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Operator	Territory Iron Pty Ltd
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Mine / Project Details	Frances Creek
Reporting Title	EL22856
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TERRITORY IRON PTY LIMITED
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ANNUAL TECHNICAL REPORT
EL22856
For The Period
5th February 2014 – 4th February 2015

Pine Creek SD52-08 1:250,000 Geological Map Sheet
Pine Creek 5270 1:100,000 Geological Map Sheet
McKinley River 5271 1:100,000 Geological Map Sheet

NORTHERN TERRITORY

LM Glass
April 2015

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SUMMARY

This report describes exploration activities conducted on Frances Creek tenement EL22856 by operator Territory Iron Pty Ltd from the 5th February 2014 to 4th February 2015.

Exploration activities during the reporting period for EL22856 include the drilling of 36 RC drill holes for a total of 2,580 metres. One thousand, two-hundred and eighty samples were selected for geochemical analysis. Expenditure for the reporting year on EL22856 was \$500,695.

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1.0 INTRODUCTION, LOCATION AND ACCESS

This report describes exploration activities conducted on Frances Creek tenement EL22856 by operator Territory Iron Pty Ltd from the 5th February 2014 to 4th February 2015.

EL22856 is an exploration licence within the Frances Creek Project Area in the Pine Creek Orogen in the Northern Territory. The Frances Creek Project Area is located about 220km south of Darwin and ~23km north of Pine Creek town ship, Figure 1. Access from Pine Creek is east along the sealed Kakadu Highway for ~2 km and 23 km north along the graded access road (past the Mt Wells turnoff) to the Frances Creek iron ore mine site.

