

## **NEWMONT TANAMI LIMITED**

## RELINQUISHMENT REPORT FOR EL 8802 (THE STEP)

for the period **29/04/1999** to **02/04/2003** 

CENTRAL TANAMI NORTHERN TERRITORY

Volume 1 of 1

**1:250,000 SHEET:** The Granites SF52-03

**1:100,000 SHEET:** Frankenia 4857 Ptilotus 4957

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Newmont Gold Exploration Pty Ltd

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Resource Development

Newmont Australia

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JUNE 2003 NEWMONT CR 31139

## **SUMMARY**

The Step EL (8802) is located on the eastern boundary of the Rabbit Flat EL (EL 2370), adjacent to the Titania prospect (Figure 3). This licence was granted on the 29/04/99. Although in the past EL8802 has been reported on in conjunction with the Tanami Project the licence is not part of the TGEA agreement.

Work completed to date includes a regional air-borne magnetic survey (part of the Rabbit Flat EL survey), a gravity survey, reconnaissance scale soil sampling and aircore drilling and a small number of petrology samples that were collected from the drill chips and submitted for analysis. A minor gravity anomaly was found east of the Titania Prospect area and a north west structural trend was observed occurring in the south of the exploration licence area. An area within the relinquished block was highlighted as containing regionally anomalous concentrations of gold and arsenic. Peak results from this area included: 6m @ 32ppb Au and 42m @ 405ppb As (TSTAC0002), 3m @ 50ppb Au and 27m (eoh) @ 900ppm As (TSTAC0003) and 21m @ 1300ppm As (TSTAC0004), 30m @ 336ppm As (eoh) from 51m depth (TSTAC0027) and 12m @ 333ppm As from 54m depth, (TSTAC0028). From these results, it is interpreted that the alteration system associated with Titania has been closed off to the east and that the depth of cover in this area may make exploration inhibitive anyway.

The bedrock encountered was described as massive and foliated dolerite, porphyritic micro-granite, sandstone, greywacke, quartz-sericite schist, minor chert thought to be equivalent to the Killi Killi Beds and surficial sands. Transported cover in the region has an average thickness of around 48m and is dominated by lacustrine clays with minor gypsum layers.

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A summary of work completed comprises:

