TODD RIVER RESOURCES

TODD RIVER METALS PTY LTD

SOLDIERS CREEK PROJECT

PARTIAL RELINQUISHMENT REPORT

EL 31209

05/12/16 to 04/12/18

Tenement/s: EL 31209

1:250 000 Sheet Name: Fergusson River (SD5212)

Holder: Todd River Metals Pty Ltd

1:100 000 Sheet Name: Wingate Mountains (5069)

Manager: NA

Datum: GDA94-52

Operator: Todd River Metals Pty Ltd

Commodity: Sn-Ta-Li-Zn-Pb-Ag-Cu

Elements Analysed

Keywords: Muldiva-Buldiva, Collia, Bynoe Pegmatite Field, Wingate Mountain pegmatite, Tin, Lithium

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Distribution: Todd River Resources Limited (1)
Department of Primary Industry and Resources (1)
Executive Summary

The Soldiers Creek project is located in the Daly River region approximately 200km south of Darwin in the Northern Territory. The project comprises a single exploration licence (EL 31209; Figure 1) which lies in the western part of the Pine Creek Orogen.

The project area contains the historical Muldiva/Buldiva and Collia prospects from which 103t of tin was mined from 1923 through to 1980 (Frater, 2005).

No on-ground exploration has been completed over the relinquished area since EL 31209 was granted on 5 December 2016. All areas of interest have been retained for further exploration.
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1. INTRODUCTION

The Soldiers Creek project is located in the Daly River region approximately 200km south of Darwin in the Northern Territory. The project comprises a single exploration licence (EL 31209; Figure 1) which lies in the western part of the Pine Creek Orogen.

The project area contains the historical Muldiva/Buldiva and Collia prospects from which 103t of tin was mined from 1923 through to 1980 (Frater, 2005).

A partial relinquishment was undertaken at the second anniversary of the licence. No on-ground exploration was completed across the relinquished area since the grant of the licence on 5 December 2016.

Figure 1: Location of Soldiers Creek project area.
2. LOCATION AND ACCESS

EL 31209 is located in the Daly River region and is centred approximately 200 km south of Darwin. Geographically it straddles the northeastern corner of the Wingate Mountains, an extensive peneplained surface. The tenement has several landform types based on the varied geological framework.

The nearest settlement is Daly River, which comprises an aboriginal community (Nauiyu), police station and hotel. The region has several tourist facilities. The licence is situated predominantly within the NT Parks and Wildlife administered Fish River Gorge Block which is managed by the Indigenous Land Corporation (ILC).

3. TENURE

The Soldiers Creek Project Area comprises one exploration licence, EL 31209 which was granted to Todd River Metals Pty Ltd on 5 December 2016 (Table 1; Figure 1). The licence was reduced at its second anniversary from 181 to 90 blocks (Table 2 & 3; Figure 2).

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Table 3: Blocks to be retained, EL 31209.

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4. GEOLOGY

The Soldiers Creek Project falls within the Central Domain of the Pine Creek Orogen (Figure 3), which is exposed over 47,500km² and comprises a thick (>4km) succession of Palaeoproterozoic clastic, carbonate and carbonaceous sedimentary and volcanic rocks, unconformably overlying Neoarchaen granitic and gneissic basement (Ahmad & Hollis, 2013).

The Central Domain is the most well exposed and well-characterised part of the Pine Creek Orogen and is subdivided into the Woodcutters Supergroup, deposited at or prior to ca 2020 Ma, and the Cosmo Supergroup deposited between 1865 and 1855 Ma. These are separated by an unconformity of at least 160 Ma (Ahmad & Hollis, 2013).

The oldest rocks within the tenement are the Early Proterozoic Burrell Creek Formation (Finniss River Group, Cosmo Supergroup; Figure 4), which discontinuously crop out across the licence. The Burrell Creek Formation comprises interbedded phyllite, slate, mudstone, feldspathic greywacke and minor pebble conglomerate (Ahmad & Hollis, 2013).
Numerous granitoid suites intrude the rocks of the Pine Creek Orogen. The Wingate Mountains (Figure 4) pegmatite district comprises pegmatites divided into two groups associated with different granites; the Fletchers Gully pegmatites with the Allia Creek granite and the Soldiers Creek field with the Soldiers Creek granite (Frater, 2005). Both granites are of similar age and belong to the Allia Creek Suite, most of which crops out in the western Litchfield Domain of the Pine Creek Orogen, but extends into the western part of the Central Domain (Figure 3).

