

GeoRem Pty Ltd

**Hermit Hill Project
Field Trip Report**

PREPARED BY:	Daniel McIntyre
AUTHOR:	Daniel McIntyre
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1 Introduction

West Cobar Metals Limited (West Cobar) engaged GeoRem Pty Ltd (GeoRem) to provide an independent review of the historical exploration on the Hermit Hill Project, identify and field check exploration targets, particularly for LCT pegmatites for the company.

West Cobar's Hermit Hill Project is located approximately 140km SSW of Darwin and 30km West of the Daly River settlement in the Northern Territory. It consists of a single exploration licence EL33208, which covers an area of approximately 664.4km². The project area is accessed by a good quality gravel road, (Port Keats Road) from Daly River and numerous station tracks and fence lines suitable for a four-wheel drive vehicle traverse (Figure 1).

The Litchfield Province was defined as the western part of the Pine Creek Geosyncline, with large parts of the Litchfield Province interpreted as 'granitoid, garnetiferous, gneissic, with metasediments varying in metamorphic grade from greenschist to upper amphibolite / granulite grade (Berkman 1980). The lack of outcrop in much of the area has limited exploration.

The mapped lithology within EL33208 is largely obscured by Cainozoic eluvial soils. Floodplain alluvium masks the geology of the northern blocks. The regional 1:500k interpretation map from the NTGS that shows much of the tenement underlain by the Allia Suite Granites (Litchfield and Murra-Kumangee Granodiorite) with areas of Hermit Creek Metamorphics sandwiched between the granites. With an isolated intrusion of Wangi Basics in the south. The isolated Wangi Basics intrusive contains anomalous Cu and Ni along the southeastern margin of the tenement.

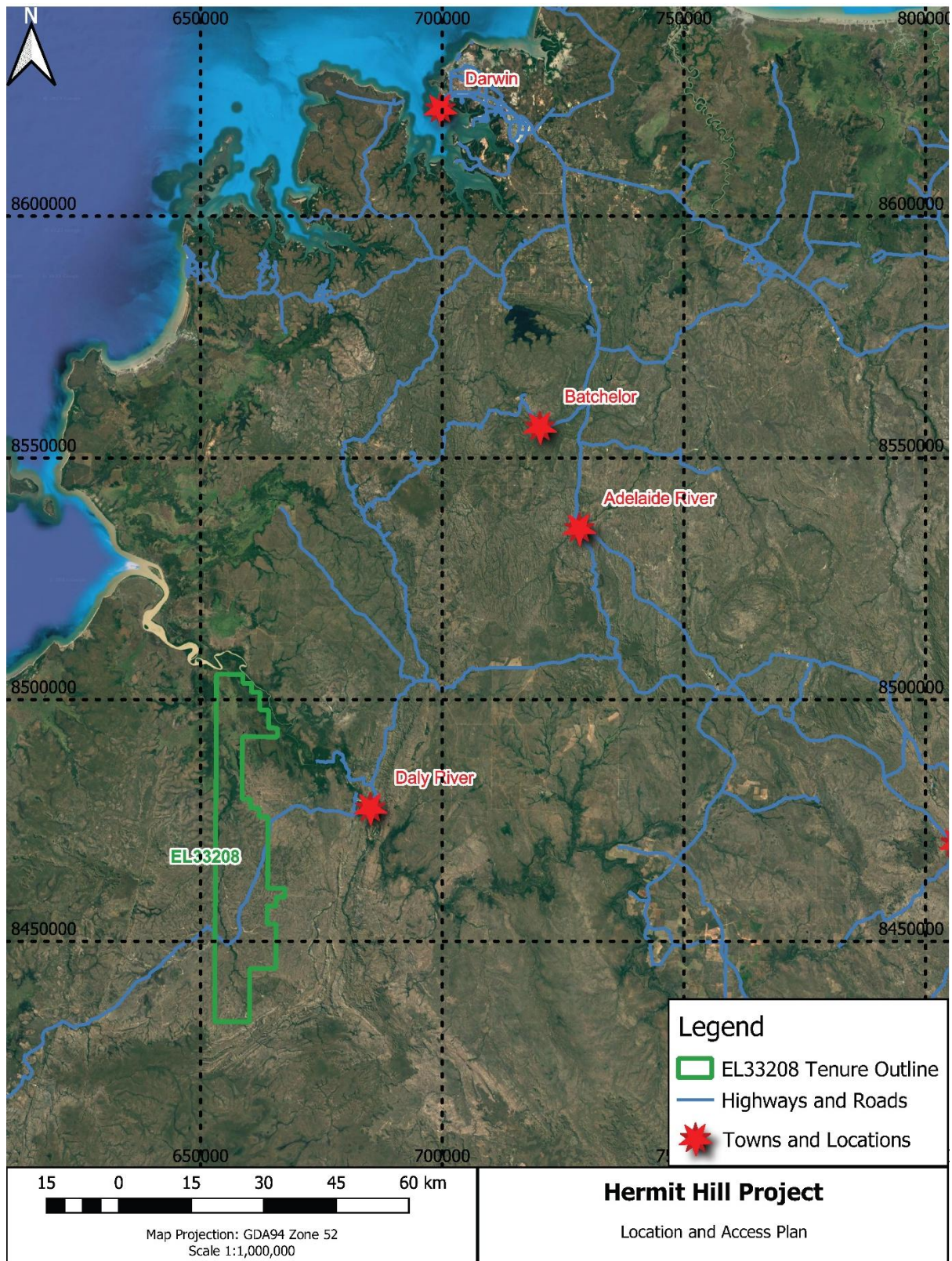


Figure 1: Hermit Hill Project Location Plan

2 Location and Access

EL 25176 is situated approximately 140km SSE of Darwin, NT, and 14km west of Daly River (Figure 2). Access to the Licence from Darwin is via the sealed Stuart Highway then the Dorat Rd (old Stuart Highway, out of Adelaide River) then via the Daly River Road, East of Daly River access is by the partially sealed Port Keats Road and numerous unsealed station tracks and fence lines suitable for a four-wheel drive vehicle traverse. Access is limited outside of the dry season.

Most of the Licence is low-lying floodplains with little relief and characterised grey to black clays with vegetation of open savannah grass and woodlands.