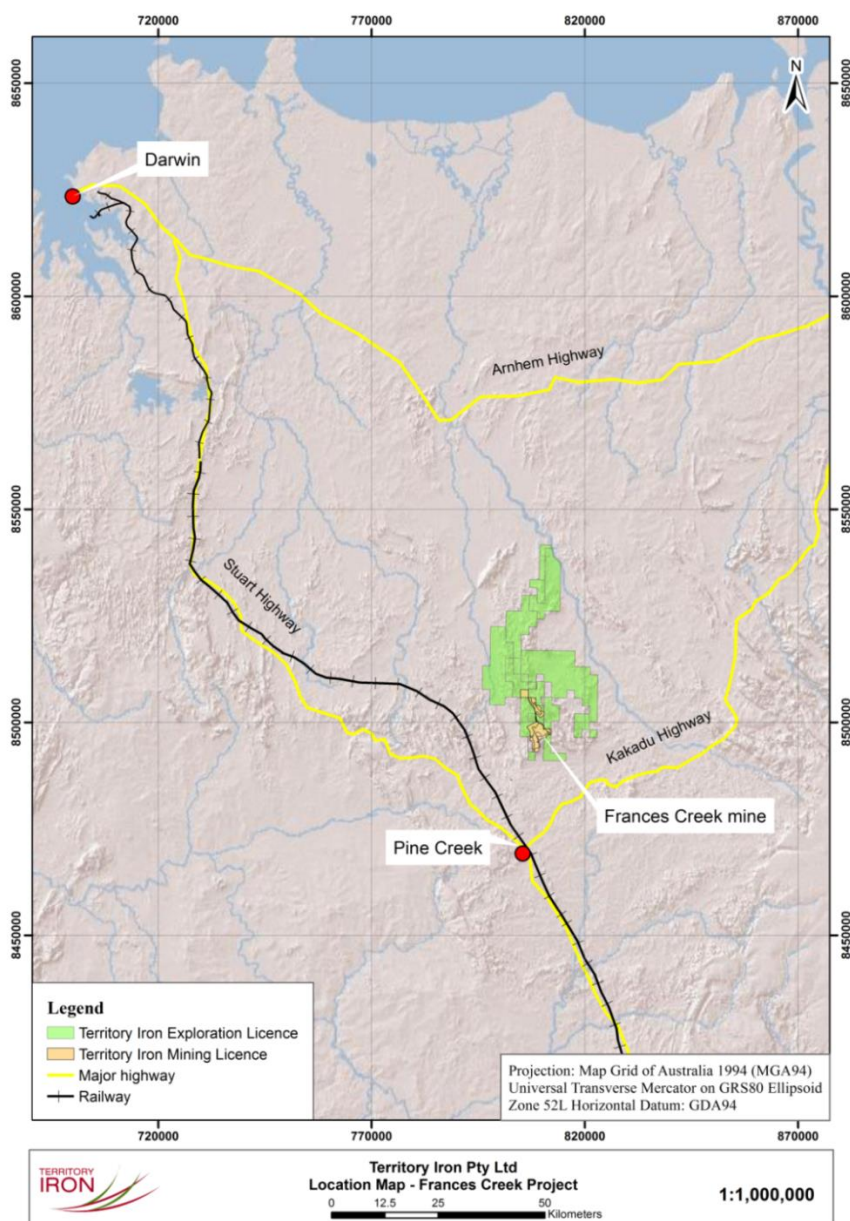


Figure 1: Location Map of Frances Creek Project with ESRI world shaded relief defining background topographic elevation. Beige polygons represent Frances Creek Mining Leases and green polygons represent Exploration Licences (the remainder of the Frances Creek Project Area)

EL22856 is located ~25 km north of Pine Creek Township and ~3 km north of the Frances Creek iron ore mine site. Access to the tenement is by graded track from the mine site, Figure 2.