The Soldiers Creek granite, a medium-grained porphyritic quartz monazite and granodiorite covers most of the western half of the tenement extending eastwards under the sub-basin. Numerous pegmatites associated with the Soldiers Creek granite intrude the Burrell Creek formation forming linear ridges within the licence area.
Mineralised pegmatites in two areas, the Fletchers Gully (off licence to the north) and Soldiers Creek pegmatite fields (Frater, 2005; Figure 5). The Muldiva, Buldiva and Collia tin mineralisation lie within the Soldiers Creek Project area.

Figure 4: Simplified stratigraphic column of the Pine Creek Orogen (Ahmad & Hollis, 2013).

Much of the eastern third of the licence is covered by middle Proterozoic Tolmer Group sandstone – the Depot Creek and Stray Creek units. Minor outcrops of the Tolmer-equivalent Auvergne Group occur at the base of the escarpment in the western part of the licence.

Younger rocks include:

- isolated outliers of the glacial-derived Uniya Formation
- remnants of early Cambrian Antrim Plateau Volcanics (basalt and minor mudstone)
- a suite of Cambrian, mainly carbonate sediments that infill the sub-basin and overlie the volcanics
- flat lying Cretaceous rocks with a thick soil cover capping the higher country to the southwest.
Previous government mapping includes the BMR 1:250,000 scale Fergusson River sheet, (1969) and the more recent NTGS compiled Wingate Mountains 1:100,000 sheet (Edgoose et al 1989). Figure 6 illustrates the regional geology in the vicinity of the licence.

Figure 5: Wingate Mountain pegmatite district, Pine Creek pegmatite province (Frater, 2005).
Figure 6: Geological setting of the Soldiers Creek Project Area (250K geology mapsheet) showing the Muldiva, Buldiva and Collia prospect areas.
5. PREVIOUS EXPLORATION

In 1905 gold was discovered at Fletchers Gully, 35km south of the Daly River township. Following this discovery 4.3t of tin was mined from pegmatite dykes in the vicinity (Crohn, 1968), and by 1944 total production from the area is reported to have been 7t of Sn concentrate (Frater, 2005).

Small alluvial and eluvial tin mining operations were soon established on the numerous pegmatites in the Burrell Creek Formation (contact aureole of the Soldiers Creek Granite) at Muldiva and Buldiva, and within the Soldiers Creek Granite itself at Collia (Frater, 2005).

The first recorded production was in 1923 when 26.7t of tin concentrate was produced by the Collia and Muldiva mines. Total production from Collia, Buldiva and Muldiva to 1967 was 45.7t and since 1967, Collia has produced a further 57.4t of tin concentrate, with the last production occurring in 1980 (Frater, 2005).

Since this time several companies carried out limited exploration work for a variety of commodities adjacent to and within the current licence. Ashton Mining Ltd and Stockdale Prospecting Ltd sampled the area for diamonds and Total Mining Australia Pty Ltd in joint venture with PNC Exploration (Australia) Ltd conducted a program of uranium exploration.

In the mid-1990s PNC Exploration undertook an extensive examination on and around an earlier discovery of minor secondary uranium mineralisation made by Planet Management and Research Pty Ltd in the late 1960s. This is associated with alteration zones in the Soldier’s Creek Granite. PNC also completed a 200 metre spaced airborne magnetic and radiometric survey which covers part of the licence area.

Crossland Strategic Minerals Pty Ltd undertook comprehensive exploration for uranium over EL22738 (similar boundaries to EL 31209) from 2009 – 2013 (Buskas, 2014). This included regional and prospect mapping, rock chip, soil and stream sediment sampling, RAB, aircore and diamond drilling, radiometric traversing and an airborne magnetics/radiometrics survey.

Crossland were keen to secure a joint venture partner to continue exploration within the licence but were unable to do so. Further drilling to follow up vein-style, primary sulphide Pb-Zn-Cu Ag mineralisation intersected during drilling in 2011 was a priority.

6. EXPLORATION COMPLETED

No on-ground exploration has been completed within the relinquished area of EL31209 since its grant on 5 December 2016.

All areas of interest, including the Muldiva-Buldiva and Collia prospect areas and areas of interest as identified by Crossland (Buskas, 2014) have been retained for further exploration.
REFERENCES


