

# **Typhon Minerals Pty Ltd**

## **EL31937 Illogwa Project**

Annual report for the period:  
2 January 2020 to 1 January 2021

**Target Commodities: Cu, Co, Ni, PGE's, Au, Ag**

Illogwa SF5315 (1:250,000)  
5951 Quartz (1:100,000)

Prepared by Typhon Minerals Pty Ltd  
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## Abstract

- EL31937 (Project) is located approximately ~145km ENE of Alice Springs. The Project is located north of the Basil Cu-Co deposit (on EL26942), and west of the important Ni-Cu-PGE prospects at Blackadder and Baldrick.
- Typhon is assessing the potential of the Project for Basil-style Cu-Co sulphide deposits, Ni-Cu-PGE sulphide mineralisation associated with mafic and ultramafic intrusions, as well as bedrock and alluvial Au deposits.
- Previous exploration and mineral development activities in the general Project area have highlighted several Cu-Co and Ni-Cu-PGE anomalies.
- During the reporting period, Typhon compiled and historical geological, geophysical, remote sensing and exploration work undertaken over the Project area. Geological reconnaissance and field checking has also been undertaken.
- Given the proximity of the Project to the Basil Deposit, Typhon offered to purchase a 100% interest in EL26942. It is anticipated that Typhon will take full ownership of EL26942 during the first quarter of 2021.
- The amalgamation of EL26942 with Typhon's tenements will mean that the exploration potential of the Project will be maximised as Typhon will be able to gain an in depth understanding of geological units hosting the mineralisation on EL26942
- The potential for the Project area to contain economic mineralisation appears to be good, and further exploration assessment work is warranted.

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## 1. Introduction

The Project is located ~145km ENE of Alice Springs (Figure 1) and extends across portions of Ambalindum, Indiana and Numery Stations.

The Project is located north of the Basil Cu-Co deposit on EL26942, and west of the important Ni-Cu-PGE prospects at Blackadder and Baldrick.

The Project can be accessed from the north via the Plenty Highway and station tracks, or from the south via the Ross Highway and station tracks.

All maps in this report are shown using the GDA94 Geographic datum in MGA94 using the Zone 53 projection.

## 2. Tenure

EL31937 was granted for a 6 year period commencing on 2 January 2019 and covers 30 sub-blocks (Figure 2; Table 1). No drop-off was required to be undertaken at the end of Year 2.

## 3. Geology

The Project lies within the Cambrian aged Irindina Province and the Proterozoic Aileron Province of the south-eastern Arunta Inlier (Figures 3 and 4). The Irindina Province comprises the Harts Range Group, a volcanosedimentary succession that was metamorphosed to granulite facies during the Ordovician Larapinta Event (~475-460 Ma). Litho-stratigraphical and geochronological data indicate that the Harts Range Group correlates with Neoproterozoic to Cambrian sediments of the adjacent Amadeus and Georgina Basins. Therefore, the Harts Range Group was probably deposited in a basin contiguous with, and possibly linking, the Amadeus and Georgina Basins.

While the Harts Range Group was metamorphosed to granulite-facies, sedimentation is interpreted to have continued in the Amadeus and Georgina Basins. Structural and lithological evidence suggest that the Larapinta Event was extensional, with very deep burial required for the measured metamorphic conditions (30-35 km). Such an event was probably associated with mantle melting. The numerous mafic and ultramafic units found throughout the Irindina Province, although their timing is poorly constrained, may have intruded during the Larapinta Event. These intrusions are considered prospective for Ni-Cu-PGE sulphide deposits.

The Harts Range Group and Amadeus and Georgina Basins were structurally inverted and brought to the surface during the mid-Palaeozoic Alice Springs Orogeny (450-300 Ma). Seismic traverse 09GA-GA1 shows that faults in the

region form part of a major, north-dipping mid-crustal detachment that separates Irindina Province rocks the Aileron Province (Figure 4).

Exploration in the general region of the Project has identified significant sulphide-hosted Cu-Co mineralisation at the Basil Deposit (Inferred Resource of 26.5 Mt @ 0.57% Cu and 0.05% Co), as well as orthomagmatic Ni-Cu-PGE sulphide mineralisation at Blackadder and Baldrick Prospects (drill intercept of 9m @ 0.48% Ni and 0.37% Cu; Figure 3).