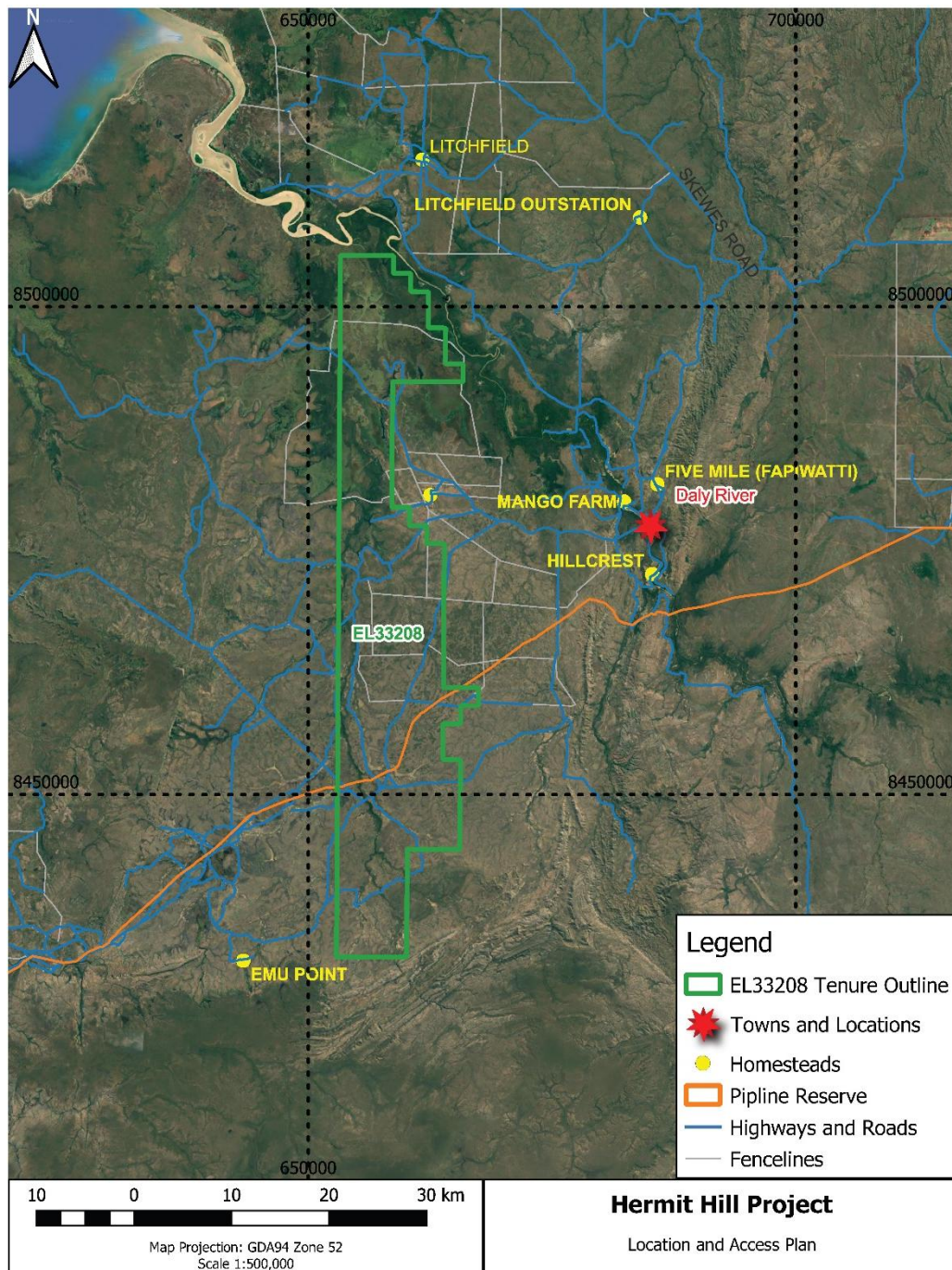


Figure 2: Hermit Hill Project Location and Access Plan

3 Tenure

Tenement EL33208 was granted to West Cobar on 16th December 2022 for a term of 6 years. It comprises 200 graticular blocks (664.4 km²) and there are no other mining or mineral claims within the license boundary. The annual expenditure commitment on the tenement is \$40,000.

The tenement is wholly within the Elizabeth Downs pastoral lease owned by Yiang Xiang Assets Pty Ltd. There is a small title registered to the Australian Telecommunications commission in the North of the tenement. The Bonaparte Gas Pipeline traverses the central portion of the tenement and any exploration activities within close proximity to the pipeline are required to comply with section 66 of the *Energy Pipeline Act 1981*.

4 Geology

EL33208 is situated within on the western side of the Pine Creek Orogen, in the area known as Litchfield Province. The regional geology is outlined in several texts, most notably including Ahmad et al., 1993; Ahmad, 1998; Berkman, 1980; Mendum 1972, Fahey et al., 1986, Pietsch 1989 and Carson et. al., 2006. The Giants Reef Fault is to the east of EL33208, which is interpreted as the boundary between the 'central' Pine Creek Orogen to the east and the Litchfield Province to the west (Berkman 1980).

The Litchfield Province was defined as the western part of the Pine Creek Geosyncline, with large parts of the Litchfield Province interpreted as 'granitoid, garnetiferous, gneissic, with metasediments varying in metamorphic grade from greenschist to upper amphibolite / granulite grade (Berkman 1980). The lack of outcrop in much of the area has limited exploration. Work by the NTGS has reviewed the Litchfield Province, with geochronology tentatively correlating the Litchfield Province with the Halls Creek Orogen to the southwest, but notes that the field evidence indicates a complex tectonic relationship (Carson et al., 2006; Glass, 2007).

The mapped lithology within EL33208 is largely obscured by Cainozoic eluvial soils. Floodplain alluvium masks the geology of the northern blocks. The central portion has small outcrops of granites from the Allia Suite. Further south, metabasite rocks of the Hermit Creek Metamorphics are mapped in areas adjacent to Murra-Kamangee Granodiorite. The central and southern portion of the tenement is underlain by the Allia Suite Granites (Litchfield and Murra-Kumangee Granodiorite) with areas of Hermit Creek Metamorphics sandwiched between the granites. The isolated Wangi Basics intrusive contains anomalous Cu and Ni along the southeastern margin of the tenement (figure 3).

The Allia Suite, which comprises the Two sisters Granite (Bynoe), Mount Litchfield Granite, Murra-Kamangee Granodiorite, Allia Creek Granite and Soldiers Creek Granite. The Allia Suite is approximately 1840 Ma in age and is a S-type, containing minerals such as andalusite, cordierite and muscovite. Abundant pegmatites which occur within the granite and into the surrounding country rock are characteristics of the suite. Some Sn, Ta, with minor Au and W mineralisation are spatially associated with Allia Suite particularly the Two Sisters and Soldiers Creek granites. The Allia suite is highly fractionating, reduced, and peraluminous that has high potential for further discoveries of Sn (and Li) due to the number of late-stage pegmatites and hydrothermal alteration. (Wyborn 2002)

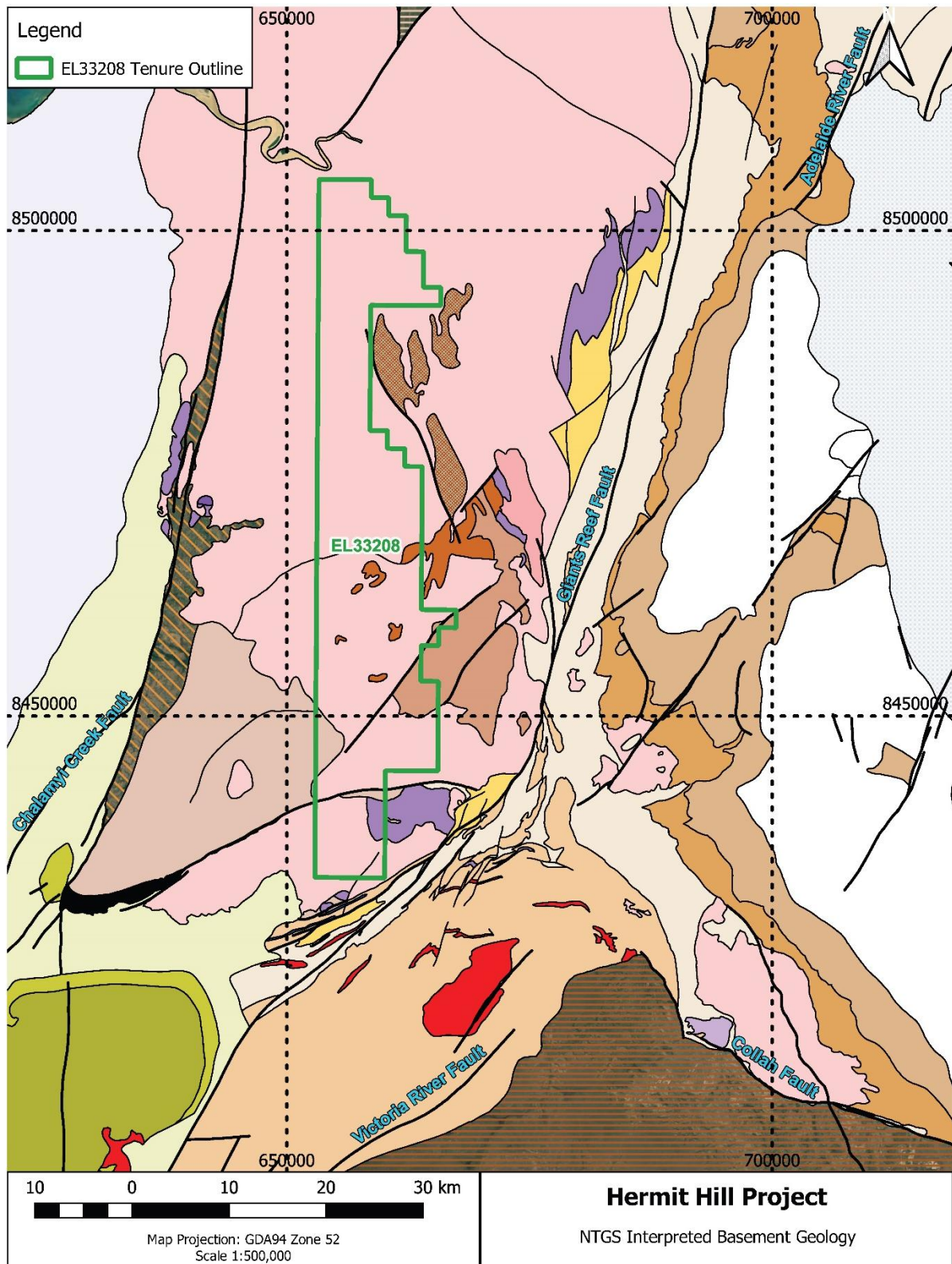


Figure 3: Hermit Hill Project Interpreted Basement Geology.

5 Exploration Targets for field Checking

A review of public and open file data has identified gold, base metal and Li/Sn targets in addition to magnetic and Rum Jungle AEM survey data. Neil Pendock of Dirt Exploration was engaged by West Cobar to identify potential Lithium targets utilising Sentinel-2 satellite remote sensing data.

