration Rationale

The geological setting of the Chilling project suggests that a wide variety of deposit styles could be present. The greater region has produced both gold and tin, which are spatially related to granites. Tin is predominantly confined to pegmatite swarms, which invade the lower Proterozoic Burrell Creek formation. Gold mineralisation occurs at the historical Fletcher's Gully Mine, located in the southwestern corner of EL 25076. Incomplete records indicate that over 70 kg of gold were produced from quartz veins

confined to fold axes in a carbonaceous/graphitic-rich sequence within the Burrell Creek formation.

Tin, as alluvial concentrations and lode deposits is known from Buldiva, Muldiva and Collia in ELs 25076 and 22738. Base metals deposits have been prospected / mined in a structurally prepared meta-sediment-volcanic environment assigned to the basal Burrell Creek formation at Daly River and also in carbonate rocks of the Daly Basin. The district has several occurrences of basic intrusives, which could have a potential to host nickel-copper or platinoid mineralisation.

Within the project tenements, structurally controlled uranium mineralisation is present at the MEMA Prospect (EL 25076) - in a shear within the Allia Creek granite, and in the Soldiers Creek granite (EL 22738) associated with pegmatitic and quartz vein swarms. The Burrell Creek formation hosts vein-style uranium mineralisation at the March Fly (EL 24557) and Eccles Prospects (EL 25077). The former has a complex anomalous geochemistry which includes As, Sn, W, Be, Bi, Co, Ni, Cu etc. Greisen / pegmatite 'dykes' and tourmaline alteration are a feature of these two occurrences. There is also a spatial relationship with the mid-Proterozoic unconformity.

Within EL 22738 widespread base metal and uranium anomalism has been identified within ferruginous-siliceous-carbonate breccia units. Drilling this year has clarified the stratigraphy as well as providing some insights into the probable origin of the anomalous metals. The geochemistry has close similarities to that of the various styles of mineralisation present in the Rum Jungle field. The adjacent (and underlying) Soldier's Creek Granite is prospective for uranium mineralisation along cross faults and in veins, and for tin mineralisation in greisens, veins and associated alluvium. There is also the potential for the smaller but exceptionally high grade deposit-type such as those found at McArthur River and Cigar Lake in the Athabasca Basin, Saskatchewan, Canada.

The variety of mineral occurrences spread throughout the Chilling project illustrates that both source rocks and suitable structurally prepared lithological hosts are present.

2.0 LOCATION AND GENERAL DESCRIPTION

EL23682 is located approximately 50 km south of the Daly River Crossing, which is connected by sealed road to the Stuart Highway and Darwin. Vehicular access to the area is not possible. The EL is located on NT Portion 2700, formerly owned by the NT Land Corporation and leased as part of Fish River Station. In 2009, Portion 2700 was transferred to the Parks and Wildlife Service of the Northern Territory and has been re-named the Fish River Gorge Block. The area is subject to a Land Claim under the Aboriginal Land Rights Act (NT), and a Native Title Claim, No DC01/28, Fish River.

3.0 TENURE

EL23682 was granted for a six-year term on 18 September 2003 (expiring 17 September 2009) with the original title covering an area of 48 sub-blocks (159.2 km²). The licence applicant and holder was a subsidiary of Paradigm North Pty Ltd (Paradigm).

Paradigm was renamed Crossland Mines Pty Ltd, and the tenement was transferred to “a subsidiary of Crossland Mines”. Crossland Uranium Mines Ltd was floated as a public company in 2007 and eventually became the operator of the licence. Crossland Mines remains the tenement applicant.

It was noted in the earlier annual reports that a \$5,000 cash security deposit was made.

The area was compulsorily reduced to 24 sub blocks (79.6 km²) on 17 September 2008. On the 18th August 2009, a two year renewal was applied for by Crossland. This renewal was subsequently granted by DoR. The licence was allowed to expire on the anniversary of the second two year renewal period. See **Figures 1 and 2** for the original and reduced licence outlines.