Regional Airborne Magnetic Survey

Gravity Survey 670 stations

Soil Sampling 35 samples

Aircore drilling
 19 holes, 1511m, 516 samples

Petrology 3 samples

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## **FIGURES**

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## **APPENDICES**

Appendix 1 Digital Sample & Drillhole Data

Appendix 2 Geophysical Survey Data

**Appendix 3** Petrological Descriptions

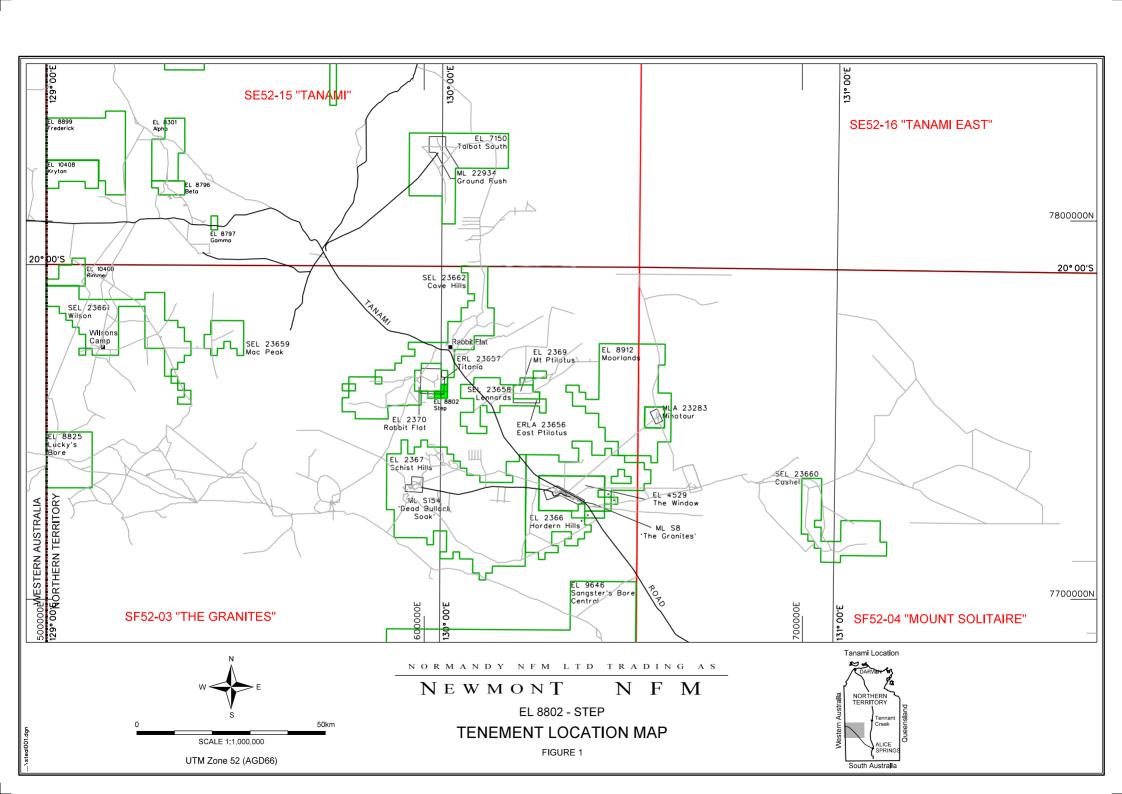
## 1 INTRODUCTION

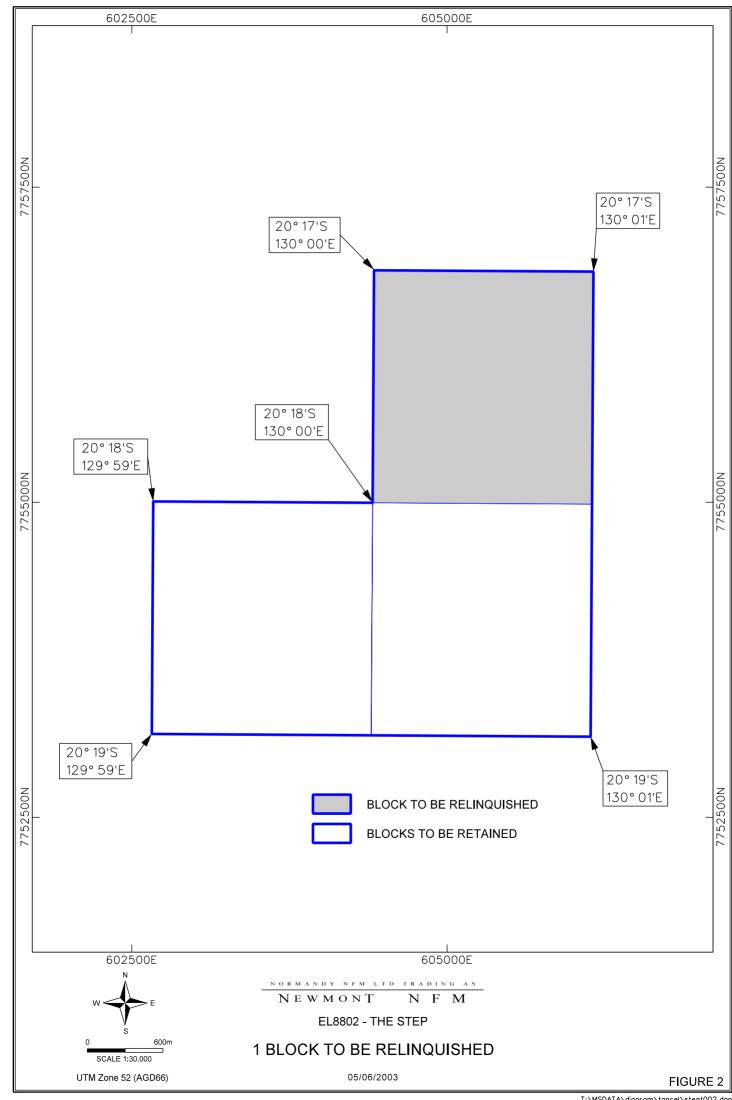
This report summarises the work carried out by Normandy NFM, now Newmont Tanami Limited (as of 11 June 2003), over one block of the EL8802 licence that was relinquished when overlaying SELA 23662 was granted on 3 April 2003, combining this block with EL 2370, adjacent to the west. (Figure 2).

