Date: 16th September 2015  
Report No: R106.2015

TITLE HOLDER: MINERALS INVESCO PTY LTD

Exploration Licence 28470 Fourth Annual and Final Surrender Report

Tennant Creek Region, Northern Territory  
For the Period 26/8/2011 to 08/9/2015

By  
Senior Geologist, Minerals Invesco

For:  
Minerals Invesco Pty Ltd  
PO Box 1217,  
South Perth,  
Western Australia, 6951

And

Minerals and Energy InfoCentre  
Northern Territory Geological Survey  
Department of Mines and Energy  
GPO Box 3000  
DARWIN NT 0801
## Annual Report Title Details

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<td></td>
<td>PO BOX 1217 South Perth, WA 6951</td>
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<td>Email for expenditure</td>
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</table>
Abstract

Exploration Licence 28470 was granted to Minerals Invesco Pty Ltd (Invesco) in the Northern Territory on 26/08/2011 for a period of 6 years. The licence is located in the Warramunga Province of the Tennant Creek Region. The licence area is located about 50 km south of the Tennant Creek Township in the central Australia.

Previous geological and geophysical information suggests that about half of the project area may contain Warramunga Group rocks, which are prospective for gold and base metals mineralisation. However, the eastern part is mainly covered by granite body (under sand cover) and is not considered prospective at this stage. Previous geochemical surveys, so far, have not identified any significant gold or base metals mineralisation. However, geochemical exploration undertaken has been limited and surface sampling appears to be ineffective due to the transported nature of Quaternary sedimentary cover. In addition, previous drilling campaigns have tested limited parts of the project area and hence not all the magnetic anomalies have been tested. Certainly, magnetic interpretation of old geophysical data has identified magnetic ridges which are several kilometer in length. These ridges may have been folded into thicker metasedimentary sequences and fold hinges or anticlinal structures. Such structures are important gold bearing features in the Tennant Region.

Invesco conducted a thorough desktop review of all previous exploration on the ground now covered by EL28470 in 2011-2012. All available STRIKE digital data and open file company reports were reviewed.

Invesco completed 2012-2013 Aeromagnetic/radiometric data processing, interpretation on Nov. 2012, depth modeling on Apr. 2013, and IP survey which was conducted over 4 magnetic anomalies to define anomalies better and assess their depth more accurately on Sept. 2013. Also 1 site inspection for planning of exploration programs and conceptual targeting studies was completed on Apr. 2013.

Work done in the 2013-2014 year of tenure included IP survey and modelling of IP anomalies in aeromagnetic anomaly area and total 696 soil and rock chip sampling and assaying in 4 aeromagnetic anomaly area.

In 2014 tenure year no geological work are conducted on the licence area to test the mineralization, just 1 site inspection was took place in May 2015 for drilling program.

Because of the prediction of pessimistic outlook of mining economy, the planed about 400 meters diamond drilling 2 holes in aeromagnetic anomaly area In 2014 tenure year was cancelled to test the mineralization.

The licence area is considered to have only low potential for gold and the near future of mining economy will be pessimistic. So it is recommended that the tenement be relinquished at the fourth tenure year end.
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1 Introduction

1.1 Location & Access

Exploration Licence 28470 lies approximately 50 km south of the Tennant Creek Township. Access to the lease area is from the Stuart Highway which runs along the eastern margin of the lease area. Figure 1 shows the exploration license position with respect to the current infrastructure.
Figure 1: PROJECT SITE MAP

Legend
- EL 28470
- proposed drillholes
- native vegetation areas
- pipelines
- water course areas
- water points
- bores
- Principal Road
- Minor Road
- Track
- railways
- spot elevations
- water course lines
- springs
- water holes

Projection: Map Grid of Australia Zone 53
Datum: Geodetic Datum of Australia 1994

Date: 2/05/2014
Author: Strongman
2 Tenure

Exploration Licence 28470 was granted to Minerals Invesco Pty Ltd (Invesco) for a period of six years on the 26th August 2011 and reduction retained at 130 graticular blocks in 2013. Details of EL 28470 are shown in Table 1.

This report covers all the EL’s four years of tenure.