The Project covers units of the Riddock Amphibolite Member which contains variably deformed metagabbro intercalated with amphibolite and minor metapsammopelitic rocks.

The Basil Cu-Co deposit is located within a 10 km-long zone of hydrothermal alteration containing zones of massive, stringer and disseminated pyrite, pyrrhotite and chalcopyrite within the Riddock Amphibolite.

The genesis of the Basil deposit is not well understood due to extensive metamorphic overprinting. The two most likely options appear to be: 1) a metamorphosed orthomagmatic system; or 2) a metamorphosed volcanic-hosted massive sulphide system (e.g. Sharrad et. al., 2014).

A recent Geoscience Australia study highlighted the significant Ni-Cu-PGE potential of the mafic-ultramafic intrusions in the general application area (Duffer et al., 2016, GA Record 2016-001; see also Meixner and Hoatson, 2003, GA Record 2003/29, for further discussion of the Riddock Amphibolite).

Approximately 50% of the area is covered by a veneer of aeolian and colluvial sand and gravel.

The Project is considered prospective for;

- Ni-Cu-PGE mineralisation associated with mafic and ultramafic intrusions
- “Basil type” Cu-Co semi-massive sulphides
- Vein-style REE-Th mineralisation
- Uranium mineralisation

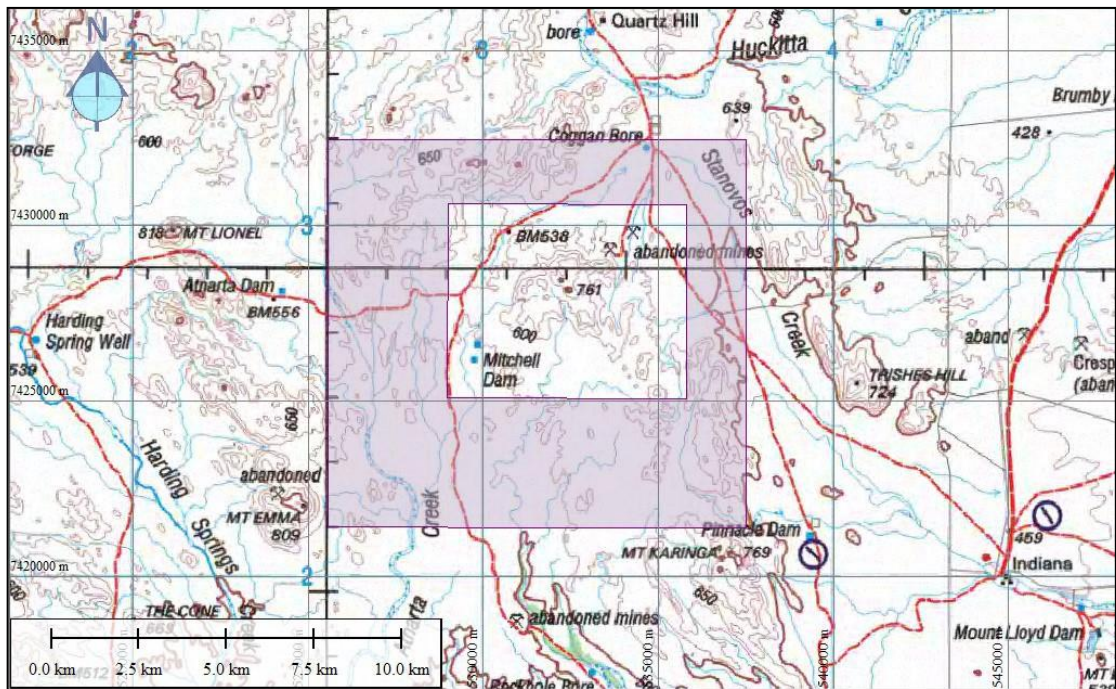
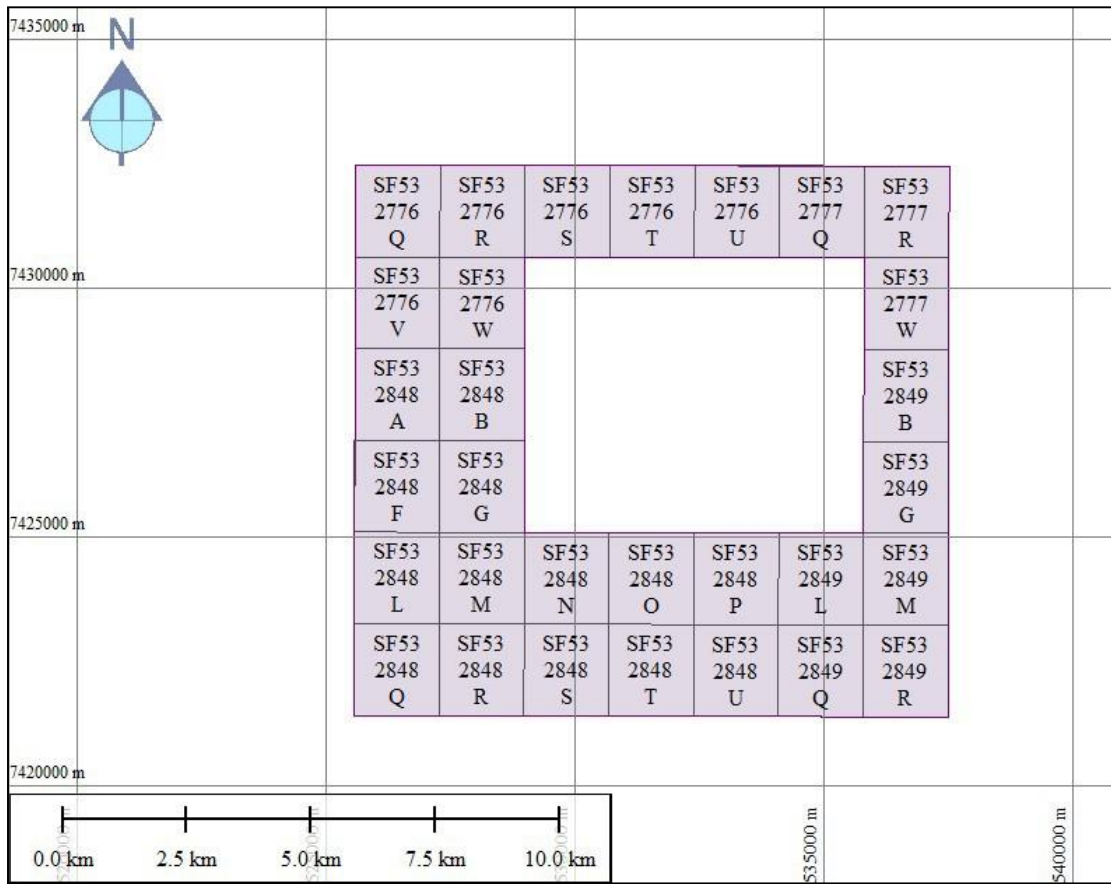


