



BOULDER RIDGE PROJECT
PARTIAL RELINQUISHMENT REPORT
to the Department of Primary Industry and Resources
for the period 21/08/12 to 24/10/18 for
EL29595

Date: 12 December 2018
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TITLE PAGE AND BIBLIOGRAPHIC DATA SHEET

Project Name: Boulder Ridge

Combined Report number: GR-443

Tenement: EL29595

Tenement operator: Northern Star (Tanami) Pty Ltd

Tenement holder: Northern Star (Tanami) Pty Ltd (100%)

Report type: Partial Relinquishment Report

Report title: Partial Relinquishment Report to the Department of Primary Industry and Resources for the period 21/08/2012 to 24/10/2018

Report period: 21/08/2012 to 24/10/2018

Compiled by: C Turnbull - Land Administration Geologist, Northern Star Resources Ltd

Date of report: 12 December 2018

1:250 000 map sheet: SE52-15 Tanami

1:100 000 map sheet: Pargee 4758

Target commodity: Gold

Keywords: Proterozoic Granites-Tanami Inlier, Tanami Group, Mt Charles Formation, Birrindudu Group, Gold, Greenschist Facies, Aeolian Sand Blanket, Aeromagnetic survey

Prospects drilled: N/A

List of assays: N/A

Distribution:

Department of Primary Industry & Resources (NT)	(1)
Northern Star Resources Limited (WA)	(1)
Central Land Council (NT)	(1)

1 SUMMARY

This report describes exploration activities primarily for gold undertaken by Northern Star (Tanami) Pty Ltd and previous operators over the partially relinquished portion (30 blocks) of EL29595 as part of the Boulder Ridge Project GR-443 between grant date on the 21 August 2012 and the date of partial relinquishment on the 24 October 2018.

The Boulder Ridge Project is located in the Northern Territory adjacent to the border with Western Australia, in an area immediately north of the Tanami Road. Halls Creek, the nearest town, is approximately 210km north-west of the project area.

Access to the project area from the west is along the Tanami Road from Halls Creek and then by historic exploration tracks and drill lines. Within Northern Territory, access can be gained using the Tanami Road directly from Alice Springs. Access to the project area is restricted after heavy rains during the wet season (from December to April).

Work completed over the partially relinquished portion of the tenement by previous operators and Northern Star (Tanami) Pty Ltd comprised:

- Aeromagnetic survey

Work completed by Northern Star (Tanami) Pty Ltd on the Boulder Ridge project has resulted in the identification of 30 out of 89 blocks on EL29595 to be non-prospective for gold and consequently partially relinquished in October 2018. There are 59 remaining contiguous blocks of EL29595.

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2 INTRODUCTION

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The climate is semi-arid with rainfall averaging approximately 400 mm per annum. Most rainfall occurs as summer storms associated with the monsoon season between November and March. Daily temperatures range from winter minima of near zero to summer maxima of about 48°C. The mean maximum temperature ranges from 26°C in June/July to 39°C in November/January. The area is devoid of surface water except in small soaks after heavy rain. The Tanami Desert in which the leases are situated is typically dominated by smooth plainlands widely covered in aeolian sand with a vegetation cover described as tall open acacia scrubland with a hummocky grass under-story (spinifex).

3 TENURE

This report covers the Exploration Licence EL29595 which is part of the Boulder Ridge Project under the Group Report number GR-443. The tenements were due to expire on the 20th of August 2018, but a renewal was submitted for a further two years in August this year.

Pursuant to a Tenement Sale Agreement and Mineral Rights Agreement both executed 29 August 2016 with completion effective from 10th January 2017, Northern Star (Tanami) Pty Ltd became the 100% beneficial owner of the Titles. Transfer of Titles to Northern Star (Tanami) Pty Ltd were lodged and registered by the Department on 8 March 2017.

Reporting Group GR-443 was approved on 23 February 2017 with a reporting period of 21 August – 20 August and submission on 20 October.

