

#### **About Artemis Resources**

Artemis Resources is an ASX-listed mineral exploration company with a focus on gold and base metals:

#### **Key Gold Projects**

Mt Clement – gold/copper (WA) Yandal – gold (WA)

West Pilbara – gold/base metals (WA)

Artemis' corporate strategy is to maximise shareholder returns through a combination of exploration success and quality project acquisition.

The Company's focus on gold is viewed as an important growth strategy for the Company.

#### **Australian Securities Exchange**

Code: ARV

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# ASX Announcement 16 January 2013

## Mt Clement Review Reveals Significant Antimony Exploration Target

### **Highlights**

- Review of Mt Clement Project identifies significant antimony mineralisation
- Historical drilling defined antimony-lead mineralisation at Eastern Hills prospect
- ✓ Exploration target: 830,000t at 1.7% Sb and 2.4% Pb
- ✓ Artemis plans 2013 drilling to upgrade exploration target to a JORC compliant resource
- ✓ Initial metallurgical testing indicated that recoveries for antimony and lead up to 98% are possible
- ✓ Antimony prices have surged almost 200% over past
   4 years, currently at ~US\$12,000 per tonne

Artemis Resources Limited (ASX: ARV) is pleased to provide 2013 exploration objectives for the Eastern Hills prospect, part of the Mt Clement Gold Project in the Ashburton region of Western Australia (Figure 1). The Mt Clement Gold Project (ARV 80%) is a joint venture with Northern Star Resources Ltd (ASX: NST 20%), operator of the nearby Paulsens Gold Mine, where production is forecast to rise to 100-115,000oz gold in calendar year 2013 on the back of recent exploration success (See NST ASX Announcement 12 December 2012). The Mt Clement gold deposit contains an Inferred Resource of 1.13Mt at 1.8g/t Au and 17.0g/t Ag (64,000oz gold and 618,000oz silver contained) that is compliant with the JORC Code (2004)<sup>1</sup>.

As part of a review of the Artemis project portfolio at the end of 2012, Artemis has identified historical antimony-lead mineralisation at the Eastern Hills location, less than one kilometre to the southeast of the Mt Clement gold deposit (Figure 2).



<sup>&</sup>lt;sup>1</sup> Mt Clement Inferred Resource previously reported in ASX Announcement dated 26 July 2011



#### **EASTERN HILLS ANTIMONY-LEAD DEPOSIT**

The Eastern Hills prospect was originally drilled by BHP in the mid 1970s with a single drill hole as part of a broader drilling program for gold at the Mt Clement gold deposit. In the mid 1990s, Taipan Resources NL (ASX: TAI) defined a zone of lead-antimony (Pb-Sb) mineralisation based on 19 reverse circulation (RC) holes, as outlined in an internal report<sup>2</sup>. A review of historical exploration at Eastern Hills suggests that there is potential for an initial *Exploration Target* 830,000 tonnes at a grade of 1.7% Sb and 2.4% Pb. The Eastern Hills *Exploration Target* also contains precious metal credits of around 0.22g/t gold and 26g/t silver.

It should be noted that as this is an *Exploration Target* only, the potential quantity and grade is conceptual in nature, there has so far been insufficient exploration to define a Mineral Resource in compliance with the JORC Code and it is uncertain if further exploration will result in the determination of a Mineral Resource as defined by the JORC Code.

The Eastern Hills deposit was not previously considered relevant given the Company's prime objective of gold exploration and discovery, as well as the relatively weak commodity prices for both lead and antimony. However substantial commodity price increases over recent years have led to a re-evaluation of this prospect's potential.

