# Otter Gold NL (100%)

TANAMI REGION NORTHERN TERRITORY

## PARTIAL RELINQUISHMENT REPORT

For

EXPLORATION LICENCE

# EL10348 (Lillies Bore)

23<sup>rd</sup> January 2001 to 22<sup>nd</sup> January 2004

Volume 1 of 1

Newmont Report No: 31402

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### **OTTER GOLD NL**

- **TITLE:**PARTIAL RELINQUISHMENT REPORT FOR<br/>EXPLORATION LICENCE 10348
- **PERIOD:**  $23^{rd}$  JANUARY 2001 to  $22^{nd}$  JANUARY 2004
- **REPORT No.:** 31402
- **COMPILED BY:** M. MUIR
- LOCATION: TANAMI 1:250,000 SE 52-15 PARGEE 1:100,000 4758 TANAMI 1:100,000 4858 BREADEN 1:100,000 4859 MALLEE 1:100,000 4759
- **COMMODITY:** GOLD
- **DATE:** APRIL 2004
- **KEYWORDS:** GEOCHEMICAL SAMPLING, LAG SAMPLING, REGIONAL GEOLOGY, PROTEROZOIC, VERY LOW GOLD DETECTION ANALYSIS.

### SUMMARY

Exploration Licence 10348 was granted on the  $23^{rd}$  of January 2001, for a period of six years. EL 10348 is located some 50km north west of the Tanami Mine. At the end of the third year of tenure it was decided to relinquish ground because the areas to be relinquished were seen as having low prospectivity for hosting an economic deposit of gold. Also due to the high tenement costs encountered this year, there is a need to "drop off" the least prospectivity. The ground was reduced from 134 blocks (417 km<sup>2</sup>) to approximately 93 blocks (289 km<sup>2</sup>).

The relinquished ground included 31 regional surface samples where the results were less than 0.5ppb Au. The surface samples were taken in bulk on an approximate 2km x 2km grid by Stockdale. The samples were taken using a Helicopter. These samples were purchased by Otter Gold NL and assayed with the ALS ZARG technique (0.1ppb Au detection). An assessment of the Exploration License was made and the decision was made to partially surrender EL10348 on the 22<sup>nd</sup> January 2004.

Activity in Relinquished Ground	No. of Samples	High Result	Sample Spacing
Geochemistry	31	0.5ppb Au	2km x 2km

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### **1.0 INTRODUCTION**

This report contains details of exploration activities conducted within the relinquished ground EL10348 for the period 23<sup>rd</sup> January 2001 to 22<sup>nd</sup> January 2004. This exploration licence is part of the Suplejack Indigenous Land Use Agreement (ILUA) executed 7<sup>th</sup> February 2000 and registered on the 30<sup>th</sup> October 2000 between the Central Land Council, Otter Gold NL and Anglogold Australasia. A copy was lodged with the Department of Minerals and Energy (currently the Department of Business, Industry & Resource Development) on the 21<sup>st</sup> November 2000 for title grant purposes.

The exploration that has been completed on the ground to be relinquished has produced no significant results and the ground is not seen as prospective. Also due to the high tenement costs associated with this licence there was seen a need to "drop off" the least prospective ground to focus exploration dollars in regions of substantially higher prospectivity.

### 2.0 LOCATION AND EXPLORATION HISTORY

### 2.1 Location and Access

Exploration Licence 10348 is situated 50 kilometres northwest of the Tanami Mine (Figure 1). The Licence lies within the Suplejack Station Pastoral Lease. The major access to the Licence will be challenging and could be via Suplejack Station tracks and then via exploration tracks made by previous exploration companies or helicopter.

### 2.2 Tenement Status

Exploration Licence 10348 was granted to Otter Gold NL on 23<sup>rd</sup> January 2001 for a period of six years.

The tenement originally comprised 134 blocks covering an area of 417 square kilometres, with control of Otter Gold NL being gained by Newmont it was decided because of escalating tenement costs that the ground should be partially relinquished at the end of its third year. During January of 2004 a decision was made to reduce EL10348 ground by 41 blocks, from 134 blocks (417km<sup>2</sup>) to 93 blocks (289km<sup>2</sup>). See Figure 2 for approximate ground relinquished.

This exploration licence is part of the Suplejack Indigenous Land Use Agreement (ILUA) executed 7<sup>th</sup> February 2000 and registered on the 30<sup>th</sup> October 2000 between the Central Land Council, Otter Gold NL and Anglogold Australasia. A copy was lodged with the Department of Minerals and Energy (currently the Department of Business, Industry & Resource Development) on the 21<sup>st</sup> November 2000 for title grant purposes.

