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# **ELEVENTH ANNUAL TECHNICAL REPORT**

## FOR THE REPORTING PERIOD ENDING

**7 NOVEMBER 2017** 

# EL25238

# **ARLTUNGA GOLD PROJECT**

ALICE SPRINGS (SF5314) 1:250 000 Map Sheets

RIDDOCH (5851) 1:100 000 Map Sheets

# COMMODITIES: GOLD AND COPPER

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Appendix 1: Maps from August 2014 Fieldwork

Information in this report that relates to exploration activity and results was compiled under the guidance of James Patterson who is a Member of the Australasian Institute of Geoscientists. Mr Patterson has sufficient experience relevant to the styles of mineralization and to the activities which are being reported to qualify as a Competent Person as defined by the JORC code, 2004. Mr Patterson consents to the release of the information compiled in this report in the form and context in which it appears.

#### **1. INTRODUCTION**

The Arltunga tenement, EL25238, is located approximately 110km east of Alice Springs. After 77km of sealed road along the Ross Highway, there is a well formed gravel road which leads northeast for 35km to the Arltunga Historical Mining reserve. The Arltunga tenement lies immediately north of the Historical Reserve boundary. A further 14km of gravel track leads further northeast to the Claraville Homestead (Ambalindum Station Residence). The Old Ambalindum Homestead is located approximately 8km west of Claraville along the Arltunga Tourist Drive.

Gold was first discovered at Arltunga in 1887 which sparked a gold rush and the establishment of a town. By 1888 a number of mines were in operation with mining activity peaking between 1896 and 1913.

The historic mines of the Arltunga Goldfield are divided into 4 vein camps: Arltunga, White Range, Claraville and Mt Chapman. The Arltunga and White Range Camps are within the Arltunga Historic Reserve. The Exploration License hosts 33 historical gold mines within the Wipeout and Mt Chapman vein camps. Many of these veins were re-sampled by Genesis with high-grade gold confirmed in most instances (up to 53g/t).

No exploration activity was undertaken by Genesis Resources for the Arltunga Gold Project during the reporting period ending 7<sup>th</sup> November 2017.

#### 2. TENEMENT

The exploration licence (EL25238) tenement details are summarized in Table 1. An Application for Renewal of the Mineral Exploration Licence was accepted on the 21/03/2017. The new expiry date is the 08/11/2018.

| Project  | Tenement | Status  | Current Area   |                     | Current Holder        | Granted  |  |  |
|----------|----------|---------|----------------|---------------------|-----------------------|----------|--|--|
|          | Number   |         | Blocks (sq km) |                     |                       |          |  |  |
|          |          |         |                |                     |                       |          |  |  |
| Arltunga | EL25238  | Granted | 31             | 95.2km <sup>2</sup> | Genesis Resources Ltd | 08/11/06 |  |  |

Table 1: Arltunga Gold Project – Tenement Summary



#### **3. PREVIOUS EXPLORATION AND MINING**

The area covered by the current GES tenement has previously been explored by a number of companies since the 1970's. The most relevant activity is summarised below.

White Range Gold NL (Ogierman, 1988) carried out work on EL 4789 covering most of the current GES tenement area during 1988. 103 stream sediment samples were collected with reconnaissance mapping and rock chip sampling. An airborne magnetic survey was flown.

At the Wheal Fortune prospect 7 RC holes plus 1 core diamond hole were drilled to test downdip of the main historic workings. Holes were targeted on the basis of field mapping and historical data only. Results were reported as being disappointing with a best intersection of 1m @ 3.09 g/t Au in MCRC01 drilled under the main western reef. The holes intersected zones of carbonate alteration that were associated with low grade Au anomalism downdip of the surface mineralisation. After completion of drilling 4 lines of soil sampling and ground magnetics was carried out to test for extension of the known mineralisation to the north and east of the historic workings.

**Torcon Pty Ltd 1990** (Murrell, 1990) carried out work on several tenements that covered a large portion of the existing GES tenement area. 118 stream sediment samples were collected with 91 soils samples taken to follow up of anomalous stream catchments.

Interpretation of airborne magnetic data flown by White Range Gold identified 4 areas for more detailed ground magnetic surveys. Four RC holes targeting stream and soil anomalies and one RC hole targeting a ground magnetic anomaly were drilled for a total of 186m. Three of the RC holes were drilled on geochemical targets approximately 1.5km to the west of Wipeout mine. These holes intersected "alteration zones" that were interpreted to be similar to that at Wipeout but no significant assay results were returned.