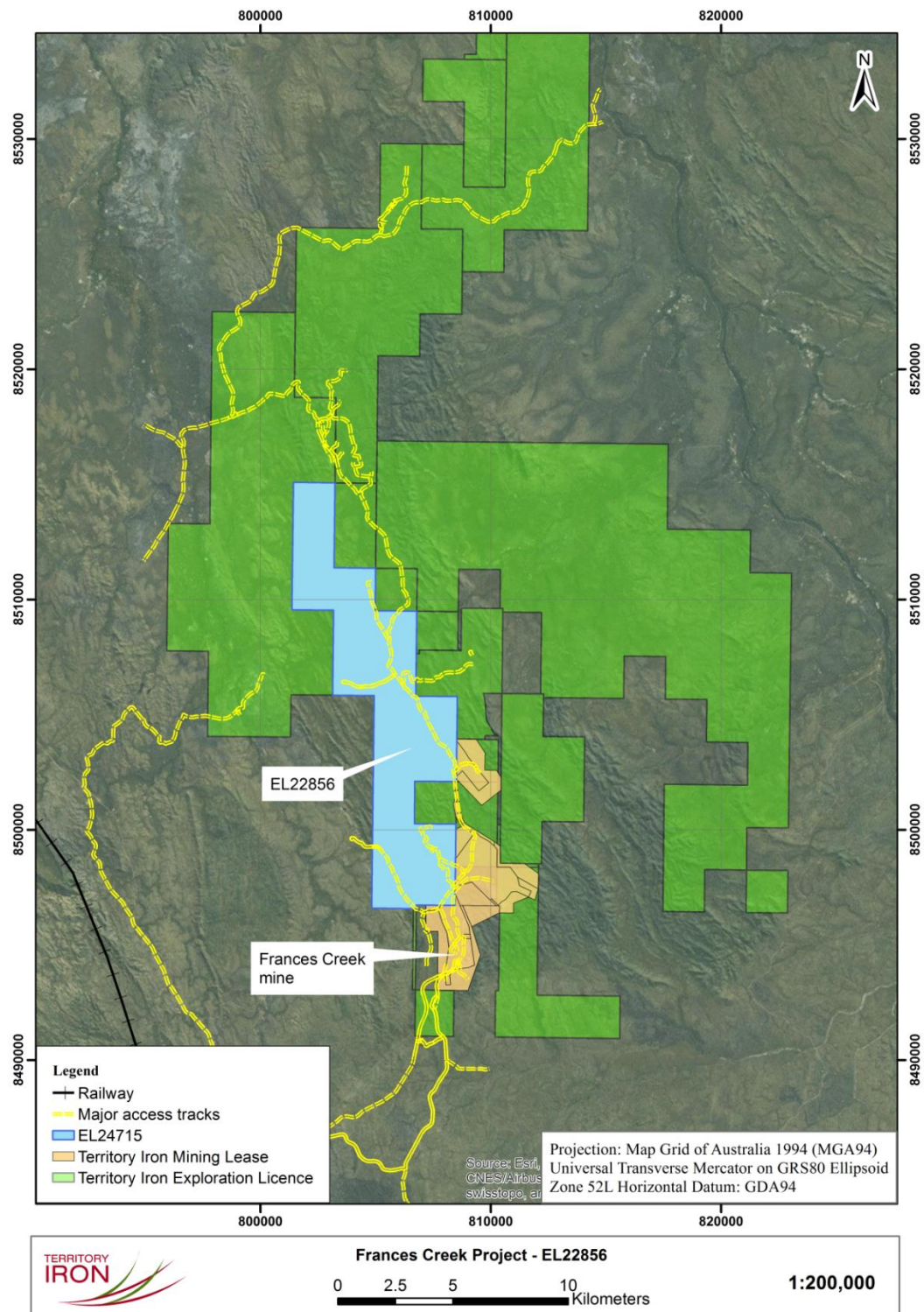


Figure 2: Location map of EL22856 (blue polygon) and Frances Creek mine site. ESRI world satellite imagery defines background relief.

2.0 TENURE

2.1 TENURE AND MINERAL RIGHTS

EL22856 was granted to Territory Iron Limited on the 5th February 2003. The original six year term of the tenement expired on the 4th February 2009. The latest renewal for the tenement was granted in March 2015 with an expiry date on the 4th February 2017.

The tenement comprises 17 blocks totalling 56.5 km² and is partially overlain by Mineral Leases ML24727, ML27224, ML27807, ML27808 and ML27226.

2.2 LAND TENURE

Land tenure under the title includes parts of:

- Ban Ban Springs Pastoral Lease, PPL 1111 – NT Portion 695, owned by Ban Ban Springs Station Pty Ltd, PO Box 7207, St Kilda Road, Melbourne, Victoria 8004.

2.3 NATIVE TITLE ACT 1993

Registered native title claims over the area include DC01/21 lodged on the 13th March 2001 (Paddy Huddleston & Ors) – PPL 1111 and DC2001/006 lodged on the 1st February 2001.

3.0 CULTURAL HERITAGE MANAGEMENT

Frances Creek Operation commissioned the undertaking of an initial cultural heritage assessment in 2005 and the ongoing cultural heritage management surveys have been integrated into the Land Disturbance Permit (internal process) since 2008. To date, these surveys have resulted in the recording of a large number of Aboriginal archaeological sites and isolated artefacts that are protected under Section 17/18 of the NT *Heritage Act* 2011. Cultural heritage surveys are continually undertaken prior to any ground disturbance activities, with a policy of 'site avoidance' implemented for ground disturbance works where possible.

More recently, in December 2013, Territory Iron was issued a permit under Section 72 of the NT *Heritage Act* (2012) to disturb sites throughout the entire Frances Creek project area if required for mining activities or exploration. However, sites will only be disturbed if absolutely necessary. Territory Iron archaeologists supervise any heritage management activities in accordance with the requirements of the permit. An Authority Certificate under the NT Aboriginal Sacred Sites Act 1989 will only be issued should the area ever be mined.

Sixty-six archaeological sites have been recorded within EL22856. These sites remain protected under the provisions of the *Heritage Act* 2012.

4.0 GEOLOGY

4.1: REGIONAL GEOLOGY

The Frances Creek mine site and adjacent exploration area are located within the Palaeoproterozoic Pine Creek Orogen which forms part of the North Australian Craton. The Pine Creek Orogen covers an area of ~50,000 km² and represents a >4 km succession of carbonate, clastic and carbonaceous sedimentary and volcanic rocks, which unconformably overlie Neoarchaeon (~2500 Ma) basement granite and gneiss. Based on the timing of sedimentation, magmatism and metamorphism, the Pine Creek Orogen has been divided into three distinct domains, from west to east; the amphibolite to granulite facies Litchfield Domain, the greenschist facies Central Domain and the amphibolite facies Nimbuwah Domain. The Frances Creek mine site and adjacent exploration area is located within the Central Domain.