### 3.0 GEOLOGY

### **3.1 Regional Geology**

The Granites – Tanami Block is bounded to the west by the Canning Basin, and to the east by the Wiso Basin and is considered to be one of the western most Palaeoproterozoic inliers of the Northern Australian Orogenic Province. The block is thought to have developed around the Barramundi Orogeny – major event 1845 – 1840 Ma (Blake et al., 1979).

The stratigraphy of the Tanami Region has been revised as a result of an intensive study recently completed by the NTGS (Hendrickx et al., 2000). The stratigraphy outlined by Blake et al (1979) has had some significant modifications (Table 1).

The Archaean Billabong Complex and Browns Range Metamorphics are the oldest rocks in the area. Browns Range Metamorphics comprise granitic gneiss and muscovite schist intruded by fine-grained granite, thin granitic sills, aplite and pegmatite. The Billabong Complex comprises banded granitic gneiss', which are generally elongated and fault bound.

Blake et al (1979)				Hendrickx et al (2000)					
Birrindudu		Co	omarie	Sandsto	one	Birrindudu	Coomarie		
Group						Group	Sandstone	Suplejack	
	,		Talbot Well Formation				Talbot Well	Downs	
							Formation	Sandstone	
		Ga	Gardiner Sandstone				Gardiner		
							Sandstone		
Suplejack Do	wns Sar	ndston	e				Nanny Goat Creek	Volcanics	
Mount Winne	ecke						Mount Winnecke Group		
Pargee Sandstone				Pargee	Mount Charles Formation				
					Sandstone				
Tanami	Mt.	Killi	Nanny	Nongra	Helena	Tanami	Killi Killi Format	ion	
Complex Ch	Charles Beds	K1ll1 Beds	illi Goat eds Creek	Beds 0	Creek Beds	Group	Twigg Formation		
	Deus	Deus	Beds		Deus		Dead Bullock For	mation	
						McFarlane	Peak Group		
Archaean				Browns Range Metamorphics					
						"Billabong	Complex"		

**Table 1.** Comparison of stratigraphic nomenclature (Hendrickx et al, 2000).

Lying unconformably above the Archaean basement is the Palaeoproterozoic McFarlane Peak Group. These rocks are characterised by a thick sequence of mafic volcanic, volcaniclastic and clastic sedimentary rocks, which possess a distinctive

magnetic and gravity signature. This package of rocks is structurally complex and is considered to have a tectonic contact with the overlying Tanami Group.

The Tanami group is subdivided into three formations:

Twigg Formation:	purple siltstone with minor sandstone and chert
Killi Killi Formation:	turbiditic sandstone
Dead Bullock Formation:	siltstone, mudstone, chert and banded iron formation

The Dead Bullock Formation occurs at the base of the Tanami Group and is dominated by fine-grained sedimentary rocks. The rocks outcrop at Dead Bullock Soak, Lightning Ridge and Officer Hill. At the Granites the rocks have been metamorphosed to amphibolite facies to form andalusite, garnet and hornblende bearing schists. The Dead Bullock formation is host to significant gold mineralisation at the Granites and Dead Bullock Soak.

The Killi-Killi Formation conformably overlies the Dead Bullock Formation and is the most extensive formation in the group. The sequence of turbidites includes micaceous greywacke, quartzwacke, and lithic greywacke, quartz arenite and lithic arenite, interbedded with siltstone, mudstone and occasional thin chert beds. Detrital mica is a characteristic feature. The Killi-Killi is metamorphosed to lower greenschist facies and is interpreted to be up to 4km thick.

The Twigg formation is confined to a narrow package of rocks immediately west of the Tanami Mine corridor. It comprises a sequence of interbedded purple siltstone with thin-bedded chert and minor medium bedded greywacke.

The Pargee Sandstone unconformably overlies the Tanami Group and is exposed on the western side of the Coomarie Dome extending into Western Australia. The Pargee Sandstone comprises thick-bedded quartz arenite, lithic arenite and conglomerate with pebbly sandstone and conglomerate at the base.

The Mount Charles Formation comprises an intercalated package of basalts and turbiditic sediments, which occur on the western side of the Frankenia Dome. The Mount Charles Formation is host to structurally controlled vein hosted gold mineralisation in the Tanami Mine Corridor. Sediments include sandstone, mudstone, carbonaceous mudstones and intraclast conglomerate. Basalts are predominantly massive units with pillow basalts and basaltic breccias also evident.

The Mt Winnecke Group is also interpreted to lie unconformably over the Tanami Group and is divided into two units - siliciclastic sediments and felsic volcanics.

The Nanny Goat Volcanics are characterised by extrusive volcanic rocks including quartz-feldspar ignimbrite, feldspar ignimbrite, rhyolite lava, basalt and minor siliciclastic sediments.

