

# PacMag Metals Limited

## QUARTERLY REPORT 31<sup>st</sup> MARCH 2009

### Activities During the Quarter

- At the Sentinel Project North Dakota USA, the Company received further positive metallurgical testwork that demonstrates high leach recoveries for uranium - molybdenum and germanium mineralisation using acid or alkaline solutions. The best results to date of leaching Sentinel ash indicate near total dissolution of the uranium, up to 91% for molybdenum and up to 71% of the germanium.
- The company held meetings with major international germanium consumers, who confirmed a substantial market exists for a potential new North American based germanium producer.
- Check analysis programs that form a portion of the resource estimate process indicated a potential systematic "under-call" of the previously reported uranium grades of early drill assay batches. The resource calculation has been delayed pending finalization of the re-analysis programs, the estimate is now anticipated to be completed by end May early June.
- Detailed mapping was completed at the Shamrock high-grade copper project in Nevada USA, confirming the strong copper potential of the project. Drill design has been finalised and a drill rig is being sought to conduct the program.
- PacMag is pleased to advise of a new 100% owned copper project in central Western Australia, where previous shallow drilling as part of an exploration program targeting diamonds intersected copper mineralisation grading 4m @ 2.43% copper from 58 – 62 metres (to the end of hole). Heritage surveys are planned shortly as a prerequisite to drill follow up.
- The Company secured a new gold project in the Tropicana District Western Australia. Full data compilation is in progress and will be released to the market shortly.

### Corporate

- Current cash and equities total \$3.8 million.

### Details of Planned Programs

- Drill testing of the Shamrock high-grade copper project.
- Blue Hills copper oxide target (Nevada) mapping and drill program design.
- Sentinel uranium, germanium, molybdenum project;
  - Resource estimation
  - Metallurgical testwork
  - Continuing expansion of land position.
- Ongoing assessment of new resource opportunities.

### ASX:PMH

### Board of Directors:

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Non-Exec: E Althaus

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## PROJECTS

### SENTINEL URANIUM-GERMANIUM-MOLYBDENUM PROJECT

(North Dakota, USA) – PacMag 100%

The Church deposit forms the central 6600 acre portion of the Company's 100% owned Sentinel uranium-germanium-molybdenum project, which covers in excess of 25,000 acres in Western North Dakota USA.

The target at Sentinel is multiple, near surface (less than 20 metres depth), stacked, sub-horizontal, high-grade uranium-germanium-molybdenum mineralisation zones that occur at the top of coal (lignite) horizons. Based on drilling to date (419 holes) at the Church Deposit (the first of several prospects to be tested), the host lignite seams are flat lying to very gently dipping and are generally 0.5 to 5 metres thick with the upper 0.5 – 1.5 metre portion carrying the highest grades of uranium and molybdenum mineralisation, whilst germanium occurs in multiple stacked layers.

Continuous mineralisation has been identified in drilling over in excess of 3km of strike and resource modelling is in progress with results anticipated to be released next quarter 2009.

#### Resource Estimate

During the quarter, work continued on the Sentinel resource model. Check analysis programs that form a portion of the resource estimate process, indicate a potential systematic "under-call" of the previously reported uranium grades for some early drill assay batches. The resource calculation has been delayed pending finalisation of re-analysis programs, that to date have shown the new assays to be consistently higher in uranium grades for selected early drill assays.

Separate check assay re-analysis programs are currently in progress for molybdenum and germanium. Once the check assay program is completed in May the resource estimate can be finalised.

#### Metallurgical Testwork

Metallurgical testwork has indicated that the Sentinel mineralisation is amenable to dissolution by several different acid and alkaline solutions, following pre-concentration by ashing. The Company is conducting testwork to determine the most effective of these solutions as part of the recovery process. As the mineralisation contains three potentially valuable mineral products with varying metallurgical response, the testwork is designed to establish which process route will provide the highest practicable mineral product recovery, at the lowest processing and capital costs for the combined three metals.