The oldest rocks (the Palaeoproterozoic Woodcutters Supergroup) comprise the Namoon Group (Masson Formation) to the east of the Frances Creek project area. They are unconformably overlain by the Mount Partridge Group (Mundogie Sandstone and Wildman Siltstone) which cover the majority of the Frances Creek project. The Mundogie Sandstone (Mount Partridge Group) forms prominent continuous northwest-striking ridges of dominantly coarse, pebbly, feldspathic quartzite and arkosic sandstone (Stuart-Smith *et al.*, 1987). Massive, graded beds of pebble conglomerate are common and units often display graded bedding and lenticular cross-bedding. Subsequent to sedimentation of the Mundogie Sandstone, the Wildman Siltstone (subdivided into two members; the Lower Wildman Siltstone and Upper Wildman Siltstone) were deposited with apparent conformity. The unit mainly comprises metapelitic assemblages with subordinate sandstone. The Lower Wildman Siltstone is host to the majority of the iron mineralisation at Frances Creek.

In the western portion of the Frances Creek project area, the Mt Partridge Group is unconformably overlain by the stratigraphic sequences of the Cosmo Supergroup, comprising the South Alligator Group (Koolpin Formation, Gerowie Tuff and Mt Bonnie Formation) stratigraphic sequence. Subsequent to deposition of these units, pre-orogenic Zamu Dolerite sills intruded these stratigraphic successions.

Syn- to post-orogenic activity is represented by intrusion of the 1835-1800 Ma Cullen Supersuite granitoids. Intrusion of the granite led to contact aureoles in the surrounding pre-orogenic Masson Formation, Mundogie Sandstone and Zamu Dolerite.

Two major episodes of folding are recognised, earlier tight to isoclinal F1 folds followed by younger open (widely spaced) folds (Stuart-Smith *et al.*, 1987). The major structural controls in the tenement area are related to D3 1-3 km scale northwest-trending non-cylindrical folds, which plunge gently to the northwest to form a series of anticlines and synclines pre-dating the intrusion of the Cullen Supersuite, and 1-3 km long northwest and northeast-trending faults.

4.2: LOCAL GEOLOGY AND MINERALISATION

EL22856 mainly overlies the Wildman Siltstone (Upper and Lower Wildman Siltstone) and a minor component of the Mundogie Sandstone (Mount Partridge Group). The tenement also overlies to the west, the South Alligator Group (Koolpin Formation, Gerowie Tuff and Mount Bonnie Formation) and the intrusive Zamu Dolerite, Figure 3.

