# N E W M O NT ASIA PACIFIC

N E W M O N T T A N A M I PTY LTD



# FINAL REPORT FOR SEL 24032 (CRAWFORD)

for the period 14/07/2004 to 27/01/2009 -For Immediate Release-

Barrow Creek JV
NORTHERN TERRITORY

Volume 1 of 1

**1:250,000 SHEET**: Lander River SF53-01

Mt Peake SF53-05
Barrow Creek SF53-06
Bonney Well SF53-02

**1:100,000 SHEET:** Conical Hill 5555

Jarrah Jarrah5556Crawford5655Taylor5755Numagalong5656

AUTHORS: P. Pring, M. Eisenlohr

TENEMENT HOLDERS: Newmont Tanami Pty Ltd

**DISTRIBUTION:** Unit Northern Territory Department of Regional Development,

Primary Industry, Fisheries and Resources

■ Newmont Asia Pacific

☐ Yuendumu Mining Company NL

□ Central Land Council

The contents of this report remain the property of Newmont Tanami Pty Ltd and may not be published in whole or in part nor used in a company prospectus without the written consent of the Company.

**APRIL 2009** 

**NEWMONT TANAMI PTY LTD CR 34166** 

#### **SUMMARY**

This report is the final report for SEL 24032 (Crawford) and as such describes all exploration activity within the relinquished area to be released to open file from 14 July 2004 to 27 January 2009. The tenement was part of an area covered by the Barrow Creek Joint Venture (BCJV) between Newmont Tanami Pty Ltd (Newmont), who are managers of the joint venture and Yuendumu Mining Company NL (YMC). The BCJV tenement is located approximately 300km north of Alice Springs and was being explored for economic gold mineralisation.

Initial fieldwork after the signing of an Indigenous Land Use Agreement (ILUA) with Traditional Owners and the Central Land Council comprised a reconnaissance program to check out future access for drilling rigs along with minor soil and lag sampling.

More recently the tenement was included in Newmont's Tanami Regional Framework Study, which highlighted the prospectivity of the area.

A ground gravity survey was carried out over the combined Barrow Creek and Lander River tenements in Nov 2006.

Reconnaissance RAB holes were drilled along access tracks in the west of the lease during May 2007 with one hole located within the relinquished ground.

# **TABLE OF CONTENTS**

1.	INTRODUCTION				
2.	TENE	MENT DETAILS1			
3.	LOCATION AND ACCESS				
4.	PREV	/IOUS EXPLORATION2			
		Previous Exploration by Other Companies			
5.	GEOL	GEOLOGY			
		Regional Geology2 Local Geology			
6.	WOR	K CARRIED OUT BETWEEN 2004 AND 20084			
7.	REFE	RENCE LIST / ANNUAL REPORT BIBLIOGRAPHY7			
8.	BIBLI	IOGRAPHIC DATA SHEET9			
9.	VERII	FICATION LISTING FORM10			
		LIST OF TABLES			
Table	e 1	Tenement Summary for SEL 240321			
		LIST OF FIGURES			
Figur Figur Figur Figur	e 2 e 3	Location and Access			

#### 1. INTRODUCTION

This document is the final report for the portion of SEL 24032 (Crawford) to be released to open file immediately for the Barrow Creek JV Project (BCJV) and as such describes the exploration activities within the relinquished area covering the period 14th July 2004 through to 27 January 2009.

#### 2. TENEMENT DETAILS

A summary of the tenement details is listed below:

SEL 24032 Newmont Tanami Pty Ltd 100%

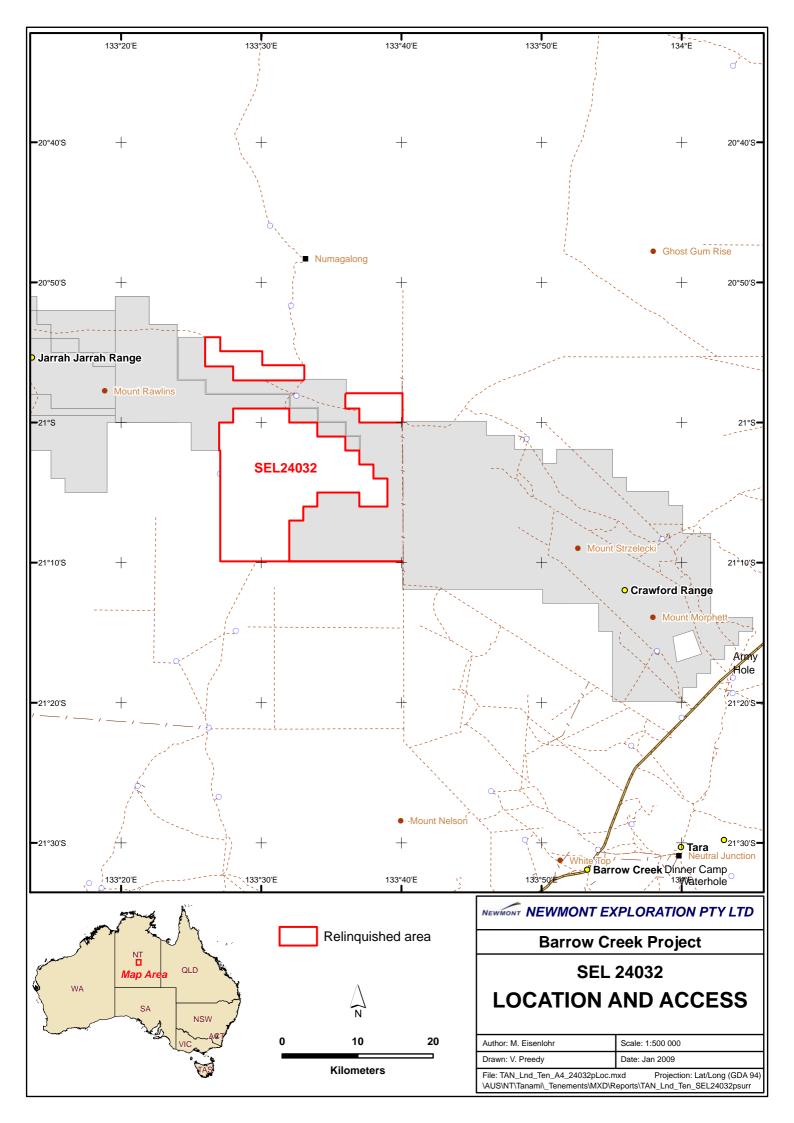
### Table 1 Tenement Summary for SEL 24032

Licence	Detail	Period
SEL 24032	expired	14 Jul 2004 to 27 Jan 2009

#### 3. LOCATION AND ACCESS

SEL 24032 is located approximately 300km north of Alice Springs and between 20 to 85km north to northwest of Barrow Creek. Access from Barrow Creek is via the Stuart Highway to the north and then using the Ali Curung to Jarra Jarra track. During the period Newmont graded much of the Ali Curung to Jarra Jarra track as some sections had fallen into a poor state of repair. Access to much of the eastern portion of SEL24032 has not been possible due to extensive exclusion zones. The tenement is located on the Stirling and Neutral Junction Stations (NT Portion 655 & 3375 respectively).

Figure 1 Location and Access



#### 4. PREVIOUS EXPLORATION

## 4.1 Previous Exploration by Other Companies

Exploration at Barrow Creek has historically been largely for base metals, gold and Sn/W/Ta deposits. Within the Crawford, Osborne and Watt Range areas, numerous copper workings can be found, including Home of Bullion and Petricks. The area to the south of the Crawford Range has been the site of the majority of tin, tungsten and tantalum workings, most being small, low tonnage operations.

Kewanee Australia Pty Ltd undertook a broad exploration program between 1970 and 1974 within the Crawford-Osborne Range area. Several targets were delineated by a combination of airborne magnetics, radiometrics and EM survey techniques. Targets generated by this method were followed up with geological mapping, sampling and a combination of percussion, reverse circulation and diamond drilling. This work delineated a sub-economic Cu-Ni resource (Prospect D), but grade was considered too low to warrant further investigation, and the ground was relinquished in 1973.

Limited exploration was conducted by Australis Mining NL during 1969, for base metal potential in the Crawford Range area. Pegmatites, granites and metadolerites were targeted with disappointing results.

More recently, Aberfoyle Ltd has explored firstly for base metal mineralisation and later gold mineralisation in the Home of Bullion area.