During the quarter, further positive metallurgical testwork has demonstrated high leach dissolution for the Sentinel uranium - molybdenum and germanium mineralisation using acid or alkaline solutions. The best results to date of leaching Sentinel ash indicate near total dissolution of the uranium, up to 91% for molybdenum and up to 71% of the germanium.

*First phase resource drilling and resource extension drilling completed (419 holes) on the first of several prospects.*

*Excellent continuity and consistency of mineralisation.*

*Check assay program nearing completion, resource estimate pending.*

*Excellent uranium – germanium and molybdenum metallurgical results.*

A further 4 leach tests were conducted with the following results:

- Alkaline leach 1 - dissolving 82% uranium, 79% molybdenum and 60% germanium;
- Alkaline leach 2 – dissolving 79% uranium, 82% molybdenum and 71% germanium;
- Acid leach 1 - dissolving 99% uranium, 91% molybdenum but low germanium;
- Acid leach 2 – dissolving 99% uranium, 88% molybdenum but low germanium.

The company is continuing with additional leach testwork, with the current focus on increasing the germanium dissolution above 71%.

## ANN MASON

(Nevada, USA) - PacMag 100%

The 100% PacMag owned Ann Mason project in Nevada, USA boasts a mineral resource of 810 million tonnes @ 0.4% copper, 0.004% molybdenum (7.1 billion pounds of contained copper metal).

The Company is focusing immediate future efforts towards high-grade copper sulphide targets (Shamrock prospect and Ann Mason “5000” zone) and near surface copper-oxide targets (Blue Hills oxide target) that may be developed with high unit value returns and corresponding low capital costs. Success in developing an initial operation at these projects may provide the catalyst to develop the much larger scale and more capital intensive porphyry deposits at Ann Mason and Blue Hills.

*Focus on high-grade targets at Shamrock and “5000” and low-cost oxide copper plays*