The Sentinel-2 satellite sensors collect eight spectral bands of VNIR imagery that have 10 m spatial resolution and 2 bands of SWIR that have 20 m resolution. It is applicable to exploration undercover to make target by mapping gasses. Serpentinization is a hydration and metamorphic transformation of ferromagnesian minerals, such as olivine and pyroxene, in mafic and ultramafic rock to produce serpentine with H₂ and CH₄ as byproducts.

Hydrogen and helium may be mapped by Sentinel-2 at 10 m spatial resolution using emission features in their VNIR spectra while methane may be mapped using the SWIR at 20 m spatial resolution. Gas signals may come from beneath cover as they percolate through cracks and fissures in surface rocks, soils and vegetation.

Any U or Th in a deposit may release He through radioactive decay while CH₄ may be produced by metasediments as well as biogenic processes acting on buried minerals e.g. pyrite. Gas estimates from Sentinel-2 for He, He and CH₄ are all anomalous over known Li occurrences.

From this data provided Neil identified 30 targets based on the best response from s_targetc imagery, that doesn't consider any ground disturbance of geological information. A further 18 targets were identified by the Ron Roberts and the author based on the best responses from the imagery provided as well as geological and spatial parameters (figure 4).

The review of open file reports has identified several pegmatite rock chip samples and intercepts in drillholes while some Sn anomalies were identified in stream sediment sampling programs. Denehurst mapped pegmatites around the Hermit Hill area with some anomalous Sn (max 24ppm) and Ta (max 22ppm) both in pan concentrates. These locations need to be investigated to determine if they are LCT pegmatites.

Mobil Energy Minerals completed a 24 RAB program in 1981 with drillholes TPPD3, and TPPD20-24 intersecting pegmatites with three of these drillholes (TPPD20-24) intersecting pegmatite within the current tenement. No details about the widths of the intercepts have been recorded (Figure 5).

Historic stream sediment sampling has been compiled by the NTGS from open file data to aid in exploration activities. A potential issue with the use of this dataset is that several elements particularly anything outside of the standard gold, uranium and base metal suites may not have been analysed for and will show up as below detection (this is particularly the case for Li, Sn Ta, etc).

The being said there is one sample (PKM45) that returned 5ppm Sn and 6 anomalous Au samples returning 100ppt or above within the tenement (figure 6). As these are isolated samples they are unlikely to indicate significant mineralisation, particularly with some anomalous results upstream and off tenure.

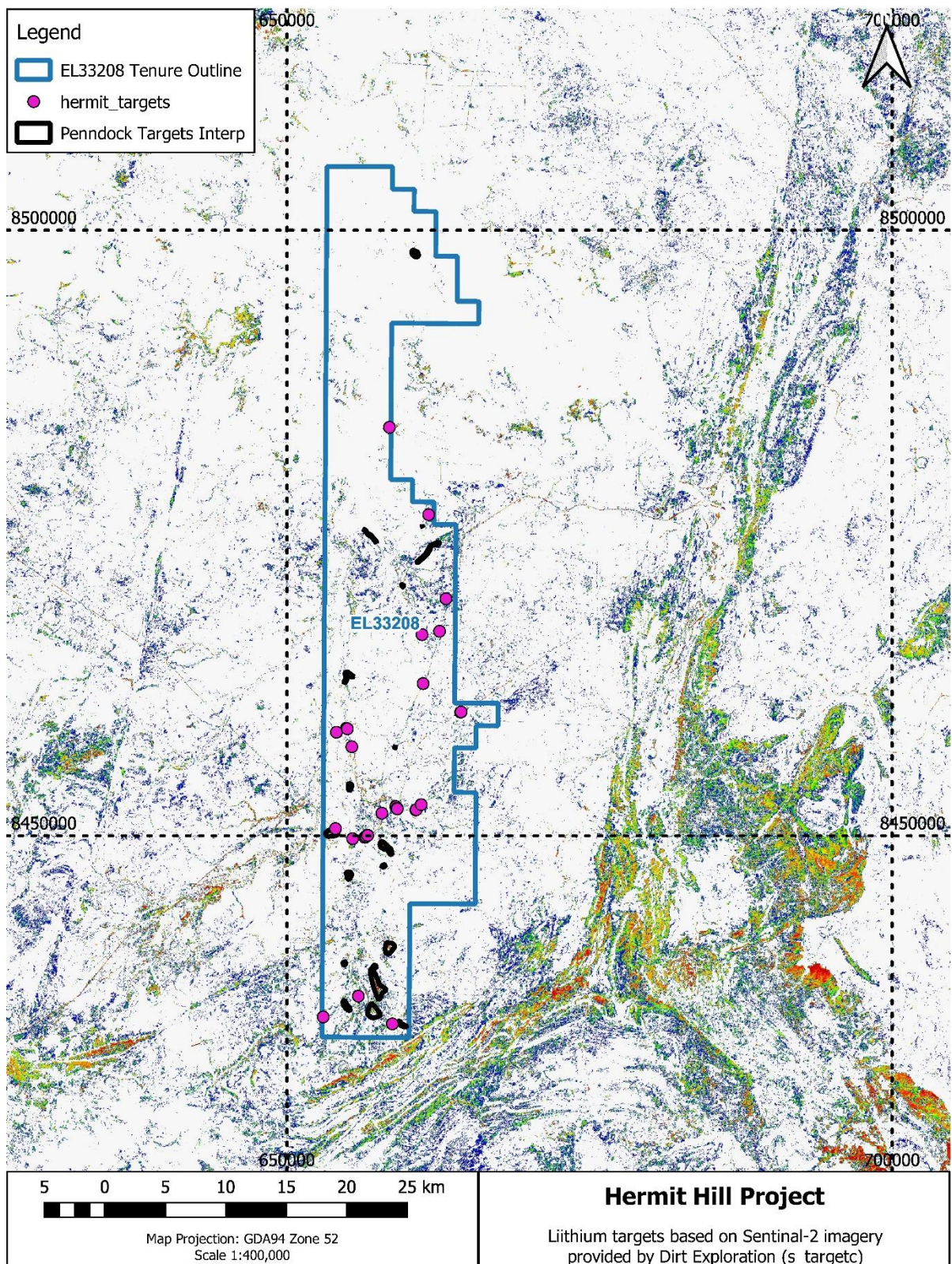


Figure 4: Hermit Hill Project with Li targets based on Sentinal-2 remote sensing data.