Previously EL8802 was reported with the Tanami Project although it is not part of The Granites Exploration Agreement (TGEA). As all previous annual reports remain on closed file this document is a comprehensive report of all work completed over the relinquished block.

Table 1: EL8802 (The Step) Exploration Licence Statistics

TENE	MENT	DA	TE OF	NUMBER OF BLOCKS			
Number	Name	Grant	Expiry	Prior to Relinquishment	Relinquished April 2003	Current	
EL8802	THE STEP	29/04/99	28/04/05	3	1	2	





## 2 LOCATION, INFRASTRUCTURE, ACCESS, SURVEY CONTROL & ENVIRONMENTAL PRACTICE

## 2.1 Location

The Step EL (8802) is located on the eastern boundary of the Rabbit Flat EL (EL 2370), adjacent to the Titania prospect (Figure 1). This licence was granted on the 29/04/99. Although EL8802 is included within this report the licence is not part of the TGEA agreement.

Geographically, the area lies in the western part of the Tanami Desert, a generally flat and featureless sand-covered landscape of spinifex and low scrub.

The annual average rainfall is of the order of 200mm, which is mostly derived from summer monsoonal and storm activity. Daily temperatures vary from minima of near freezing in winter to summer maxima of approximately 48°C. The area is devoid of surface water except in small soaks after heavy rain.

## 2.2 Infrastructure

Prior to the presence of NFM in this part of the Tanami region, infrastructural support was almost completely lacking. Currently, supplies are trucked or flown to a permanent camp at The Granites (within EL4529) from Alice Springs. All camps are serviced by telephone and fax using microwave links. Water is provided by two remote borefields. One borefield lies 35km east of The Granites (Billabong) and the other 10km north-east of Dead Bullock Soak. Power is locally generated at exploration bases and mine sites. The nearest settlements are the Rabbit Flat roadhouse 50km to the northwest of The Granites on the Tanami Road, and Tanami Downs homestead 60km to the west. The nearest town is Yuendumu some 250km southeast of The Granites on the Tanami Road.

### 2.3 Access

Access to the area is by air or via the Tanami Road. A basic network of pre-existing and newly formed tracks link individual prospect areas to the three major NFM camps at The Granites, Dead Bullock Soak and Wilsons (Figure 1).

## 2.4 Survey Control

Initial survey control has been established over the current exploration licences by Company and contract surveyors.

All survey marks have been tied to the Australian Map Grid with trigonometrical survey station control. Extensive use is made of Global Positioning System equipment by staff engaged in regional exploration.

### 2.5 Environmental Practice

Rehabilitation of exploration sites was carried out pursuant to Section 24(e) of the NT Mining Act and in accordance with the Departments "Guidelines for Rehabilitation of Exploration Sites",

- all drillholes were plugged and backfilled on completion,
- all drillpads were rehabilitated,
- all costeans were backfilled when no longer required, and
- all grid lines and tracks were rehabilitated when no longer needed.

## 3 PREVIOUS EXPLORATION

Prior to Newmont NFM being granted The Step exploration licence in 1999 there had been no recorded exploration activity within this tenement block.

## 4 EXPLORATION OBJECTIVES

Exploration and mine studies have indicated that gold mineralisation in the region has an association with a range of geological environments. Models of gold occurrence for which the Tanami is believed to be most prospective include:

- Disseminated, stratabound deposits hosted by banded iron formations;
- Discordant stockwork deposits of gold in relatively late stage quartz veins;
- Gold mineralisation in veins hosted by shear zones or other favourable structures, with strong alteration characteristics:
- Deposits in regolith containing gold concentrated by alluvial, eluvial or alteritic processes.

With these models in mind, the Company's geologists have selected prospective target exploration areas based on regional geological, structural, geophysical and geochemical data.

The detailed assessment of these targets has been undertaken by a range of exploration techniques, designed to reveal the geology of the target area, and the presence of pathfinder elements, particularly gold itself, in anomalous quantities.

Exploration within the relinquished area was difficult due to the presence of lacustrine and alluvial clays and aeolian sand sequences that overlie bedrock. The depth of these cover sequences varies form 10m to >100m.