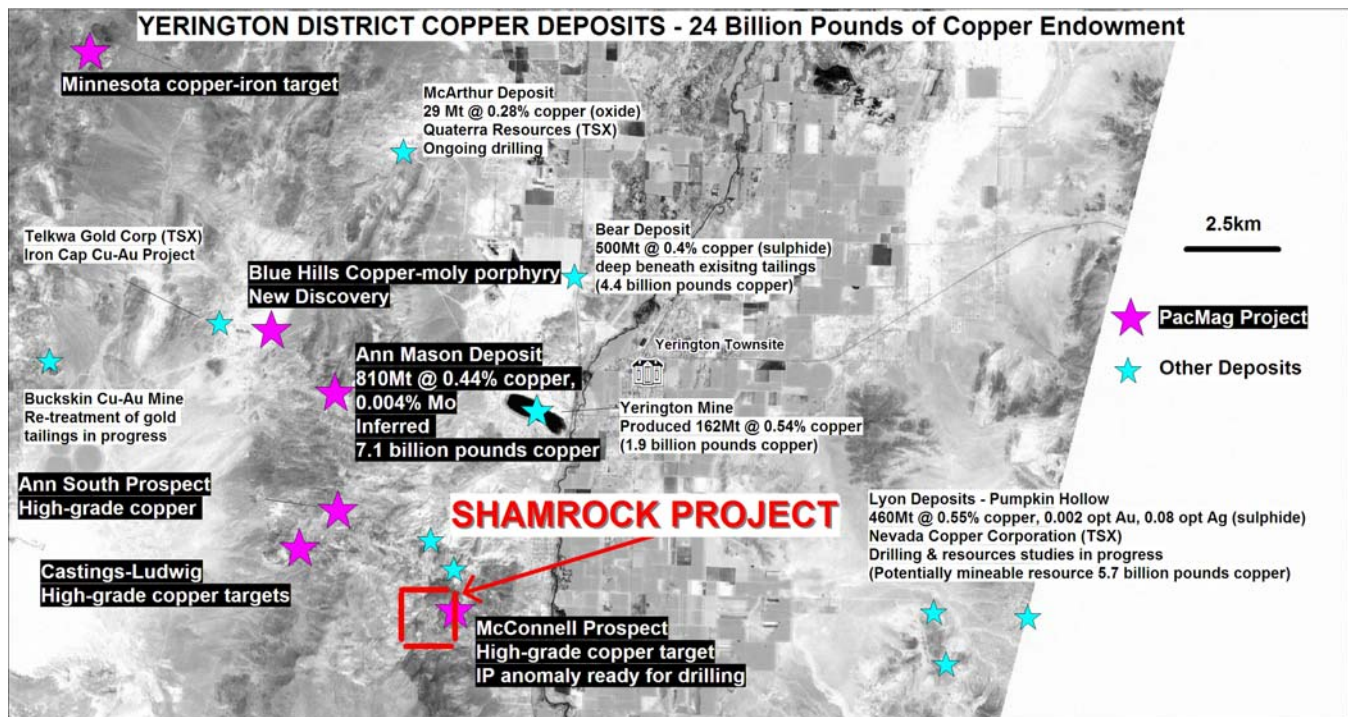


Figure 1: Yerington District – PacMag Projects and Resources

## **Shamrock Copper Prospect**

At the Shamrock Project, a high-grade copper project located 5 kilometres south east of Ann Mason (Figure 1), historical records show that previous drilling has intersected wide (10 – 20 metre) zones of strong copper mineralisation (1-3% copper), located on patented mineral claims.

*Previous drill intercepts 10 – 20m @ 1-3% copper.*

During the quarter, the company completed detailed geological mapping and field assessments that confirmed the veracity of the high-grade copper targets. Drill holes have been designed to test the targets and the Company is seeking a suitable drill contractor to undertake the program.

*Drilling planned.*

## **Blue Hills Oxide Copper**

The Company has identified a large coherent copper oxide target south and west of the recently discovered Blue Hills porphyry copper-molybdenum sulphide deposit, 5km south east of the Ann Mason resource.

*Oxide copper target 1.5km x 350 m.*

Based on PacMag's work as well as limited previous drilling, field observations and soil assays (up to 0.13% copper), the Company has outlined a copper oxide target zone at Blue Hills over an area 1.5km by 350 metres. Previously reported oxide drill intersections at the northern eastern end of the target zone include; 21.3 metres @ 0.46% copper, 36.3 metres @ 0.46% copper, 32.7 metres @ 0.22% copper and 39.6 metres @ 0.26% copper, defining a continuously mineralised zone over 360m of strike length within the new 1.5km long target.

Testwork for the mineralised interval in hole BH08006 confirm copper oxide mineralisation is acid soluble, with an average acid soluble copper assay recovery of 80%. This is an excellent result and indicates the potential for copper oxide extraction via simple acid leaching, with corresponding low operating and low start-up capital costs.

*Acid soluble copper assays returned average 80% recovery*

Potential exists for the development of a substantial horizontal, near-surface copper oxide zone, developed within a zone of deep weathering which extends to depths in excess of 120 metres. The widths, tenor and depth to mineralisation intersected by PacMag at Blue Hills are consistent with that of the nearby MacArthur copper-oxide deposit, located approximately 7km north-east of Blue Hills, where TSX listed Quaterra Resources Inc is currently undertaking resource drilling. The MacArthur copper-oxide mine operated in the 1970's. The target lies within relatively flat, open terrain allowing easy access for drill testing.