## 4.2 Previous Exploration by Newmont Tanami Pty Ltd

Newmont (and its precursor companies) has had an exploration presence in the Barrow Creek area since 1988. Work over this time has included reconnaissance programs comprising soil sampling, and vacuum and RAB drilling as well as detailed aeromagnetic/radiometric surveys, regional ground-based gravity surveys and detailed regional regolith mapping. Detailed prospect evaluation work has also been conducted, including reverse circulation and diamond drilling as well as prospect-based IP surveys.

During the 2003 field season a limited program of lag and soil sampling as well as aircore drilling was conducted within the EL 10013, SEL 10038 and SEL 22042 tenements (precursors to SEL 24032).

#### 5. GEOLOGY

#### 5.1 Regional Geology

The oldest exposed basement in Central Australia comprises metamorphic and igneous rocks of the Arunta Inlier (Haines et al., 1991). Rocks of the Arunta Inlier are interpreted as being at least partly correlative with sedimentary and volcanic sequences of the adjacent Tennant Creek and Granites-Tanami Inliers.

The Arunta Inlier (Early-Middle Proterozoic) is characterised by metamorphosed sedimentary and igneous rocks of low to medium pressure facies. Deformation and regional metamorphism to upper greenschist facies took place between 1810-1750 Ma (Black, 1981). Shaw and Stewart (1975) established three broad stratigraphic subdivisions based on facies assemblages and lithological correlations. From oldest to

youngest, these subdivisions are named Division 1, 2 and 3. Using this model defined by Shaw and Stewart (1975), the orthogneiss east of Osborne Range, the calc-silicate rocks west of Crawford Range and the Bullion Schist would be included in Division 2, and the Ledan Schist in Division 3 of the Arunta Inlier.

Unconformably overlying these rocks are the Hatches Creek Group sedimentary and volcanic rocks. Blake et al. (1987) formally subdivided the Group into the Ooradidgee, Wauchope and Hanlon Subgroups, comprising a total of 20 Formations and two Members. The Hatches Creek Group is a folded sequence of shallow-water sediments with interbedded volcanic units that reach thicknesses of at least 10,000 metres.

The sedimentary rocks include ridge-forming quartzites, felspathic, lithic and minor conglomeratic arenites and friable arenite, siltstone, shale and carbonate. The Ooradidgee Subgroup consists mainly of fluvial sedimentary and sub-aerial volcanic rocks which partly interfinger. The Wauchope Subgroup is characterised by large volumes of volcanic and sedimentary rocks, probably both marine and fluvial in origin. The Hanlon Subgroup may be entirely marine and lacks volcanic units (Blake et al., 1987).

Deformation and regional metamorphism took place between 1810-1750 Ma (Black, 1981). Folding was about NW trending axes while metamorphism to upper greenschist facies took place. Later intrusion of both the Arunta basement and the Hatches Creek Group by granitoids of the Barrow Creek Granitic Complex took place around 1660 Ma (Blake et al., 1987). Contact metamorphism and metasomatism are often observed.

Sedimentation associated with the Georgina Basin commenced during the Late Proterozoic with the Amesbury Quartzite and was terminated during the Early Devonian after deposition of the Dulcie Sandstone. The Georgina Basin sequence was mildly affected by the Carboniferous Alice Springs Orogeny.

A long erosional period followed with subsequent deep weathering during the Tertiary produced silcrete and ferricrete horizons. A veneer of Quaternary sands and soils overlays much of the area, except where recent and active alluvial sedimentation is present.

#### 5.2 Local Geology

The surface geology within SEL 24032 ranges from outcrop to thick cover in washout areas, and on average comprises 4-5m of soil cover. In the western area thick alluvial sediments are derived from the associated floodplains and palaeo-channels of the northward flowing Hanson River that flows through the licence. Cover in these areas can be in excess of 30m.

The dominant rock types include quartz-biotite schists and quartz arenites to the north, interpreted to be part of the Gwynne Sandstone and Illoquara Sandstone, along with tuffaceous siltstones and arenites of the Strzelecki Volcanics (all formations within the Wauchope subgroup of the Hatches Creek Group). Minor granite intrusions occur throughout the area. A strong NW-SE foliation is observed in the region paralleled by numerous quartz veins.

#### 6. WORK CARRIED OUT BETWEEN 2004 AND 2008

#### 2004 to 2005

Newmont developed the Tanami Regional Framework Study during 2005 / 2006 to identify prospective regions and target areas. The study highlighted the Barrow Creek – Rawlins Range region which partly included SEL24032. As the prime area of interest within SEL24032 was covered by an extensive exclusion zone, the main emphasis of the framework study was in other areas.

