Ardea Resources Limited

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ASX Symbol

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Directors/Employee Performance Rights
3,240,000

ABN 30 614 289 342

Lewis Ponds metallurgical test work produces high-grade concentrates

Results of metallurgical test work show excellent recovery of base and precious metals into two concentrate streams

- Lewis Ponds is a zinc-gold-silver-lead-copper deposit in the prospective Lachlan Fold Belt of NSW
- It is viewed as a bulk-tonnage base and precious metal opportunity, amenable to simple metallurgical gravity and flotation processing
- Metallurgical test work comprising Dense Media Separation then flotation has produced:
  - Clean zinc concentrate - over **66 % contained zinc**
  - Cu-Pb-Ag-Au concentrate containing **1,619 g/t silver**, **17.6 g/t gold**, **4.78 % copper**, and **30.3 % lead**
  - High recovered silver grades are consistent with Lewis Ponds being a silver mine in the late 1800s
  - Results show excellent recovery of payable metals and fast flotation kinetics
- Results for both concentrates are first-pass and are expected to benefit from further refinement as studies progress

In parallel to work on the Goongarrie Nickel Cobalt Project, metallurgical test work from the Lewis Ponds Zinc-Gold-Silver-Lead--Copper Project near Orange, NSW, indicates that two high-grade concentrates can be produced using simple gravity and flotation treatment processes.

The Ardea corporate strategy is to continue to advance Goongarrie and accelerate exploration on the prospective gold and nickel sulphide targets in its extensive 5,484km^2 land holding in Western Australia.

To focus our efforts and create additional value for Ardea shareholders, the company will seek to crystallise value through a spin out or divestment of its NSW mineral assets in the next twelve months. A resource estimate is underway for Lewis Ponds and the Company is currently reviewing the results of promising metallurgical work which have been completed during 2018. Exploration work is continuing on the Company's NSW tenements notably within the highly prospective Lachlan Transverse Zone (LTZ).

Lewis Ponds metallurgical test results

Lewis Ponds is a zinc-gold-silver-lead-copper deposit in the Lachlan Fold Belt of NSW. Metallurgical test work shows excellent recovery of metals in concentrates through the application of simple conventional metallurgical techniques. Test work completed shows that two concentrates, a zinc concentrate and a copper-lead-precious metal concentrate (Cu-Pb-Ag-Au concentrate, i.e. copper, lead, silver, and gold concentrate) can be produced.

Some notes on the concentrates produced:

- The **Zn concentrate** contains around **66% zinc** (in zinc sulphide), indicating a pure product.
- The **Cu-Pb-Ag-Au concentrate** contains:
  - **1,619 g/t silver** (or ~52 oz/t silver)
  - **17.6 g/t gold** (over 0.5 oz/t gold)
  - **30.3 % lead**
  - **4.78 % copper**
- Both concentrates are expected to be eminently saleable with mixed concentrates with high precious metal content readily sought in China
- Results for both concentrates are first-pass and are expected to benefit from further refinement as studies progress.

On an operating scale, the processes used in test work are generally “off-the-shelf” and inexpensive to implement, though this is yet to be modelled for Lewis Ponds.

The findings of this metallurgical study are a significant milestone on the path to development at Lewis Ponds. Further refinement and assessment of the processes will be required, but will now be coming off a very solid base established by this test work.

Figure 1 – Outcropping, folded, oxidised, mineralised zone at Lewis Ponds (looking southeast). Dark bands were massive to semi-massive sulphides with inter-bands of disseminated mineralisation and non-mineralised shales. The test procedures concentrate sulphide from massive bands and disseminated zones and remove non-mineralised rock material, providing potentially saleable sulphide products. The photo is approximately 1.5 m wide by 2 m tall.

Test work details and findings

Lewis Ponds mineralisation

Fine-grained banded sulphide mineralisation at Lewis Ponds (1, 2 & 3) contains appreciable amounts of zinc, gold, silver, lead and copper. Sulphide minerals are typical of the large deposits of the Lachlan Fold Belt of NSW, comprising pyrite, sphalerite, galena and chalcopyrite. Non-sulphide gangue minerals are also unremarkable, comprising quartz, feldspars, chlorite, micas, and carbonates.