*Widths and tenor of oxide copper similar to nearby MacArthur deposit*

## **Blue Hills - Porphyry Copper-Molybdenum Discovery**

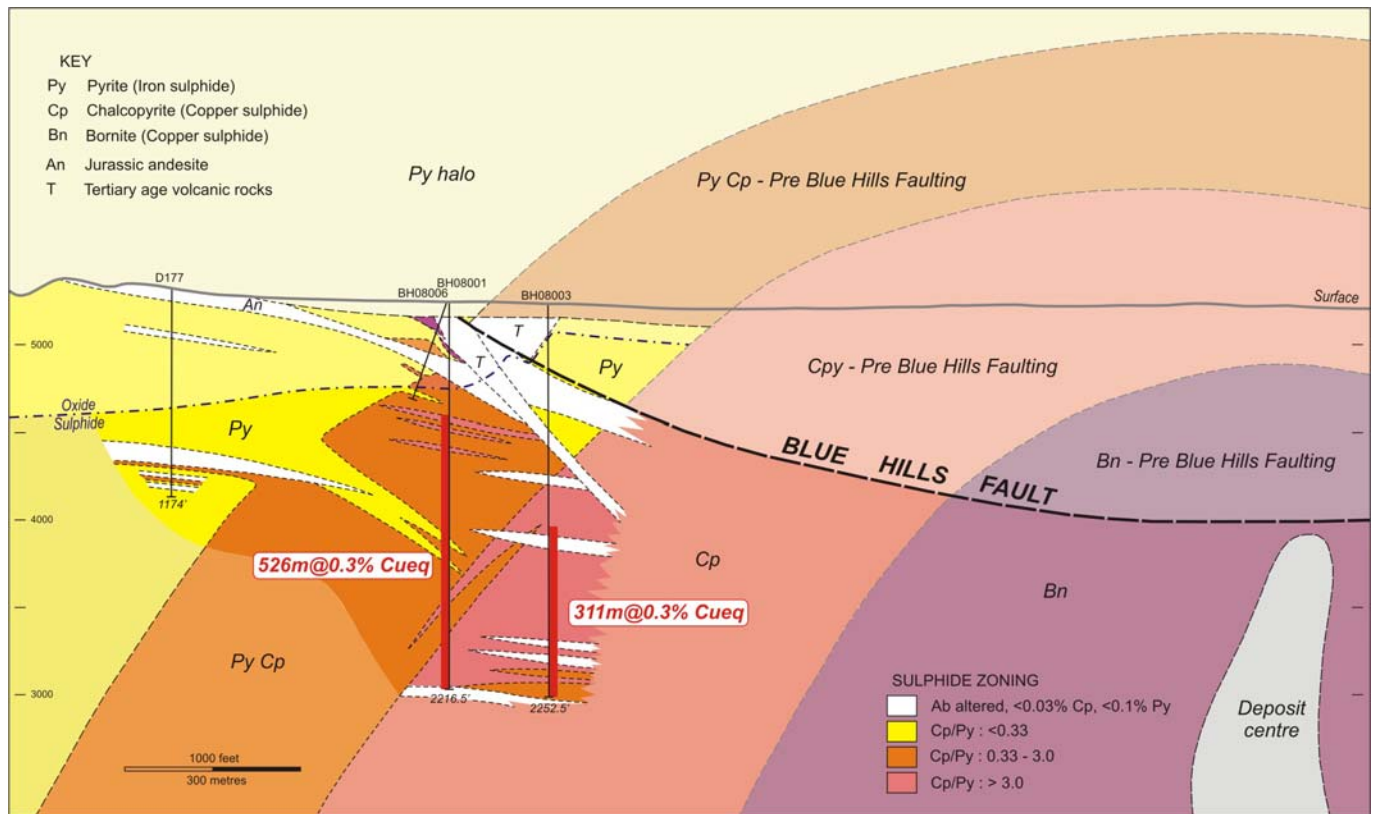
The Blue Hills porphyry copper discovery contains drill intersections including; 73.2 metres @ 0.57% copper equivalent and 100.6 metres @ 0.41% copper equivalent. The size potential of the Blue Hills mineralisation is highlighted by the massive lower-grade mineralised halo that extends from 152 metres below surface to the end of hole (BH08001) grading 526 metres at 0.3% copper equivalent.

*Large new porphyry copper system discovered, drilling required to test extents of system.*

Copper and molybdenum in both holes is located within disseminated and sheeted vein-style mineralization, hosted within porphyritic quartz monzonite. Mineralisation remains open to the east and south as well as at depth to the north and west, with relatively flat open terrain allowing easy access in all directions.

The alteration and sulphide species logged in each of the Blue Hills holes confirm a large porphyry copper-molybdenum system had been defined (Figure 2), but that neither the core of the system nor its extents have been determined. The Company has not yet ascribed a target size to the discovery, but wishes to point out that the known porphyry copper-molybdenum sulphide deposits within the district range in size from 162 to 810 million tonnes.