## 5 GEOLOGY

Tertiary drainage channels, now completely filled with alluvial and lacustrine clays and calcrete are a major feature of the relinquished area in question. The depth of these sequences varies for 10m through to greater than 100m, with the profile deepening towards to east and south. Recent aeolian sand occurs above these clays, and has a thickness that varies from 1 to 10 metres. The average depth of cover encountered in this area was 48metres.

The bedrock encountered during drilling on the licence area largely comprised schistose sericitic greywacke and siltstone, quartz arenite and minor chert. These meta-sedimentary units are thought to be part of the Killi Killi Formation. The meta-sedimentary units have been intruded by dolerite dykes and porphyritic microgranite. The main occurrence of granite occurs near the south western edge of the relinquished area in question.

## **6 METHODOLOGY**

## 6.1 Geochemical Sampling Techniques/Sample Descriptions

### 6.1.1 SURFACE SOIL SAMPLES

Soil samples are generally obtained via a shallow surface scrape, generally to a depth of approximately 20cm, which is then either sieved in the field of mechanically sieved back at a serviced field camp. The fraction chosen is dependent on the geologists' assessment of the regolith, however, common fractions include -0.5mm,  $-180\mu$ m,  $-125\mu$ m,  $-75\mu$ m. The exact fraction the geologist chooses to collect is recorded during logging. Soil material is sieved to obtain approximately 300-500g of material, which is then collected into a plastic zip-seal bag that is enclosed into another to prevent contamination during transport. The methodology chosen to analyse soil samples depends upon the geologists' expectation for the concentrations of gold in the particular soil profile and what other elements the geologist is interested in analysing for. Typically, however, methodologies are either based around methods that use either aqua regia or cyanide as a digest at either Genalysis Laboratory Services, Amdel or Newmont's in-house BLEG laboratory. Depending upon the method used, the sample is either logged as a "BCL" (used if the analysis methodology is cyanide based) or "SOIL" (used if the analysis methodology is aqua regia based).

Reconnaissance spaced sample sites are not marked; however infill sample sites are flagged in the absence of a local grid.

### 6.1.2 RAB AND AIRCORE DRILLING & SAMPLING

## Composite Samples/BOH/BR

RAB drillholes are typically composite sampled at 3m intervals where the geology is considered to be prospective. Depending on the program budget, the drillhole may be comprehensively sampled from surface, sampled only at particular lithologies or have been restricted to a bottom of hole or bedrock samples. Drill spoil is speared at intervals to obtain a 2-3kg sample. While this sample is customarily a 3m composite sample, the sample interval is ultimately left to the geologist's discretion. The sample intervals are clearly documented in the drillhole logs accompanying this report.

### **BCL/BLEG**

As described above.

## 7 WORK COMPLETED

## 7.1 1999 Field Season

The Step EL (8802) is located on the eastern boundary of the Rabbit Flat EL (EL 2370), adjacent to the Titania prospect (Figure 3). This licence was granted on the 29/04/99, however access was not obtained from the Central Land Council before the end of the field season.

Therefore no work was conducted here during 1999.

## 7.2 2000 Field Season

Exploration on the Step EL (8802) commenced during 2000. Work conducted during the 2000 field season mainly consisted of a gravity survey over the Step EL. Wide spaced aircore drilling targeted features identified by the gravity survey.

Work for the reporting period included

Gravity survey 1699 stations

Bleg Sampling 27 samples

Aircore Drilling
 9 holes for 620m, 211 samples

Petrology 3 Samples

## 7.2.1 Gravity Survey

The gravity survey was conducted by Haines Surveys Pty. Ltd. Measurements were made at a total of 670 stations spaced at 100 x 50m over 20 traverses. The gravity survey is shown in Figure 3.

No significant gravity highs were identified within the relinquished area.

## 7.2.2 Surficial Sampling

An orientation BLEG soil sampling program was undertaken over the Titania prospect to determine the effectiveness of this technique. A total of 245, 1.0kg unsieved soil samples were collected at 1-2km  $\times$  50-100m spacings. Within EL 8802, a total of 27 samples were collected during this survey. The samples were submitted to the Newmont in-house laboratory in Welshpool, WA. Sample distributions are shown in Figure 3.