Figure 1. Regional location of original EL 23682

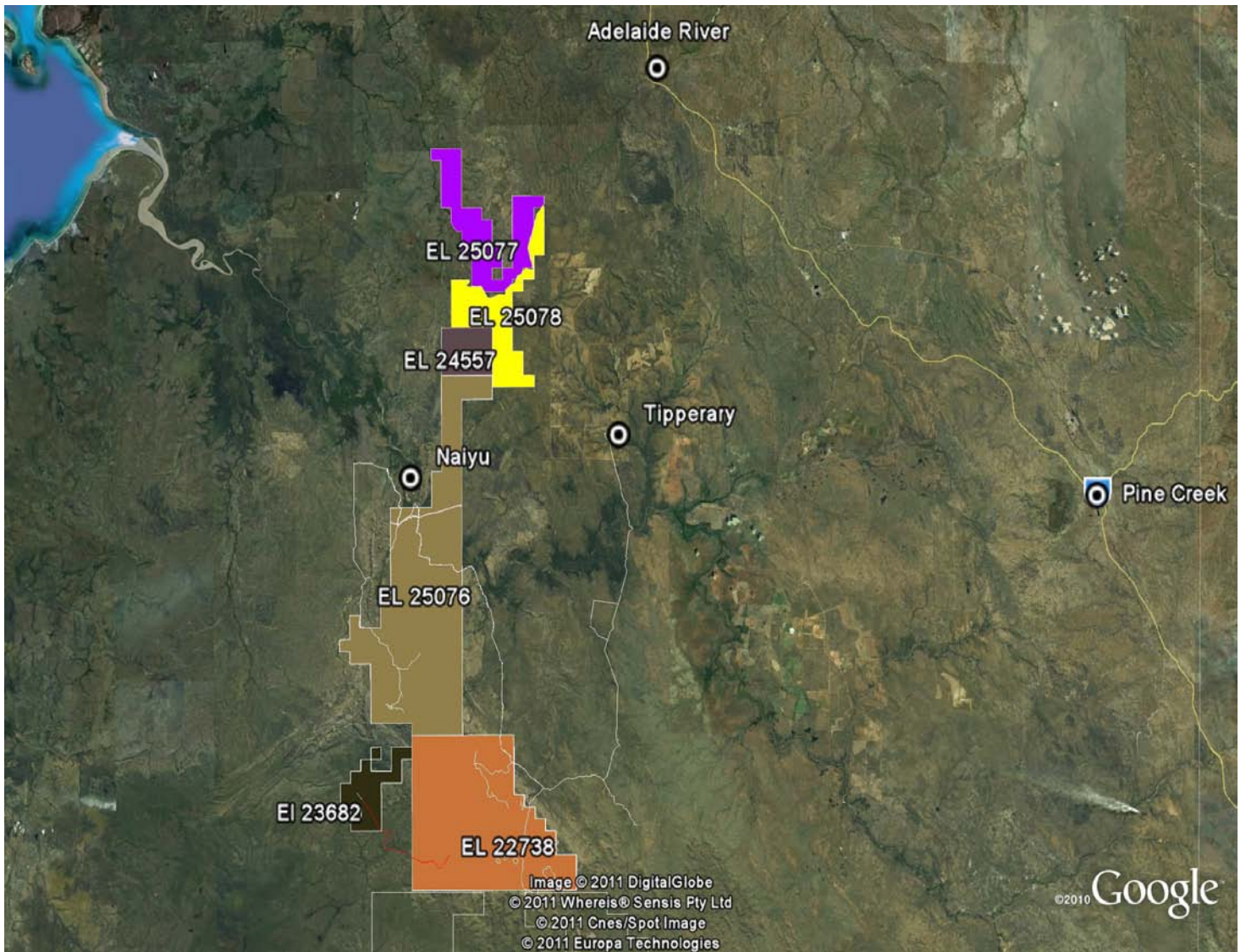


Figure 2. Reduced area and regional location of EL 23682

4.0 GEOLOGY

The most recent mapping of the area is the NTGS 1:100,000 Wingate Mountains Sheet, published with explanatory notes in 1989 (Edgoose *et al*, 1989). The area is mapped as Lower Proterozoic Chilling Sandstone, with up to 400 m of intercalated altered rhyodacite, rhyolite and banded tuff in the northern sector of the EL. These are intruded by the Ti- Tree Granophyre within the EL, and outside the area, sills assigned to the Wangi Basics. From Crossland's observations, the sandstone is frequently silicified and in places heavily quartz veined. The Lower Proterozoic rocks are overlain directly by Cretaceous sediments, which are probably no more than 50 m thick. South of Muldiva Creek and within the EL, the Angalarri Siltstone of the Auvergne Group is exposed in stream valleys beneath the Cretaceous. The contact where exposed has been mapped as faulted. This represents the northernmost exposure of the Auvergne Group, and may in part be a depositional surface.

See Figure 3 for tenement geology as mapped by the NTGS.

5.0 PREVIOUS EXPLORATION ACTIVITIES

The district has been the subject of several extensive exploration programs for a range of commodities. Both Ashton and Stockdale sampled the area for diamonds, but the results were negative. Gold has been the main commodity. Carpentaria Exploration Company completed quite intensive investigations of Terry's Prospect, a series of narrow, but in places high grade veins in and around the outcropping Berinka Volcanics to the north west of licence. Carpentaria also conducted regional gold exploration, which included parts of EL 23682, and in the process identified two areas of gold mineralisation :

- Bubbles Prospect about 5 km west of the western boundary of the EL.
- The Anniversary Ridge Prospect - a breccia zone which trends beneath Cretaceous cover west of the EL.

Another area of elevated BLEG and As results was found immediately outside the north east corner of the licence and is perhaps an extension of the Fletcher's Gully mineralisation. The plateau country within the EL was not intensively sampled, perhaps because of the absence of suitable sample sites for BLEG sample collection.

Regional exploration was undertaken by PNC Exploration (Australia) Pty. Ltd. in the mid 1990s, principally for uranium. Their tenement included part of this licence where they undertook the collection of several BLEG and stream sediment samples. These samples did not return any anomalous values with only one returning detectable levels of gold. PNC also completed a 200 m spaced airborne magnetic and radiometric survey.