Three RC pre-collars remain to be extended with diamond drilling, with an initial aim of scoping the size of the mineralised system, drilling is planned following drill testing of the near surface copper oxide target lying above this target.



**Figure 2: Blue Hills Porphyry Copper Target Showing Interpreted Pre-Blue Hills Faulting Geometry and Zone of Open Mineralisation**

**Progress on Ann Mason Pre-feasibility Study Activities**

The Company is awaiting approval of the Environmental Assessment (EA) for the Ann Mason project, that was submitted to the Federal Bureau of Land Management (BLM) for expanded exploration activities at the Ann Mason site.

**EA submitted to the BLM**

The BLM have requested that a vegetation survey be conducted and field work for this program is in progress.

## BLUE ROSE JV (SOUTH AUSTRALIA)

PacMag 51%, Giralia 49% Contributing

PacMag is currently evaluating the Blue Rose/Olary copper-gold-molybdenum project in South Australia, a joint venture with Giralia Resources NL.

### Blue Rose Oxide Deposit

The Blue Rose oxide deposit contains intersections such as: 46 metres @ 2.2% copper and 0.8 g/t gold from 11 metres depth, (including 28 metres @ 3.0% copper and 0.8 g/t gold. Beneath the oxide zones drilling has intersected copper-gold-molybdenum sulphide mineralisation, which is open to extension along strike.

During the quarter, activities included assessing previous gold exploration activities conducted northeast of Blue Rose, as well as completing rehabilitation of drill sites in accordance with statutory requirements at Netley Hill and Blue Rose.

### Golden Sophia Gold Prospect

During the quarter, previous gold exploration in the area northeast of the Blue Rose copper prospect included assessment of the Golden Sophia prospect.

The Golden Sophia Prospect is defined by a 1km long (>15ppb) gold in residual soil anomaly, with a central core of higher grade soils (240m long zone > 50ppb) that occurs above a strong discrete magnetic anomaly. The soil anomaly is open to the northwest and southeast into areas of shallow transported colluvial cover (although this requires further field checking to verify), with the southeast zone containing strongly anomalous soil geochemistry up to 310ppb Au.

Limited previous shallow drilling by Battle Mountain (Australia) Inc in 1989 on two traverses over the central portion of the soil anomaly, intersected near surface, widespread, thick zones of gold mineralization, in fine to medium grained micaceous sandstones, associated with disseminated pyrite and minor quartz veining.

Weathering is variable, but is generally shallow, extending to 10 – 30m vertical depth.

Previous geophysical (IP) surveying by Battle Mountain defined an IP chargeable and conductive zone associated with the mineralisation, extending over 800m of strike. Alteration is logged as predominantly sericite with some associated biotite, whilst the higher grade gold intervals do not appear to correlate with the strongest zones of quartz veining.

Drilling results include:

- Hole GS2; 36m @ 0.3g/t Au (2m – 38m) incl 2m @ 1.52g/t Au
- Hole GS3; 60m @ 0.58g/t Au (10 – 70m eoh) incl 6m @ 1.07g/t Au and 2m @ 8.4g/tAu