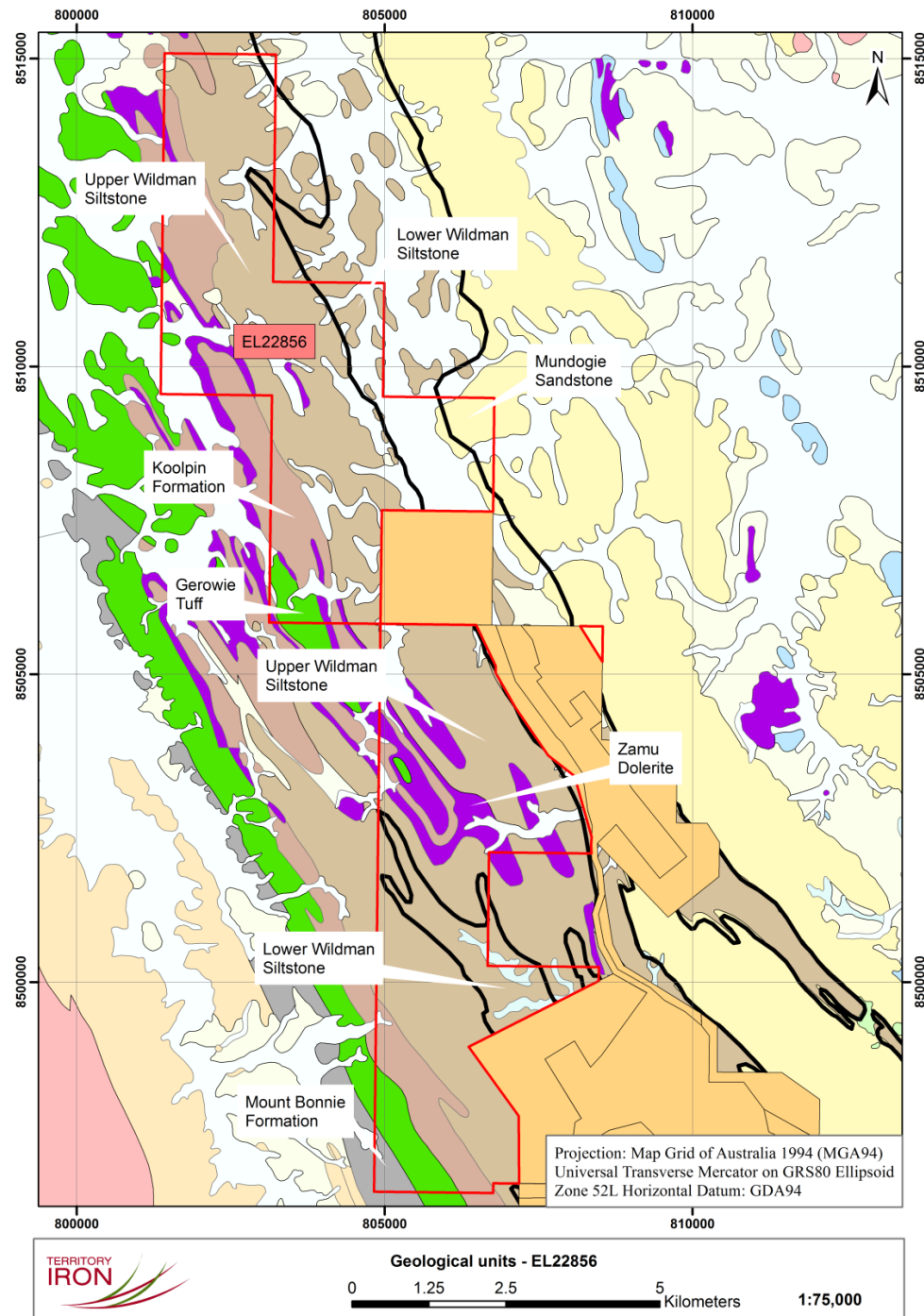


Figure 3: Local geology for EL22856. The red polygon defines the boundary for the exploration licence. The solid black line defines the boundary between the Lower and Upper Wildman Siltstone, the Lower Wildman Siltstone to the east and the Upper Wildman Siltstone to the west. Mining Leases in the Frances Creek project area are shown for reference as tan polygons

In the Frances Creek area to the south, economic grade iron mineralisation is concentrated primarily within basal breccias of the Lower Wildman Siltstone, within regional fold hinge zones and limbs of overturned NNW-trending, shallow plunging, non-cylindrical folds and subordinate parasitic folds and fold flexures. The lower sequence consists of carbonaceous phyllite, ironstone, siltstone and phyllite which is overlain by laminated grey, brown, red and cream banded siltstone (Stuart-Smith *et al*, 1987). At depth, the sequence grades into pyritic carbonaceous shale. The lower member in surface outcrop consists of bleached white to grey carbonaceous shale including highly angular iron-rich breccias and massive ironstone, overlain by laminated grey, brown, red and cream shale and siltstone.

Although not recognized in the official stratigraphic definition for the Wildman Siltstone, drilling at Frances Creek has revealed extensive dolostone in the lower member. Iron enrichment is not restricted to one stratigraphic unit and occurs in strata both above and below the Wildman Siltstone, although these enrichments do not reach economic levels. A characteristic feature of the Frances Creek deposit is that is that high-grade zones comprise numerous, small, irregular, “pod-like” ore bodies that are of the order of 10 – 20 m in diameter and generally within 100 m of the contact to the underlying Mundogie Sandstone.

Iron-bearing oxides include hematite (Fe_2O_3) and goethite ($\text{FeO}(\text{OH}) \pm$ accessory manganese minerals which are associated with goethite. High grade Fe-ore (>65 %Fe) is characterized by hard, grey, massive hematite or friable purple, microplaty hematite. These ores can range from extremely fine grained to coarse grained and bladed with numerous irregularly shaped vugs and skeletal-textures reminiscent of boxworks, in which vugs are often filled with late-crystallising, coarse-grained hematite. Goethite occurs as both ochreous and vitreous forms.

5.0: EXPLORATION ACTIVITIES – CURRENT REPORTING YEAR

During the reporting period, Territory Iron undertook the following activities within tenement EL22856.

- (i) 36 Reverse Circulation (RC) drill holes
- (ii) Acquisition of geochemical data (1280 analyses)

5.1: RC DRILLING

Territory Iron Pty Ltd drilled 36 drill holes for a total of 2,580 metres during the reporting period for EL22856. Drill hole locations are shown in Figure 4. One thousand, two-hundred and eighty samples were selected for geochemical analysis. All data pertaining to drilling including collar location, survey information, assay data and lithology are located in Appendix I.

