EL 28368

2nd Annual Report for Exploration Licence 28368
Period ending 21 June, 2013.

Tenement Holders: PLUSIOS GAIA PTY LTD

Date: 20 August 2013

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Mapsheet Location:
250k Mt Evelyn, SD53-05
100k Ranford Hill, 5370

Coordinate System: MGA Zone 53

Target Commodities: Precious metals, base metals.

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SUMMARY

Tenure was granted on 22 June 2011 for a period of 6 years.

During year 1, historical data compilation was carried out in a review of 78 open-file company reports. Approximately 286 sample locations within or proximal to the lease area were digitised and cross-checked against high resolution satellite imagery for location accuracy. Creeks were also digitised based on this imagery. 1366 assay results were entered into the database and the resulting data plots validated against the historical map records. Geophysical data from the NTGS and company reports were reviewed but found to be of limited use except at a regional scale. Access to the area was attempted during the dry-season from the eastern side and from the south-west corner, neither route proving accessible using conventional 4wd light vehicle. ATV’s will be required.

During year 2, access to the lease was achieved through the use of an ATV quad bike. Various quartz reefs were investigated and found to be barren. Several drainages historically anomalous for Au were metal detected however no nugget gold was recovered. Several rock-chip samples were collected for possible future analysis. Re-evaluation of historic data suggests that the base-metal potential of the area should form the main focus for future exploration.
INTRODUCTION

Application to explore the area was made on the basis that the area is considered prospective for a variety of mineral deposits, and in particular those containing lead, zinc, silver and gold. The geology of the application area is similar to an area to the north-east which is host to the historic Evelyn, Moline and Hercules mines. Despite the similarities there are no recorded mineral occurrences within the area but this was considered to be a function of the limited historical exploration that had taken place.

1 CONCLUSIONS AND RECOMMENDATIONS

Access to the area had previously proven difficult and the use of an ATV was required to carry out the exploration program. Geological inspection of several quartz reef “blows” failed to identify any signs of likely associated gold mineralisation. Metal detecting in several creek systems historically reporting anomalously high Au concentrations did not return any gold nugget occurrences. Several rock-chip samples were collected for future analysis if warranted.

There appears to be limited scope throughout the area for coarse alluvial gold accumulations amenable to working by metal detector. Any alluvial gold is likely to consist only of very fine flakes or “gold dust” that could only be recovered by gravity separation or chemical extraction.

Exploration on the lease will now focus on the base-metal potential of the area with particular emphasis on the Koolpin formation near the Golden Spider anticline.

A future work program is included at Section 8.

2 LOCATION AND TENURE

Exploration Licence 28368 falls within Pastoral Lease No. 1134, Mary River Cattle Station, and is located 30 kilometres east-north-east of Pine Creek, within the Cullen Mineral Field. It is located on the Ranford Hill 1:100,000 map sheet, and the Moline and Wandie 1:50,000 map sheets. Access is via the Stuart Highway to Pine Creek and then via the Kakadu Highway, Wandie Rd and then station tracks (Figure 1). These tracks are only accessible by 4x4 vehicles in the dry season.

The tenement, consisting of 4 graticule blocks, 13.35 square kilometres in area, lies between latitudes 13°42’ south and 13°45’ south and longitudes 132°05’ east and 132°07’ east. EL 28368 was granted on the 22 of June, 2011 for a period of six years.

Figure 1 – EL 28368 Location Diagram
3 REGIONAL GEOLOGY

Exploration Licence 28368 is located near the centre of the Pine Creek Geosyncline with Early Proterozoic metasediments of the Mt Partridge, South Alligator and Finnis River Groups exposed in the area (Figure 2).

Within the southern portion of the licence, the Cullen Batholith outcrops and is comprised of the McCarthy’s Granite, which is a coarse grained porphyritic hornblende biotite rock. The granite is generally well exposed in the area and forms low undulating hills, well incised by numerous perennial streams. The intrusive contact with the sedimentary rocks to the north is often marked by a zone of quartz, pegmatite and aplite veining, rafts of sedimentary rocks within the granite and slivers of granite within the sedimentary rock pile.