Table 1: Tenement Details

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Holder</th>
<th>Granted</th>
<th>Expiry</th>
<th>Sub Blocks</th>
<th>Area</th>
</tr>
</thead>
<tbody>
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<td>EL 28470</td>
<td>Minerals Invesco Pty Ltd</td>
<td>26 Aug., 2011</td>
<td>25 Aug., 2017</td>
<td>130</td>
<td>386.23km²</td>
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</table>
3 Geological Setting & Previous Work

3.1 Geological setting

The Project area is located within southern part of the Warramunga Province, a Palaeoproterozoic package known for gold (+ base metals and bismuth) mineralisation. It forms part of the Tennant Region, situated north and northwest of the Davenport province and south of the Tomkinson Province. To the east and west, province extends subsurface beneath the Phanerozoic Georgina and Wiso basins respectively. It mainly comprises Palaeoproterozoic basement, the Tennant Inlier, centered around Tennant Creek Township; comprising volcaniclastic rocks, volcanic and flysch sediments, intruded by granites and deformed during Tennant Orogeny at approximately 1870 Ma.

From Tennant Inlier, so far, 5 million ounces of gold has been produced along with significant quantities of copper, bismuth and tungsten from various iron-oxide deposits mainly from the Warramunga Formation. In the area, a significant base metals resource has also been discovered by Westgold Resources Limited recently. Currently, region has also been targeted for uranium exploration.

EL28470 is the most southerly tenement held by Minerals Invesco Pty Ltd and more than 90% of it is covered by Quaternary sand (Qs) and alluvium/colluvium (Qa, Qc). However, some islands of bedrock geology in the eastern (central) part of the tenement show its significance (c.f. Figure 2). Here, small outcrops of Palaeoproterozoic Warramunga Formation can be observed, which are generally surrounded by Quaternary alluvium (Qa)/colluvium (Qc).

Geology of the project area is shown in Figure 2. The Warramunga Formation comprises interbedded greywacke, siltstone, shale and felsic volcanics which were tightly folded at about 1870 Ma. In places, it also contains chert, jaspilite and felsic volcanic rocks. During reconnaissance field work in November – December 2011, isolated outcrops of the Warramunga Formation have been noted. Generally it forms NS ridges up to several hundred meters long transacted.
Figure 2: Geological Setting of the Project Area
3.2 Previous Work

Since 1970, the area covered by EL 28470 has been explored by several exploration companies along with regional mapping of the area by Government agencies such as Bureau of Mineral Resources, Geoscience Australia and Northern Territory Geological Survey. In addition, the project area has been flown by airborne magnetic and radiometric surveys.

Open-file exploration reports were acquired from NT Geological Survey. Areas covered by these reports mainly fall within EL28470, but also contains some results from surrounding areas.

EL 28470 has been moderately explored and has been subjected to geological mapping, soil sampling, assaying for a variety of elements, geophysical surveys, drilling and logging.

First record of exploration activity in the area was conducted by Geopeko and results are reported in company report CR1970-0025. Part of the project area was prospected for gold mineralisation. Nobelex NL conducted a geophysical survey program which identified three magnetic anomalies, one was drilled, intersecting BIFs (Banded Iron Formation) and jaspilites that were assigned to the Warramunga Group/Formation. Ground truthing of area showed presence of ferruginised rocks of the Warramunga Group/Formation, which were unconformably overlain by the Hatches Creek Group. In 1974, Nobelex continued exploring the area under expired EL 41, and drilled two holes. These holes intersected BIFs along with jaspers, mudstone, siltstone and sandstones which probably belong to the Warramunga Formation. In 1978, Geopeko continued its interest in the area and identified two prospects which were later evaluated by ground gridding and geophysical evaluation. Another attempt was made under EL (expired) 1130 and targeted the area for Tennant Creek Style Cu-Bi-Au mineralisation, using aeromagnetic and ground magnetic surveys. In 1980s part of EL 28470 was explored by Occidental Minerals Corporation of Australia. Petrological studies and rock chip samples were taken. Highest value of Cu 220 ppm was recorded. In 1984, Geopeko and Shell Australia combined their resources to explore part of the project area. Aeromagnetic data was used to identify a number of targets along with rock chip sampling program. BIF Hill prospect was evaluated for potential low grade gold deposit. Au spiked at 1.5 g/t with regolith enrichment. Part of EL 28470 was explored by Minscope Pty Ltd during 1986 – 87. Two targets were chosen in the Banded Iron Formation at BIF hill and quartz vein. The quartz veining was striking 300 degrees magnetic averaging 3m thickness and described as milky white quartz with box shaped vugs - the quartz vein crossing the pipeline is many km long and up to 20m thick. The sampling results show background or normal unmineralised values for both Au and As with slight Au from the BIFs.

