



## ASX ANNOUNCEMENT

20 April 2010

### **INDEPENDENT SCOPING STUDY CONFIRMS POTENTIAL FOR A ROBUST MINING PROJECT AT KEMPFIELD**

Argent Minerals Limited (Argent ASX:ARD) is pleased to announce the positive results of the Independent Scoping Study to produce silver, gold, lead and zinc from its Kempfield, NSW, property. The Study has been managed and co-ordinated by Gemell Mining Engineers, independent consultants to Argent.

#### **Key outcomes include:**

- **Agitated Leach plus Flotation of leached tails to produce Silver, Lead and Zinc;**
- **10.5 year life of mine (LOM) at 600,000 tpa;**
- **Payable production of 12 million ounces of Silver, and 42,000 tonnes of Lead / Zinc;**
- **LOM operating cost, net of other metal credits, of \$10.27 (US\$9.24) per ounce of Silver compared to the 19 April 2010 price of \$19.19 (US\$17.60) per ounce of Silver.**

**In addition the Kempfield VMS mineralised system is only partially drilled and has the potential to add more mineable resources.**

In light of the positive outcome of the Scoping Study, see below for details, the Board of Argent has decided to undertake a Definitive Feasibility Study (DFS) with the objective of taking a decision to mine by March 2011 and commencing production of silver in the first half of 2012.

**Kempfield remains highly prospective. The Kempfield Volcanogenic Massive Sulphide (VMS) mineralised system is only partially drilled and has the potential to add more mineable resources.**

All zones are open at depth and there are extensive gaps along strike that require drilling. Recent IP and soil surveys have identified some excellent drill targets along strike and an extensive drill programme is planned to commence later this quarter.

#### **Regional Resources**

The region within 50kms of Kempfield has historically seen extensive precious and base metals production and there are a number of deposits which could potentially be treated through a plant located at Kempfield. Several opportunities have been identified and will be the subject of further review.



## **Barite Concentrates could also be Produced with the Addition of Further Float Cells**

The in-pit mining inventory at Kempfield is estimated to contain over 1 million tonnes of barite, which sells for US\$100 (December 2008) per tonne landed in the Gulf of Mexico. In the absence of a firm market for the product, the Scoping Study does not include any Barite production. If a market for Kempfield Barite was developed in the future it could be produced as a low cost by-product and provide a valuable income stream for the project.

## **The Project Provides Argent with Exposure to the Silver Price which has tended to Move In Sync with Gold**

A 30% increase in gold and silver prices i.e. to US\$1430 per ounce gold and US\$21.84 per ounce silver, would add \$70 million to the project's net cash flows. In addition, the proposed pits contain large quantities of low grade material, currently classified as waste at current prices, some of which would be economic to process at higher silver prices.

## **Definitive Feasibility Study (DFS)**

The DFS which will commence immediately is budgeted to cost approximately \$1.1 million and will be done to a standard designed to attract project financing. It will include:

- 3,500m of infill, metallurgical and geotechnical drilling;
- Metallurgical Bottle Roll and Flotation test work;
- Preparation of an Environmental Impact Study (EIS). Fauna, flora and heritage studies have already been completed;
- Process plant engineering and site layout including tailings dam design; and,
- Infrastructure requirements including water and power.

Concurrently with the preparation of the DFS the company will seek Development Approval and the grant of a Mining Lease. Discussions have begun to establish a Mining Agreement with the Gundungurra Tribal Council, the representative of the Native Title Claimant to the area.

Completion of the DFS will culminate in a project financing decision for Kempfield.

Argent's Executive Chairman, Mr Kerry McHugh, said that "the Scoping Study results are very encouraging and, if they are confirmed by the Definitive Feasibility Study and lead to the establishment of a viable project, will provide a strong stepping stone for Argent's growth profile and underpin the future of the company for years ahead.

"The cash generated would fund the company's exploration efforts, including at the highly prospective Kempfield tenement and assist in the funding of new opportunities. As noted above the Board continues to review and assess other potential near term production assets accessible to Kempfield and in other key regional mining areas in Australia."



## Detailed Financial and Technical Information

The Study has been managed and co-ordinated by Gemell Mining Engineers, with metallurgical input from Kappes Cassiday and Associates for the Heap Leaching Study and Mr B.Sceresini of Australian Mining Advisers for the Agitated Leaching / Flotation Study. Hellman and Schofield undertook the resource estimates and Australian Mine Design and Development Pty Ltd (AMDAD) produced the pit shells and provided estimates of the mining inventory.