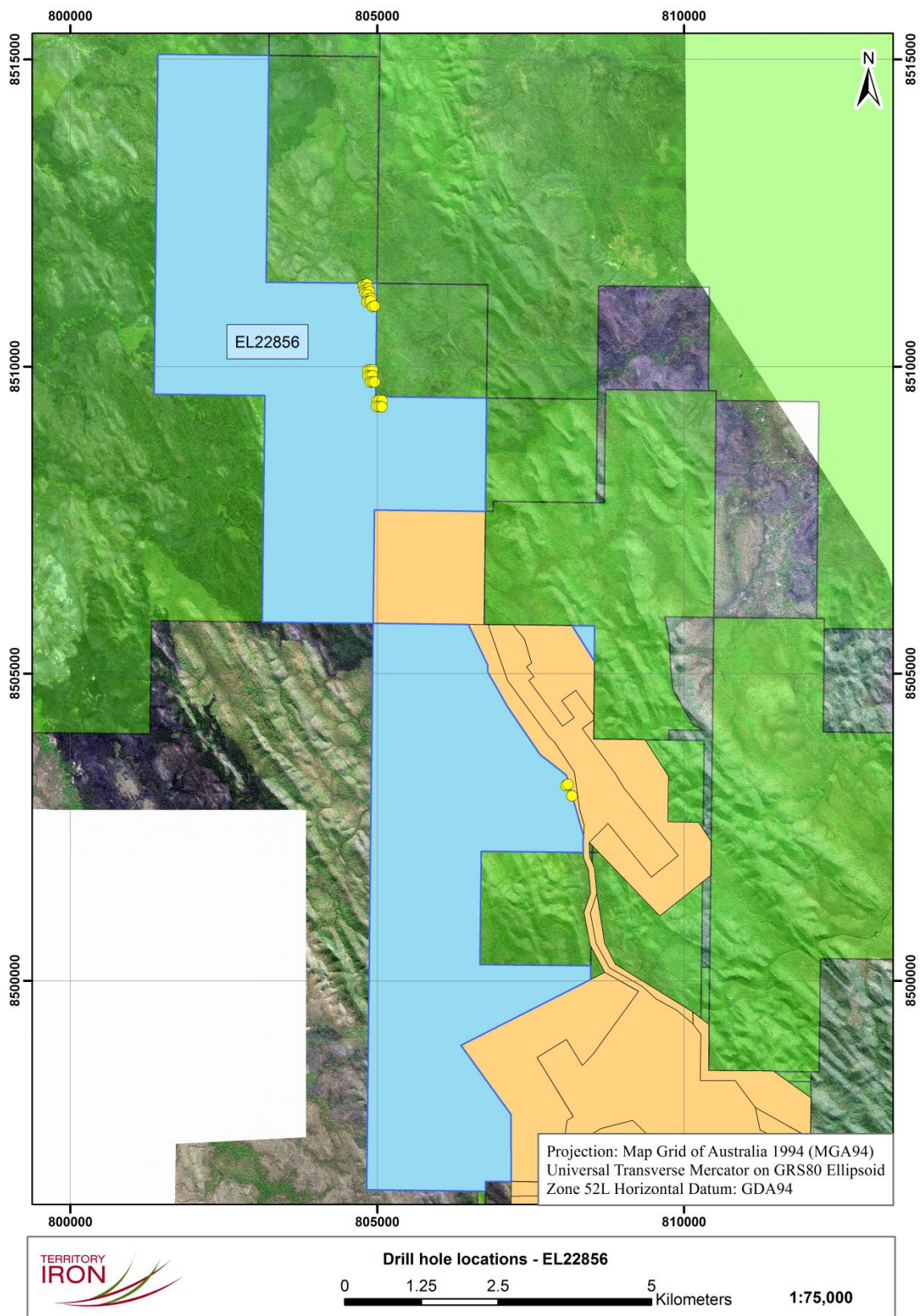


Figure 4: Location of RC drill holes (yellow dots) within EL22856. The blue polygon represents EL22856, the green polygons Territory Iron Exploration Licences and tan polygons Territory Iron Mineral Leases



Figure 5: Detail of northern drill hole locations – EL22856. The blue polygon represents EL22856