An important finding is that no secondary sulphide phases or metal oxides were found, greatly simplifying processing of potential ore.

Grain sizes are varied with fine galena (0.03 mm) associated with coarser chalcopyrite and pyrite (0.07 mm), and coarser still sphalerite (0.10 mm) as recrystallised grains within the foliation in "pressure-shadow" positions.

Figure 2 – Semi-massive to disseminated pyrite-sphalerite-chalcopyrite sulphides within chlorite-dominated alteration, ALD0003, 148.50 m.

Phase 1 – Ore preparation using DMS

An initial phase of Dense Media Separation (DMS) has the potential to greatly upgrade the economics of the deposit for minimal investment. A prerequisite for DMS, present at Lewis Ponds, is a contrast in density between heavier ore minerals (i.e. metal sulphides) and lighter gangue or waste minerals (silicates and carbonates).

At Lewis Ponds, the studies found that at a 12.5 mm crush size, 94 % of sulphide and precious metal content can be recovered with the rejection 25 % of the mass. This corresponds to a 1.25 upgrade factor.

The process is generally inexpensive to implement, being a form of gravity separation conducted at relatively coarse crush size. It is used to pre-concentrate run-of-mine ore by the rejection of a low grade, low density fraction. Application of a successful DMS circuit can allow a combination of lower ore cut-off grade in the mine and/or a higher mill feed grade, potentially providing enhanced project economics.

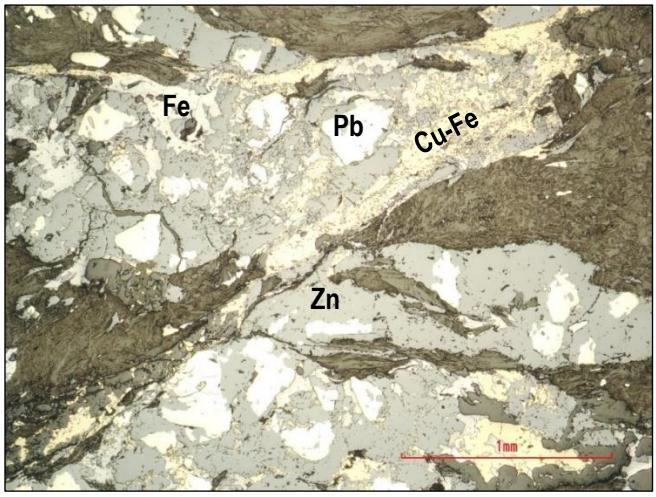

Figure 3 – Photomicrograph (plane polarised reflected light) of sheared mineralisation at Lewis Ponds, dominated by sphalerite (Zn, mid-grey) which envelops galena (Pb, white), pyrite (Fe, pale yellow) and chalcopyrite (Cu-Fe, yellow), shown amongst non-sulphide minerals (dark grey). Silver and gold (not visible here) are associated with the galena, hence upon processing the production of the Cu-Pb-Ag-Au concentrate. ALD0003, 148.50 m (see Figure 2), field of view is 3 mm across.

Phase 2 – Flotation

The second phase of the process involves a conventional crush and float circuit to produce concentrates. The initial aim has been to produce two distinct products:

- a mixed **copper, lead, silver and gold concentrate** marketed for its high precious metals content;
- a clean **zinc concentrate**.

A total of 20 tests were conducted to establish the initial flotation flowsheet and reagent regime. Work shows that good flotation performance combined with fast flotation kinetics is very achievable from a relatively simple selective flowsheet.

The results of the test work are summarised in Table 1 below. With these metallurgical results in mind, work is underway on the redefinition of a base and precious metal resource update at Lewis Ponds.

Table 1 - Grades of base and precious metals in the feed, the product concentrates, and the tails at Lewis Ponds, showing exceptional concentration of metals into the Cu-Pb-Ag-Au and the Zn concentrates. The proportions of each metal recovered into the respective fractions are also shown.