Table 2 – Reconnaissance Surface Sample Details

Туре	Sample Numbers	Total	Analytical Method	Elements
BLEG	3213111-129	27	Newmont inhouse BLEG	Ag, As, Au, Bi, Cd, Cu, Mn, Zn
	27 samples			

### 7.2.3 Aircore Drilling

Wide spaced aircore drilling was completed in the relinquished block, along strike to the east of the Titania prospect area. Drilling showed the bedrock to consist of sandstones, greywackes, quartz-sericite schists with minor dolerite, granite and cherts. Transported cover in the region had an average thickness of around 48m and was dominated by lacustrine and alluvial clays. Peak results included 21m @ 1300ppm As from TSTAC0004 (Appendix 1).

Table 3 - Aircore Drill Sample Details

Drillhole ID	Sample Type	Sample Numbers	Amdel Method	Elements (ppm)
TSTAC0001- 0008, 0026 3m Composites		3224601-3224755, 3630455-3630471, 449962-450000,	ARM1 Aqua regia digest ICP-MS	Au (0.1ppb), Ag (0.01), As (0.5), Bi (0.1), Cu (0.2), Pb (0.2), Sb (0.1), Zn (0.5)
9 Holes for 620m		211 Samples		

### 7.2.4 Petrology

Three samples (P05001-05003) of drill chip material were sent for petrology to Pontifex and Associates. The rocks were described as a massive and foliated dolerite, porphyritic microgranite and a mass flow arenite. Details of the petrology are contained in Appendix 3.

## 7.3 2001 Field Season

Work during 2001 was severely hampered by the abnormally wet monsoonal conditions that have been experienced in the Tanami region over the past two years. Given the Step EL is located entirely within a paleodrainage, the accumulated effect of rainfall over the past few seasons has made work in this EL difficult to complete. Therefore work during the 2001 field season was restricted to a review of geophysical, geochemical data and geological data, in light of the new NTGS mapping in the region. It was determined from the review that the concentrations of arsenic associated with the Titania prospect area are probably contiguous with the anomalous regional arsenic seen at The Step EL. Gold concentrations are comparatively low compared to Titania, however they are elevated when regarded at a regional scale.

Aeromagnetic and gravity data was reprocessed and stitched into existing data sets covering the Titania, Redeye and greater Rabbit Flat EL areas. A new interpretation of this enlarged data set has been completed, and new targets associated with structural controls on mineralisation have been defined for exploration in the 2002 field season.

Work for the reporting period included:

- Compilation and reinterpretation of Aeromagnetic and gravity data.
- Review of drill sample-derived geochemistry.

## 7.4 2002 Field Season

Work during 2002 comprised:

Bleg Sampling 8 samples

Aircore Drilling
 10 holes for 891m, 305 samples

#### 7.4.1 Reconnaissance

Exploration completed this year that was specifically designed as a regional assessment was a reconnaissance soil sampling program that covered most of the central Rabbit Flat area (EL2370).

Samples were collected at a 500m by 500m scale over an area that covered the Titania prospect area and The Step. Within EL 8802, a total of 8 samples were collected.

Table 4 – Reconnaissance Surface Sample Details

Sample Numbers	Sample Type	Total	Newmont/ Genalysis Methods	Elements Analysed
3249094-3249097 3636825-3636829	BCL	8	BLEG A / BT/MS	Au As
	8 sample	S		

All sample data is attached in Appendix 1. Sample locations are displayed on Figure 3.

## 7.4.2 Aircore Drilling

A follow-up reconnaissance-drilling program was conducted during the 2002 field season. Drilling within the relinquished block was designed to find the eastern-most extent to the arsenic mineralisation associated with the Titania prospect area and to assess the likelihood of economic gold mineralisation occurring within this halo.

