

**FINAL REPORT**

**EL43/2006**

**GOWRIE PARK PROJECT**

**For Period 8 March 2007 to 30<sup>th</sup> June 2008**

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**Distribution:**

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### DIGITAL FILES

EL43\_2006\_200806\_01\_Report.pdf (Report Text)

EL43\_2006\_200806\_02\_File Verification.txt (Report File Verification)

## **SUMMARY**

This is the final report for EL43/2006. Newcrest Mining Limited revised its exploration strategy in early 2008 with the result that Newcrest is no longer exploring in Tasmania. As a consequence, Gowrie Park EL43/2008 is to be relinquished.

Newcrest Mining Limited commenced exploration for gold-rich deposits on being granted EL43/2006 – Gowrie Park on the 8<sup>th</sup> March 2007. The tenement encompasses the northeastern extension of Mount Read Volcanics (MRV) and is located just 34km south of Devonport in northern Tasmania.

Previous exploration by CRAE, Plutonic Operations, RGC Exploration, Aberfoyle and Pasminco has detailed the presence of an extensive, 8km-long, sericite-chlorite-pyrite alteration zone, hosted within felsic volcanoclastics and lavas. The alteration zone, termed the ‘Cethana Alteration Zone’ (CAZ), extends from the Cethana West prospect, east through to Gowrie Park. The CAZ hosts anomalous base metal stringer mineralisation intersected in drilling, which has been interpreted by past explorers to represent sub-seafloor replacement mineralisation.

Newcrest’s exploration work, during tenure has been to re-evaluate the CAZ in terms of its prospectivity for gold-rich polymetallic mineralisation. Reconnaissance geological mapping, rock chip and soil sampling and relogging of historic drill core was undertaken prior to relinquishing the tenement.

## **KEY WORDS**

Exploration; Gold; Copper; Mount Read Volcanics; Cethana; Cethana Alteration Zone; Cethana 4240; Gog 4440; Gowrie Park; Lake Barrington; Star of the West; Gregory’s Road; North Gog.

## **1. INTRODUCTION**

Newcrest Mining Limited explored for gold rich deposits within EL43/2006 on the north east extension of the Mount Read Volcanics. This is the final report for EL43/2006 for the period 8<sup>th</sup> March 2007 to 30<sup>th</sup> June 2008.

### **1.1 TITLE**

#### **Tenement**

EL43/2006 was granted on the 8<sup>th</sup> March 2007 to Newcrest Operations Limited for five years to 7<sup>th</sup> March 2012.

#### **Location**

The tenement covers an area of 141 square kilometres over the northern slopes of Round Mountain, Mount Claude, Roland, Van Dyke and the Gog Range, while to the northwest and northeast, the Dasher and Minnow Rivers form broad valley floors respectively. Refer to Figure 1 for location. Most of the exploration area of interest falls within State Forest. However, in terms of land tenure, the EL also comprises some private land, Crown land, Aurora/ Hydro / Transend land, MDC informal reserve, Staverton Forest Reserve, Promised Land Forest Reserve, Lake Barrington Nature Recreation Area, and parts of the Mt Roland Regional Reserve and Conservation Areas.