Stream		Mass (proportion)	Grade (within fraction) Copper	Lead	Silver	Gold	Zinc	Iron	Comment
Feed		100 %	0.15 %	0.85 %	44 g/t	0.61 g/t	2.55 %	5.70 %	Ingoing grade
Products	Cu-Pb-Ag-Au conc	2.0 %	**4.78 %**	**30.30 %**	**1619 g/t**	**17.6 g/t**	5.64 %	18.60 %	Combined conc for Cu, Pb, Ag, Au
	% recovered		**64.1**	**72.9**	**74.5**	**58.6**	4.5	6.7	
	Zn conc	3.4 %	0.22 %	0.50 %	64 g/t	0.25 g/t	**66.10 %**	4.20 %	Concentrate for Zn only
	% recovered		4.9	2	4.9	1.4	**87**	2.5	
Tails	Final tail	94.6 %	0.05 %	0.23 %	10 g/t	0.26 g/t	0.23 %	5.40 %	Tails contain low metals + high waste iron
	% recovered		31	25.2	20.7	40	8.5	90.8	

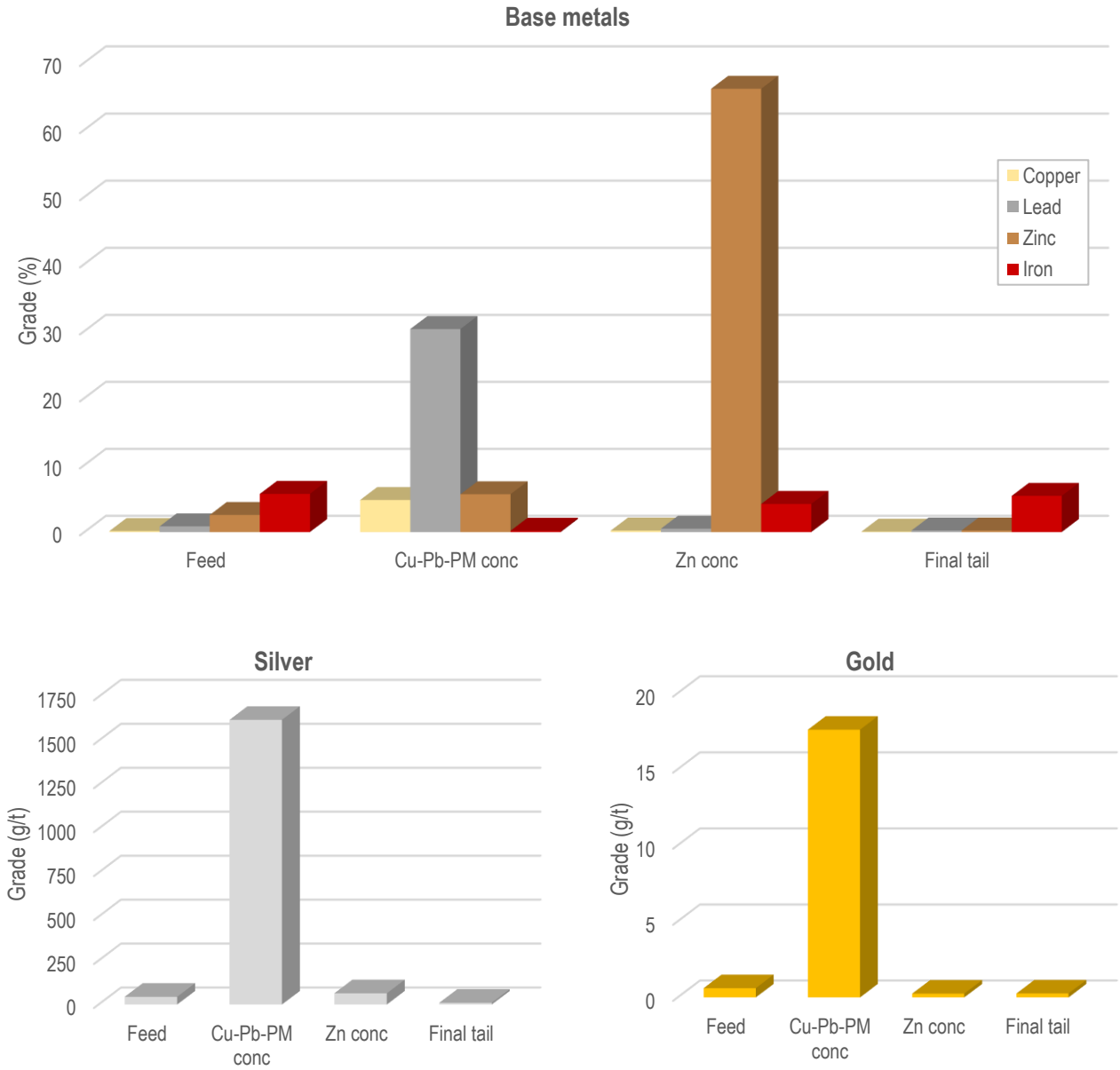

Figure 4 – Relative grades of base metals (Cu, Pb, Zn, and waste Fe), silver, and gold in the feed, the product concentrates, and tails at Lewis Ponds