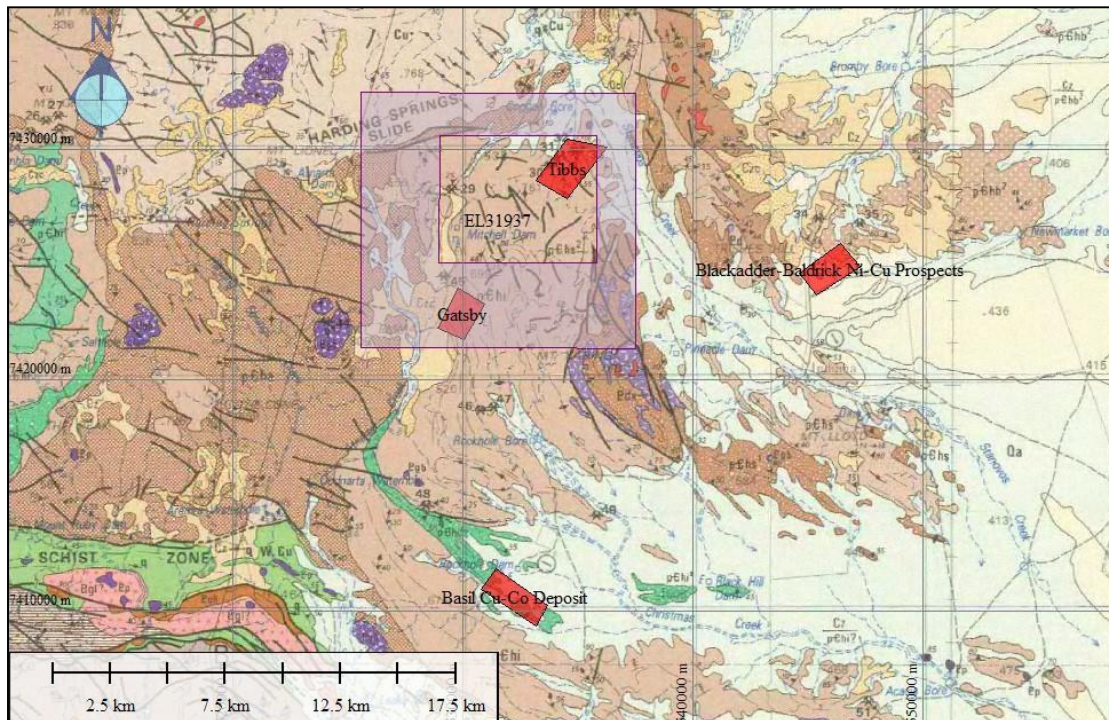
Figure 1: Location map (MGA94 zone 53).



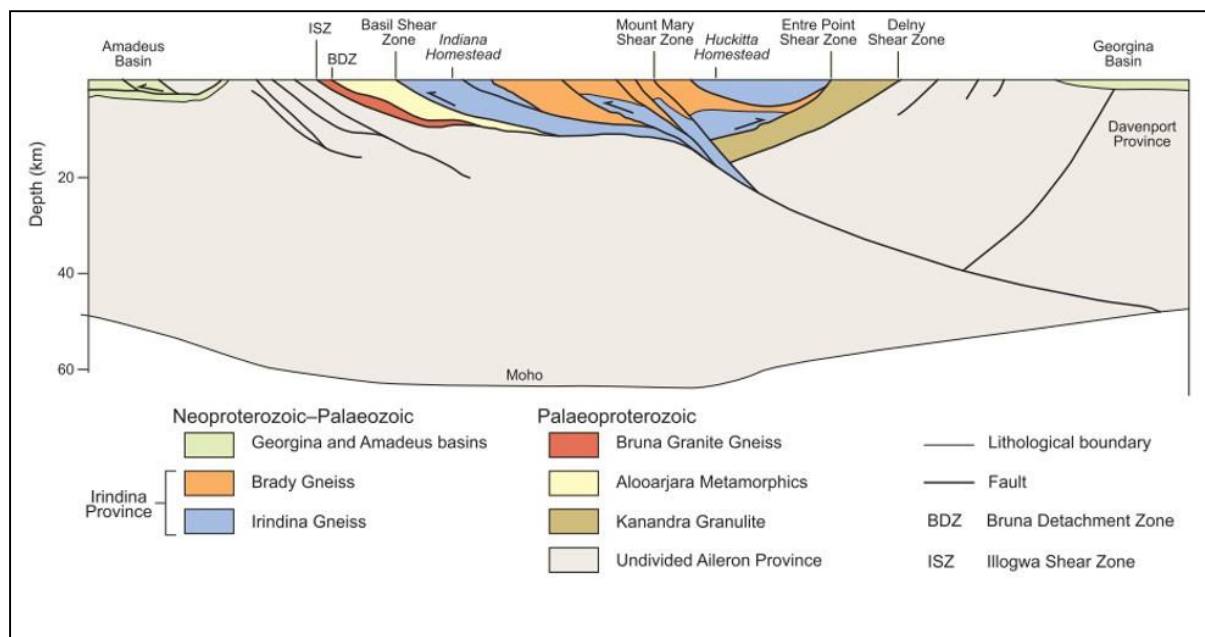
**Figure 2: Tenement map (MGA94 Zone 53).**