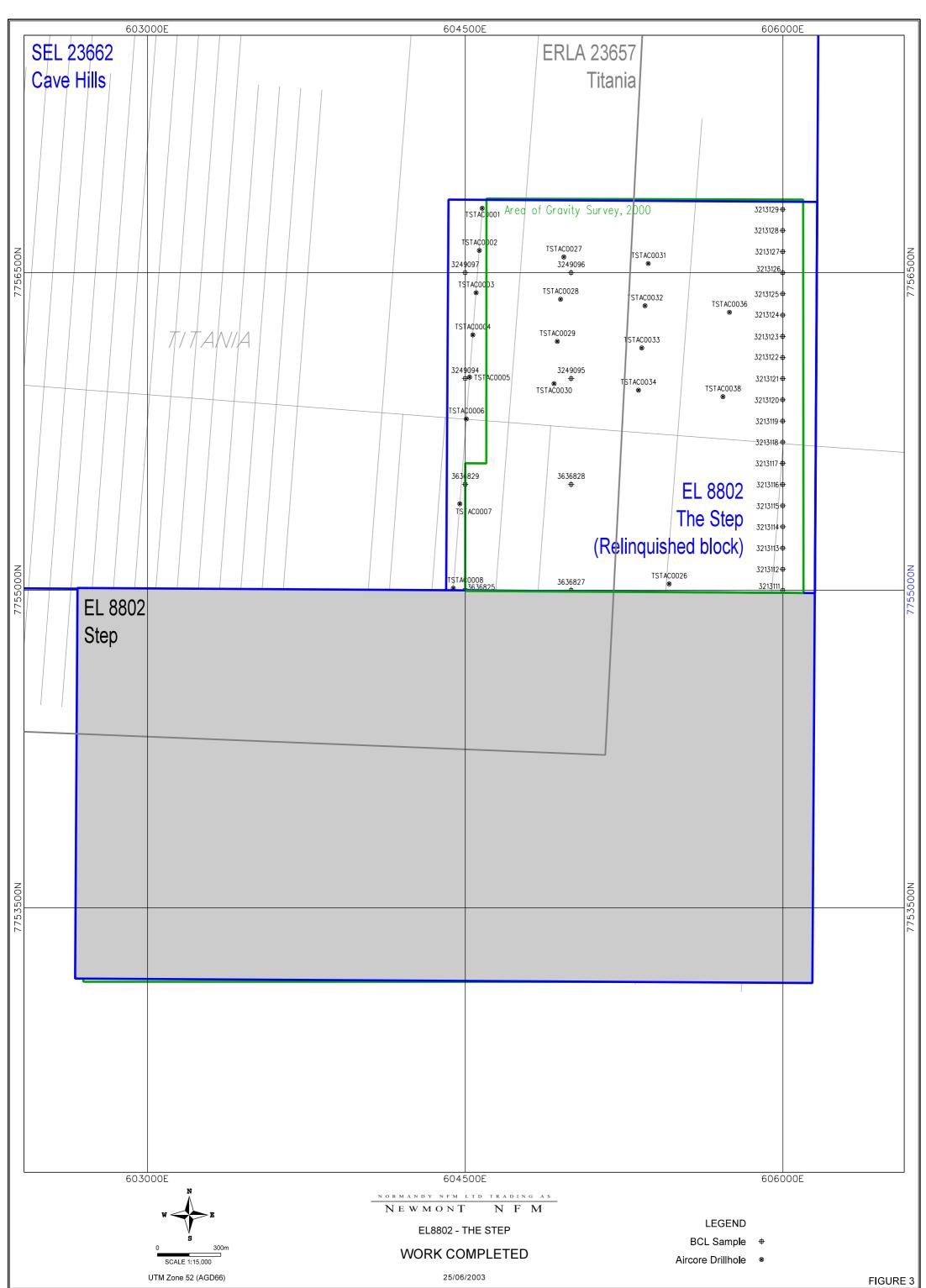
All drillhole locations are displayed on Figure 3 and all results are attached in Appendix 1.

Table 5 - The Step Aircore Drilling Details

Drillhole ID	Sample Type	Sample Numbers	Amdel Method	Elements (ppm)
TSTAC0027- 0036, 0038	3m Composite	3261792-3262000 3637001-3637096	ARM2	As, Au
10 holes f	or 891 metres	305 Samples		

Assay results from samples collected during drilling to the east of the Titania Prospect area indicate that arsenic anomalism associated with alteration extends approximately 500metres east of the boundary between The Step and the Rabbit Flat Exploration licences. Further east of this, only background concentrations of arsenic were found, although the cover of lacustrine clays also becomes very thick (>80m). No regionally anomalous concentrations of gold, beyond those that were found during drilling completed here during the 2000 field season, were found. From these results, it is interpreted that the alteration system associated with Titania has been closed off to the east and that the depth of cover in this area may make exploration inhibitive anyway. Within the alteration system there is still potential to define gold resources, once a better understanding of the regolith conditions in this region is gained.