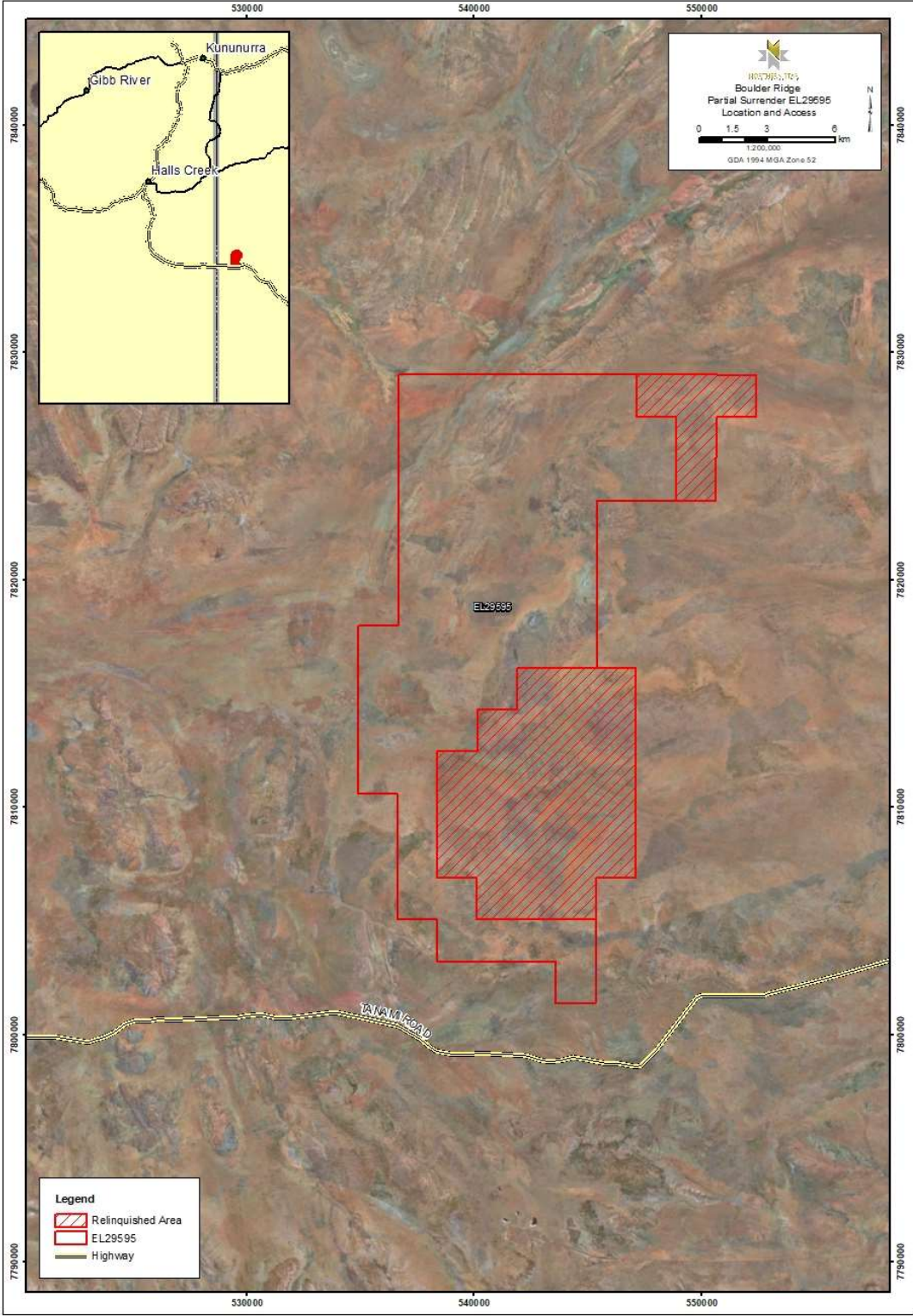


Figure 1: Location and Access to EL29595

Tenement	Holder	Current Area (blocks)	Grant Date	Renewal Date
EL29595	Northern Star (Tanami) Pty Ltd 100%	59	21/08/2012	20/08/2020

Table 1: Tenure of EL29595

4 REGIONAL AND LOCAL GEOLOGY

In the Tanami Region, one of the most important tectonic units is the North Australian Craton, the stratigraphic succession shows similarities with the Pine Creek and Halls Creek Orogens and other Palaeoproterozoic successions in northern Australia.