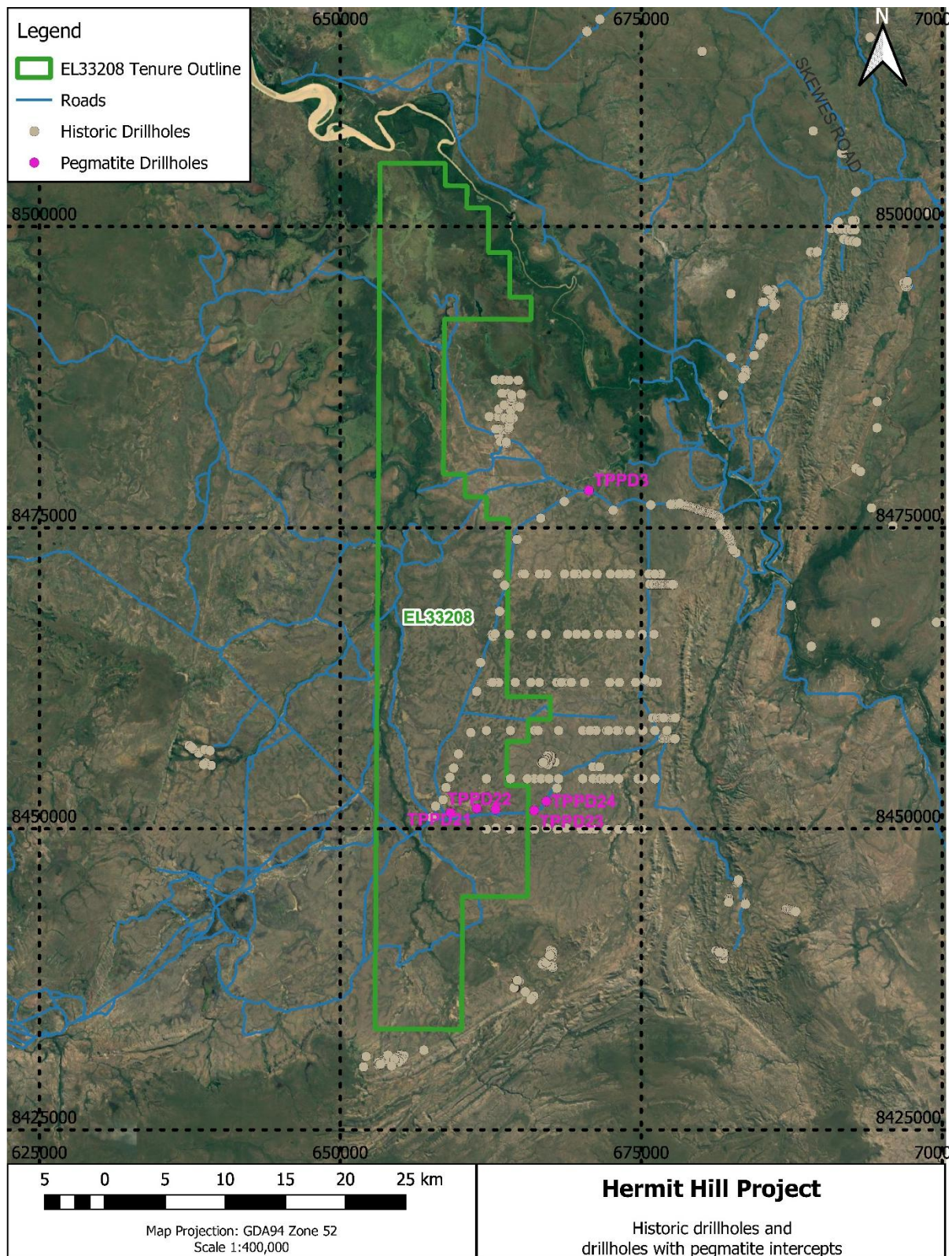


Figure 5: Drillholes within the tenement and the holes with Pegmatite intercepts

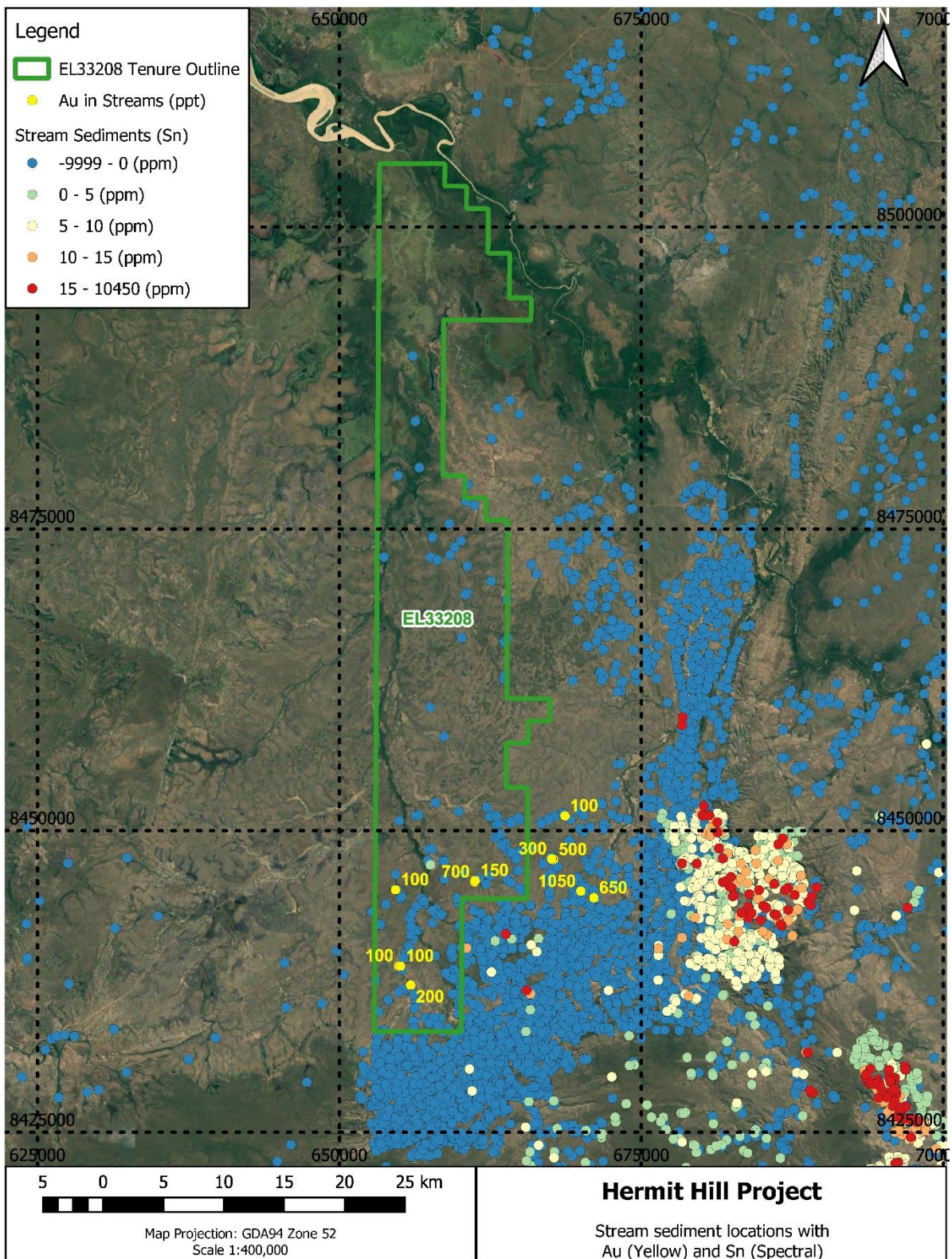


Figure 6: Stream sediment sampling with Sn in ppm (spectral) and gold in ppt (yellow)

The Northern Territory statewide aeromagnetic data has outlined three anomalous zones within the tenement (figure 7). The dominant magnetic feature is the Wangi Basics known as the Sandy Creek Mafic-Ultramafic Complex at the southern end of the tenure. Historic exploration by Mobil, Placer, Geopeko and Discovery Nickel returned some anomalous Cu, Ni, Co and PGE results (figures 8, 9,10 and 11).

In the north of the tenement there are many subtle magnetic features that might have an association with mafic/ultramafic lithologies. Territory Uranium engaged a geophysical consultant that identified these anomalies but didn't provide any further information on possible source of economic significance. Discovery Nickel outlines some anomalous Ni, Cu, Co and PGE results along these trends in soils to the SE (figure 12).

In the central portion of the tenement there are several subtle magnetic features that might have an association with mafic/ultramafic lithologies. Territory Uranium engaged a geophysical consultant that identified these anomalies but didn't provide any further information on possible source of economic significance. Southdale Holdings Pty Ltd undertook reconnaissance geological mapping and geochemical sampling program for Ni, Cu, PGEs over the interpreted metabasites from the NTGS. The program consisted of 15 x rock chip, 5 x -2mm stream sediments, 4 x -2mm soils and 3 x lag samples, with no anomalous results were returned. However not all metabasites were evaluated, so potential still remains to identify economic mineralisation.

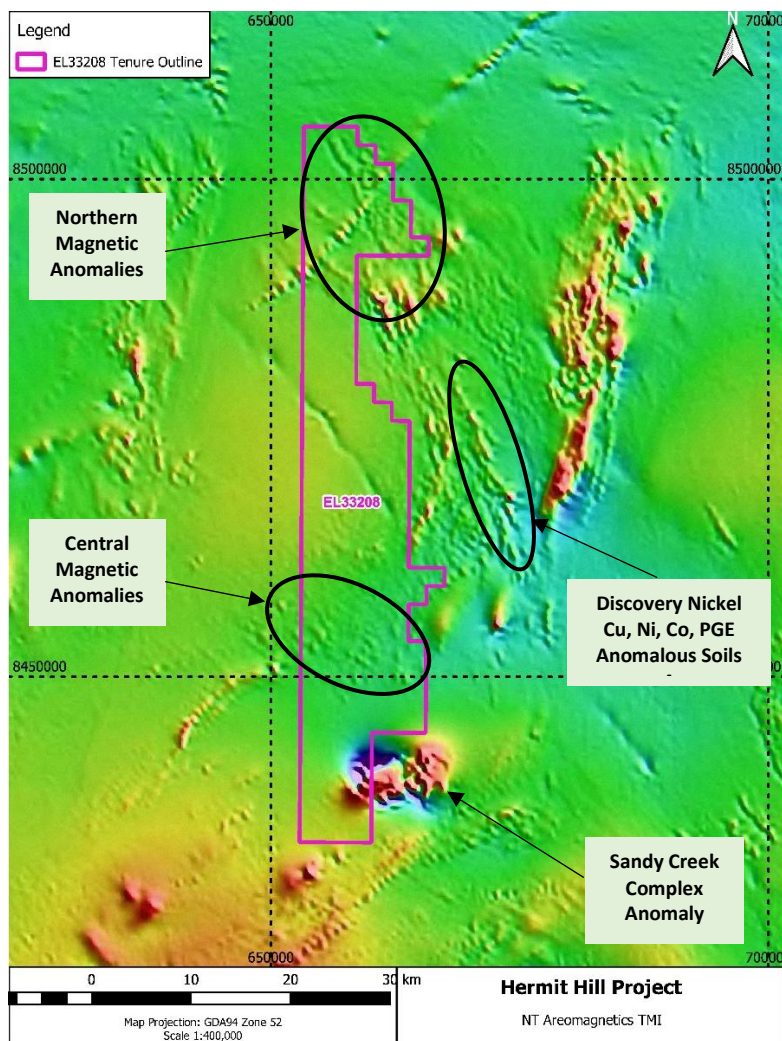


Figure 7: Statewide Northern Territory aeromagnetic data (TMI) outlining anomalies within the tenement.