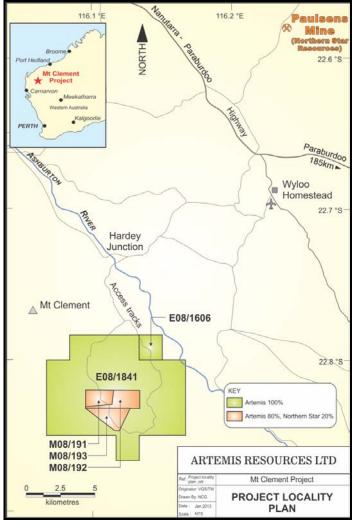


Figure 1 - Mt Clement Project - Location map

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<sup>&</sup>lt;sup>2</sup> Eastern Hills Project Resource Report, Taipan Resources NL internal report, November 1997



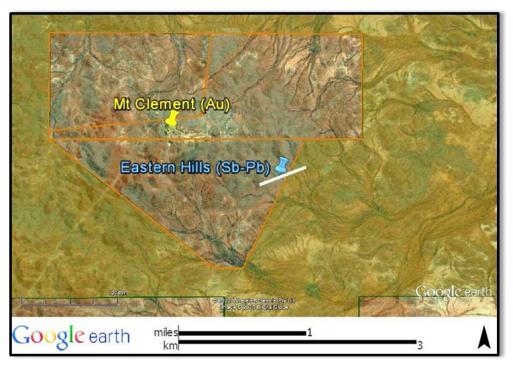


Figure 2 Eastern Hills location on Google Earth image

The Eastern Hills antimony-lead deposit consists of a zone of mineralisation up to two metres wide associated with a fault structure and outcropping over a strike length of at least 600 metres. The dominant fault structure trends ENE (Figure 3) and dips steeply (80 degrees?) to the SSE, however appears to splay into multiple (three?) structures at its eastern end. In contrast, the host rocks – a package of sandstones and siltstones – are striking W-WNW and are thus cut obliquely by the mineralised structure.

The antimony-lead mineralisation occurs as massive sulphides bounded by a broader zone of disseminated sulphides. The mineralisation contains high levels of antimony and lead, as well as minor gold and silver, associated with a linear quartz vein represented at surface by a thin, outcropping gossanous zone.

Sulphide mineralogy consists of arsenopyrite, pyrite and boulangerite – a lead-antimony sulphide – with minor pyrrhotite, chalcopyrite and galena. Both arsenopyrite and pyrite extend into the disseminated zone for up to eight metres, forming a mineralised zone up to ~15 metres wide.

A preliminary **metallurgical assessment** was designed by Normet and commissioned to Ammtec by Taipan. While the actual report providing details of this testwork is not currently available to Artemis, the following summary is provided in Taipan's 1997 internal report<sup>2</sup>.

A 20kg "ore grade" sample composite was subjected to gravity separation and flotation recovery with the objective of producing a high grade antimony-lead concentrate. Mineralogical examination of drill chips identified boulangerite  $(Pb_5Sb_4S_{11})$  as the main sulphide along with arsenopyrite, pyrite and pyrrhotite. Rougher flotation using potassium amyl xanthate (PAX) and two recognised activators yielded high Sb and Pb recoveries – greater than 98%.



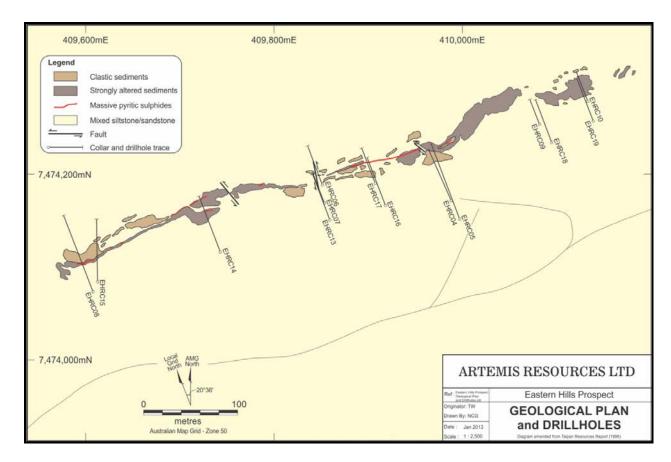


Figure 3 Eastern Hills drill hole plan and geology

#### **EASTERN HILLS EXPLORATION TARGET**

The purpose of defining the exploration target at Eastern Hills is to demonstrate the potential size and scale of the deposit's metal endowment, where Artemis expects that its 2013 exploration activities will lead to the estimation of a mineral resource, in accordance with the JORC Code.