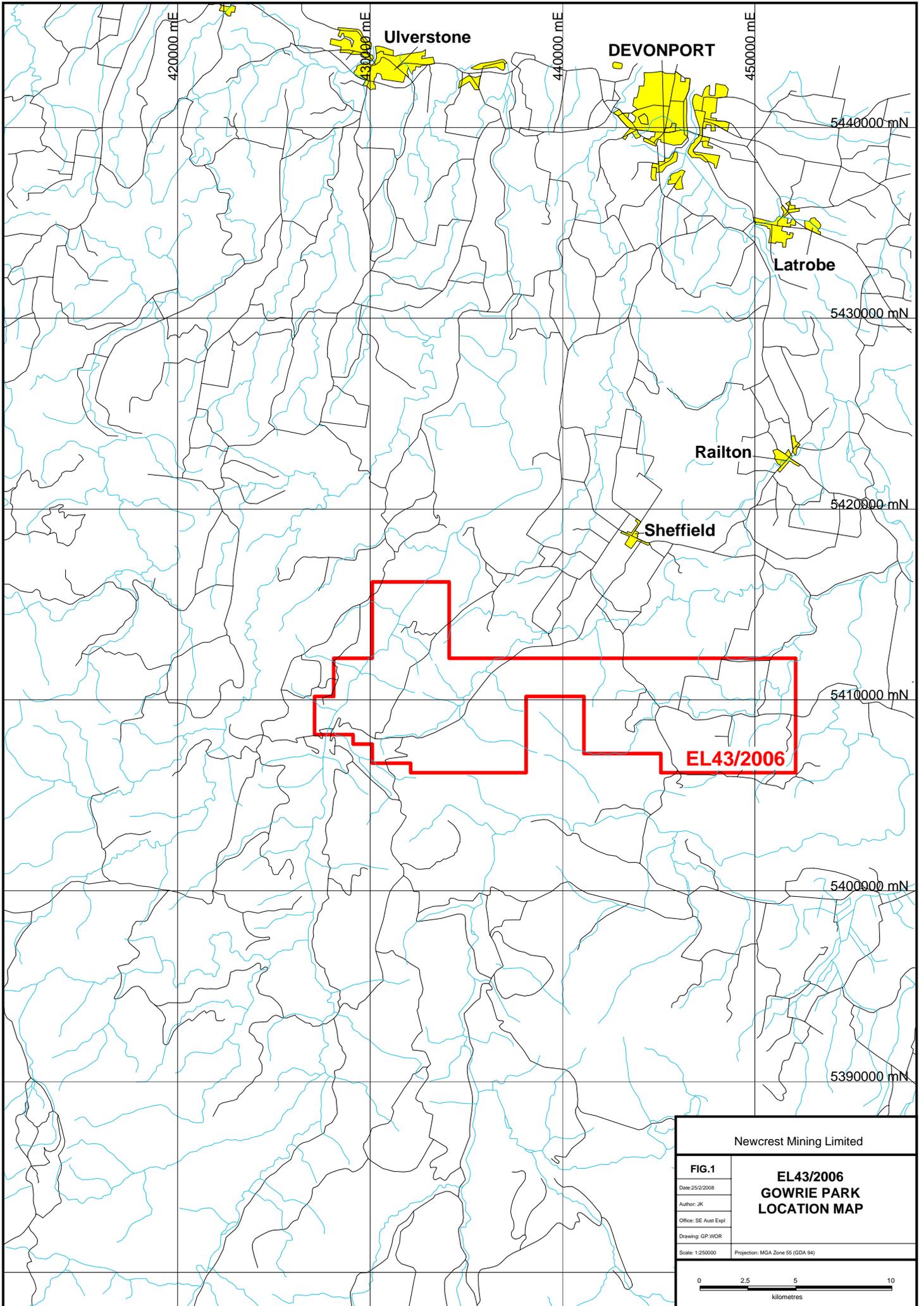
Topographic map sheets covering the area are listed below.

#### **1:25,000 TASMANIA TOPOGRAPHIC MAPS**

CETHANA	4240
WILMOT	4241
GOG	4440
SHEFFIELD	4441

#### **Datum**

All MGA (Map Grid Australia) references are to GDA94\_Zone 55.



Newcrest Mining Limited

**FIG.1**

Date: 25/2/2008

Author: JK

Office: SE Aust Expl

Drawing: GP.WOR

Scale: 1:250000

Projection: MGA Zone 55 (GDA 94)

**EL43/2006  
GOWRIE PARK  
LOCATION MAP**



## 2. PREVIOUS EXPLORATION

Significant phases of past exploration by other companies in the area covered by the tenement is summarised in the First Annual Report. Work included regional stream sediment sampling, extensive soil and rock chip sampling on grids, geological mapping, some IP, EM surveys and both open hole and core drilling.

The main prospects identified along with the best base metal and gold assays are listed below.

### Cethana East and Cethana West Prospects

Three diamond drill holes (DD77CC1, DD77CC2 and DD77CC3) were drilled in the mid 1970's by CRAE to test Pb-Zn soil anomalies.

Best intersections reported were:

DD77CC1: 0.4m @ 8.2% Zn, 0.2% Pb from 78.6m;  
2.0m @ 1.1% Zn, 1.0% Pb, 12 g/t Ag from 98m.

DD77CC3: 33.2m @ 0.14% Zn, 524 ppm Pb from  
20.5m @ 0.13% Zn, 0.11% Pb from 132m

DD77CC5 1.0 m @ 1.18% Cu, 3.88% Zn, 0.8% Pb, 185 g/t Ag and 0.7 g/t Au.

Further cored holes and percussion drilling failed to improve on the general tenor of mineralisation. Best intersection in follow-up drilling was:

DD77CC6 – 3.0m @ 1.4% Zn, 0.49% Pb and 3.5 g/t Ag

### Gowrie Park Prospect

In the late 1970's three diamond drill holes were drilled at Gowrie Park prospect by CRA after extensive geological mapping, geochemical sampling, IP and magnetic surveys were conducted.

The best intersections was in hole DD77GPC3:

9.4m @ 1.1% Pb and 0.4% Zn from 34.0m;  
Including: 3.0m @ 1.8% Pb, 0.5% Zn from 36.7m;  
and 1.0m @ 2.8% Pb, 1% Zn and 14 ppm Ag from 41.6m.