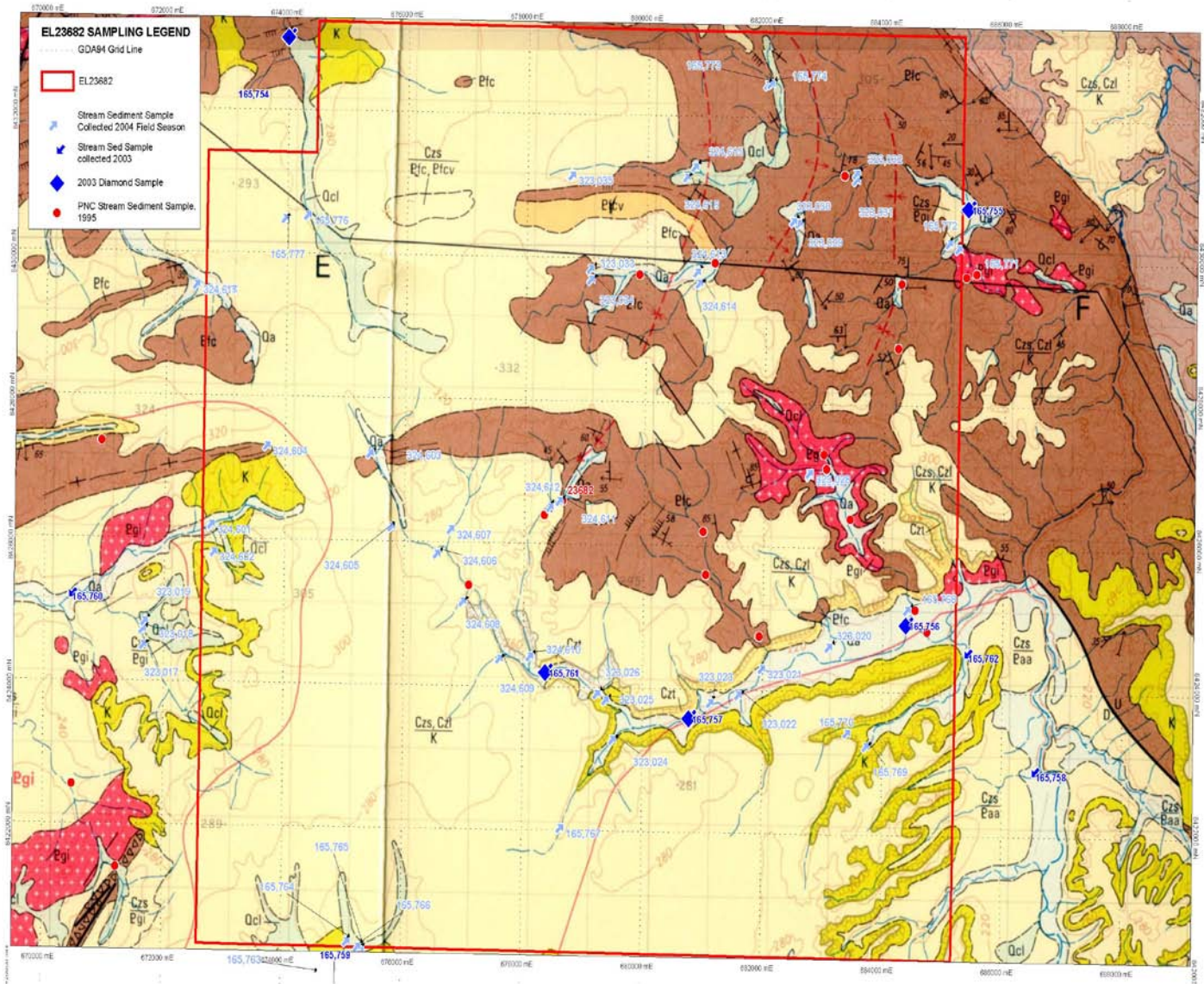


Figure 3. Tenement Geology and Sample Locations

EL23682 CHILLING GEOLOGY MAP LEGEND (FROM NTGS)