Historically 19 reverse circulation (RC) drill holes were completed by Taipan Resources NL in 1996 and 1997 for a total of 1,975 metres. These two drilling campaigns successfully demonstrated continuity of the antimony-lead mineralisation along a strike length of at least 600 metres (Figure 3) and to a vertical depth of 120 metres however the mineralisation remained open, both at depth and along strike. There has so far been no follow-up exploration of this deposit to assess the further potential of the Eastern Hills deposit, nor formulate a mineral resource estimate in accordance with the JORC Code.

Artemis' **Exploration Target** has been estimated using a range of factors including:

- The strike of the known mineralised structures
- The steep dip of the known mineralised structures
- Historical exploration results
- The nature of narrow vein metallic deposits



Historical grade modelling of the mineralised zone was undertaken by Taipan<sup>2</sup> utilising the following parameters:

**Mineralised zones** – zones of mineralisation were delineated on cross sections based on a cutoff grade of 3.0% Pb equivalent (PbEq) where PbEq was calculated using the equation Pb +  $(3.1 \times Sb)$ . Significant intersections are shown in Table 3. A review of historical commodity prices indicates that average lead and antimony prices for the month of November 1997 were 26c/lb (Pb) and 83c/lb (Sb), a ratio of 1 to 3.2.

Top cut - no upper cutoff grade was used

Minimum width – the minimum downhole width used was 1 metre

**Dilution** – internal dilution was included, however there is no indication of the maximum internal dilution width allowed in the estimation.

**Average grades** – grades for antimony, lead, gold and silver were modelled within the sectional mineralised zone using weighted average grades relative to drill hole intercept width and the polygonal method.

The following (Table 1) are assumptions that have been utilised in estimating the Eastern Hills *Exploration Target* as per the JORC Code:

Table 1 Eastern Hills Exploration Target parameters

Parameters	Minimum	Maximum	
Strike length (m)	575	775	
True width (m)	1.7	2.3	
Vertical depth (m)	120	200	
SG	3.5	3.5	
Tonnes (t)	410,000	1,250,000	
Sb Grade (%)	1.5	1.9	
Pb grade (%)	2.1	2.7	
Au grade (g/t)	0.22	0.22	
Ag grade (g/t)	26	26	

Consequently, the arithmetic average calculated from the range of values in Table 1, results in an estimated **Exploration Target for Eastern Hills of 830,000 tonnes at 1.7 % Sb and 2.4% Pb** (with accessory gold at 0.22g/t and silver at 26g/t).

The Eastern Hills *Exploration Target* incorporates potential quantity and grade, and is therefore conceptual in nature. There has been insufficient exploration to define a Mineral Resource in compliance with the JORC Code and it is uncertain if further exploration will result in the determination of a Mineral Resource as defined by the JORC Code.

Artemis is continuing to review the geological interpretation and historical results at Eastern Hills with the objective of defining drill targets to validate the historical drilling as well as testing the extensions to mineralisation, both along strike and at depth.



#### **EASTERN HILLS PROPOSED PROGRAM**

Artemis believes that the Eastern Hills deposit now has significant relevance, based on the antimony price surge, and is planning to commence exploration activities in 2013, with the objective to confirm the *Exploration Target* and upgrade it to a resource estimate that is compliant with the JORC Code (2004), as well as expanding the resource both down dip and along strike.