#### Genesis Resources 2009 - 2015

In 2009 a detailed review of open file and available NTGS data was completed by Resource Potentials. The review noted the association of gold with pyrite, the association of mineralisation with shear zones and quartz veins of limited strike length and the presence of an 800m wide, circular magnetic feature in the middle of tenement with historic mines occurring on the margins.

Consultant Richard Russell carried out reconnaissance mapping over several prospect areas during late 2009.

In early 2010 a Gradient Array Induced Polarisation Survey (GAIP) was completed. The GAIP survey focussed on two areas at Wipeout Mine and Wheal Fortune Mine (Figure 2), which were selected on the basis of historic mining activity and the occurrence of gold in association with pyrite as reported by Matthews in 1905 and quoted in Enday, 2010 (Table 1, Figure 2, Appendices 2 & 3).

Subsequent field checking of the electrical anomalies generated by the GAIP survey during 2011 suggested that there was significant potential for gold mineralisation at several anomalies and geological trends (Howard 2011, Section 4).



Figure 2: Location of Eastern and Western Induced Polarisation Anomalies

- New gold mineralisation was found at Anomaly B2-IP10, to the northeast of the Wipeout Mine, with 5.2g/t gold from a chargeability feature in excess of 600m in length (Figure 4).
- At the Round Hill prospect a 500m long chlorite schist-hosted shear striking at right angles to the usual minor thin quartz veins, contained significant gold mineralisation (up to 29.2g/t) and offers potential for a significant deposit.
- GAIP anomaly B2-IP4 and GAIP trends Wipe Out (B2-IP1to5); Magdala (B4-IP5, 15, 3, 13) and Star Creek to Wheal Fortune (B4-IP2to6) (Figure 3 and 4).

A program of electrical profiling (CSAMT) was carried out during December 2012 guided by the previously acquired GAIP survey over the known gold mineralisation (Figure 6). The survey method was tested across a known occurrence of sulphide mineralisation of 132g/t gold. Subsequently, thirteen lines were surveyed with CSAMT stations at 25m spacing for a total of 5 line kilometres. The lines highlighted significant low resistivity anomalism.



Figure 3: Eastern IP Anomalies (Block 4) CSAMT profile locations



Figure 4: Western IP Anomalies (Block 2) CSAMT profile locations



Figure 5: Eastern IP Anomalies (Block 4) CSAMT profile locations on photo

#### **Table 2: CSAMT Profiles**

| AREA           | Northing | W start | E finish | Length m | Stations | Projection | Zone | AnID      | Gold ppm | Mine          |
|----------------|----------|---------|----------|----------|----------|------------|------|-----------|----------|---------------|
| East (block4)  | 7411000  | 479025  | 479475   | 450      | 18       | GDA94      | 53   | B4-IP13   |          |               |
| East (block4)  | 7411200  | 479050  | 479200   | 150      | 6        | GDA94      | 53   | B4-IP3    | 59.2     | Magdala       |
| East (block4)  | 7411450  | 479075  | 479600   | 525      | 21       | GDA94      | 53   | B4-IP15/6 | 3.09     |               |
| East (block4)  | 7411600  | 479125  | 479500   | 375      | 15       | GDA94      | 53   |           |          | Wheal Fortune |
| East (block4)  | 7411650  | 479350  | 479500   | 150      | 6        | GDA94      | 53   |           |          | Wheal Fortune |
| East (block4)  | 7411700  | 479350  | 479500   | 150      | 6        | GDA94      | 53   | B4-IP1    | 132      | Wheal Fortune |
| East (block4)  | 7411750  | 479375  | 479500   | 125      | 5        | GDA94      | 53   |           |          | Wheal Fortune |
| East (block4)  | 7411800  | 479175  | 479300   | 125      | 5        | GDA94      | 53   | B4-IP5    |          |               |
| East (block4)  | 7412000  | 479000  | 479250   | 250      | 10       | GDA94      | 53   | B4-IP5A   |          |               |
| East (block4)  | 7412050  | 479575  | 479675   | 100      | 4        | GDA94      | 53   | B4-IP2    | 4.14     | Star Creek    |
| West (block 2) | 7411900  | 473875  | 474100   | 225      | 9        | GDA94      | 53   | B2-IP4    |          |               |
| West (block 2) | 7412550  | 474300  | 474500   | 200      | 8        | GDA94      | 53   | B2-IP1    | 34.1     | Wipe Out      |
| West (block 2) | 7412850  | 474125  | 474425   | 300      | 12       | GDA94      | 53   | B2-IP5    |          |               |
| West (block 2) | 7412900  | 474625  | 474800   | 175      | 7        | GDA94      | 53   | B2-IP10   | 5.16     |               |
| West (block 2) | 7413000  | 474700  | 474825   | 125      | 5        | GDA94      | 53   | B2-IP10   |          |               |

Anomalies with significant gold mineralisation potential were found:

- below known gold quartz-reef-type 'veins',
- below newly discovered interpreted 'veins', and
- within wide, long, deep, low electrically resistive zones, possibly caused by alteration.