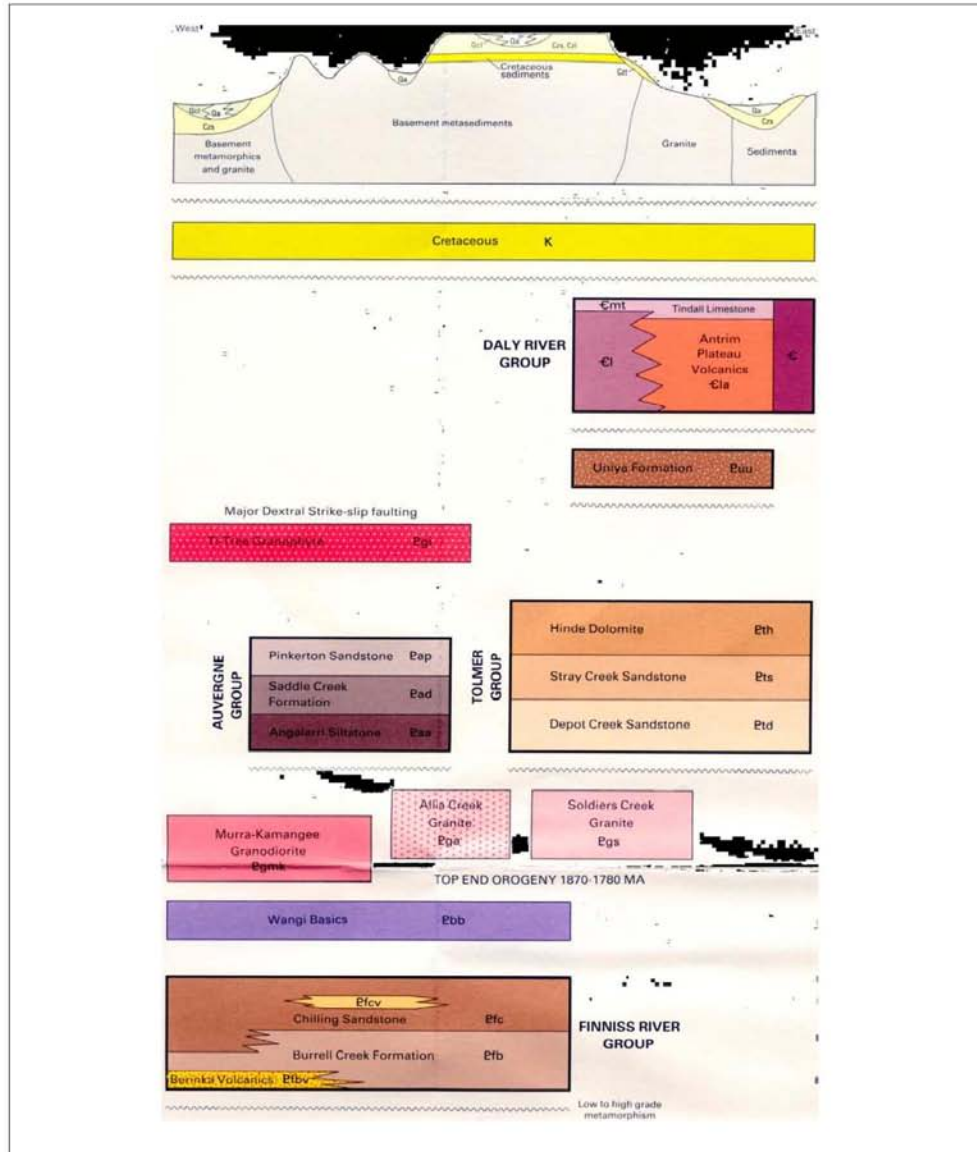


Figure 4. Geology Legend

6.0 CROSSLAND EXPLORATION ACTIVITIES

2004-2005

Field work by Crossland commenced on the licence in late 2003, with a helicopter-supported reconnaissance expedition to collect baseline geochemical samples and to carry out preliminary geological mapping of specific areas. It proved difficult to find many good sites for diamond sampling in the streams. After the results of stream sediment sampling were received, a further more detailed phase of sampling was completed as the first round of sampling had shown quite strong results for gold.

The following summarises the sampling activities completed in the 2003-2004 season.

Diamond Sampling.

Because of the paucity of suitable stream development, only a few good alluvial traps are developed. Five diamond sample sites were considered worthy of sampling from the nine sites visited during initial reconnaissance. The results of the sampling were negative, which confirmed the earlier work in the area although the initial reconnaissance did not provide complete coverage.

-80# Stream Sediment Sampling.

A total of nine stream samples were collected during the initial reconnaissance in 2003. The samples were wet and had to be dried prior to sieving. This was done without any comminution, which resulted in limited material passing the sieve. At a later date it was decided to perform low level gold-platinoid analyses on fire assay prills. There was insufficient sample for three of the nine samples, but the remainder generally confirmed the high gold levels obtained in the original fire assays. The platinoid elements were below detection.

A second round of stream sediment sampling was undertaken in 2004 to follow up on the anomalous gold results. A total of 50 samples was collected. The results of this programme did not confirm the elevated gold values, although there were generally strong values for a range of other elements in several instances. Unfortunately there was insufficient sample remaining from the original sampling to check the discrepancies, therefore the most likely explanation is that the original analyses were the result of laboratory contamination. The clustering of these higher values for other elements generally supported the earlier results apart from the gold, and tended to confirm that elevated values were associated with the more complex structural setting indicated by geophysical interpretation in the central western part of the EL.

Only one rock sample, consisting of limonite stained Cretaceous? claystone was collected from a low outcrop in the south of the EL.

The diamond samples were processed and examined by Global Diamond Services Pty Ltd of Perth. All geochemical samples were prepared by North Australian Laboratories, Pine Creek and Fire Assayed for gold to a 1ppb detection limit. Pulps were forwarded to NT Environmental Laboratories (NTEL) for analysis using G400 total acid digest

followed by ICP OES and MS for the 61 major and trace element suite. A second firing was prepared using fire assay prills prepared at NAL to analyse for trace levels of gold and platinoids.

Elements analysed for were :

Ag, Al, As, Au,
Ba, Be, Bi,
Ca, Cd, Ce, Co, Cr, Cu,
Dy,
Er, Eu,
Fe,
Ga, Gd, Ge,
Hf, Ho,
In,
K,
La, Li, Lu,
Mg, Mn, Mo,
Na, Nb, Nd, Ni,
P, Pb, Pd, Pr, Pt,
Rb, Re, Ru,
S, Sb, Sc, Se, Sm, Sn, Sr,
Ta, Tb, Th, Tl, Tm,
U, V, W,
Y, Yb, Zn, Zr.