Within the region, Archaean rocks of the Browns Range Metamorphics and Billabong Complex are theorised to underlie the later Proterozoic sequences. The overlying Palaeoproterozoic Tanami Group is dominated by volcanic and volcanoclastic rocks, along with clastic and calc-silicate sediments. These are overlain by siltstone, carbonaceous shale, calc-silicates and BIF of the Dead Bullock Formation. This in turn is overlain by a thick sequence of turbidites, the Killi Formation. Interbedded siltstone, greywacke and chert west of Tanami are included in the Twigg Formation.

The Pargee Sandstone and Mount Charles Formation have historically been identified as having been formed in short-lived, small extensional basins. A period of wider extension is believed to have followed, this was accompanied by felsic volcanism in the Mount Winnecke Group and Nanny Goat Volcanics. Five main granitic suites are recognised in the Tanami Region, the most important being the Coomarie and Frederick Suites. The youngest granites in the area belong to The Granites Suite.

Deposition in the Birrindudu Basin began with sandstone transgressing over the metamorphic and crystalline basement probably at about 1.7 Ga. This was accompanied by regionally extensive north-trending growth faults and volcanism, possibly indicating rifting. The Birrindudu and Tolmer Groups represent the exposed basal section of this basin and may be as much as 6,000m thick. Apart from minor felsic volcanic rocks (tentatively assigned to undifferentiated Birrindudu Group) and carbonate rocks and shale in the upper Tolmer Group, these units are dominated by coarse clastic sedimentary rocks. Neoproterozoic and younger

sequences include the Redcliff Pound Group Neoproterozoic, Antrim Plateau Volcanics, Lucas Formation, Pedestal beds and Larranganni Beds.

The extensive flows of Neoproterozoic-Cambrian Antrim Plateau Volcanics consist primarily of tholeiitic basalt lava flows with minor sedimentary rocks. Flat lying sedimentary rocks of the Devonian Lucas Formation and Pedestal Beds and Cretaceous Larranganni Beds overlie Antrim Plateau Volcanics and older rocks.

Large areas of the Tanami region are covered by Cainozoic deposits of laterite and calcrete, and more recent, unconsolidated fluvial and aeolian sand and gravel.