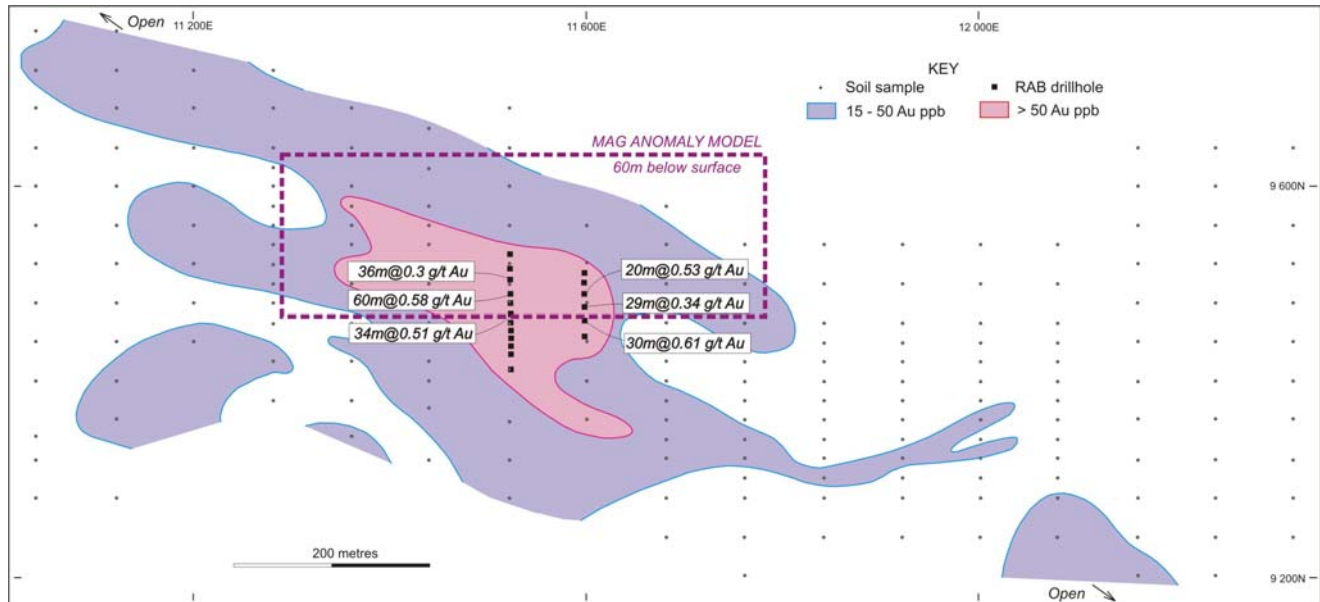
*Discussions continued on development options.*

*Significant regional gold potential identified from evaluation of historic records.*

*Golden Sophia Prospect:  
60m @ 0.58 g/t gold including 2m @ 8.4 g/t gold.*

- Hole GS4; 34m @ 0.51g/t Au eoh (6 – 40m eoh) incl 2m @ 3.53g/t Au and 2m @ 1.36g/t Au
- Hole GS27; 20m @ 0.53g/t Au (18-38m) and
- Hole GS29; 30m @ 0.61g/t Au (2 – 32m), incl 5m @ 1.3 g/t Au.

Continuous mineralisation has been defined by two 80m spaced drill traverses over a width of approximately 100m, however, mineralisation remains open along strike to the east and west, whilst drill results are anomalous in the northern most holes.



**Figure 3: Golden Sophia Prospect – Gold Target**

Potential exists for a zone of mineralisation with modest tonnes at low gold grades within the existing soil anomaly, however, further potential lies in the zones along strike under alluvial cover for the discovery of higher grade mineralization, as well as for mineralisation of a higher tenor associated with the underlying magnetic anomaly (modeled as 500m strike, 150m width, 60m below surface at 0.5% magnetite), that has yet to be tested by deeper drilling. Note, previous drilling has tested to an average of only 30m below surface, with the deepest hole (GS3) drilled to 54m below surface (70m @ -60 degrees)

**Significant open ended target in altered sedimentary rocks overlying untested magnetic anomaly.**

Previous petrographic studies indicate mineralisation in predominantly fine grained (pelitic) sedimentary rocks, as opposed to sandstones logged by the Battle Mountain field geologists. Both sericite and biotite alteration are confirmed.

Gold was the only element assayed for in both soils and drilling, hence no inference can be drawn from any multi-element geochemical associations.

The occurrence of the gold in sericite-biotite altered meta-sedimentary rocks above a discrete magnetic anomaly, could be related to an underlying intrusive source (porphyry). Similar porphyry related systems are present at the nearby Giles Knob (1km south), Blue Rose (skarn), Anabama Mo-Cu porphyry and further west at the Netley Hill Mo prospect.

The company plans on conducting field reconnaissance next quarter to assess the potential of the Golden Sophia prospect, as well as the surrounding area where there are numerous additional historic gold workings and occurrences that have never been explored with modern exploration techniques.