The Scoping Study indicates that either a Heap Leach Silver Project (HL) or a project to produce silver, lead and zinc by Agitated Leach followed by Flotation (ALF) could be developed profitably at Kempfield. The ALF project is clearly superior from a financial, size and flexibility point of view and it is this project on which the company will undertake a Definitive Feasibility Study.

The key features of the Scoping Study results for the ALF are as follows (100% basis):

<b>Physical</b>	
<b>In-Pit Plant Feed</b>	
Oxide and Transitional	2.7 mt @ 76g/t Ag and 0.11 g/t Au
Primary	3.6 mt @ 66 g/t Ag, 0.07 g/t Au, 0.6% Pb and 1.2% Zn
<b>Total</b>	6.3 mt @ 70 g/t Ag and 0.09 g/t Au
Throughput	600,000 tpa
Life of Mine (LOM)	10.5 years
LOM Payable Production	12.2 million ozs of Silver 15,000 ozs of Gold 31,000 tonnes of Zinc in concentrates 11,000 tonnes of Lead in concentrates
<b>Financial</b>	
LOM Revenue*	\$351 million
LOM Operating Costs	\$248 million (includes contingencies of 10%)
LOM Operating Surplus	\$103 million
LOM Capex	\$42 million includes initial capex of \$31m and contingencies of 20%
Net Cash Flow Before Tax	\$61 million
Initial Capex pay-back	4.25 years
NPV at 10% Discount	\$20 million
IRR	23.1%

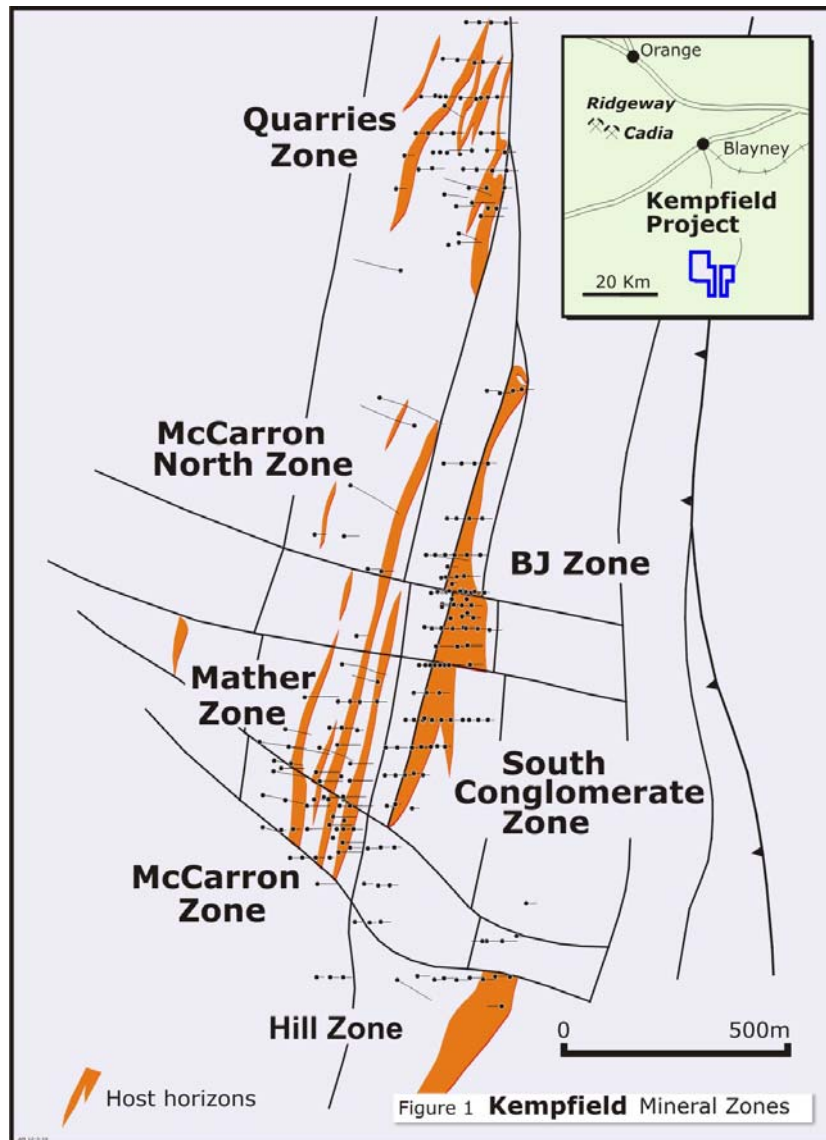
Operating costs per ounce of silver after deducting gold and base metal credits are A\$10.27 per oz.