Resistivity inversion modelling for each anomalous line is presented as stacked profiles in Figures 9 and 10.

(i) Wheal Fortune Main Reef (figure 9) - the first line, 7411750N, confirmed the efficacy of the CSAMT method over the recorded position of massive sulphide in a shaft. An anomaly was defined which coincided with the sulphide occurrence on this line and on the adjacent lines 50m to the north and south, suggesting sulphide in a vein at least 50m long but open in both directions. Veining is possibly associated with a fault that shows marked vertical displacement.



Figure 6 Arltunga location map and GAIP survey areas.

- (ii) Significant anomalism was found at two other historical gold diggings:
  - Wheal Fortune Eastern Reef (Figure 9, 7411650N) at 100m depth.
  - Magdala (Figure 9, 7411450N) a 50m wide, shallow anomaly which is possibly oxidised and a deeper, vertical fault-controlled feature, possibly extending to 250m below surface.
- (iii) Significant anomalism interpreted as veins was also mapped at the new gold\_occurrence at Wipeout Northeast (rock chip sample 5.16 g/t) at a GAIP conductivity/resistivity anomaly:
  - *B2-IP10* (Figure 10, 7412900N)-a vertical to steeply easterly dipping 'vein' of 75-100m depth extent.
- (iv) Several steeply dipping 'veins' at Wipeout were mapped to the west and east of the B2-IP10 anomaly on Line 7412900N (Figure 9) and on Line 7412500N.
- (v) A broad zone of *low resistivity* in the west and northwest on the Eastern GAIP survey (Mt Chapman Figure 7) was investigated by two CSAMT lines (7412000N & 7412300N), each of which showed high conductivity anomalism (Figure 9); the resistivity map shows the potential for a strike length of this feature of greater than 1.1km. It may represent a significant shear with clay or sulphide alteration extending to greater than 250m depth. Similar low resistivity features were observed on the Western GAIP (Wipeout) survey at 474500E/7412800N and 474700E/7412200N (Figure 8).

# Figure 7:Location of eastern CSAMT profiles on GAIP resistivity image - attachedFigure 8:Location of western CSAMT profiles on GAIP resistivity image - attached



Figure 9: Eastern area (Mt Chapman) stacked CSAMT profiles



Figure 10 Western area (Wipeout) stacked CSAMT profiles.

#### August 2014 Fieldwork and Data Review

Seven days reconnaissance mapping was carried out between 16 – 22 August 2014. Several prospect areas were mapped including Wipeout, Wipeout north east, Round Hill, Chinaman's, Jenkins, Wheal Fortune, Magdala, and several airmag and CSAMT anomalies.

Based on this mapping and existing geochemical data the historic workings at Wipeout, Round Hill, Chinaman's and Jenkins are considered to warrant drill testing for downdip extensions of the surface mineralization. Geophysical targets at Wipeout and Wheal Fortune also represent drill targets.

At Wipeout, a sub vertical to steeply west dipping mineralized shear/vein is hosted in tonalite and extends over approximately 120m of strike length. GAIP and CSAMT surveys over the area did not show a response below the workings but did identify a strong parallel anomaly approximately 100m to the east, Field checking indicated that the southern part of this anomaly corresponds to a north – south trending part of a creek. This may represent a north – south trending shear zone and warrants drill testing.

At Wipeout north east the reported mineralised veining could not be located. However the CSAMT anomaly that corresponds to the reported position of the veining may warrant testing with a fence of short, angled RC holes.

At Chinaman's Mine en echelon shearing/veining hosted in tonalite occurs within a 15m wide zone of approximately 120m strike length. No geophysical data is available. As the mine lies only 100m off a maintained station track the site has easy access and 2 short, angled RC holes would adequately test downdip of the workings.