#### 2006

Work undertaken during the 2006/07 reporting period consisted of a geophysical program comprising a ground gravity survey and a regional aerial magnetic survey, part of which covered this tenement. (see below)

#### 2007

The RAB drilling program included one hole drilled within the relinquished area. NEWRRB0002 was drilled to 11m stopping in quartz rich channel sediments. This vertical hole was collared west of the Hanson River.

#### 2008

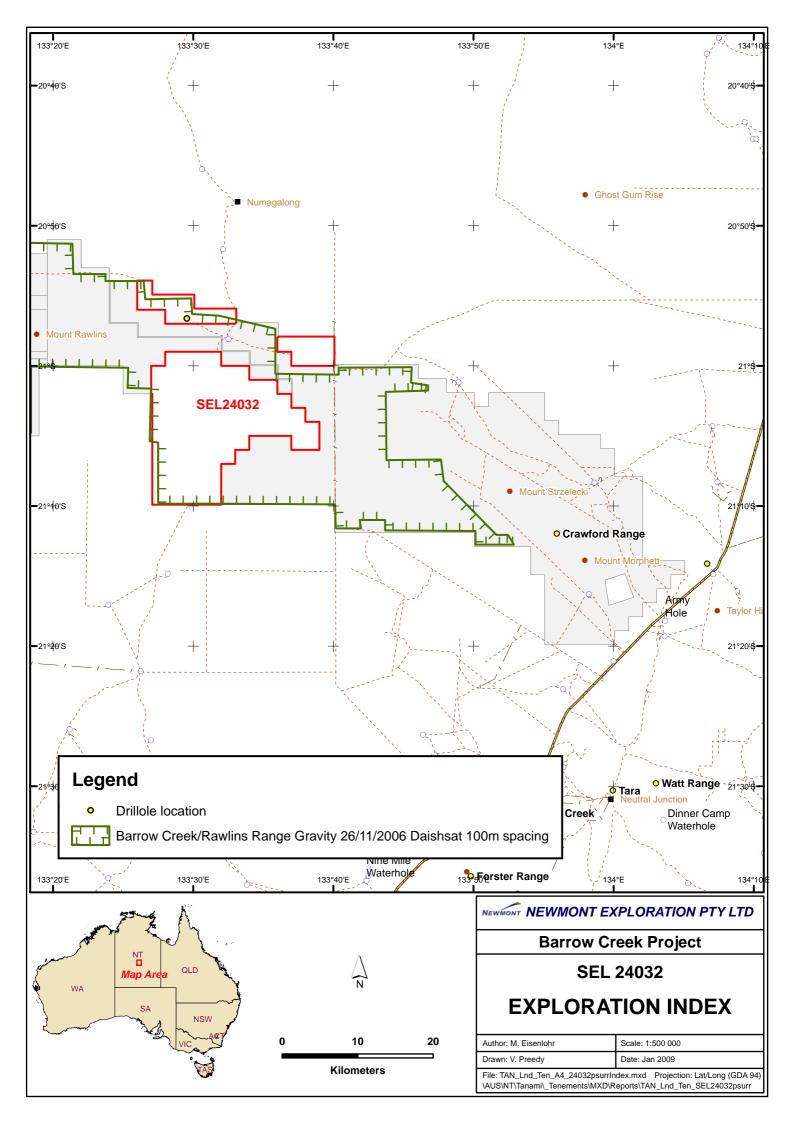
#### **Geophysics**

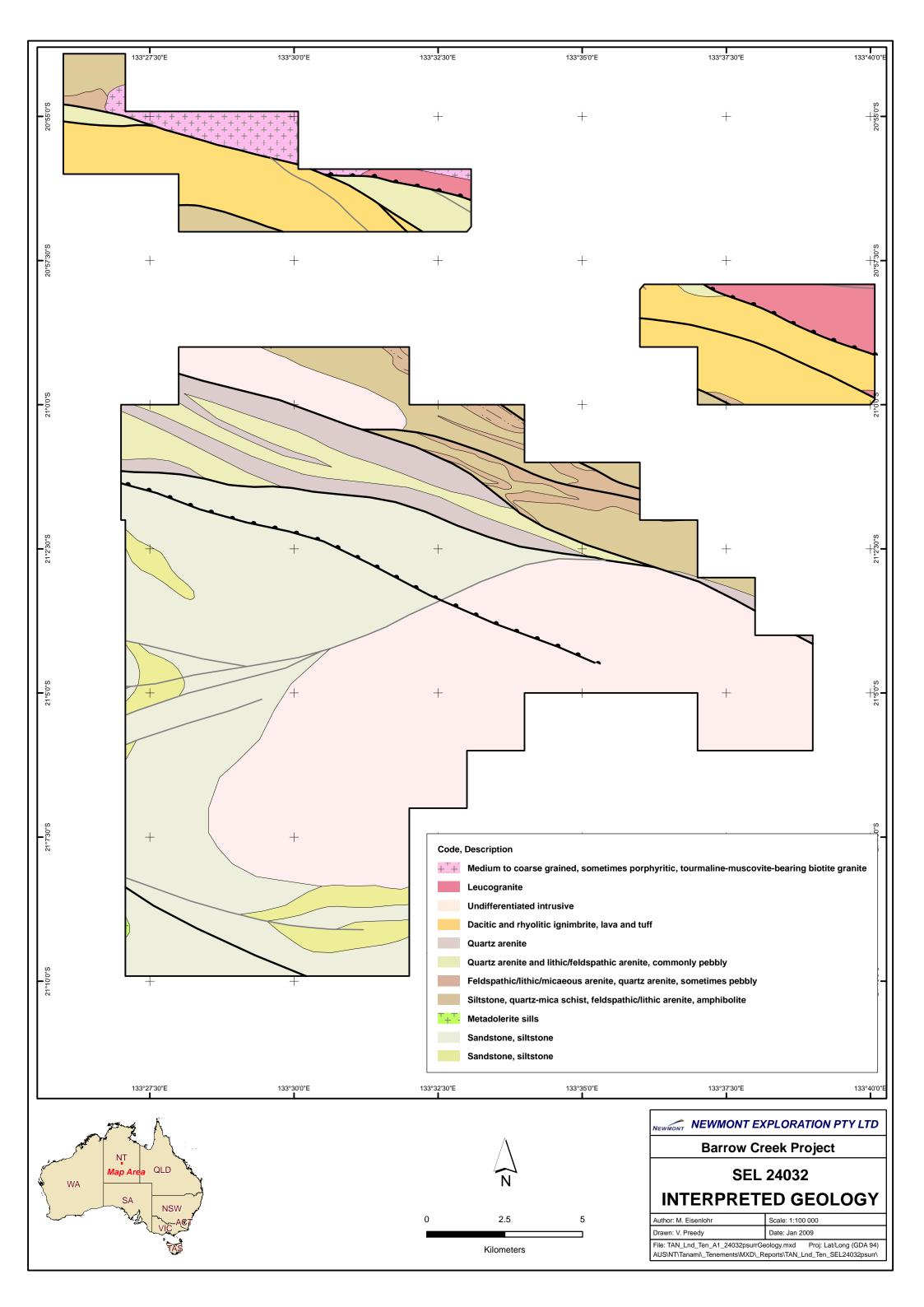
An outcome of the Tanami Framework Study completed during the middle of 2006 was the need for improved gravity and magnetic coverage over the Barrow Creek/Rawlins Range package of tenements.