Under a JV (joint venture) agreement Anglogold Australia and Normandy Exploration Limited explored part of the project area (2000 – 2001). During the program, a helicopter surface sampling was undertaken that included 95 lag, 19 rock chips and 47 soils coupled with a vehicle supported sampling programme with 60 lag and 23 rock chips. Two small anomalies were identified:
1. 399900E 7771500N (AGD66 Zone 53) Au up to 9.2 ppb and As up to 43 ppm; 2. 393500E 7775000N (AGD 66 Zone 53) lag Au up to 7.8 ppb.

EL 28470 and surrounding region was explored for Tennant Creek style mineralisation (Au- Cu and Au quartz lodes) by Newmont Australia during 2001 – 2002. Aeromagnetic, radiometric and gravity surveys and RAB drilling identified the Archery Prospect which was tested with RC
drilling - no economic mineralisation was intersected. 2 RAB holes for 197m drilled to determine regolith depth - both abandoned due to high water influx and difficult drilling conditions. 2RC holes drilled to test magnetic anomalies known as the Archery Prospect. BTRC003 & 004 were both abandoned at 58m and 34m respectively at the base of the Cenozoic. Assays were Au 4ppb max and Cu 27ppm max. One diamond hole was used to drill the Archery prospect BT-DD009.

In 2002-2003, Newmont Gold Exploration Ltd conducted a reassessment exercise on expired EL 9432 which covered central part of the project area. The data used was mainly geochemical and geophysical collected over many years. The main purpose was to define a zinc anomaly at Darts prospect. Since 1996, the tenement area has been explored and exploration program conducted was mapping, rock chip sampling, petrography, reinterpretation of regional geophysical data, 12 RAB holes for 399 m. Aerial geophysics and gravity produced 12 magnetic anomalies. Two prospects were drilled by 2 RC holes (BTRC001, BTRC002) for 378m intersecting felsic porphyry and Flynn subgroup volcanics. Assays - Au max 6ppb and Cu max 38ppm. The following year BTRC005, 007 & 008 - 3 RC holes were completed in 1998 for 966m. RC005 - Snooker prospect - 355m - all Au results were <0.01g/t. BTRC007 – Hockey Prospect - 286m - 12-15m 0.03g/t, 15-18m 0.02g/t Au (located outside EL 28470), all other assays <0.01g/t Au. BTRC008 - 325m - Assay results were below background level. The 4th year involved locating the Darts Prospect (holes ADL426, ADL428 and SHDH95). The 5th year was helicopter surface sampling. 95 lag, 19 rock chips and 47 soils and vehicle supported sampling program with 60 lag and 23 rock chips. Based on available geological, historical drilling and geophysical information, a new subsurface geological map of EL has been constructed (c.f. Figure 3). In this map recent alluvial/sand covered has been removed and has provided better picture for bed rock geology.

Approximately, western half of the project area is covered by the rocks of the Warramunga Formation, whereas eastern half is mainly covered by hidden granite body which is mainly covered by Cenozoic sand cover. A number of small outcrops of the Warramunga Formation mapped in the Bonney Well (1: 250 000) geological map and exposed within EL 28470 appear to be remnant of much wider cover of the Warramunga Formation, which during the process of weathering has washed away. Some large quartz veins/dykes which are several meters wide and runs NW direction for many kms are probably related to granite emplacement in the Palaeoproterozoic.