![Regional Geology Map](image)

Figure 2 – Regional Geology (from NTGS 1:250k Mt Evelyn Geology Map, 2004). Cross section from NTGS/BMR 1:100k Ranford Hill Geology Map, 1986.
Directly north of the granite contact, the Early Proterozoic sedimentary sequences of the Mt Partridge, South Alligator and Finnis River Groups have been folded into asymmetrical sequences along north-westerly trending axes. The Spider Anticline forms the prominent topographical feature within the lease area exposing Koolpin Formation along the limbs of the structure and stratigraphically higher units of the South Alligator and Finnis River Groups further to the northeast.

4 LOCAL GEOLOGY

The following is a description of the lithological units occurring within EL 28368. The lithologies are related stratigraphically as shown in Figure 3.

Koolpin Formation

The Koolpin Formation forms the topographic high ridge lines. On the limbs of the Spider Anticline, these ridges are flat topped and have cliff like drop offs along the edges. Silicification as a result of weathering phenomena has strongly altered these rocks, although the original texture and nature can still be discerned. The Koolpin predominantly comprise carbonaceous mudstone but has chert, ironstone and phyllite interbeds. The nodular chert ironstone horizon often forms the steep drops along the edges of the ridge. Strong secondary silicification in conjunction with ferruginisation within this bed make it particularly resistant to erosion. Ferruginisation within the Koolpin Formation is a common feature. Box work textures as disseminations and within fractures are often observed throughout, but are particularly concentrated along cherty and ironstone horizons.

Gerowie Tuff

The Gerowie Tuff comprises light brown siliceous siltstones, argillites and albitic cherts. These rocks, along with the Mt Bonnie Formation, form a series of relatively low undulating hills that are well incised by a perennial drainage system. Very thin skeletal soils develop over the Gerowie Tuff and rock types are difficult to discern through the effects of weathering on similarly textured and coloured lithologies.

Mt Bonnie Formation

The Mt Bonnie Formation superficially, at least, resembles the Gerowie Tuff in its occurrence and nature. Siliceous siltstones, slates, argillites, cherts, and greywackes are observed. Areas of well incised but low relief are formed and thin skeletal soils are commonly developed.

Burrell Creek Formation

The Burrell Creek Formation is typified by felspathic greywacke, slates and siltstones.
5 MINERALISATION POTENTIAL

Target mineralisation styles include sulphide hosted gold and base metal deposits associated with the tightly folded and sometimes overturned and sheared anticlinal structures. Fe-Quartz veining within the Mt Bonnie and Burrell Creek formations, where aligned sub-parallel with regional fold axes, are considered prospective for near-surface gold occurrences.

6 PREVIOUS EXPLORATION

The area has been sporadically explored since the mid 1960’s when United Uranium first completed a regional geological mapping and geochemical sampling program covering the Lower Proterozoic rocks that form the ranges to the north of the McCarthy’s silver-lead mine. Since then several companies have completed investigations and they include:

- Australia and New Zealand Exploration Co, who conducted stream sediment and heavy mineral sampling in their search for base metals, tungsten, uranium and tin.

- Greenbushes and Amoco/Cyprus similarly conducted geological mapping and rock chip sampling concentrating on base metal mineralisation.
• North Star, Seventh State Mines and Driffield Mining focussed on gold and base metal sampling around the McCarthy's mine area and the nose of the Spider anticline.

• Renison Goldfields completed some detailed geological mapping work and rock-chip sampling to further evaluate the gold potential of the Spider Anticline

• Nicron/Aztec Mining focussed on consolidating previous historical data and conducted further extensive soil, stream sediment and rock-chip sampling followed by some costeasing and drilling works (not in this lease area)

• Dominion/Northern Gold conducted limited LAG sampling east of the nose of the Spider anticline.