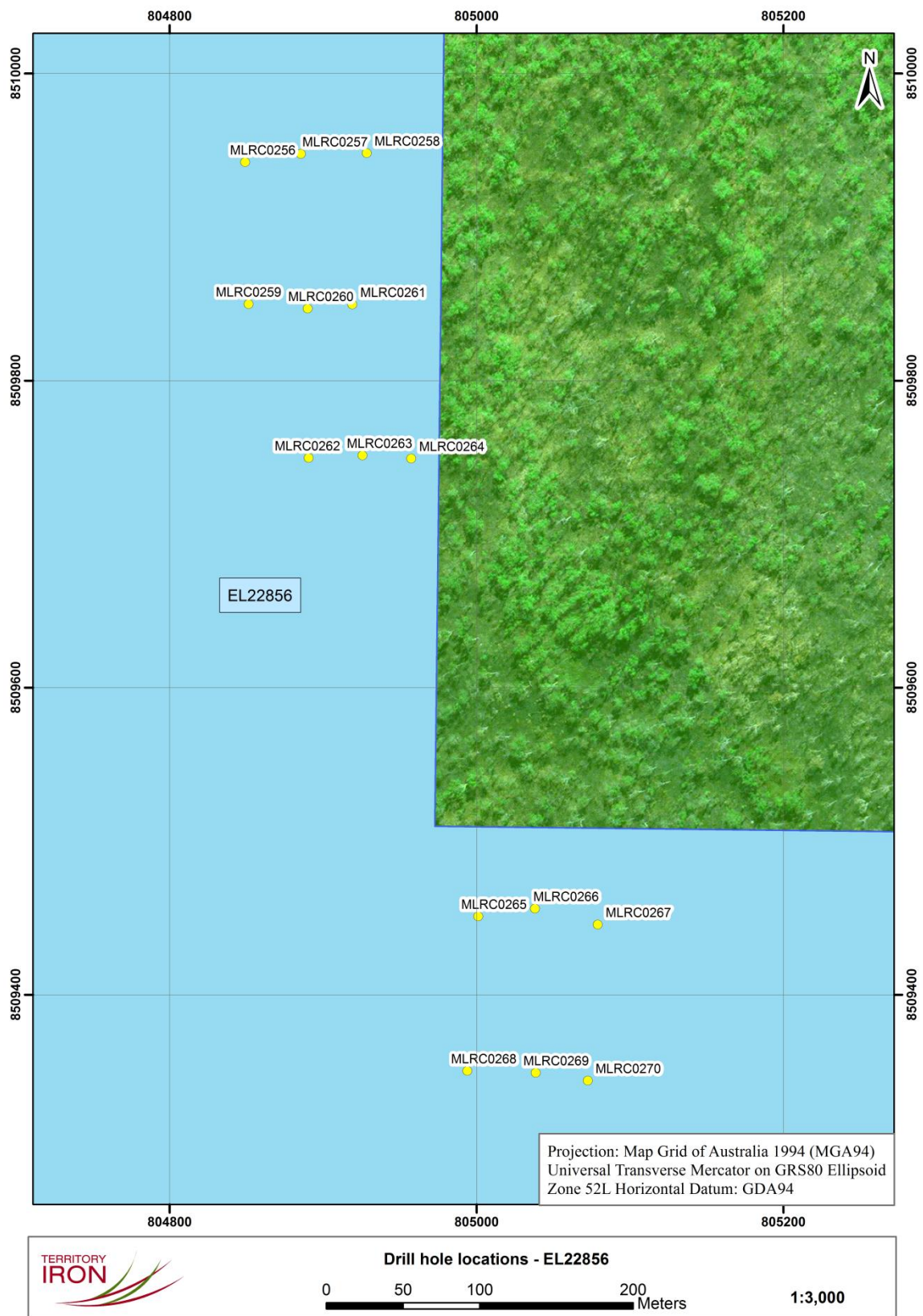


Figure 6: Detail of northern drill hole locations - EL22856. The blue polygon represents EL22856