The best drilling intersections from samples collected during the 2002 reconnaissance drilling program included 30m @ 336ppm As (eoh) from 51m depth (TSTAC0027) and 12m @ 333ppm As from 54m depth, (TSTAC0028).



## 8 REFERENCE LIST / ANNUAL REPORT BIBLIOGRAPHY

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- Thomas, D.J., Zdziarski, A., Dale, P., Power, D. and Pring, P., 2000. Annual Report for the Tanami Project for the 1999 Field Season. Normandy NFM Report 26116.

## APPENDICES 1 & 2 DIGITAL SAMPLE & DRILLHOLE DATA

## Appendix 1

SURFACE SAMPLE ASSAY DATA

STE\_WASG1\_SUR2003P.TXT

DRILLHOLE COLLAR DATA FILE

STE\_WASL1\_DRI2003P.TXT

DOWNHOLE ASSAYS DATA FILE

STE\_WADG1\_DOW2003P.TXT

DOWNHOLE LITHOLOGY DATA FILE

STE\_WADL1\_DOW2003P.TXT

DOWNHOLE SURVEY DATA FILE

STE\_WADS1\_DOW2003P.TXT

## **GEOPHYSICS SURVEY DATA**

## Appendix 2

GRAVITY SURVEY DATA FILE STEPGRAVITY.xyz

# APPENDIX 3 PETROLOGICAL DESCRIPTIONS

Report # Auti Petrology #	hor Date Work Count ID		Geo Prosp NFMSample #	ect From To	Easting	Northing	Notes Description ÈL8802
EL88D2	Step						
P7998 PU	2/08/2000 TS		JR Step (I	EL)			The Step EL 8802
P05001	1 TSTAC0003	DC	3224635	66 6	9 22800	9800	Weathered massive and foliated metadolerites. Seems to be more deformed than those at Oberon and Titania.
P05002	2 TSTAC0005	DC	3224686	81 -8	4 22800	9400	Porphyritic microgranite with phyllic alteration. Similar to the Twin Bonanza Porphyritic Microgranite, but the groundmass is similar to Old Pirate Microgranite.
P05003	3 TSTAC0006	DC		57 Ξ+0	8 22800	9202	Very matrix-rich mass -flow arenite. Has single crystal quartz grains, clasts of clouded polycrystalline quartz and of sericite-rich phyllite, all in a weathered matrix rich in sericite +/- altered possible biotite. Rare muscovite and tourmaline occur. Not a typical Madigan Beds lithology (possibly related to the Titania Wacke).

## **Northern Territory Department of Mines and Energy**

# REPORT METADATA FORM (MINERAL EXPLORATION)

PART A (DME USE ONLY)								
Report Number		Date Received						
Collation	pp.	figs	logs	maps	apps.			
Media	CDs	1.5"	Exab.	DLT	vols.			

PART B								
Tenure Number(s)	EL 8802		Company R Number	eport	31139			
Report Date	June 2003		Anniversary	Date	29/04/1999	9		
Group Project Name	Tanami Proje	ect						
Report Title	Relinquishmo 02/04/2003	Relinquishment Report for EL8802 (The Step) for the period 29/04/1999 to 02/04/2003						
Author(s)	M. Walter	M. Walter						
Corporate Author(s)	Newmont Australia							
Maps 1 : 250 000	SF52-03							
Maps 1: 100 000	4857	4957						

Te	Tectonic Units								
	Amadeus Basin		Carpentaria Basin		McArthur Basin		Pine Creek Inlier		
	Arafura Basin		Daly Basin		Money Shoal Basin		Simpson Basin		
	Arnhem Inlier		Dunmarra Basin		Murphy Inlier		South Nicholson Basin		
	Arunta Inlier		Eromanga Basin		Musgrave Block		Tennant Creek Inlier		
	Birrindudu Basin		Fitzmaurice Mobile Zone		Ngalia Basin		Victoria Basin		
	Bonaparte Basin		Georgina Basin		Ord Basin		Warburton Basin		
	Browse Basin	<b>✓</b>	Granites-Tanami Inlier		Pedirka Basin		Wiso Basin		
Ot	her structural units								