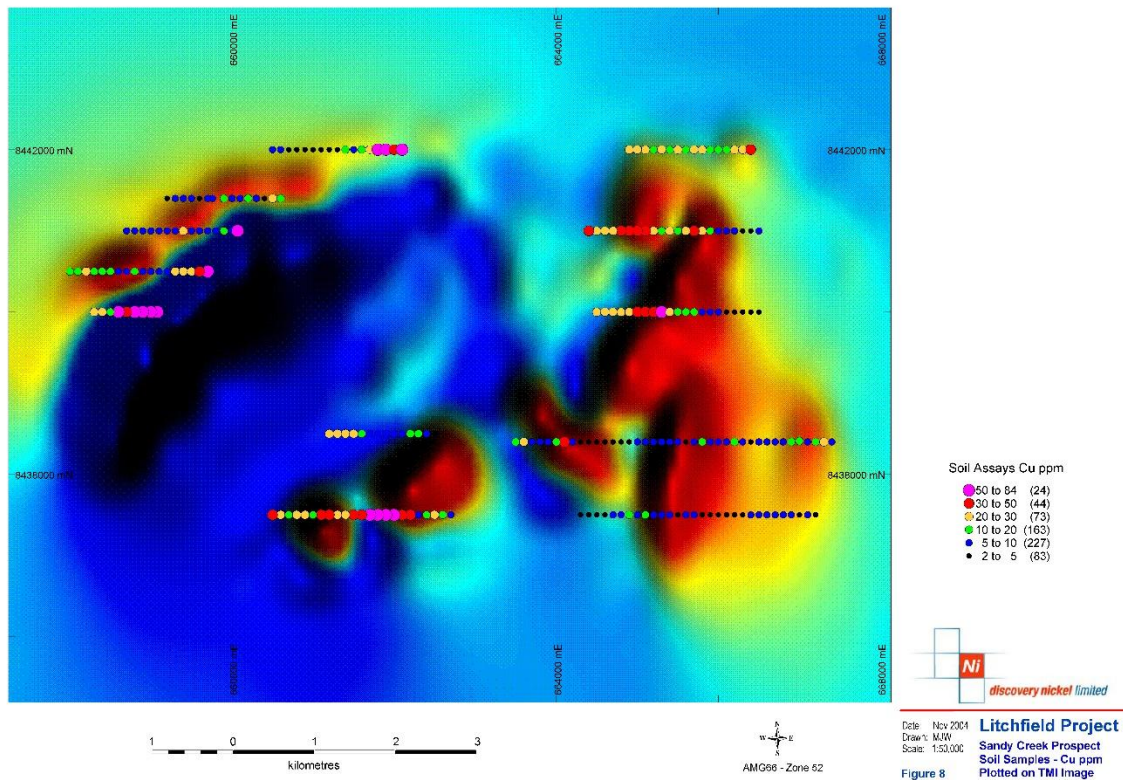


Figure 8: Sandy Creek Complex with anomalous Copper in soil results on TMI magnetics

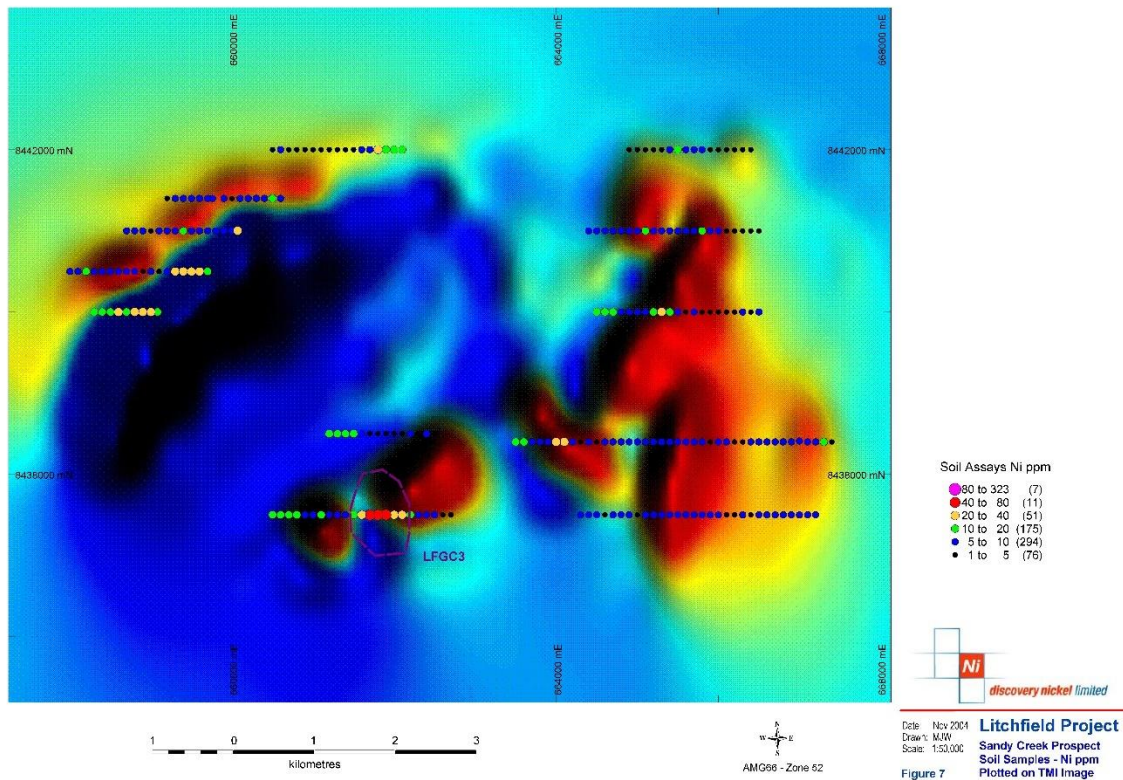


Figure 9: Sandy Creek Complex with anomalous Copper in soil results on TMI magnetics

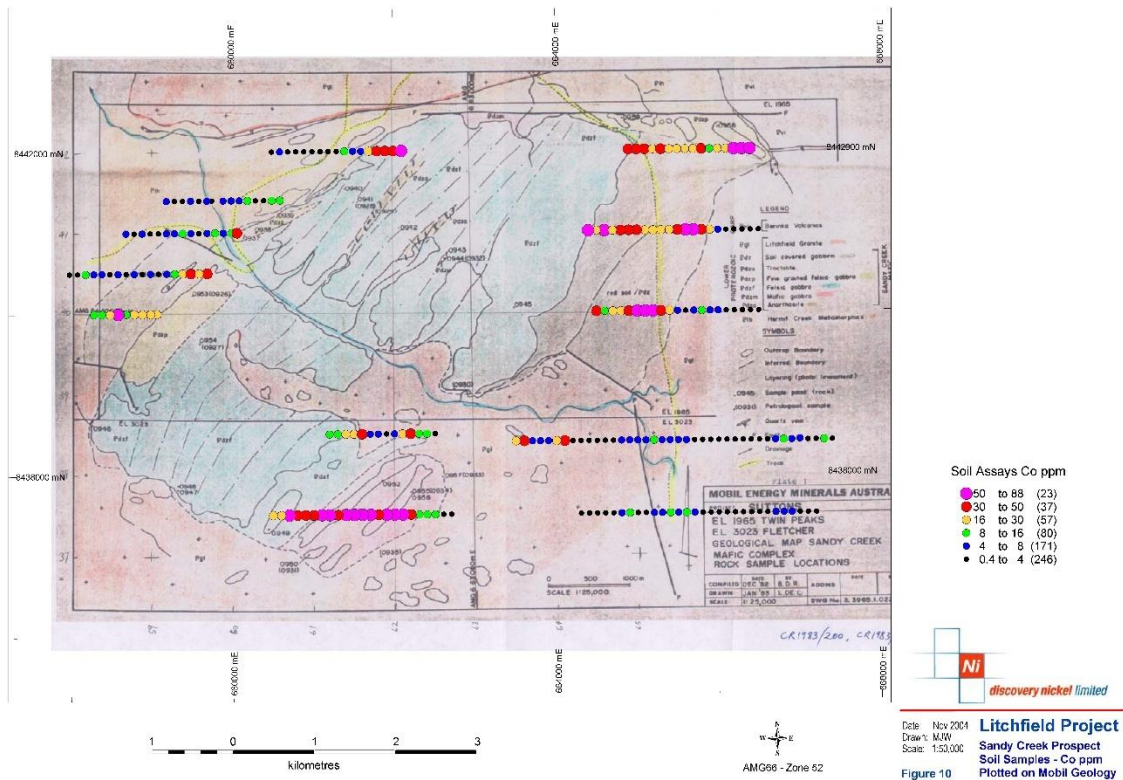


Figure 10: Sandy Creek Complex with anomalous Cobalt in soil results on Suttons geological mapping

