NORTHERN STAR
RESOURCES LIMITED

EL29594 Annual Report

Period Ending 20/08/2019

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EL29594 ANNUAL REPORT

Project Name:	
Combined Reporting Group:	
Tenement Operator:	
Tenement Holder:	Northern Star Resources Ltd
Report Type:	Annual Report
Report Title:	
Reporting Period:	
Author:	
Date of Report:	
Geodetic Datum:	GDA 94
1:250 000 Map Sheet:	
1:100 000 Map Sheet:	
Keywords:	
Target Commodities:	Au
Prospects Drilled:	Kookaburra East
Assays:	Al, As, Au, Ba, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, Pb, Rb, Re, Sb, Sc, Se, Sn, S, Sr, Ta, Te, Th, Ti, Tl, U, V, Y, Zn and Zr

1. Work Completed

Exploration activities completed by Northern Star during the reporting period include;

- Geological mapping, reconnaissance and drill targeting
- Soil and rock chip sampling
- Ground gravity survey
- Aircore drilling

1.1 Surface Sampling Summary

Sample Type	No. of Samples
Rock chip	17
Soil	47
Grab	7

1.2 Drilling Summary

Hole Type	No. of Holes	Total Meters
Aircore	4	174

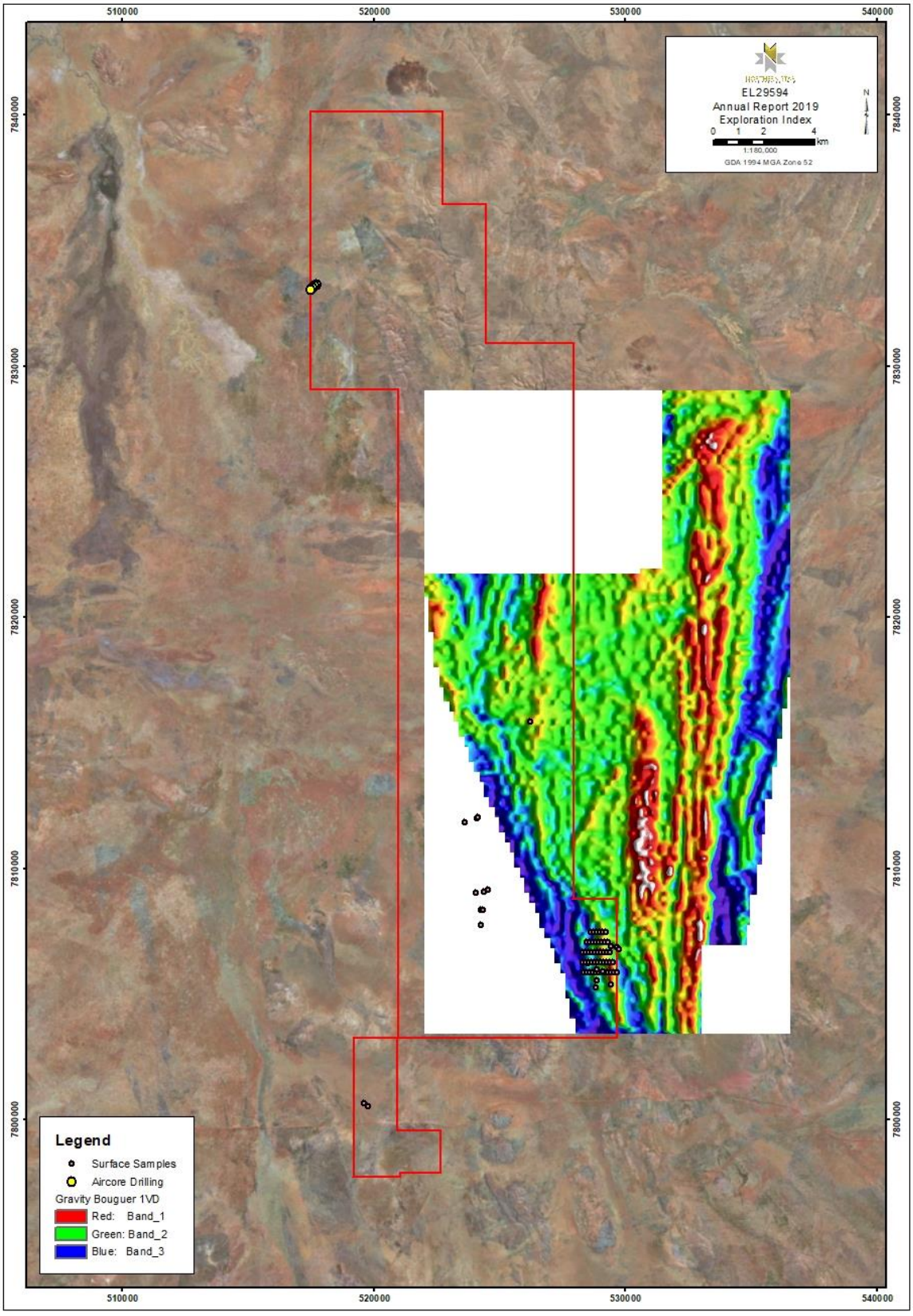

Figure 1: EL29594 Northern Star gold exploration index

2. Geophysical Survey

The Supernova prospect gravity survey completed acquisition during the reporting period. A total of 6,463 stations were acquired over several tenements, of which 1,915 were on EL29594. The Supernova prospect includes prospective Mt Charles stratigraphy that wraps northwards around the Coomarie Granite Dome. The aim of undertaking the Supernova gravity survey was to identify additional structural drill targets that are concealed by extensive aeolian sand cover.

After receipt of final data during the period, a detailed analysis was undertaken to identify any potential drill targets that have not been sufficiently drill tested. To date, no further targets have been identified. What was observed within the data however was that structural complexity confined within the Mt Charles stratigraphy appeared to increase in complexity further north. This has provided to company with further areas for exploration, this work has not yet been completed at the end of the reporting period.

3. Surface Sampling and Mapping

Mars Prospect Soil Sampling

A total of 47 soil samples were collected over the Mars Prospect during the reporting period as infill and extension to an earlier phase of sampling conducted during the previous reporting period. The Mars Prospect geology appears to be a sequence of right lateral jogs in the northwest extension of the Bluebush Fault, which borders the western margin of the Mt Charles stratigraphy of the Molech mining area.