Artemis will also be assessing its strategic options as there has been significant interest in antimony projects in Australia over recent years. While Hillgrove (New South Wales), Costerfield (Victoria) and Blue Spec (WA) Australia's major antimony projects, are strongly associated with high grade gold mineralisation, the Eastern Hills deposit displays grade and size similarities with the Wild Cattle Creek antimony resource in northeastern New South Wales (Table 2). Wild Cattle Creek was the main target in a successful takeover of Anchor Resources Ltd (ASX: AHR) by a Chinese diversified mining group in mid 2011.

Table 2 Comparable Australian antimony deposit

Deposit	Category	Tonnage	Sb grade %	Au grade g/t	Pb grade %	W grade ppm	Sb Metal (tonnes)
Eastern Hills	Mineralisation Target	830,000	1.7	0.22	2.4	-	14,100
Wild Cattle Creek <sup>3</sup>	Indicated + Inferred Resource	1,060,000	1.77	0.23	-	332	18,700

The exploration program envisaged will include a thorough review of all Eastern Hills historical data, field reconnaissance and verification of geological interpretation, re-analysis of surface outcrops for confirmation of mineralisation, planning and undertaking a campaign of RC drilling to both confirm previous drilling and extend the mineralisation at depth and along strike. Artemis intends to engage a Competent Person to take responsibility for the process leading to estimation and reporting of mineral resources in accordance with the JORC Code during calendar year 2013.

#### **ANTIMONY PRICES AND MARKET**

Antimony is a specialty metal, commonly found in nature in its sulphide form of stibnite. Saleable products include antimony metal (ingot) and antimony trioxide, a white powder. Its uses include:

- fire retardant agent
- hardening/strengthening agent for lead and zinc alloys
- lead batteries, ammunition
- catalyst in PET (plastics) production
- ceramics

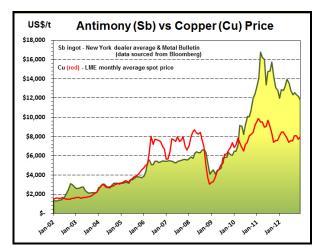
In 1997, when Taipan discovered the Eastern Hills mineralisation, the antimony price was depressed, at or below US\$2,000 per tonne and the lead price was around US\$550 per tonne. Global commodity prices, and specifically antimony prices, have undergone a significant surge, particularly in the past four years, following a period of sustained rises over the past decade (Figure 4).

<sup>&</sup>lt;sup>3</sup> Wild Cattle Creek Mineral Resource at 0.5% Sb cutoff, in compliance with JORC Code, as per AHR Annual Report 2012



For some years, antimony and copper prices have tracked very closely (Figure 4). But despite the robust consistency of copper pricing over recent years, since early 2010, the antimony price has de-coupled from its more famous base metal "cousin" and has surged to record highs with antimony pricing currently 50% higher than that of copper.

Since the record monthly average price for antimony ingot reached US\$16,800 per tonne in March 2011, antimony prices have remained strong, currently trading at around US\$12,000 per tonne, a six-fold increase since the Eastern Hills deposit was first reported in 1997. This has the potential to significantly enhance the economic parameters of the Eastern Hills deposit.



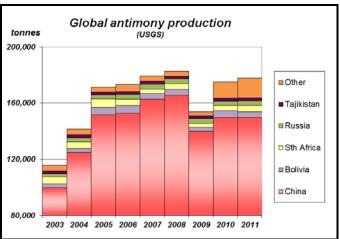


Figure 4 Antimony price vs copper price

Figure 5 Annual global antimony production by country

Global antimony output has been dominated by the Chinese for many years (Figure 5). However, with lower output from China since 2009, new sources of antimony are required. The Chinese-owned Beaver Brook mine in Canada filled that void in 2010 and 2011 but recent announcements indicate that this mine is to be closed down.

- Global output rose almost 70% from 2003 to 2008 and has stabilised post GFC
- Despite post GFC falls, China dominates global production (~85% in 2011 USGS)
- China has imposed export quotas on strategic commodities such as antimony over recent years
- "Other" dominated by Canada in 2010-11 (Figure 5)
- Remainder of output from high sovereign risk countries
- China production decreases reinforce the need for new antimony sources

This reliance on China as a source of global antimony has led to the European Commission placing antimony on its list of 14 Critical Raw Materials, based on supply risk, economic importance and environmental country risk.