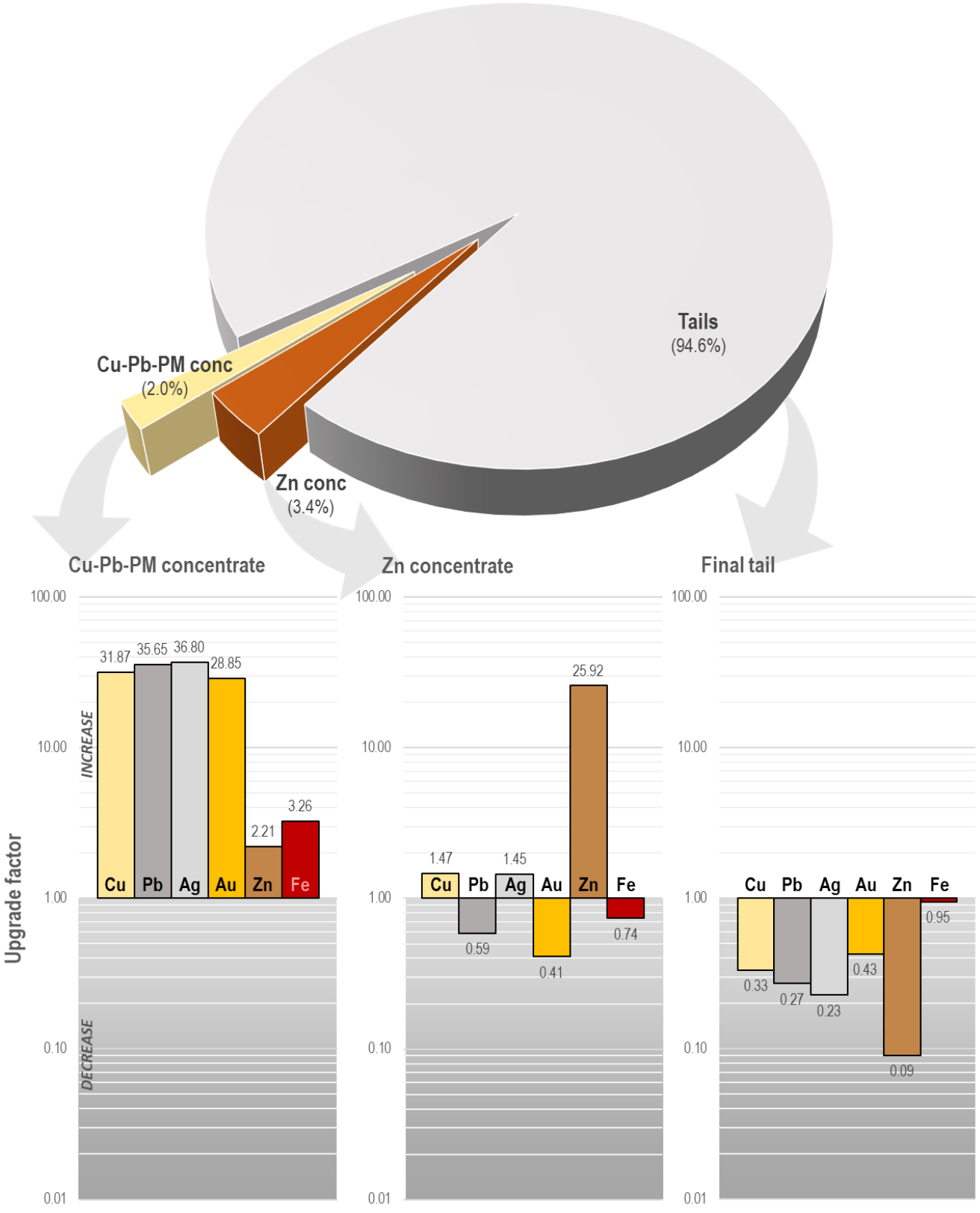

Figure 5 – Proportions of products obtained from processing of the initial feed for all runs in this study. The Cu-Pb-Precious Metal concentrate represents only 2 % of the mass but shows increases of between 29 times and 37 times for the metals of interest. The Zn concentrate is only 3.4 % of the mass but shows around a 26 times increase in zinc levels. The final tails which comprise around 95 % by mass show that the metals of interest are removed to varying degrees, with nearly all waste iron reporting to the tails.

Zinc concentrate

The zinc concentrate constitutes around 3.4 % of the ore feed by mass (Table 1). It contains around 66% zinc (predominantly in the zinc sulphide, sphalerite), indicating a pure product. Iron has been minimised, and in the concentrate is likely partially within the sphalerite crystal structure, but also partly in associated pyrite.

Recovery of around 87 % of the contained metal from the feed using these techniques is excellent. When including the zinc content of the Cu-Pb-Ag-Au concentrate, zinc recoveries exceed 90 %.

Copper-Lead-Precious Metal concentrate

The Cu-Pb-Ag-Au concentrate represents only 2 % of the ore feed by mass. Both lead and copper are strongly fractionated into this concentrate (by 35 times and by 32 times respectively). Lead recoveries of around 73% of the contained metal are good, better than the ~64 % copper recoveries. These represent opportunities for future improvement.

Gold and silver overwhelmingly report to the Cu-Pb-Ag-Au concentrate (~37 times and 29 times concentrated respectively) with high values of 1,619 g/t silver and 17.6 g/t gold. Recovery percentages once again present refinement opportunities. Both precious metals show an affiliation with the fine-grained lead sulphide galena. Separate testing of pyrite concentrates shows that they are very low in gold in this sample set.

Tails