\*Revenue is based on the following prices:

Metal		US\$	A\$ at US\$0.90c Exchange Rate
Silver	per ounce	16.80	18.67
Gold	per ounce	1,100	1,222
Zinc	per tonne	2,205	2,450
Lead	per tonne	2,205	2,450



Figure 1 - Kempfield Mineral Zones



### In-Pit Mining Inventory

Over 90% of the mining inventory, i.e. diluted and recoverable in-pit resources, is classified as Measured or Indicated under the JORC code, with most of the Inferred material reporting to the Quarries Zone and the McCarron Zone. Infill drilling will be required at a cost of approximately \$200,000. Cross sections showing the proposed pit outlines superimposed on the resource blocks are set out at figures 2 and 3 for the BJ and McCarron zones respectively. 3D visualisations of the BJ and McCarron pits are set out in figures 4 and 5.



### Figure 2 – BJ Cross Sections

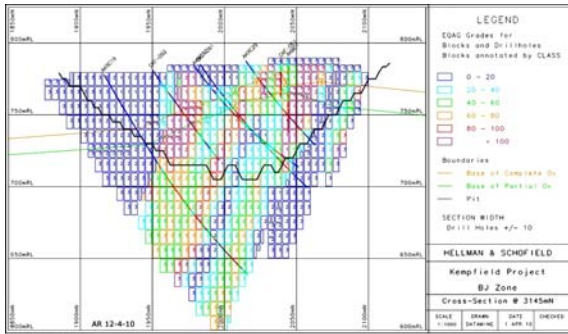
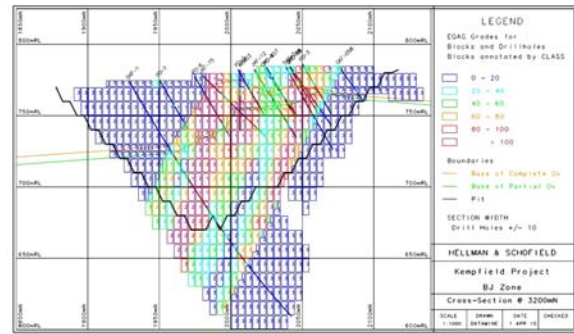


Figure 2

**BJ** Cross Section 3145N



**BJ** Cross Section 3200N

### Figure 3 – McCarron Cross Sections

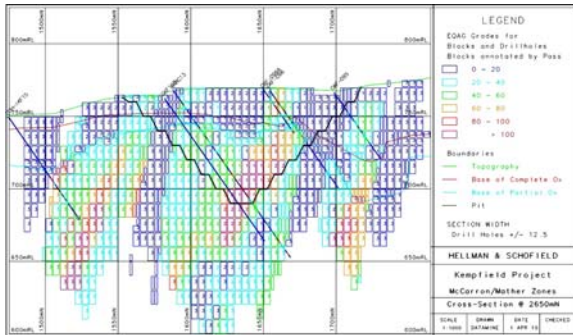
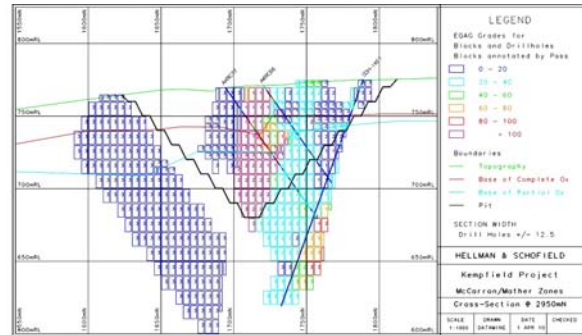


Figure 3

**McCarron** Cross Section 2650N



**McCarron** Cross Section 2950N

## Mining

The operation would involve mining ore from the BJ, McCarron and Quarries zones with a combined waste to ore ratio of 1.9 to 1.

The BJ and McCarron pits are the largest at 2.9 and 2.5 million tonnes respectively and are situated between 500m and 600m from the proposed plant site.