Further drilling in the 80's returned some minor anomalous gold intersections with a maximum value of 2.0m @ 1.0 g/t Au in hole DD77GPC1.

### **Lake Barrington Prospect**

After the Lake Barrington prospect was identified by Asarco in 1974, CRAE completed mapping, rock sampling, magnetic and dipole-dipole IP surveys and two diamond drill holes.

Drill holes intersected dispersed copper mineralisation and one minor ( $\pm 10$  cm) semi-massive sulphide band. Significant intersections included:

DD80LB1     15.2m @ 0.38% Cu from 31.5m.  
DD80LB2     16.0m @ 0.31% Cu from 270m.  
DD82LB3     15.85m @ 1.17% Cu, 12 g/t Ag from 156.6m,;  
                  5.15m @ 2.45% Cu, 23 g/t Ag, 0.18 g/t Au from 167.3m,;

### **Star of the West Mine**

Gold was reported to occur in lenticular quartz veins hosted within a feldspar-hornblende porphyry, as well as within the friable matrix of the porphyry in a shaft dug in the 1890's.

Reconnaissance rock chip sampling by CRAE in 1980 returned anomalous gold in outcrop (up to 1.18 g/t Au) but little further work was done.

### **Gregory's Road Prospect**

Minor gold anomalism reportedly occurs in quartz tourmaline breccia veins hosted in gabbroic to tonalite intrusives. In 1984, Austamax collected some rock chip samples with best value of 0.24 g/t Au. No other significant previous work.

### **North Gog Prospect**

C-horizon soil data was collected over the West Gog Range, just south of EL43/2006 by Aurion Gold in April-May 2002. An extensive Au-Cu-As anomaly was defined which is open to the north and extends onto EL43/2006. Aurion Gold also mapped silica-sericite altered volcanics on their grid with fine quartz-limonite-hematite veining similar to that of the Firetower prospect.

### **3. EXPLORATION STRATEGY**

#### **Target**

Newcrest was exploring for high grade polymetallic gold deposits. In particular, the Henty style of gold deposit was considered an attractive target.

#### **Strategy**

The basic exploration strategy is to compile previous geological mapping, geochemical and geophysical work, combine with additional selective geochemical and geophysical surveys and interpret to define drill targets.

A review of previous exploration suggested there is still good potential for stratabound gold-rich polymetallic VHMS mineralisation to occur at depth beneath known mineralisation within the Cethana Alteration Zone. In addition there are dozens of historic workings and prospects, some of which were considered worthy of follow-up.

### **4. RECONNAISSANCE MAPPING**

Reconnaissance geological mapping was conducted at the Lake Barrington prospect and the Cethana Alteration Zone in the western portion of the exploration license. Reconnaissance field mapping was also completed over the Star of the West, Gregory's Road and North Gog prospects on the northern flanks of the Gog Range.

### **5. CETHANA ALTERATION ZONE CORE RELOGGING**

Three historic diamond drill holes from the Cethana Alteration Zone were relogged at the Mineral Resources of Tasmania core library. They were DD77GPC1 (Gowrie Park), CED2 (Cethana East) and DD86CC13 (Cethana West).

The main features that were observed between the three prospects are as follows.

- 1) The eastern most prospect at Gowrie Park is dominated by more massive quartz-feldspar phyric ?lava or welded tuff and minor quartz-feldspar phyric volcaniclastic units. The central East Cethana prospect consists predominately of crystal rich tuffaceous siltstones and sandstones with minor felsic lavas, while the western most prospect, Cethana West consists almost entirely of coarse tuffaceous sandstone with a greater lithic component.

- 2) Alteration in general is zoned from east to west from sericite±quartz-pyrite to sericite-chlorite-hematite to chlorite-albite-hematite-sericite. Strongest intensity of sericite-quartz-pyrite alteration was observed at the eastern most prospect at Gowrie Park and is associated with strongest gold anomalism.
- 3) The intensity of foliation in the interpreted felsic “footwall sequence” decreases from west to east. This appears to reflect the lithological control of the host rocks during alteration and subsequent deformation.
- 4) Sulfide content generally decreased towards the west, however the central portion of the CAZ contained increased levels of pyrite.

## **6. SURFACE GEOCHEMISTRY**

### **6.1 ROCK CHIP SAMPLING AND PETROGRAPHY**

Fourteen reconnaissance rock chip samples were collected from three gold and gold-copper prospects within the Gowrie Park EL. One sample was collected from the Gregory’s Road prospect and 13 samples were taken from the Star of the West prospect. Results were disappointing.

Three selected samples were submitted to Mason Geoscience Pty Ltd for petrographic analysis. Results are reported in the First Annual Report.

### **6.2 SOIL SAMPLING**

Soil sampling programs were conducted at North Gog, Gregory’s Road and the Star of the West prospects. The soil sampling program was designed to provide better target definition for drill planning for the eastern portion of the Gowrie Park EL.