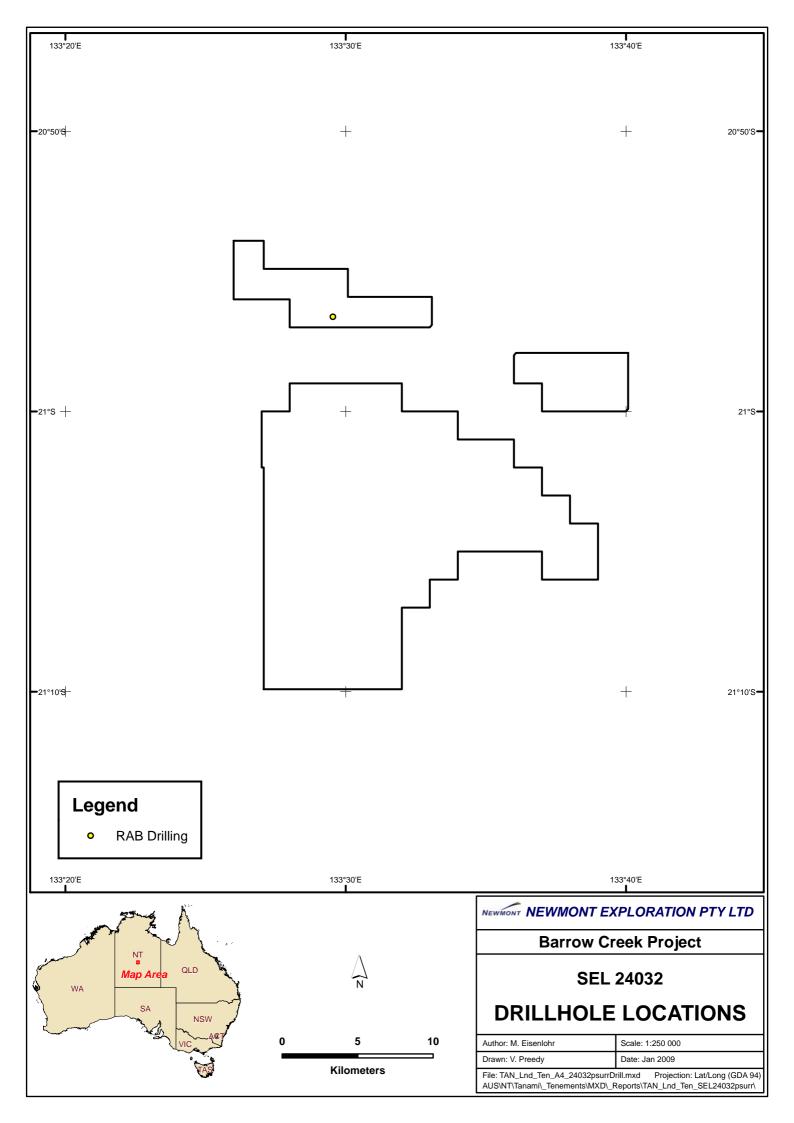
On the 12th November 2006 Daishat began a ground gravity survey assisted by a helicopter. It took 14 days to complete 2923 stations at one kilometre station spacing over the combined Barrow Creek and Lander River tenements (Figure 2).

In July 2007 an aerial magnetic and radiometric survey was flown over the western Rawlins Range tenements.

#### Figure 2 Exploration Index







#### 7. REFERENCE LIST / ANNUAL REPORT BIBLIOGRAPHY

#### References

Haines, P.W. et al., 1991. Explanatory Notes 1:250,000 Geological Map Series, Barrow Creek SF 53-6. Department of Mines and Energy. Northern Territory Geological Survey. Darwin.

Blake, T.U. et al., 1987. Geology of the Proterozoic Davenport Province, Central Australia. Bureau of Mineral Resources, Australia, Bulletin, 226.

Black L.P., 1981. Age of the Warramunga Group, Tennant Creek Block, Northern Territory. BMR Journal of Australia Geology and Geophysics, 6, 253-257.

Shaw, R.D. and Stewart, A.J., 1975. Arunta Block, Regional Geology. In Knight, C. L. (Editor), Economic Geology of Australia and Papua New Guinea: 1 Metals. AusIMM, Melbourne.

# Reports to NT Department of Regional Development, Primary Industry, Fisheries and Resources

Pring, P., Eisenlohr, M., 2008. Partial Relinquishment Report for SEL 24032 (Crawford) for the period 14 Jul 2004 to 13 Jul 2008 Barrow Creek JV Newmont Tanami Pty CR33905

Pring, P., Eisenlohr, M., 2008. Combined Annual Report for EL23887 (Rawlins East) and SEL24032 (Crawford) for the period 15 Jul 2007 to 14 Jul 2008 Barrow Creek JV Newmont Tanami Pty CR33561

Parker, F; 2007. Combined Annual Report for EL 23887 (Rawlins East) and SEL 24032 (Crawford) for the period 15/07/2006 to 14/07/2007 Barrow Creek JV Newmont Tanami Pty CR33468

Walter, M., 2004. Sixth Annual Report for the Barrow Creek Project for the Year ending 31 Dec 2003 Newmont CR31404

Parker, F., 2004. Final report for EL 10013 (Antelope) for the period 20/02/2002 to 15/07/2004 Barrow Creek Joint Venture Newmont CR31701

Whittaker, E.J 2002. Report for the Barrow Creek Project Covering the 2001 Field Season, Newmont NFM Ltd. Newmont RN: 29466.