Geological Observations

Samples collected during the first phase reconnaissance contained above normal concentrations of gold, cadmium, caesium, antimony and uranium. Given the known setting we might expect the environment to have potential for a variety of deposit styles, including:

- Unconformity related uranium-gold deposits
- Volcanogenic massive sulphide deposits
- Skarn tin deposits
- Mafic intrusive related styles of mineralisation
- Pine Creek Geosyncline-style gold deposits

The follow up sampling did not directly confirm the gold potential of the area, and the overall results were not specific enough to identify a particular commodity target. The Cretaceous rocks cover most of the more prospective older rocks, therefore a more direct and conventional approach to exploring is made more difficult. Despite the generally favourable structural setting of the EL, there is no known occurrences of mineralisation, and the results of previous exploration have not been positive. The search is complicated by the absence of road access, which has required the use of a helicopter for initial reconnaissance work. The weakly developed drainage system within the cover rocks has

resulted in a lack of material suitable to the most common method of regional gold exploration, bulk cyanide leach (BCL).

2005-2011

Beyond 2005, no further on-ground work was conducted, with the company's exploration efforts being concentrated on their more accessible and geologically favourable tenements. Following the airborne survey conducted in late 2007, it was planned to drill within the licence following interpretation of the data by Crossland's geophysical consultant. Several targets were chosen although only one, the 'bullseye' magnetic anomaly, was seriously considered.

During 2010 a helicopter survey was conducted to assess access from EL 22738 across country to the proposed mag anomaly drill site. The financial; and environmental costs of the exercise was considered too great so the only alternative was to plan a heli-assisted program. This exercise was considerably beyond the allocated budget and it was decided to conduct no further work.

Table 1 Summarised Exploration Activities for EL 23682.

YEAR	Exploration Activity	Amount
2003-2004	<ul style="list-style-type: none"> • Literature research and data compilation. • Helicopter- supported geological reconnaissance and collection of stream sediment samples, and -1.2mm samples for diamond exploration. • Analysis by low level scans for 63 elements including precious metals and platinoids. • Interpretation of results. • Helicopter – supported follow- up stream sediment sampling on closer sample spacing. 	<p>9 stream sed 5 diamond samples</p> <p>50 stream sed 1 rock sample</p>
2004-2005	<ul style="list-style-type: none"> • Reinterpretation of government airborne geophysics • Re-assessment of project aims and directions 	
2005-2006	<ul style="list-style-type: none"> • Helicopter reconnaissance, which involved the presence of a uranium expert to assess the regions potential. • Further searching of the literature for data relating to EL23682 and adjacent ground including exploration licences. 	
2006-2007	Airborne magnetics and radiometrics	200 m line spacing
2007-2008	No activities	
2008-2009	Office studies. Reinterp of magnetics. Access planning.	
2009-2010	<ul style="list-style-type: none"> • Planning of drill hole – check and map out access by helicopter. No drill contractor available. • Sacred site survey. 	
2010-2011	No activities. Licence expired.	

7.0 GEOPHYSICAL DATA

Airborne geophysical data covering the title was acquired by the NT Geological Survey in 1984. This was flown on 500 m line spacings at 100 m ground clearance. The area of the EL was also covered by PNC in their 1995 survey at 200 m line spacing and 80 m terrain clearance. The digital data for this survey were acquired and Crossland undertook re-gridding and interpretation using in-house facilities.

There is strong character in the magnetic data (**Figure 5**), which appears to be dominated by bodies of Wangi Basics, including a very strong feature associated with the main outcrop area near the northwest corner of the WingateMountains Sheet. Several less intense but discrete highs are present in the district, including some within the EL. The immediate area is the locus of several magnetic trends, and regionally it sits in a probable jog on the Giants Reef Fault. It is possible that this has been the site of multiple intrusive episodes.

The radiometric character principally illustrates the distribution of granites and cover sediments (**Figure 6**). Variations in the radiometric pattern are clear in the RGB (K-Th-U) radiometrics. These indicate that an area in the centre of the EL has a radiometric pattern similar to other areas mapped as Ti-Tree Granophyre, as well as trends in areas mapped as Cretaceous cover that indicate concentric radiometric patterns. These may be due to granitic or pegmatite sills, or perhaps to the mapped acid volcanics or pyroclastics that are interbedded with the Chilling Sandstone. This would imply that the lower Proterozoic lithologies are more widespread in the northern portion of the EL. There is certainly an abundance of siliceous float in these areas, possibly due to subcropping Chilling Sandstone. Based on the re-examination of geophysical data, an area requiring more intensive study has been selected in the central west of the licence.

The licence area was flown again in 2007 as part Crossland's project-wide Chilling airborne survey (**Figure 7**). The survey was scheduled to be flown on a 100 m line spacing but because of a delayed commencement, and after the rains had commenced, the line spacing was increased to 200 m.

Figure 8 is a composite plan exhibiting 'trend lines' for both magnetics and radiometrics over mapped and interpreted geology.