## **NORTHLING COPPER**

**(Western Australia) - PacMag 100%**

The Northling copper project, located 170km north of Wiluna in Western Australia, occurs in an area of limited rock outcrop immediately outside the northwestern margin of the Earahedy Basin. The project covers an area described on regional geological maps as predominantly Archaean granites. A number of discrete aeromagnetic anomalies within the area have been targeted by previous diamond explorers. Several of these magnetic anomalies have subsequently been indentified as kimberlites (diamondiferous host rocks such as the Nabberu 1 Pipe, located immediately west of the project area). Other magnetic anomalies were not explained, with shallow RAB drilling intersecting altered sedimentary rocks interpreted as possibly outliers of the Earahedy Basin sequence or granitic rocks.

In 1994, Northling Pty Ltd, whilst testing for diamond pipes in the project area, intersected copper mineralisation grading 4m @ 2.43% copper from 58 – 62 metres (to the end of hole) associated with rocks described by their geologists as “mafic igneous rocks with abundant sulphides”. In total, only three holes at approximately 60 m spacing were drilled to test the magnetic anomaly. No follow-up drilling has been conducted to date.

The Company has secured tenure over the project area covering 57km<sup>2</sup> and plans to commence heritage surveys prior to drill testing later this year.

## **MYSTIQUE GOLD**

**(Western Australia) - PacMag 100%**

During the quarter, the Company identified a new gold prospect (Mystique Project) and has secured 100% owned tenements (434 km<sup>2</sup>) covering a major poorly tested gold geochemical anomaly in the Fraser Range Province, Western Australia. The province contains the recently discovered AngloGold Ashanti - Independence Group Tropicana Gold Project (5.01 million ounces of gold).

Previous exploration activities identified a large gold in soil anomaly, that is larger and stronger than that reported overlying the Tropicana gold deposit, whilst the aircore drilling gold results are of a similar magnitude to those intersected in early reconnaissance aircore drilling programs, overlying the main Tropicana gold zones that were subsequently discovered by deeper RC and core drilling.

On completion of full data compilation, a further, more detailed description will be provided early next month.



The information in this ASX Release that relates to the Sentinel Project Exploration Results, Minerals Resources or Ore Reserves, as those terms are as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserve", is based on information compiled by Mr Michael Clifford and Mr J Guilinger. Mr Clifford is a Member of the Australian Institute of Geoscientists and a full time employee of the Company, whilst Mr J Guilinger is a Registered Member (RM) with the Society of Mining Engineers (SME) and a Qualified Person (QP) with the Mining and Metallurgical Society of America (MMSA), and a consultant to the Company. Mr Guilinger has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are 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 Reserve". Mr Clifford and Mr Guilinger consent to the inclusion in this ASX Release of the matters based on their information in the form and context in which it appears.

The information in this ASX Release that relates to (projects other than Sentinel) Exploration Results, Minerals Resources or Ore Reserves, as those terms are as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserve", is based on information compiled by Mr Michael Clifford, who is a full time employee of the Company and a Member of the Australian Institute of Geoscientists. Mr Michael Clifford has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are 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 Reserve". Mr Michael Clifford consents to the inclusion in this ASX Release of the matters based on his information in the form and context in which it appears.

## CORPORATE

At the end of the quarter the Company has cash of \$2.8 million and equity investments valued at approximately \$1.0 million.

**Michael Clifford**  
**Director**

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### **ABOUT PACMAG (ASX:PMH)**

*PacMag is an Australian-based exploration company focused on its advanced copper-molybdenum-gold assets at Ann Mason in the USA as well as the Sentinel uranium-germanium-molybdenum project located in North Dakota USA. Ann Mason boasts a mineral resource of 810 million tonnes @ 0.4% copper, 0.004% molybdenum (7.1 billion pounds of contained copper metal).*

*PacMag also holds interests in other less advanced copper and gold projects in Australia.*

<b>Capital Structure</b>	<b>(as at 31<sup>st</sup> March 2009)</b>	<b>Major Shareholders</b>	
Ordinary Shares (PMH)	144,667,639	Giralia Resources NL	10.37%