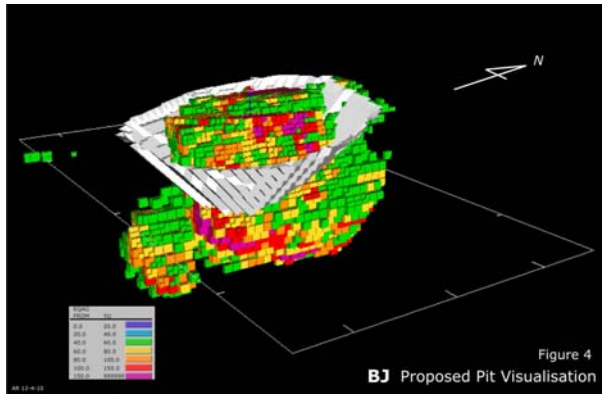
The Quarries Zone contains a number of smaller pits and is located about 1300m from the plant site. See further the proposed outline of the mining and processing site in figure 6.

The McCarron and Quarries primary ores contain combined lead / zinc grades of 2.9% and 2.7% respectively, with McCarron having the additional benefit of gold grading 0.19g/t.

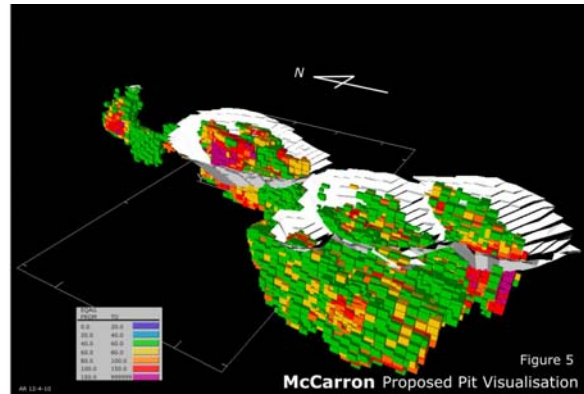
The Scoping Study envisages contract mining and is based on drill and blast for all ore and waste and grade control drilling on the ore. The cost of mining, at \$11.34 per tonne of ore, is based on indicative prices supplied by a medium sized contractor.



**Figure 4 – BJ Proposed Pit Visualisation**



**Figure 5 – McCarron Proposed Pit Visualisation**



## Processing

The processing route for the oxide and transitional ore envisages crushing, grinding and agitated leaching followed by silver / gold precipitation in a Merrill Crowe unit and the production of silver with gold credits dore bars which would be sent off-site for refining and sale. The ore has a low work index of 7.0 and a relatively low abrasion index of 0.06. Metallurgical test work has indicated average silver and gold recoveries of 83% and 85% respectively for the oxide and transitional ores.

The processing route for the primary ore includes the leaching / Merrill Crowe / silver-gold dore process followed by processing the leached tail through a flotation circuit to produce zinc concentrates and silver-rich lead concentrates.

Bottle roll tests indicate that 63% of the silver in the primary ore appears to be recoverable via agitated leaching. Flotation test work and Quemsan and Microprobe analysis on the BJ primary ore indicates that approximately 80% of the silver remaining in the leach tail could be recoverable to either lead or zinc concentrates giving an overall recovery of the silver in that ore of approximately 93%. Gold recoveries to the agitated leach circuit are estimated at 85%.

Preliminary metallurgical test work on BJ ore, including flotation and Quemsan and microprobe analysis, showed high minerals liberation and indicate that it should be possible to produce a silver-rich lead concentrate and a high grade zinc concentrate by selective flotation.

Leaching-plus-flotation tests on BJ primary ore indicated 94.7% total silver recovery from a head grade of 88g/t silver, 55% lead recovery from a low head grade of 0.2% lead and 96.1% zinc recovery from a head grade of 0.8% zinc. These figures represent first-pass recoveries to a rougher concentrate. Ultimate lead and zinc recoveries and concentrate grades are yet to be confirmed by selective flotation test work. Consequently, the estimates used in the study and which underpin the viability of the project, i.e. that 88% of the zinc would be recovered to a zinc concentrate grading 57% zinc and that 51% of the lead would be recovered to a lead concentrate grading 46% lead, are best approximations available based upon the flotation test work conducted to date.