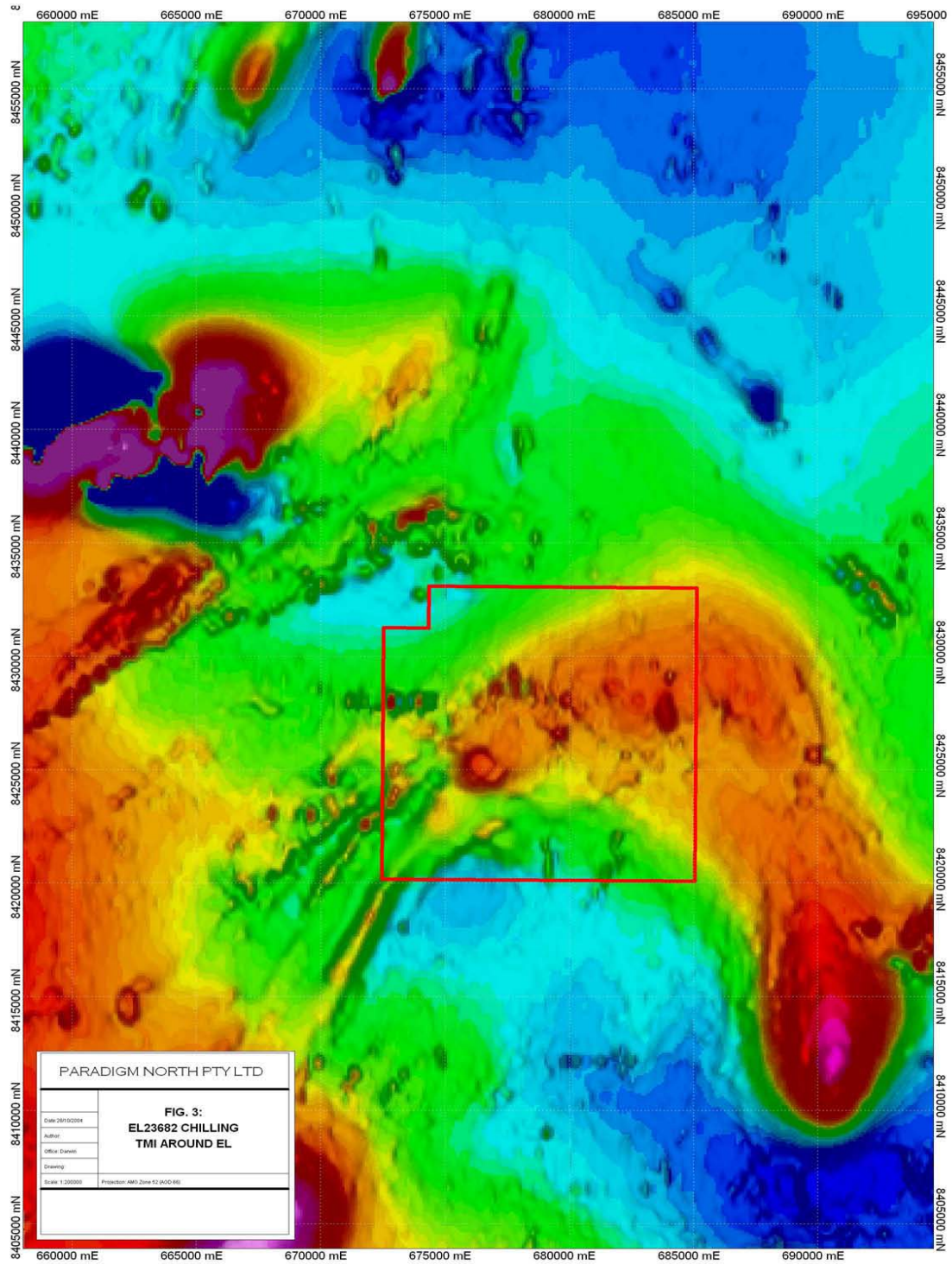


Figure 5. Airborne Magnetics

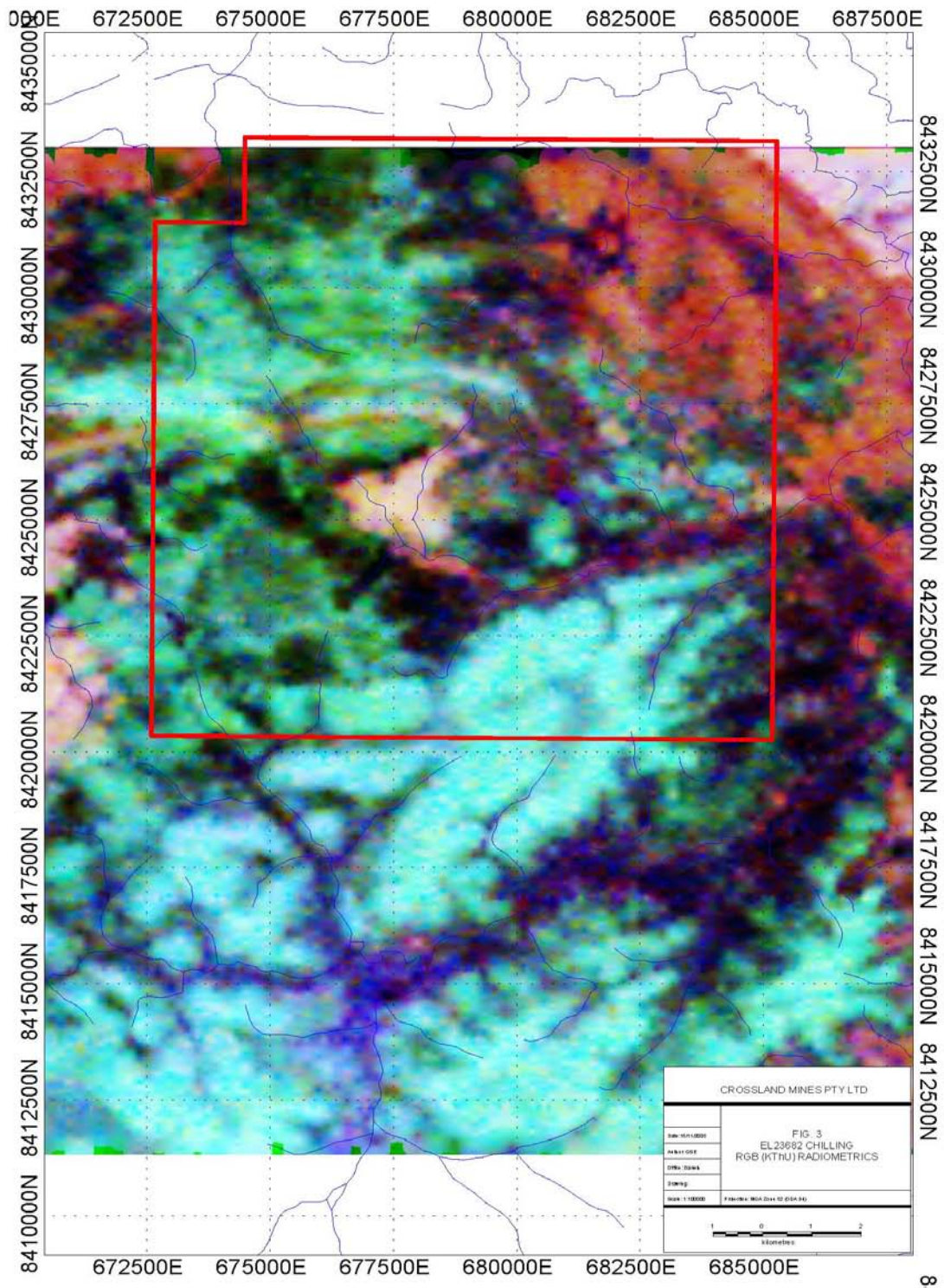


Figure 6. Airborne Radiometrics