Stratigraphic Names						
Killi Killi Formation						

AMF Thesaurus Terms - General							
	Geological		Regional Geology		Stratigraphy		Structural Geology
	mapping						
	Metallogenesis		Remote sensing		Imagery		Landsat
✓	Petrology		Lithology		Literature reviews		Metamorphism
	Lineaments		Photogeology	1	Reconnaissance		Indicator minerals
Other terms							

AMF Thesaurus Terms - Target Minerals								
✓	Gold		Silver			Tin		Diamonds
	Lead		Copper			Platinum Group		Industrial Minerals
_	7:00	_	Linearium			Minerals		
<u> </u>	Zinc hers		Uranium			Bauxite		
Ot	11615							
A	MF Thesaurus Term	s - M	inina					
	Environmental		Feasibility s	tudies		Geostatistics		Metallurgy
	impact surveys		,					0,
	Ore reserves		Resource			Mineral resources		Mining geology
			assessmen					
	Mine design		Mine draina	ige		Mine evaluation		Pits
Ot	ner terms							
A 10	1E Thosaurus Torm	- G	anhyoidal S	STIM (O) (O				
AIN	IF Thesaurus Term Aerial magnetic	<u>s - G</u>	Aerial radio			Aerial EM surveys		Ground EM
•	surveys		surveys	activity	_	Aeriai Eivi Suiveys		surveys
1	Gravity surveys		Geophysica	al		Gravity anomalies		Bouger anomaly
			anomalies	~-	-			maps
	Sirotem surveys		Ground ma	gnetic		IP surveys		Resistivity surveys
	•		surveys					
	Seismic surveys		Magnetic			Geophysical	✓	Geophysical logs
			anomalies			interpretation		
Ot	her terms							
A 1	IE Thospurus Torm	o G	achamical	Evoloret	ion	Surface compling		
AN	MF Thesaurus Term							Rulk sampling
AN ✓	Geochemical	s - G	Stream sec		ion -	Rock chip		Bulk sampling
AN ✓	Geochemical sampling		Stream sec	liment			□ ✓	· ·
<b>A</b> N ✓	Geochemical		Stream sec	liment		Rock chip sampling		Bulk sampling Assaying
<b>AN</b> ✓	Geochemical sampling Soil sampling Isotope		Stream sec sampling Heavy mine	liment eral		Rock chip sampling Geochemical		· ·
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✓ ✓ Ot	Geochemical sampling Soil sampling Isotope geochemistry her terms	Ge	Stream sec sampling Heavy mine sampling Whole rock analysis	liment eral	on -	Rock chip sampling Geochemical anomalies X ray diffraction  Drill sampling	✓ ✓	Assaying Sample location maps
Ot AN	Geochemical sampling Soil sampling Isotope geochemistry her terms  IF Thesaurus Terms Diamond drilling		Stream sec sampling Heavy mine sampling Whole rock analysis	liment eral	on -	Rock chip sampling Geochemical anomalies X ray diffraction  Drill sampling Percussion drilling	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	Assaying Sample location maps Air drilling
Ott	Geochemical sampling Soil sampling Isotope geochemistry her terms  IF Thesaurus Terms Diamond drilling RC drilling		Stream sec sampling Heavy mine sampling Whole rock analysis	Explorations	on -	Rock chip sampling Geochemical anomalies X ray diffraction  Drill sampling Percussion drilling Vacuum drilling	✓ ✓	Assaying Sample location maps Air drilling Auger drilling
Ott	Geochemical sampling Soil sampling Isotope geochemistry her terms  IF Thesaurus Terms Diamond drilling RC drilling Drill core		Stream sec sampling Heavy mine sampling Whole rock analysis	Explorations	on -	Rock chip sampling Geochemical anomalies X ray diffraction  Drill sampling Percussion drilling	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	Assaying Sample location maps Air drilling
Ott	Geochemical sampling Soil sampling Isotope geochemistry her terms  IF Thesaurus Terms Diamond drilling RC drilling		Stream sec sampling Heavy mine sampling Whole rock analysis	Explorations	on -	Rock chip sampling Geochemical anomalies X ray diffraction  Drill sampling Percussion drilling Vacuum drilling	✓ ✓	Assaying Sample location maps Air drilling Auger drilling
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Mine / Deposit / Prospects	Location - AMG	Location - Datum
Mines		
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Deposits		
Prospects	Titania	
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