The project area has been divided into two structural domains. Western domain is dominated by the buried granite bod. In the eastern domain, interpretation of geophysical data has identified high frequency NW-SE trending fabric which is deformed into series of folds.

Invesco conducted a thorough desktop review of all previous exploration on the ground now covered by EL28470 in 2011-2012. All available STRIKE digital data and open file company reports were reviewed.

Invesco completed 2012-2013 Aeromagnetic/radiometric data processing, interpretation on Nov. 2012, depth modeling on Apr. 2013(Table 4,Figure 5), and IP survey which was conducted over 4 magnetic anomalies to define anomalies better and assess their depth more accurately on Sept. 2013. Also 1 site inspection for planning of exploration programs and conceptual targeting studies was completed on Apr. 2013.

Work done in the 2013-2014 year of tenure included IP survey and modelling of IP
anomalies in aeromagnetic anomaly area (c.f. Figure 6, Figure 7, Figure 8) and total 696 soil and rock chip sampling and assaying in 4 aeromagnetic anomaly area (c.f. Figure 4).

Figure 3: Subsurface geological map of the project area
Four lines of pole-dipole IP were undertaken on EL 28470 in October 2013, targeting magnetic anomalies. During the survey, for practical purpose, Line 1 and Line 2 were combined together some overlapping data point locations. The data collected was of high quality and only Anomaly 1 and Anomaly 3 showed some chargeability higher than background (Table 3, Figure 6, Figure 7, Figure 8).

Table 2: Line locations

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<tr>
<th>Line</th>
<th>Start_E</th>
<th>Start_N</th>
<th>End_E</th>
<th>End_N</th>
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Table 3: Summary of results for each modelled magnetic body

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<td>1</td>
<td>2.5</td>
<td>no anomaly</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>4</td>
<td>anomaly is small</td>
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<td>4</td>
<td>4</td>
<td>3.2</td>
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<td>6</td>
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This soil samples survey conducted on the May 2014. The sampling locality consisted of 4 lines almost along the IP survey line and 20 meters spaced ties across the major structural lines (Figure 4).

So far there is not any significant gold or base metals mineralization identified in the tenement area.
Figure 4: EL28470 aeromagnetic anomalies locality with IP Survey & Soil sampling location
Figure 5: Aeromagnetic models
**Table 4: Anomaly positions (MGA94) with model center top**

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<td>396270</td>
<td>7767490</td>
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</table>

**Figure 6: Line locations shown over modelled magnetic bodies**

(Background image is 1VD RTPMagnetics)
Figure 7: Line1 inversion models
Figure 8: Line3 inversion models

In 2014 tenure year no geological work are conducted on the licence area to test the mineralization, just 1 site inspection was took place in May 2015 for drilling program.

5 Conclusions & Recommendations

Previous geological and geophysical information suggests that about half of the project area may contain Warramunga Group rocks, which are prospective for gold and base metals mineralisation. However, the eastern part is mainly covered by granite body (under sand cover) and is not considered prospective at this stage.

Previous geochemical surveys, so far, have not identified any significant gold or base metals mineralisation. However, geochemical exploration undertaken has been limited and surface sampling appears to be ineffective due to the transported nature of Quaternary sedimentary cover. In addition, previous drilling campaigns have tested limited parts of the project area and hence not all the magnetic anomalies have been tested.

Certainly, magnetic interpretation of old geophysical data has identified magnetic ridges which are several kms in length. These ridges may have been folded into thicker metasedimentary sequences and fold hinges or anticlinal structures. Such structures are important gold bearing features in the Tennant Creek Region.

The geophysical (radiometric/magnetic) survey flown in 2012 by Invesco was processed and interpreted, 4 major untested magnetic anomalies was generate.

The IP survey over 4 magnetic anomalies in 2013 by Invesco has been processed and interpreted to define anomalies better and assess their depth more accurately.

Because of the prediction of pessimistic outlook of mining economy, the planed about 400 meters diamond drilling 2 holes in aeromagnetic anomaly area in 2014 tenure year was cancelled to test the mineralization.

The licence area is considered to have only low potential for gold and the near future of mining economy will be pessimistic. So it is recommended that the tenement be relinquished at the fourth tenure year end.
6 References


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