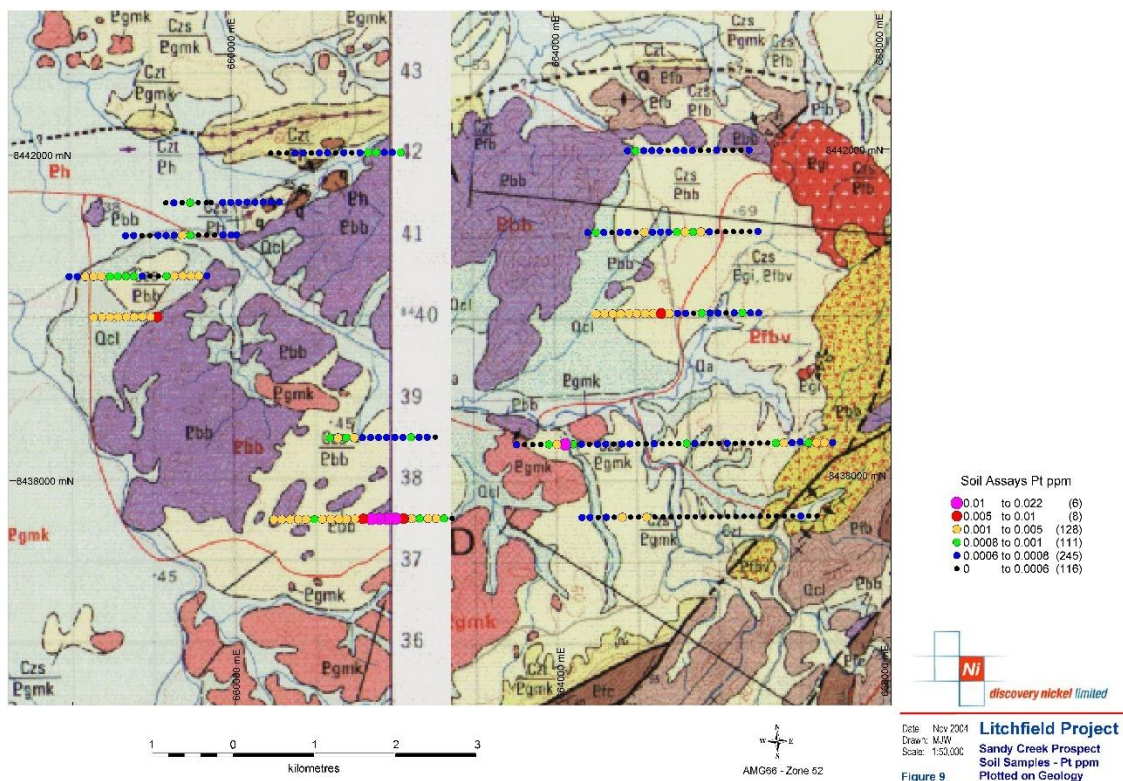
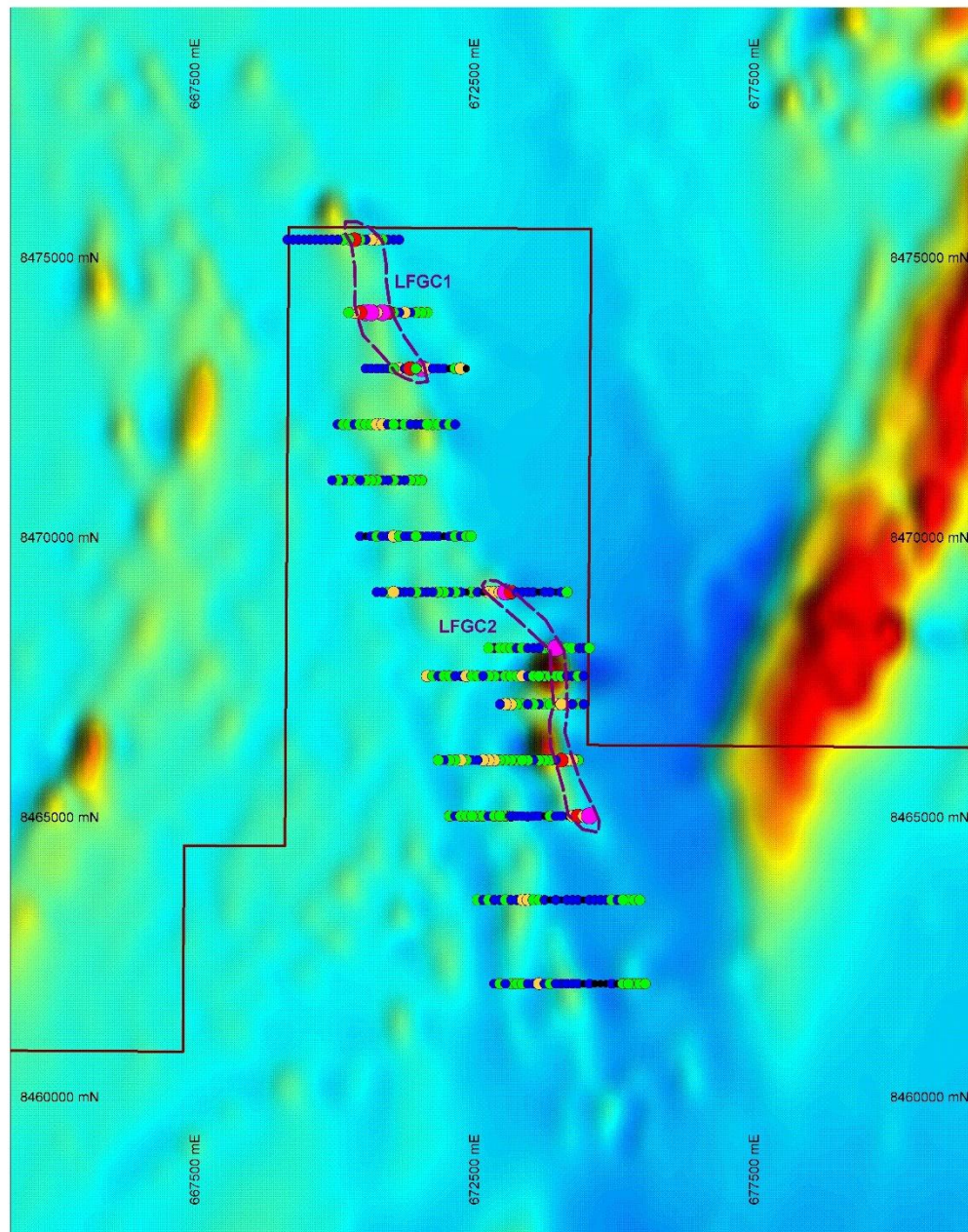


Figure 11: Sandy Creek Complex with anomalous Platinum in soil results on NTGS outcrop geology



LEGEND

Soil Assays Ni ppm

- 80 to 323 (7)
- 40 to 80 (11)
- 20 to 40 (51)
- 10 to 20 (175)
- 5 to 10 (294)
- 1 to 5 (76)

2 0 2
kilometres



Date: Nov 2004
Drawn: MJW
Scale: 1:100,000

Litchfield Project
SW Daly Prospect
Soil Samples - Ni ppm
Plotted on TMI Image

Figure 3

Figure 12: Discovery Nickel anomalous Platinum soils over TMI magnetics.