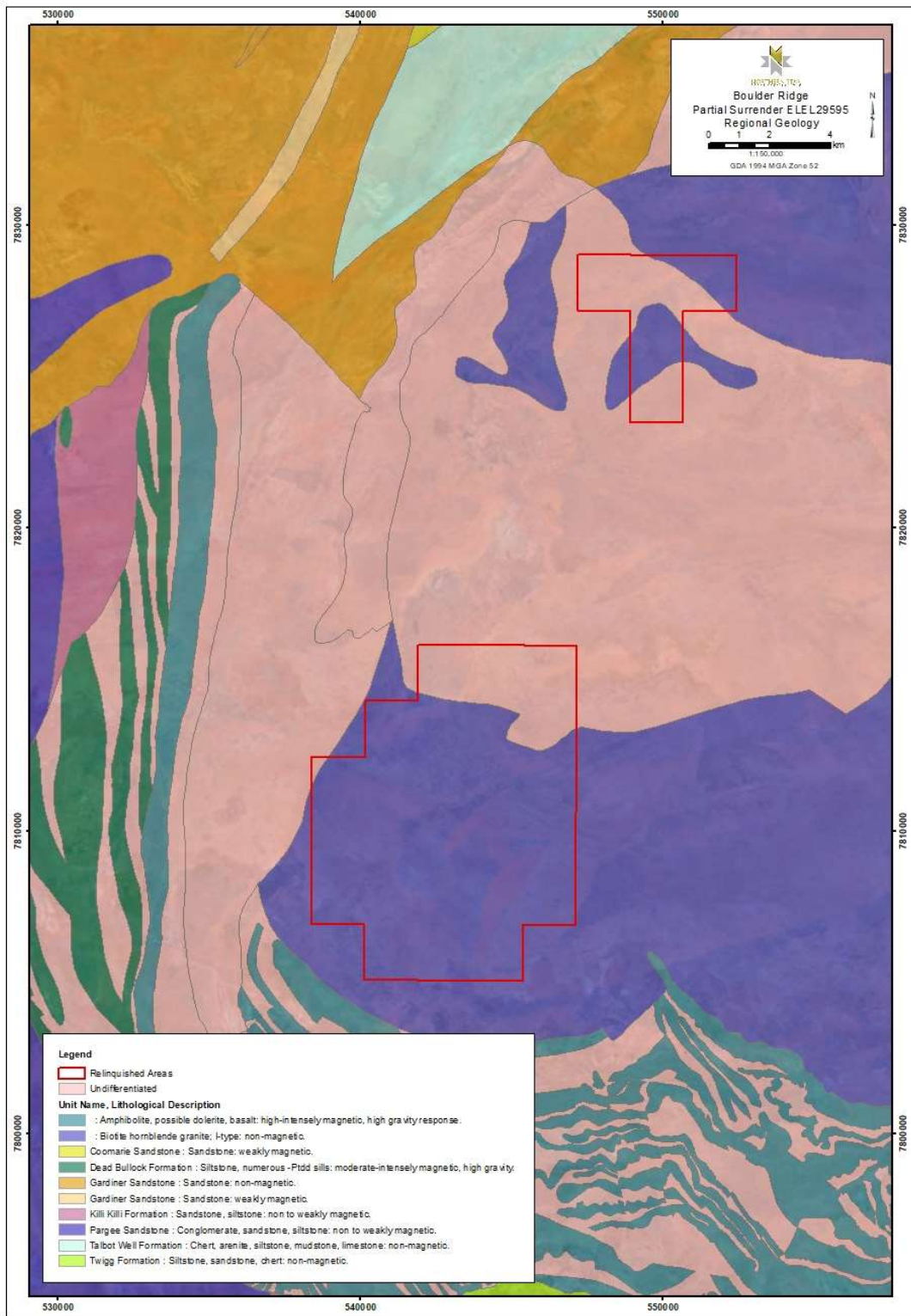


Figure 2: Regional NTGS 1:250,000 interpreted bedrock geology

5 PREVIOUS EXPLORATION

Previous work completed within the reporting group area was carried out by Northern Star (Tanami) Pty Ltd and involved a helicopter-assisted field reconnaissance program including rock chip sampling, purchase of “Rapid Eye” high-resolution satellite imagery, and a regional airborne magnetic and radiometric survey over parts of EL25171, EL27590 and the entirety of EL29595. Merging of the new airborne magnetic-radiometric data with legacy and government datasets was also completed.

Geological reconnaissance and geophysical interpretation identified two areas of interest to Northern Star (Tanami) Pty Ltd at Boulder Ridge, these have been termed Kookaburra East and Supernova.

6 WORK COMPLETED ON RELINQUISHED PORTION OF EL29595

No drilling or geochemical surface sampling has occurred on the relinquished portions of EL29595. The regional geophysical surveys and the associated geological interpretation have encompassed these areas, but no areas of interest were identified on the relinquished ground.