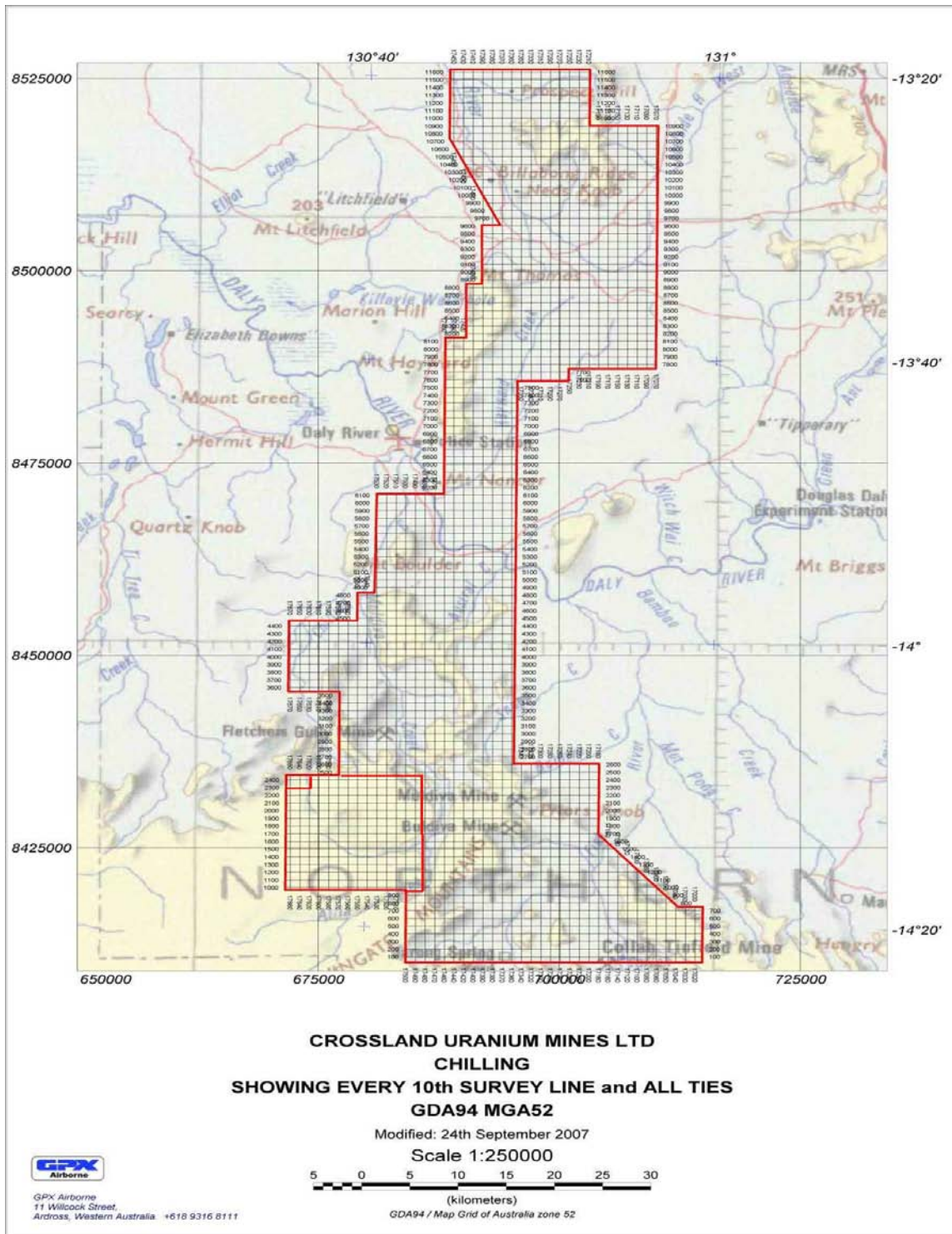


Figure 7. Flight Lines with approximate outline of original EL 23682

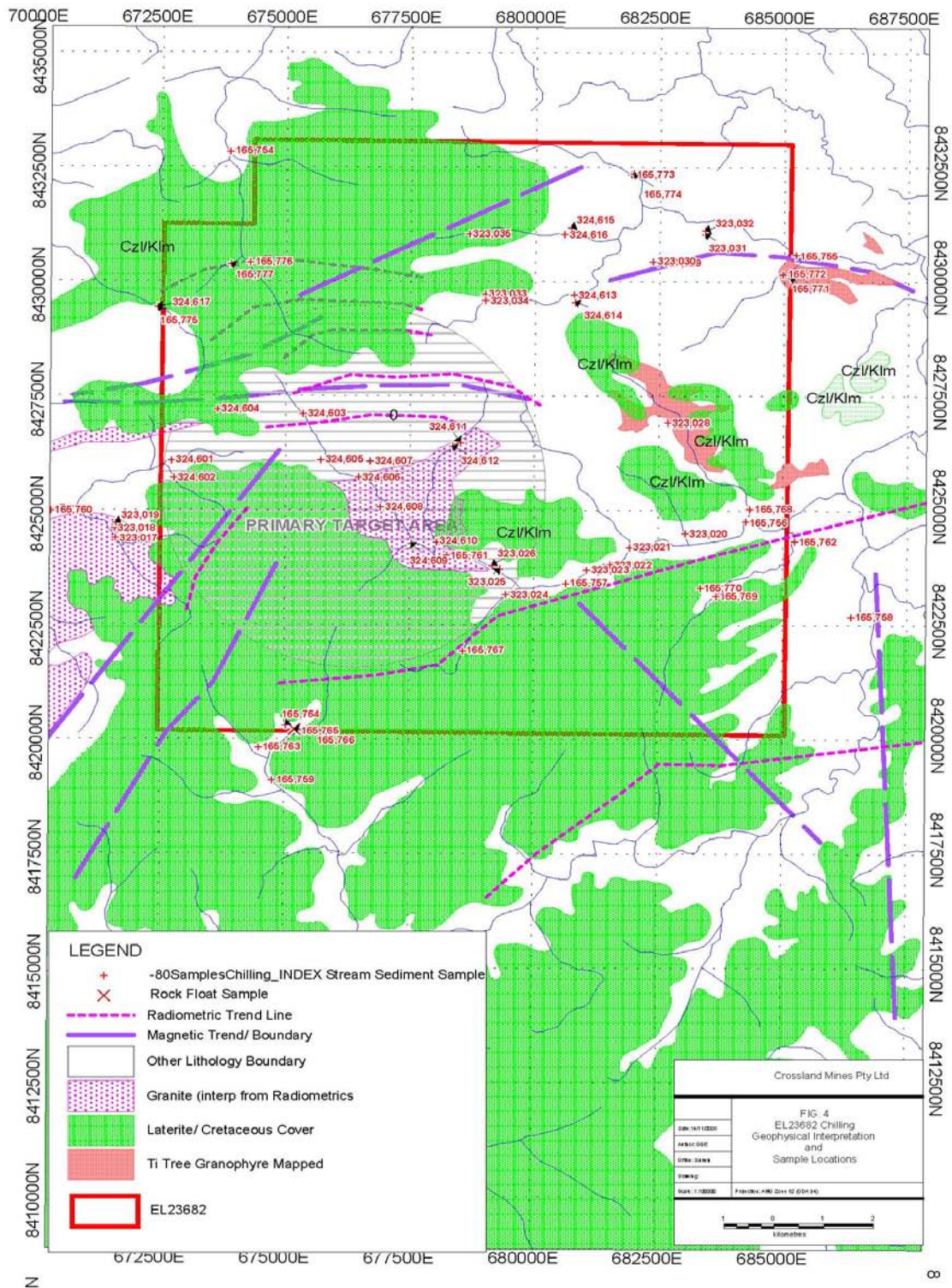


Figure 8. Magnetics / Radiometrics Interpretation with sample points.

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