A AAPA search was conducted to determine if there were any registered or recorded heritage sites. Several registered and recorded heritage sites were identified (figure 13)

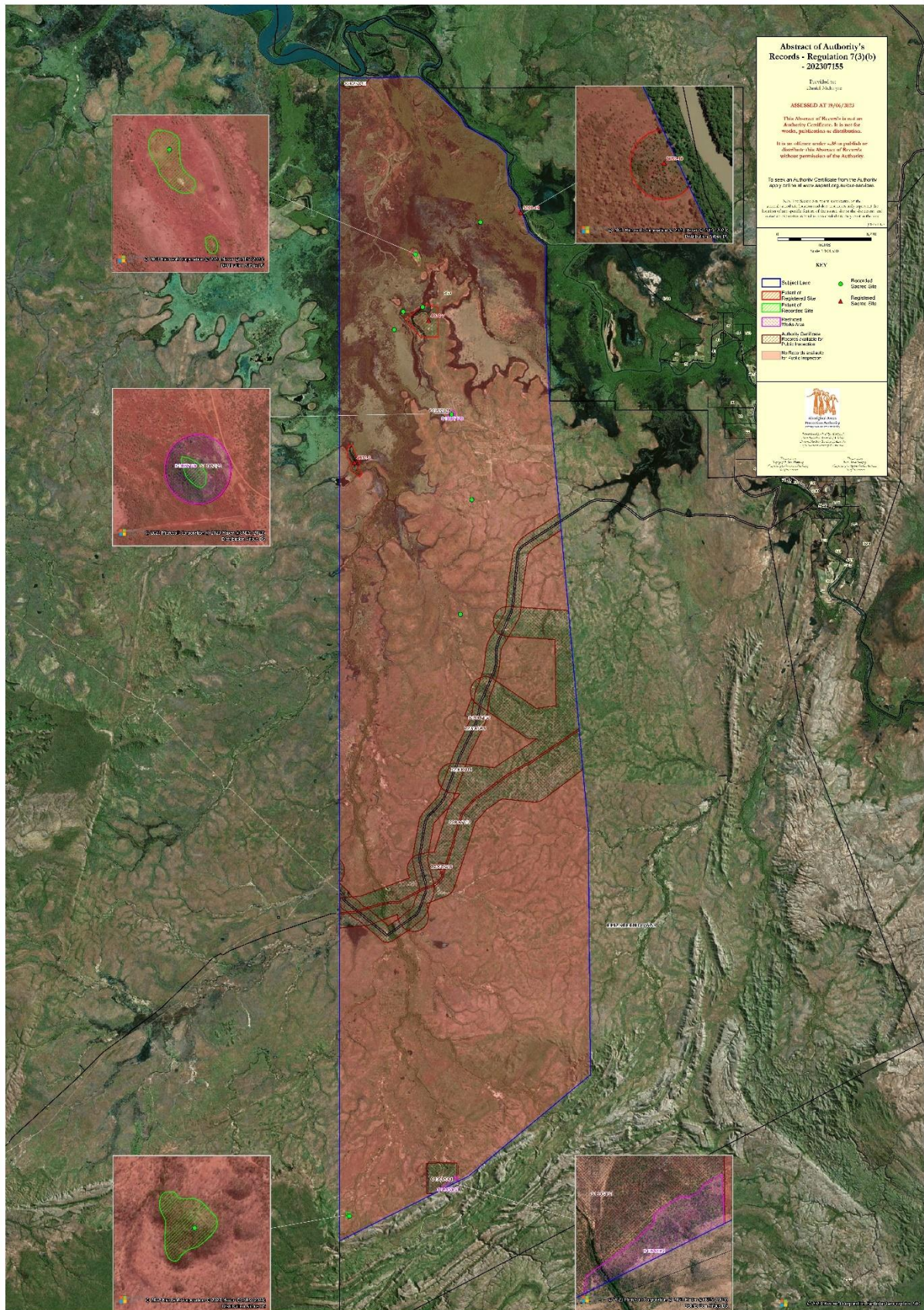


Figure 13: Registered and recorded heritage sites within the tenement.

6 Fieldwork Completed

A field trip was undertaken by Ron Roberts and Daniel McIntyre (author) from the 30th June to 7th July 2023. Accommodation was at the Banyan Farm Tourist Park north of Daly River.

The purpose of the field trip was primarily to field check the Li targets and to review the other exploration targets identified if they were deemed worthy. Sample sites were visited by 4WD vehicle mainly staying on existing tracks but occasional walking traverses when required (figure 14). A total of 14 rock chip samples were collected all samples were submitted for Li suite with selected samples for gold and base metals. Limited outcrop and isolated granite boulders are rarely observed above the black soil plains.

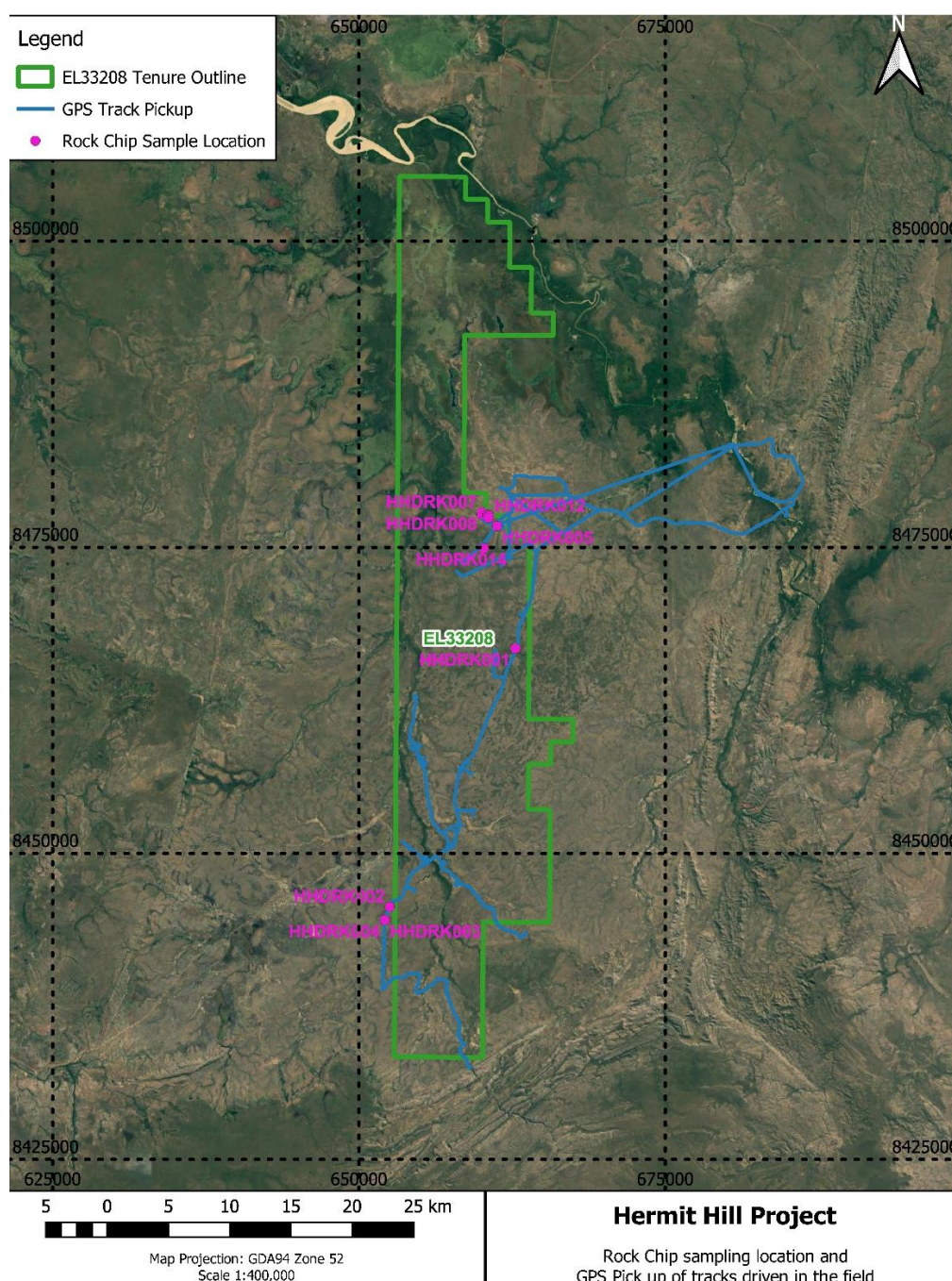


Figure 14: Rock chip sample locations and GPS track pick up.

From the 48 targets identified from the Sentinel-2 data a total of 22 were evaluated in field with the remaining targets unable to be accessed due to wet ground conditions or steeply incised creek channels. Four of these unchecked targets have subsequently be categorised based on aerial imagery and the results of the field investigation. Sixteen of the targets were found along roads, gravel pits or disturbed ground with a further ten samples from flood plains or drainage systems (table 1). From the observations of the landscape throughout the project area it is unlikely that the Sentinel-2 data will be able to identify Li targets.