Soils tend to be thin, low fertility, acidic, skeletal duplex podsols having developed in a post glaciation environment on Cambrian aged rhyolite-andesite volcanics. All samples taken were classed as “C-horizon” on the basis that they are basal soils and include some rock fragments from the underlying bedrock.

Assays for soil samples were completed by Australian Laboratory Group (ALS) at the Orange ALS laboratory facility. Analytical techniques used on the samples were Au-AA26 for gold and ME-ICP41s for a suite of elements including Cu, Pb, Zn, Ag, As, Ba, Mn, Fe, S, Bi, Cd, Co, Mo, Sb and Tl.

### **6.2.1 North Gog Soil Sampling**

A total of 56 C-horizon soil samples were collected over 2.2 line kms on three cleared grid lines at the North Gog Au-Cu prospect, in the eastern portion of the Gowrie Park EL. The results show a weak coincident Au, Cu  $\pm$ Zn anomaly (165 x 250m) located in the southern portion of the grid. The Au-Cu anomalism is principally constrained to rhyolitic-dacitic volcanics, similar lithologies to those that host the West Gog anomalism and Firetower prospects. The anomaly is open to the east and has the potential to extend westward beneath the talus covered slopes of Mt Roland. However, because of its limited extent, it is unlikely to represent a large tonnage target that would be of interest to Newcrest Mining Limited.

### **6.2.2 Star of the West Soil Sampling**

At Star of the West, a total of 84 C-horizon soil samples were collected on three north-south oriented 'bush lines' at 200m spacings with samples collected at 25m intervals. The sampling program aimed to follow up gold anomalism in soils (56 ppb Au) and rock chips (1.18 g/t Au) delineated by CRA Exploration.

The soil sampling program, failed to replicate the anomalism identified by CRA. Only one sample (NTS0435) returned anomalous gold in soils (0.257 g/t Au). A weak, but broad 400m-long copper anomaly, up to 85 ppm Cu, is apparent on the eastern most line. The absence of any apparent hydrothermal alteration, visible veining or mineralisation in outcrop and no clear explanation for the gold anomalism, it is unlikely that the Star of the West prospect holds the potential of representing a large tonnage gold target.

### **6.2.3 Gregory's Road Soil Sampling**

Two "bush lines" of C-horizon soils totaling 28 samples were completed over the Gregory's Road prospect. Assay results across both lines were poor and no definitive gold anomalism was identified. The best result, 0.01 g/t Au was detected in NTS0385. A weak copper anomaly up to 304 ppm Cu is apparent at the western end of the southern line. No further work is recommended at this prospect.

## **7. PLANNED WORK**

Newcrest's exploration strategy has changed and no further exploration is planned in Tasmania at this stage. The tenement EL43/2006 is to be relinquished.

## 8. ENVIRONMENT

The exploration program required the cutting and of pegging of three north-south oriented grid lines for a total of 2.2 line kms over the North Gog prospect, from which C-horizon soil samples were collected. The grid lines were completed by Rogers Exploration Services, through vegetation classified by TasVeg as predominately Eucalyptus oblique – dry forest and woodland, Eucalyptus oblique – wet forest, Eucalyptus amygdalina – Eucalyptus oblique damp sclerophyll forest, Acacia dealbata forest and Plantations for silviculture. Lines were pegged at 50m intervals with wooden pegs and flagging tape. See photo below for example of line.



*Photo of soil sample cut grid line at North Gog Prospect*

Soil sampling at Star of the West and Gregorys Road prospect were conducted on ‘bush lines’ simply using compass and GPS with no cutting necessary. Photo below illustrates the nature of the vegetation.



*Photo of soil sample 'bush line' at Star of West Prospect*

For *Phytophthora cinnamomi* (*Pc*) hygiene management, all boots and gaiters were washed before going to a new area/line and at the end of each day. In addition all soil sampling implements used had all dirt removed before moving on to the next station/site.

## 9. EXPENDITURE

**EXPENDITURE  
EL43/2006  
GOWRIE PARK PROJECT**

**For Period 1<sup>st</sup> March 2007 – 30<sup>th</sup> June 2008**

ITEM	EXPENDITURE
SALARIES	\$4,558
FIELD COSTS	\$164
MISCELLANEOUS OFFICE COSTS	\$1,006
TRAVEL/ACCOMM	\$2,172
LAND AND LEGAL	\$63
<b>TOTAL EXPENDITURE</b>	<b>\$5,951</b>

## 10. BIBLIOGRAPHY

*Kitto.J., Morrison, K. 2008: First Annual Report EL43/2006 Gowrie Park For Period 8<sup>th</sup> March 2007 to 7<sup>th</sup> March 2008*