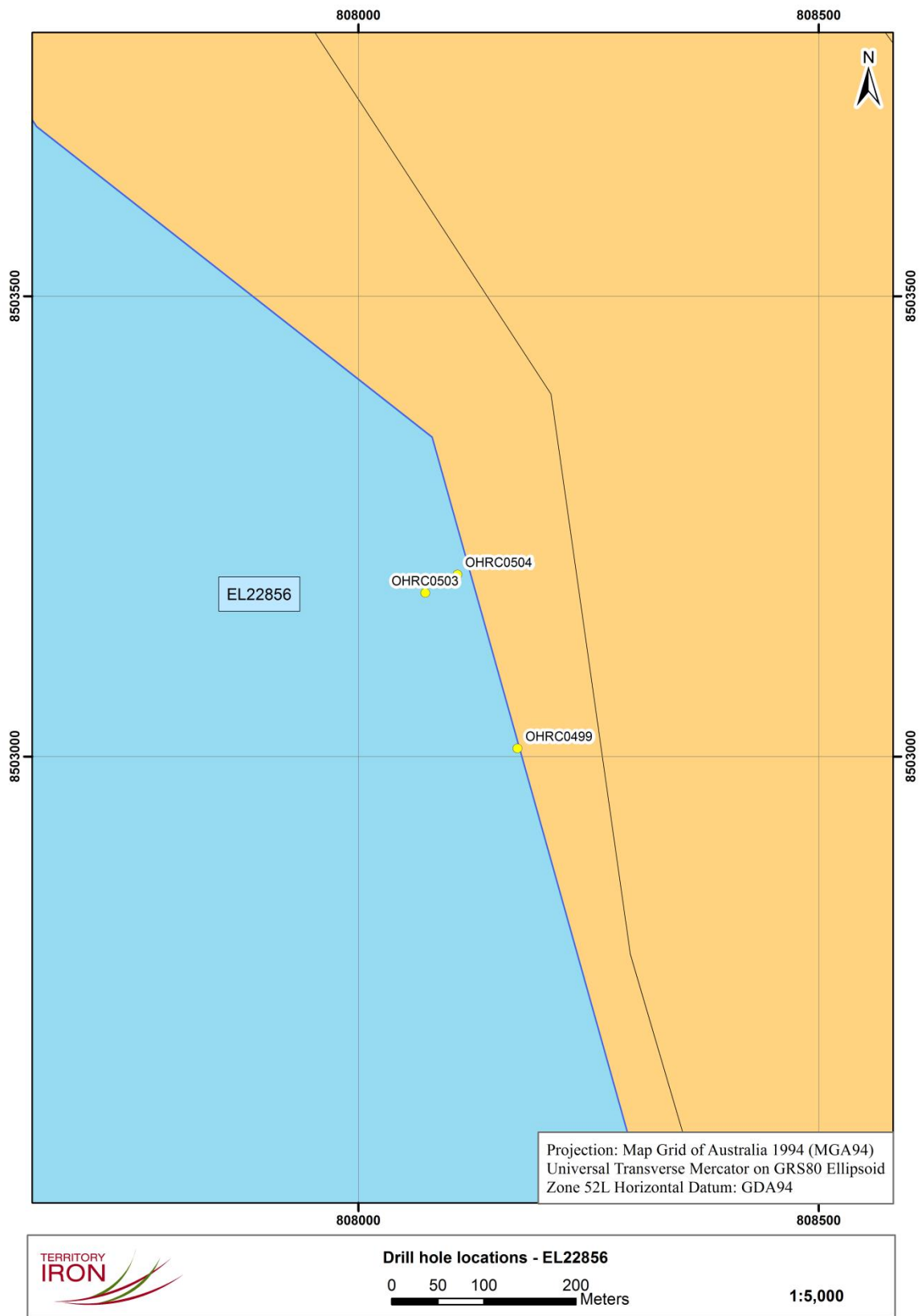


Figure 7: Detail of southern drill hole locations - EL22856. The blue polygon represents EL22856 and the tan polygon Frances Creek Mineral Leases

6.0: CONCLUSIONS AND RECOMMENDATIONS

The main focus for EL22856 for the next reporting year will be a review of earlier acquired data and remediation (rehabilitation) of all drill holes in compliance with the Department of Mines and Energy requirements.

7.0: REFERENCES

Stuart-Smith PG, Needham RS, Bagas L and Wallace DA, 1987. Pine Creek, Northern Territory, *BMR 1:100,000 Geological Map Commentary, Bureau of Mineral Resources, Geology and Geophysics*, Canberra, Australia.

APPENDIX I

DRILL AND ASSAY DATA (Text Files)