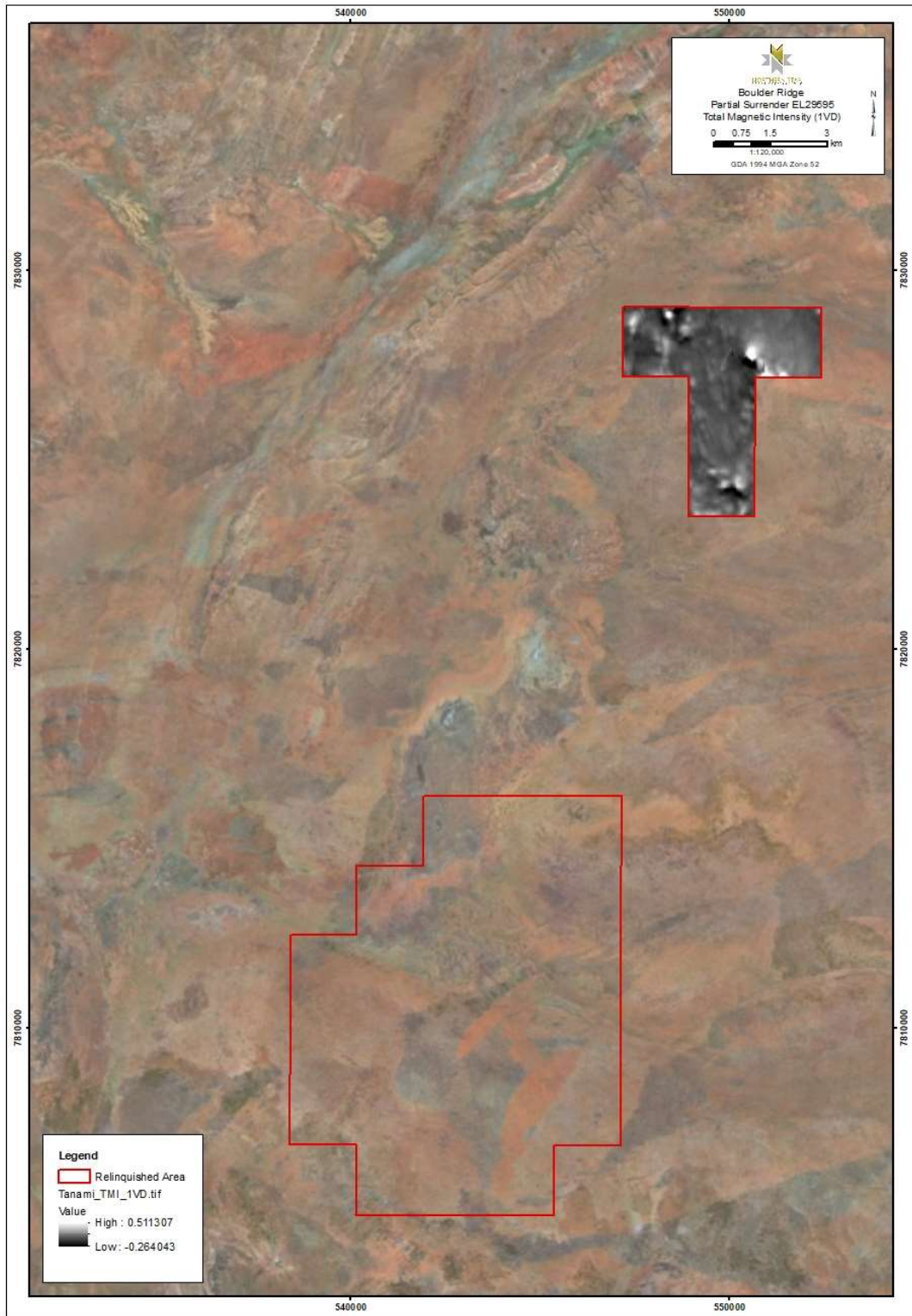


Figure 3: Total magnetic intensity (1VD) coverage of relinquished area

7 CONCLUSIONS AND RECOMMENDATIONS

Northern Star (Tanami) Pty Ltd wish to continue advancing the Boulder Ridge project through detailed analysis and interpretation of drilling data combined with the acquired geophysical data (airborne magnetic radiometric and ground gravity data) of target areas within EL29595. Work completed by Northern Star (Tanami) Pty Ltd has resulted in the identification of 30 out of 89 blocks to be non-prospective for gold and consequently partially relinquished in October 2018. There are 59 remaining contiguous blocks of EL29595.

8 REFERENCES

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