Whittaker, E.J 2001. Report for the Barrow Creek Project Covering the 2000 Field Season. Normandy NFM Ltd. Normandy RN: 28023.

Smith, M.E.H 2000. Report for the Barrow Creek Project Covering the 1999 Field Season. Normandy NFM Ltd. Normandy RN: 26794.

#### EL 7928 (Crawford)

Smith, M.E.H & Adrichem, S.M., 1999. First Relinquishment Report for EL7928 (Crawford) for the Period 5/2/93 to 4/2/99. Normandy NFM Ltd. Normandy RN: 50033.

Morris, T; 1997a. Fourth Annual Report for EL7928 (Crawford) for the period 06/02/97 to 05/02/98. Normandy Gold, Tennant Creek.

Chambers, C; 1996. Third Annual Report for EL7928 (Crawford) for the period 06/02/96 to 05/02/97. Normandy Gold, Tennant Creek.

Mujdrica, S; 1995a. Second Annual Report for EL7928 (Crawford) for the period 06/02/95 to 05/02/96. Normandy Gold, Tennant Creek.

Kuoni, J; 1994. First Annual Report for EL7928 (Crawford) for the period 06/02/94 to 05/02/95. PosGold, Tennant Creek.

#### 8. BIBLIOGRAPHIC DATA SHEET

HOLDER: Newmont Tanami Pty Ltd

**PROJECT:** Barrow Creek Joint Venture

PROSPECT: Crawford

TENEMENTS: SEL24032

REPORT NUMBER: CR34166

DATE: April 2009

AUTHORS: M. Eisenlohr, P. Pring

STATE: NT

**LATITUDE:** -20°70' to -21°10'

**LONGITUDE:** 133°25' to 134°40'

**1:250,000 SHEET**: Barrow Creek SF53-06

Bonney Well SF53-02 Lander River SF53-01 Mt Peake SF53-05

**1:100,000 SHEET:** Conical Hill 5565

Jarrah Jarrah 5556 Crawford 5655 Numagalong 5656

COMMODITY: gold

**KEYWORDS:** drilling, geological interpretation, gravity survey,

# 9. VERIFICATION LISTING FORM

Exploration Work Type	File Name	Format					
Office Studies							
Literature search							
Database compilation							
Computer modelling							
Reprocessing of data							
General research	051 04000 00005D0 DD5	DDE					
Report preparation	SEL24032_2008FR2.PDF	PDF					
Other (specify)							
Airborne Exploration Surveys							
Aeromagnetics							
Radiometrics							
Electromagnetics							
Gravity							
Digital terrain modelling							
Other (specify)							
Remote Sensing							
Aerial photography							
LANDSAT							
SPOT							
MSS							
Radar							
Other (specify)							
` ' ' ' ' '							
Ground Exploration Surveys							
Geological Mapping							
Regional							
Reconnaissance							
Prospect							
Underground							
Costean							
Ground Geophysics							
Radiometrics							
Magnetics							
Gravity	SEL24032_Final_Gravity.xls						
Digital terrain modelling							
Electromagnetics							
SP/AP/EP							
IP							
AMT							
Resistivity							
•							
Complex resistivity							

Seismic reflection		11			
Seismic refraction					
Well logging					
Geophysical interpretation					
Geochemical Surveying					
Drill sample					
Stream sediment					
Soil					
Rock chip					
Laterite					
Water					
Biogeochemistry					
Isotope					
Whole rock					
Mineral analysis					
All Drilling	Types Undertaken: RAB DRILLING				
Collar	SEL24032_A_01_DrillCollars2008P.txt				
DH_Survey	SEL24032_A_04_DownholeSurveys2008P.txt				
Geology_ Interval	SEL24032_A_02_Lithology2008P.txt				
Geology_Point					
Sample & Assay	SEL24032_A_03_DownholeGeochem2008P.txt				
	SEL24032_A_05_DownholeSample2008P.txt				
Logs	SEL24032_A_07_DownHoleVeining2008P.txt				
	SEL24032_A_08_DownHoleRegolith2008P.txt				