**Table 1: Sub-Block List**

<b>NO</b>	<b>BLOCK</b>	<b>GRID_ID</b>	<b>BIM</b>	<b>SUB_BLOCK</b>
1	2848	SF532848	SF53	L
2	2848	SF532848	SF53	M
3	2848	SF532848	SF53	N
4	2848	SF532848	SF53	O
5	2848	SF532848	SF53	P
6	2849	SF532849	SF53	L
7	2849	SF532849	SF53	M
8	2848	SF532848	SF53	F
9	2848	SF532848	SF53	G
10	2849	SF532849	SF53	G
11	2848	SF532848	SF53	Q
12	2848	SF532848	SF53	R
13	2848	SF532848	SF53	S
14	2848	SF532848	SF53	T
15	2848	SF532848	SF53	U
16	2849	SF532849	SF53	Q
17	2849	SF532849	SF53	R
18	2848	SF532848	SF53	A
19	2848	SF532848	SF53	B
20	2849	SF532849	SF53	B
21	2776	SF532776	SF53	V
22	2776	SF532776	SF53	W
23	2777	SF532777	SF53	W
24	2776	SF532776	SF53	Q
25	2776	SF532776	SF53	R
26	2776	SF532776	SF53	S
27	2776	SF532776	SF53	T
28	2776	SF532776	SF53	U
29	2777	SF532777	SF53	Q
30	2777	SF532777	SF53	R



**Figure 3:** Regional geological map (1:250,000 NTGS mapping; MGA94 Zone 53). For lithological legend, please see the published Illogwa SF5315 and Alice Springs SF5314 maps.



**Figure 4:** Interpreted migrated seismic section from seismic line 09GA-A1 showing large scale crustal structures along the southern margin the Irindina Province (modified after Scrimgeour, 2011).

#### **4. Exploration history**

The area within and surrounding the Project has previously been explored by a number of companies including Mithril Resources, MMG, BHP, Red Metal and Western Desert. Previous work included mapping, stream sediment, soil and rock chip sampling, ground and airborne magnetic and electromagnetic surveys, and AC, RC and DC drilling. The work located multiple gabbroic intrusions with potential to host magmatic Ni-Cu-PGE sulphide deposits. The AEM/GEM surveys identified a number of mid- to late-time bedrock responses. Large tonnages of Cu-Co mineralisation were defined at the Basil Deposit.

#### **5. Summary of work undertaken**

During the reporting period, Typhon undertook geological reconnaissance, field checking and desk top studies to assess the geological and mineralisation potential of the Project area. Further field work was deferred due to access restrictions associated with the COVID-19 pandemic.

Typhon entered into an agreement to purchase a 100% interest in EL26942 over the Basil Deposit from Mithril Resources, and it is anticipated that Typhon will take full ownership of EL26942 during the first quarter of 2021.

Work included reviews of open-file company reports and other public domain documents, as well as geological papers outlining historical exploration activities. Confidential datasets provided by Mithril were assessed and reviewed, and have provided insights into the mineralisation potential of geological units and anomalies in the Project area. The assessment work covered the entire Project area so no exploration index map is provided in this report.

#### **6. Conclusion and recommendations**

The potential for the Project area to contain significant Cu-Co, Ni-Cu-PGE and Au mineralisation appears to be significant. Geophysical anomalies have been identified at the Gatsby Prospect. Geochemical anomalism at Tibbs may extend into the Project area. (Figure 3). Further work will be undertaken to assess the significance of these anomalies.

The amalgamation of EL26942 and EL31937 under common ownership will mean that the exploration potential of Project will be maximised as Typhon will be able to gain an in depth understanding of geological units hosting the significant mineralisation at the Basil Deposit.

## **7. Confidentiality Statement**

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## 8. References

Scrimgeour, I.R. (2011). Geology and Mineral Resources of the Northern Territory, p 29.1-29.12.

Sharrad, K. A. et. al. (2014). The Basil Cu–Co deposit, Eastern Arunta Region, Northern Territory, Australia: A metamorphosed volcanic-hosted massive sulphide deposit. *Ore Geology Reviews*, 2014, vol. 56, pp 141-156.

Various exploration reports for EL's 24194, 26942, 27243, 25643, 25453, 25402, 25653, 27662, 27178, as well as aeromagnetic and radiometric datasets (CR1996/285; CR2013/997; CR2014/579, CR2008/54; GA548 and GA 1003) and the Central Arunta Gravity Survey.