Shearing at Round Hill has previously been reported to extend over a 1km strike length. The main area of historic workings is located within a saddle in a prominent north south trending ridge. A series of 5-10m deep slots have been dug on en echelon shears/veins over approximately 120m of strike length. The shears/veins occur over a width of approximately 100m. This represents the widest zone of vein development seen to date on the tenement area and is considered a priority target for drill testing.

Jenkin's workings occur within tonalite close to the western margin of a large, circular magnetic anomaly. Veining extends over a strike length of around 80m.

At Wheal Fortune, within the Mt Chapman Vein Camp in the eastern half of the tenement collars for 5 of the 8 holes drilled by White Range Gold NL during 1988 were located. This drilling did not return significant results and is considered to have already tested downdip of the main areas of workings. Four RC drill holes are planned to test corresponding, linear GAIP and CSAMT anomalies that occur along strike to the northeast at Star Creek and parallel to the workings at Wheal Fortune. Refer to Appendix 1 for the maps from the August 2014 fieldwork.

#### 4. EXPLORATION CARRIED OUT

The potential takeover of Genesis Resources by the Blumont Group did not proceed as planned and Genesis is now in talks with other investors from Asia. As a result Genesis has not been able to spend capital on its Australian tenements until these transactions are finalised.

No exploration activity was undertaken during the reporting period.

#### 5. CONCLUSIONS

- Interpretation of airborne magnetic data suggests there are several intrusive bodies at relatively shallow depth which may have provided mineralising fluids for the known historic deposits.
- Electrical geophysical profiling (CSAMT) defined anomalous bodies beneath four known gold mines and prospects (up to 275m depth extent) and indicated a strike length of greater than 100m at one mine.
- A corridor of intense low resistivity (high conductivity) measuring 100 m wide and greater than 1100m long was shown by electrical profiling to extend to depths in excess of 250m. This corridor may represent an alteration halo surrounding a vein system with potential for gold mineralisation. Other similar 'corridors' were noted.
- It should be noted that, until a representative suite of these CSAMT features have been drilled the source of the anomalies remains uncertain.

#### 6. RECOMMENDATIONS

- 1500m of RC Drilling is proposed for several prospect areas on the Arltunga tenement during the first half of the 2018 calendar year. Drilling will be designed to test below historical mine workings and extensions as well as testing several of the previously defined CSAMT targets.
- The planned drill program will focus mainly on targets within the Claraville Vein camp in the western half of the tenement as this area has relatively low lying topography and easier access from existing station tracks (Figure 11). Refer to Table 3 for the Arltunga Gold Project Proposed Drill holes.



Figure 11: Map of Planed Work Areas

| Proposed |            |         |         |    |     |      |       |                                 |
|----------|------------|---------|---------|----|-----|------|-------|---------------------------------|
| ID       | Prospect   | GDA94_E | GDA94_N | RL | Dip | Azim | Depth | Target                          |
| PARL01   | Wipeout    | 474320  | 7412465 |    | -50 | 90   | 80    | Under WO workings               |
| PARL02   | Wipeout    | 474415  | 7412500 |    | -50 | 90   | 120   | CSAMT targets AMT03 and AMT01   |
| PARL03   | Wipeout    | 474630  | 7412500 |    | -50 | 90   | 80    | CSAMT target AMT02              |
|          |            |         |         |    |     |      |       | CSAMT target AMT05 and 5 g/t Au |
| PARL04   | Wipeout NE | 474785  | 7412900 |    | -50 | 270  | 80    | in rock. GAIP anomaly           |
| PARL05   | Wipeout NE | 474715  | 7412900 |    | -50 | 270  | 80    | CSAMT target AMT04              |
| PARL06   | Round Hill | 474705  | 7409675 |    | -50 | 300  | 80    | Below eastern line of workings  |
|          |            |         |         |    |     |      |       | Extension of mineralisation in  |
| PARL07   | Round Hill | 474650  | 7409700 |    | -50 | 300  | 100   | workings                        |
| PARL08   | Round Hill | 474650  | 7409700 |    | -50 | 270  | 80    | Below workings                  |
| PARL09   | Round Hill | 474645  | 7409745 |    | -50 | 320  | 80    | Below western line of workings  |
| PARL10   | Chinaman's | 475190  | 7409705 |    | -50 | 100  | 80    | Below workings                  |
| PARL11   | Chinaman's | 475175  | 7409635 |    | -50 | 100  | 80    | Below workings                  |

Table 3: Arltunga Gold Project Proposed Drill holes.

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