Whilst no significant gold was detected in the soil samples, several pathfinder elements identified a coincident arsenic, molybdenum, tungsten, bismuth, antimony and tellurium anomaly in the central eastern portion of the soil grid. All pathfinder concentrations are relatively subdued, but in many cases range between two- and five-times background.

Mars Prospect Grab Sampling

On-ground assessment of the Mars prospect was undertaken as follow-up to the targeted geochemical soil sampling completed earlier in the reporting period. The Mars prospect straddles the border of the interpreted Kookaburra domain and Coyote triangle zone. Outcrop exposures show rocks that resemble the Killi Killi Formation, with evidence of an overlying conglomerate and sandstone likely belonging to the Birrindudu Formation.

Proximal colluvium was noted over much of the areas shown to be anomalous in soil sampling, so minimal outcrop was available to map in much of the area of interest.

Flanking the main area of interest to the west and east were northwest trending exposures, orientations varied from 294-350^0. Subvertical quartz veins were observed within a chert/siltstone host rock, which itself dips 57^0 to the east and rotates to a westerly dip further east, indicating a potential syncline within the prospect area. A northwest trending shear zone was identified and is interpreted to be axial planar to this anticline. Noted further northward, along the interpreted syncline was a dilational zone within a north west verging fold, potentially indicating an anticline located west of the mapped syncline. This potential anticline would correlate spatially with the anomalous soil samples. A north-trending (024^0) brecciated quartz vein/gossan was mapped north of the interpreted syncline.

Additional areas of interest were discovered during the geological mapping. The prospectivity of the area was assessed with further groundwork, including reconnaissance mapping and rock chip sampling. A total of 7 rock chip samples were collected over EL29594, none of which identified any significant gold or pathfinder anomalism. **Error! Reference source not found.** below is a copy of field reconnaissance notes taken from the Mars prospect. No further work is planned for the Mars prospect.