The Birrindudu group comprises 3 units with Gardiner Sandstone at the base, overlain by Talbot Well Formation and Coomarie Sandstone. The Suplejack Down sandstone is interpreted to belong to this group but is relationship is unclear. The Birrindudu group lie unconformably over the Browns Range Metamorphics, MacFarlane Peak Group, Tanami Group, Pargee Sandstone, Nanny Goat Creek Volcanics and Mount Winnecke Group.

Cenozoic laterite, silcrete, calcrete, and Quaternary debris cover 60 - 70% of the Tanami Desert. The Quaternary sediments are generally unconsolidated, representing the most recent phase of erosion and deposition of sands, gravels and lithic fragments.

### 3.2 Local Geology

EL 10348 is predominantly covered by Birrindudu Group cover sequence. There are significant outcrops of Gardiner Sandstone (sublithic arenite, quartz arenite, medium to coarse basal conglomerate, minor siltstone; medium to thinly bedded, cross bedded) Coomarie Sandstone (sublithic arenite, crossbedded, ripple marks) and Talbot Well Formation (sublithic arenite, chert, silstone, limestone). These are folded about the Coomarie Granite. There also exist significant east west palaeochannels and lakes. There is a significant north west trending fault that truncates the Birrindudu Group in the east of the tenement. The southern portion of the lease is assumed to be Coomarie Granite that lies under cover.

### 4.0 EXPLORATION HISTORY of Relinquished Ground within EL10348

### 4.1 Exploration completed pre 2001.

Sampling for diamonds was completed by Stockdale Prospecting. Stockdale took regional loam bulk samples and also additional surface samples were taken and kept for most sites where a loam sample was taken. These samples were taken separately from the loam samples in 'geochem' packets. The samples were taken at a depth that did not exceed 20 centimetres. The samples were taken generally on a two kilometre by two kilometre grid. These samples were purchased by Otter Gold NL and assayed with the ALS ZARG technique (0.1ppb Au detection). A maximum of 0.5ppb Au was returned. 31 samples were within the relinquished ground.

### 4.2 Exploration completed during 23<sup>rd</sup> January 2001 to 22<sup>nd</sup> January 2002.

Work completed during 2001 within EL10348 involved the assessment of any geochemical targets and ranking them within the entirety of the Otter Gold NL database. No significant targets were identified.

### 4.3 Exploration completed during 23<sup>rd</sup> January 2002 to 22<sup>nd</sup> January 2003.

Second year work programmes were put on hold within this region due to minimal staff being assigned to the northern Tanami region. Other regions were designated as higher priority targets and thus attention. The take over of Otter Gold NL by Normandy NFM/Newmont also pushed the field season back with the uncertainty of staff positions and budgets.

### 4.4 Exploration completed during 23<sup>rd</sup> January 2003 to 22<sup>nd</sup> January 2004.

During the third year of tenure, work was confined to data review and assessment of the exploration potential for the upcoming season and to budget for work in the 2004 field season. Other regions were designated as higher priority targets and thus attention

### 5.0 ENVIRONMENT

Environmental disturbance has been kept to a minimum wherever possible. The use of a helicopter for surface sampling and the backfilling of sample holes and the emphasis on remote detection of targets have kept the environmental disturbance to a minimum. All rubbish was removed from sites and camps.

### 6.0 **REFERENCES**

Blake, D.H., Hodgson, I.M., and Muhling, P.C., 1979, Geology of the Granites-Tanami Region, Bur. Min. Res. Geol. Aust. Bull, No. 197.

Hendrickx M.A., Slater K.R., Crispe A.J., Dean A.A., Vandenberg L.C., and Smith J.B., 2000. Palaeoproterozoic stratigraphy of the Tanami Region: regional correlations and relation to mineralisation – preliminary results. Northern Territory Geological Survey. Geological Survey Record GS 2000-13.

Hodgson, C. J., 1975, Tanami, Northern Territory, 1:250,000 Geological Series: Explanatory Notes.

**Muir, M., 2002,** *NT DBIRD 1<sup>st</sup> Annual Report for EL 10348 (January 2001-2002)*, Otter Gold NL Unpublished Company Report

**Muir, M., 2003,** *NT DBIRD 2nd Annual Report for EL 10348 (January 2002-2003)*, Otter Gold NL Unpublished Company Report

**Muir, M., 2004,** *NT DBIRD 3rd Annual Report for EL 10348 (January 2003-2004)*, Otter Gold NL Unpublished Company Report

**Tunks, A. J., 1996,** *Geology of the Tanami Gold Mine, Northern Territory.* Unpublished PhD Thesis, University of Tasmania.

# **APPENDIX 1** Figures





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# **APPENDIX 2**

# **Sampling Data**

See attached Files