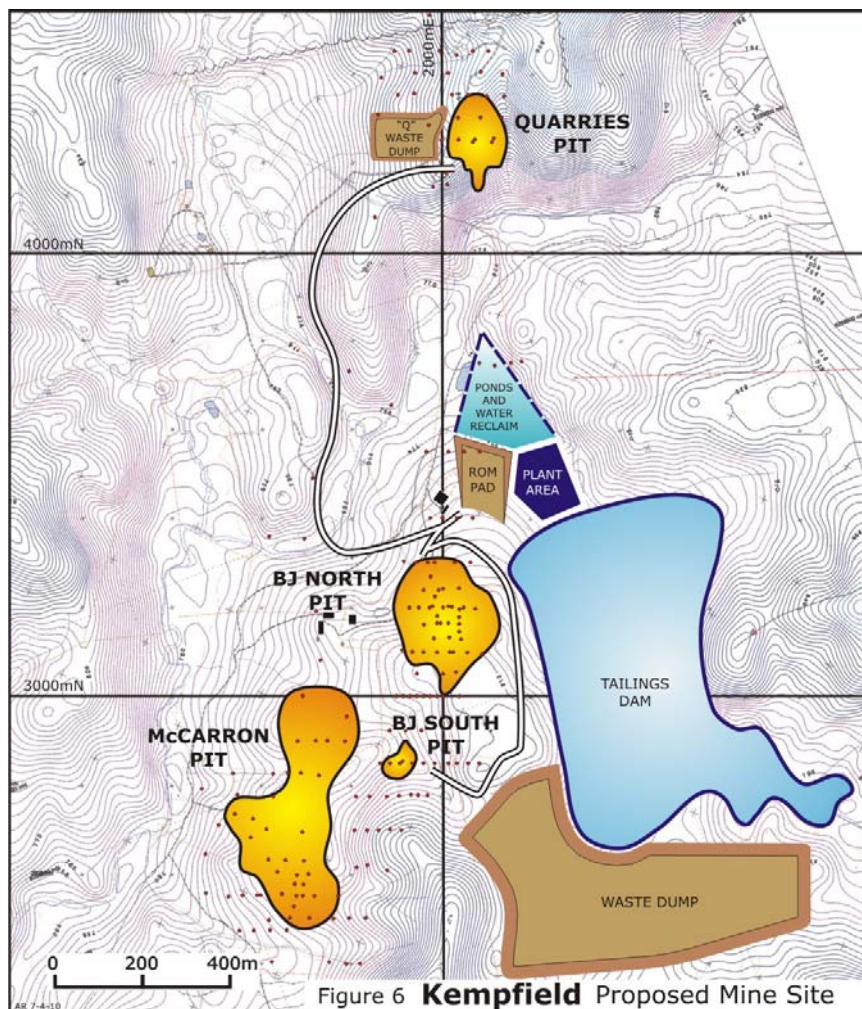


The leaching and flotation characteristics revealed by the tests on BJ ores have been assumed to apply to ores from the McCarron and Quarries Zones. An important and early part of the Definitive Feasibility Study work will be additional and extensive test work to confirm the Scoping Study's leaching and flotation parameters. This will include leaching and precipitation tests on all ore types in each zone as well as locked step flotation tests on the sulphide ores in each zone.

An agitated leach / flotation plant may be capable of successfully treating a wider range of ores than a heap leach project, including gold ores sourced from the Kempfield tenement, e.g. Mt Dudley, or from the surrounding region.

Barite concentrates could also be produced with the addition of further float cells. The in-pit mining inventory at Kempfield is estimated to contain over 1 million tonnes of barite but in the absence of a firm market for the product, the Scoping Study does not envisage its production. If a market for Kempfield barite was developed in the future it could provide a valuable income stream for the project.

**Figure 6 – Kempfield Proposed Mine Site**





## Infrastructure

The Kempfield project is located some 80kms south east of the city of Orange in central western NSW. The Orange-Bathurst region provides a large range of mining and exploration services and has a long history of mining with the most recent being Newcrest's Cadia-Ridgeway gold / copper operation. Road access is via a 10km unsealed public road servicing a small number of rural holdings and an area of NSW State Pine Forest. This road joins the main road linking Orange and Goulburn.

A secure source of sufficient process water has yet to be identified although water has been encountered in a number of drill holes on the property in the past. As part of the Feasibility Study a hydrological consultant will be engaged to identify and access the site's water requirements. Bore holes within or outside the property are likely to be needed to augment water made by the pits and water collected from rainfall.

The site is serviced by a single phase power line but the project would require a new or upgraded three-phase power line from a Country Energy off-take point. The Scoping Study includes a preliminary allowance for approximately 7kms of line.

Argent is earning a 70% interest from Golden Cross Resources Limited through the expenditure of \$2.7 million by June 2013.

For more information:

[www.argentminerals.com.au](http://www.argentminerals.com.au)

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## Competent Person Statements

The information in this Report that relates to Exploration is based on information compiled by David Timms who is a member of the Australian Institute of Geoscientists, and a Technical Consultant to Argent, and who has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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 Timms consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.