Table 1: Sentinel-2 Targets and field observations

Source	Roads	Gravel Pit	Disturbed Ground	Flood Plain or Drainage	Unchecked	Total
Neil Pendock	10	3	2	4	11	30
Ron/Daniel	0	0	1	6	11	18
Total	10	3	3	10	22	48

The pegmatite intercepts in the drillholes were unable to be evaluated as they were behind a locked gate, with several attempts to find alternative accesses unsuccessful. Attempts to locate drillholes along the Port Keats Road were also unsuccessful either in the field or from aerial imagery, possibly due to several factors:

1. There may be an issue with the exact location of drillholes due to the coordinate system being used and subsequent translations/registration leading to incorrect GPS coordinates.
2. The drill spoil is unlikely to be persevered after 40 years due to environmental factors. E.g. high rainfall, muddy sheetwash nature of the landscape, coupled with the interaction of stock constantly turning over the surface.
3. Tracks and drill pads unable to be identified due to the rapid regrowth of vegetation and burning by station owners to remove tall grasses and promote regrowth.

Pegmatites were investigated in the Hermit Hill area which is one of the few places of outcrop throughout the tenement package. On the scree slope on the side of the hill to the west of Hermit Hill there were numerous small holes that may have been diggings for minerals but more likely animal diggings, on the top of this hill however there was what appears to be some historic digging targeting pegmatite, possibly Sn? The pegmatites in the area appear to have some zonation or phases with a quartz/muscovite phase and a more feldspar rich phase, with some large books of mica up to 7cm. The presence of several phases or zonation of pegmatites is viewed as a positive as it may indicate fractionation of the source.

Pegmatites in the Hermit hill area appear to extend north and south on a NW-SE trend and even though difficult to follow due to thick grasses, can be traced for 300-400m along strike. Most of the rock chip samples were collected in this area. No obvious Li bearing minerals were identified.

An attempt was made to access the Sandy Creek Complex area to evaluate the base metals and PGE anomalies identified in historic soils, was unsuccessful due to wet ground conditions.

The Au and Sn stream sediment samples were not followed up in the field as most of the area is sheetwash with limited outcrop to enable tracking back the source of any anomalies. Initial thoughts are that the landscape was mainly sheetwash but on reflection this may be incorrect as Discovery Nickel identified a base metal and PGE anomaly in soils over a similar landscape. Any surface geochemical (streams, soils) sampling program needs to be carefully planned and implemented to ensure that it is effective.

Numerous historical diggings and costeans were observed over and area of multiple quartz veins and what looks to be a lithological contact with a ferruginous metasediment. No indication of this work was identified in the open file review.

No attempt was made to locate the Geophysical magnetic anomalies as the are in areas of limited to no outcrop.

There appears to be some issue with registration of some of the NT government datasets as it was observed that the boundary between Elizabeth Downs station and the Aboriginal reserve to the east is out by approx. 160m (possible datum shift). A similar situation occurs when the AAPA heritage plan is registered and digitized.

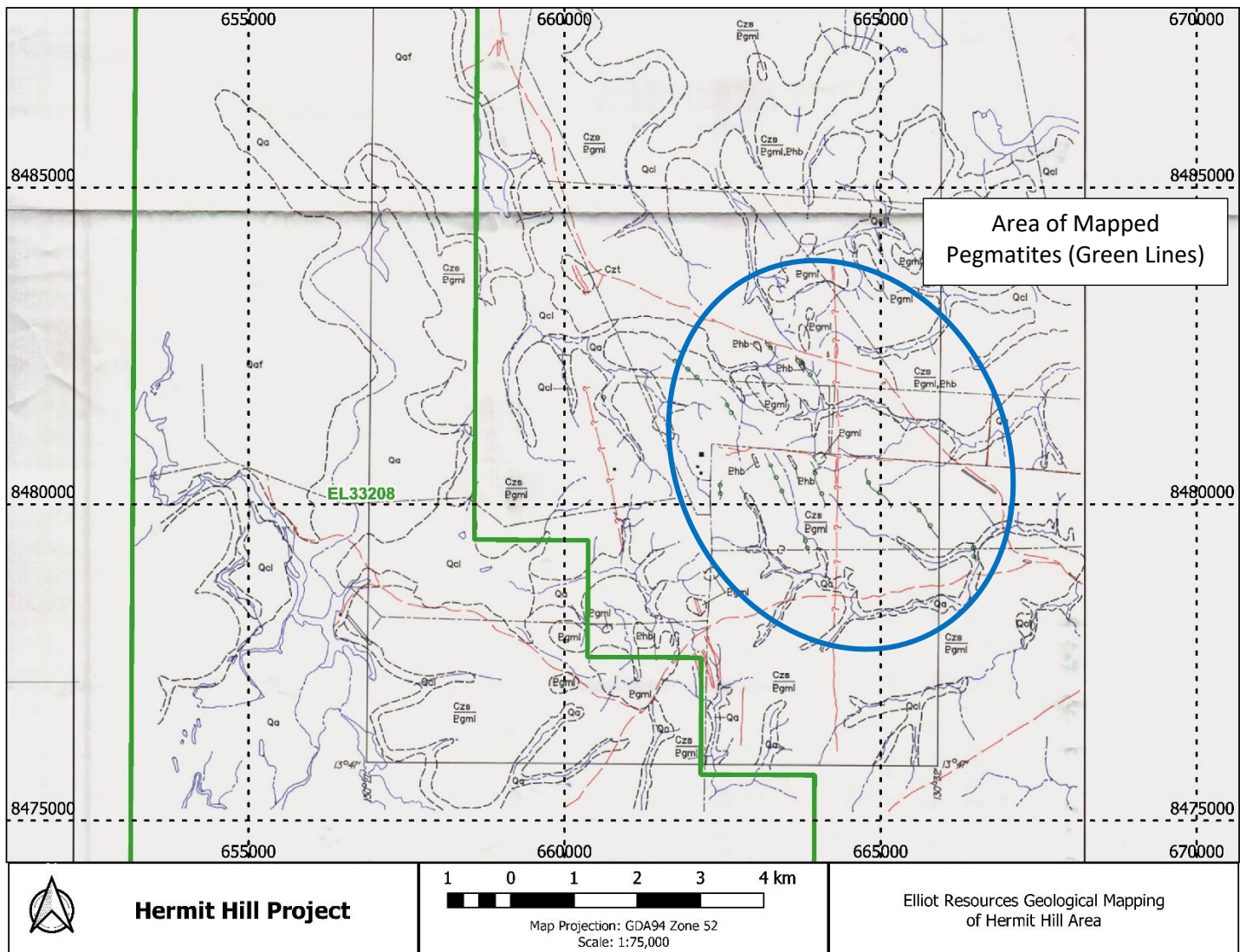


Figure 15: Geological mapping of the Hermit Hill area outline pegmatites to the NE of tenure

7 Results and Discussion

It is encouraging that several pegmatites appear to have either several phases or zonation which may be derived from fractionation of the source granite. Outside of the Hermit Hill Area no outcropping pegmatites or pegmatite float was observed even though pegmatites had been intersected in historic drilling. This indicated the potential for pegmatites to be located under cover within the tenement.

Assay results of the pegmatites were disappointing with no anomalous Li, Sn or Ta returned confirming initial observations of a lack of LCT mineral assemblages. A further review of the Hermit Hill area might be warranted once the area has been burnt off to determine the extent and orientation of the pegmatites observed. One stream sediment sample with 5ppm Sn indicates some LCT pegmatite potential within the tenement with the remaining streams either not analysed for Sn or below detection limit.

Denehurst mapped pegmatites and anomalous geochemical sampling has delineated anomalous Sn and Ta values that need to be followed up with a soil and stream sediment sampling program to determine if there are any LCT pegmatite potential.

Results of the Sentinel-2 targeting were generally disappointing with no obvious targets for further exploration identified. This is mainly thought to be because of the nature of the landscape of black soils plains with standing water emitting gases that appear to be from a Li mineral decay sequence.

Several quartz veins with well-formed quartz crystals up to 2cm were sampled in for gold with no anomalous results.

There were 3 samples submitted for base metals that the results are still pending.

There remains potential for base metals and gold that have been identified but not followed up due to restricted 4WD access.

8 Conclusions and Recommendations

The Litchfield Granite is an S type granite which are prospective sources for LCT pegmatites, particularly the pegmatites particularly in the Hermit Hill area where anomalous Sn and Ta geochemistry has been returned. A combined mapping and geochemical sampling program consisting of streams and soils is recommended over this area once burnt by the station owner.

There is evidence by other lithium exploration companies that weathering of LCT pegmatites can result in a reduction of the Li assays (with results as low as 50ppm possibly anomalous), however it is expected due to their refractory nature that Sn and Ta would report in assay.

A helicopter survey is recommended to follow up the gold and base metal samples that were not investigated due to access difficulties.