Table 3 Eastern Hills Significant Drillhole Intersections<sup>4</sup>

Drillhole No.	From (m)	To (m)		Intersection width (m)	Sb grade (%)	Pb grade (%)	Au grade (g/t)	Ag grade (g/t)
EHRC04	111.0	116.0		5.0	0.6	0.6	0	10
	119.0	121.0	incl	2.0	1.0	1.1	0	15
EHRC05	116.0	131.0		15.0	1.0	1.2	0.1	10
	118.0	120.0	incl	2.0	2.8	3.3	0	24
	126.0	128.0	and	2.0	1.9	2.2	0.1	21
EHRC06	27.0	33.0		6.0	1.3	3.5	0.4	20
	27.0	28.0	incl	1.0	5.2	13.0	1.3	47
EHRC07	46.0	47.0		1.0	2.9	10.0	4.5	54
	54.0	57.0		3.0	7.9	12.4	1.6	55
	55.0	56.0	incl	1.0	15.0	29.5	3.4	105
EHRC08	65.0	66.0		1.0	3.0	1.1	0.2	42
EHRC09	38.0	47.0		9.0	0.7	0.9	0	4
EHRC10	21.0	24.0		3.0	0.4	1.7	0.2	13
	28.0	32.0		4.0	2.3	3.1	0.2	52
	31.0	32.0	incl	1.0	8.2	10.3	0.5	200
	46.0	47.0		1.0	1.1	1.4	0	2
EHRC13	84.0	88.0		4.0	2.2	4.1	0.8	46
EHRC14	43.0	44.0		1.0	1.4	0.3	0.1	8
EHRC15	74.0	75.0		1.0	1.8	2.1	0	7
	85.0	90.0		5.0	0.7	0.7	0	8
	108.0	109.0		1.0	0.7	0.9	0.1	14
	122.0	125.0		3.0	1.2	1.4	0.1	34
	127.0	128.0		1.0	1.8	2.0	0.1	1
EHRC16	85.0	89.0		4.0	1.3	2.8	0.1	29
EHRC17	39.0	42.0		3.0	1.5	2.7	0.1	20
EHRC18	70.0	71.0		1.0	1.0	6.8	0.4	127
EHRC19	85.0	88.0		3.0	1.4	4.0	0.2	62
	94.0	95.0		1.0	1.1	1.4	0	10

 $<sup>^4</sup>$  Significant intersections were selected based on a cutoff grade of 3.0% Pb equivalent (PbEq) where PbEq was calculated using the equation Pb + (3.1 x Sb). Average grades for intervals >1m were calculated as a weighted average of thickness x grade.



#### **ABOUT ARTEMIS RESOURCES**

Artemis Resources Limited is a resources exploration company with a focus on its prospective Mount Clement, Yandal and West Pilbara gold projects in Western Australia. These projects have significant exploration potential and close proximity to existing important deposits or producing mines. Artemis aims to develop a significant gold inventory through exploration and acquisitions which have the potential to become mines and create shareholder value.

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#### **Competent Person Statements**

The information in this document that relates to Exploration Results and Exploration Targets is based on information compiled or reviewed by Mr Trevor Woolfe, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Woolfe is a consultant to the Company, and is employed by Alexander Cable Pty Ltd. Mr Woolfe has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Woolfe consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this document that relates to Mineral Resources at the Mount Clement Gold Project is based on information compiled by Mr Steven Nicholls, who is a Member of Australian Institute of Geoscientists. Mr Nicholls has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Nicholls of Apex Geoscience Limited consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Company's Exploration Target includes potential quantity and grade and is conceptual in nature. There has been insufficient exploration to define these mineral resources and it is uncertain if further exploration will result in the determination of mineral resources.