No other meaningful field work has been carried out in the lease area since the late 1990’s

7 WORK COMPLETED

During year 1, historical data compilation was carried out in a review of 78 open-file company reports. Approximately 286 sample locations within or proximal to the lease area were digitised and cross-checked against high resolution satellite imagery for location accuracy. Creeks were also digitised based on this imagery. 1366 assay results were entered into the database and the resulting data plots validated against the historical map records. Geophysical data from the NTGS and company reports were reviewed but found to be of limited use except at a regional scale. Access to the area was attempted during the dry-season from the eastern side and from the south-west corner, neither route proving accessible using conventional 4wd light vehicle. ATV’s will be required.

Work during year 2 focussed on gaining access to the lease area to follow-up target areas identified from the year 1 program and to undertake further reconnaissance investigations. A summary follows.

7.1 Land access investigations

In the previous reporting period, access to the lease area using conventional light vehicle was found to be impossible due to large creek systems and boggy black-soil flats. A field visit during the current reporting period was undertaken using a combination of light vehicle and an ATV quad bike. Access was finally gained to the lease via the Pine Creek - Wandie track, then along a very old bush track and then cross-land to a camp site located at a creek confluence near the historic McCarthy silver-lead mine. From the camp site, the ATV was used to navigate a combination of existing historic graded tracks and cross-land to various parts of the lease. See Figure 4 for a map of the various access routes utilised.
7.2 Geological mapping

Once in the lease area, various geological outcrops were investigated, with particular focus on any quartz reef "blows". Outcrops of various lithological units were identified including: McCarthy Granite, Koolpin Formation, Gerowie Tuff, and Mt Bonnie formations. Quartz blows were identified in four locations and visually checked for integral iron-staining and ironstone development which, in this region, may indicate greater potential for gold mineralization associated with the reef. On this occasion, none of the quartz reefs were found to have any significant iron mineralization and were therefore considered low priority targets. See Figure 5.

A 2 km long prominent ridge, visually evident from satellite imagery, occurring in a structurally favorable location for gold mineralization and thought to possibly be a large quartz reef was field checked. The 10m high ridge was found to be composed of strongly silicified, hornfelsed Burrell Creek formation. Minor quartz veining was identified in only the most prominent of the outcrops. See Figure 6. The observed geology did not reflect any potential for mineralization.
Near the apex of the Golden Spider anticline, a significant 800m long NNW-SSE aplite dyke was field checked. The reef appears to parallel a thrust fault that offsets the geology on the east and west sides of a coincident creek line. The dyke is between 2 and 10 metres wide in places and up to 2m in height and dips very steeply to the east. Although the dyke is extensive it is not prospective for gold. See Figure 7.

7.3 Geochemical sampling

Several rock-chip samples were collected from the Koolpin Formation in the vicinity of the fault near the Golden Spider anticline. These samples may be submitted for multi-element analysis in the next reporting period.

7.4 Prospecting

Metal detecting was carried out along several creek systems in which historical sampling had returned elevated gold concentrations. Three Minelab GP3500 and one GPX5000 series detectors were used. A total of 3.6 linear km of detecting was completed. See Figure 8. No gold nuggets of detectable size were identified however numerous man-made ferrous and non-ferrous objects were recovered.
Figure 8 – Historic Au sample values and areas metal detected.

7.5 Target generation

Evaluation of historic data together with the field reconnaissance work highlighted the need to focus future exploration activities on the base metal potential of the area, in particular in the vicinity of the anticline structures that occur toward the western and southern parts of the lease. In these locations the historic geochemical data has shown significantly elevated base metal values that warrant follow-up.

8 PROPOSED PROGRAM FOR YEAR 3

Geological mapping

Geological mapping using a combination of aerial imagery, available geophysics and limited ground traverses may be undertaken in the vicinity of the prominent Spider Anticline axis and a smaller parasitic anticline fold axis to its north. These axes tightly fold Koolpin and overlying lithologies within the lease areas.

Geochemical sampling

Additional follow-up sampling may be carried out in the vicinity of the anticline axes mentioned above.

Data compilation, review & target generation

Further assimilation of historical data together with knowledge gained from neighbouring tenements will help to prioritise target areas for future follow-up.
REFERENCES