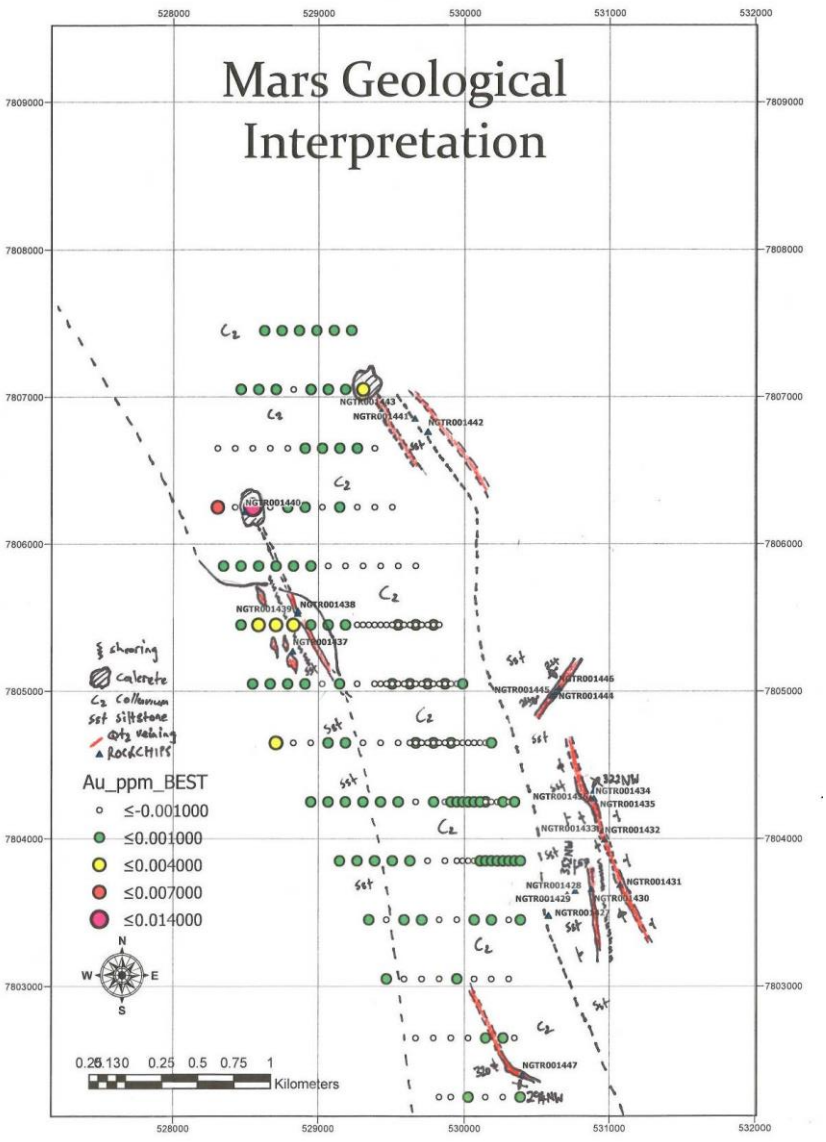

Figure 2: Mars geological reconnaissance notes

Regional Rock Chip Sampling

A total of 17 rock chip samples were collected across the licence during the reporting period as a part of regional exploration. Rock chip sampling was undertaken to provide a lithogeochemical fingerprint of the underlying lithologies to better constrain regional geological interpretations. The interpretations made from this sampling assisted in confirming the distribution of various stratigraphic units within EL29594.

4. Drilling

Drilling at Kookaburra East during the reporting period targeted the stratigraphic package that hosts the Bald Hill Deposits to the west (Kookaburra and Sandpiper). Drilling was focussed on interpreted iron-rich, folded sedimentary units of the Killi Killi Formation. Interpretation of airborne magnetic data showed moderate, west north-westerly plunging anticlines which are cross-cut by oblique second order structures of the adjacent Bluebush Fault.

A single anomalous sample of 205ppb Au was returned but single meter resampling of one anomalous composite sample revealed no significant anomalism.

Analysis and interpretation of the Kookaburra East drill program has not identified any areas of anomalism, and therefore no further work will be undertaken on this prospect.

5. Drill Targeting

Drilling targeting was undertaken during the reporting period, taking into consideration the work completed over the Supernova, Mars and Kookaburra East prospects. Whilst drill targeting failed to identify any specific areas, the geological interpretation of the Supernova Gravity dataset did identify increased prospectivity for gold mineralisation in a structurally complex zone to the north. Further groundwork including geological reconnaissance and geochemical sampling is required to ascertain the true potential of this area for economic gold mineralisation.

6. Spectral Review

Drilling at Kookaburra in 2018 targeted folded magnetic stratigraphy. Fine to coarse-grained sedimentary units were intersected beneath variable cover thickness. Areas of paleochannel and silcrete were mapped. Gold anomalism is associated with a magnetically high unit representing banded iron formation (BIF). The gold anomalous samples are adjacent to areas of white mica alteration, commonly found as a proximal alteration mineral to gold.

Chlorite is absent from the spectra, perhaps suggesting the absence of iron-rich rock. There is widespread, low level carbonate present, most likely indicating the presence of calcrete. Kaolinite spectra mapped out one drill line where poorly sorted kaolinite dominates, these holes were terminated in transported material, rendering them ineffective for the type of exploration for which they were designed. The north-western most line indicates variable kaolinite crystallinity signifying a change of some kind.

The analysis of spectral data acquired from the Kookaburra East AC drill program has shown that it is a potentially valuable tool in gold exploration. NSR plan to undertake additional research in the application of spectral analyses in Tanami exploration.

7. Environment and Rehabilitation

The Kookaburra East AC drill rehabilitation is not complete as NSR are progressing on-ground training of local Traditional Owners to complete the work, through the assistance of the Central Land Council.

8. CONCLUSIONS & RECOMMENDATIONS

Northern Star have undertaken considerable and varied exploration over EL29594, focussing on prospective areas and testing for economic gold mineralisation at two key areas, Kookaburra East and Supernova. No significant mineralisation has been intercepted to-date, however NSR believe there are additional areas over EL29594 that warrant further investigation.