The final tails, which constitute 94.6 % of the mass of the feed, show significant depletion of all metals of interest, along with little change in waste iron contents (Figure 5). Of these, zinc extraction has been the most efficient, with over 90 % of the zinc recovered.

Further enhancements to the process

Refinement of the defined processes will continue, with several opportunities presenting.

The next phase of DMS test work will use a larger composite sample with the separation made in a pilot scale dense medial cyclone (as would be used in a full-scale plant design) instead of the small-scale bench sink-float Heavy Liquid Separation (HLS) test work used in this initial program. It was planned that the -1mm fines, which is not fed to the DM cyclones, will be the subject of reflux classifier test work to determine its potential beneficiation potential.

Further flotation development test work is required, particularly in optimising the mixed Cu-Pb-Ag-Au circuit (galena liberation and depressant optimisation for pyrite, sphalerite and non-sulphide gangue). Further improvements are expected through pyrite and sphalerite rejection from the mixed Cu-Pb-Ag-Au concentrate with a consequent increase in the lead grade of the mixed Cu-Pb-Ag-Au concentrate. Extraction of sphalerite from the Cu-Pb-Ag-Au concentrate and incorporation into the Zn concentrate would result in increased payable zinc recoveries.

About the Lewis Ponds deposit

Lewis Ponds is a zinc-gold-silver-lead-copper deposit in the Lachlan Fold Belt of NSW (Figure 6). The belt is host to numerous major bulk tonnage gold and base metal mines. Of particular note is that the major

deposits at Northparkes and Cadia are hosted within or adjacent to the Lachlan Transverse Zone (LTZ), a west-northwest trending lineament that is thought to represent a fundamental crustal weakness that corresponds to major mineralised centres. Several of Ardea's projects, including notably Lewis Ponds, are located within the LTZ.

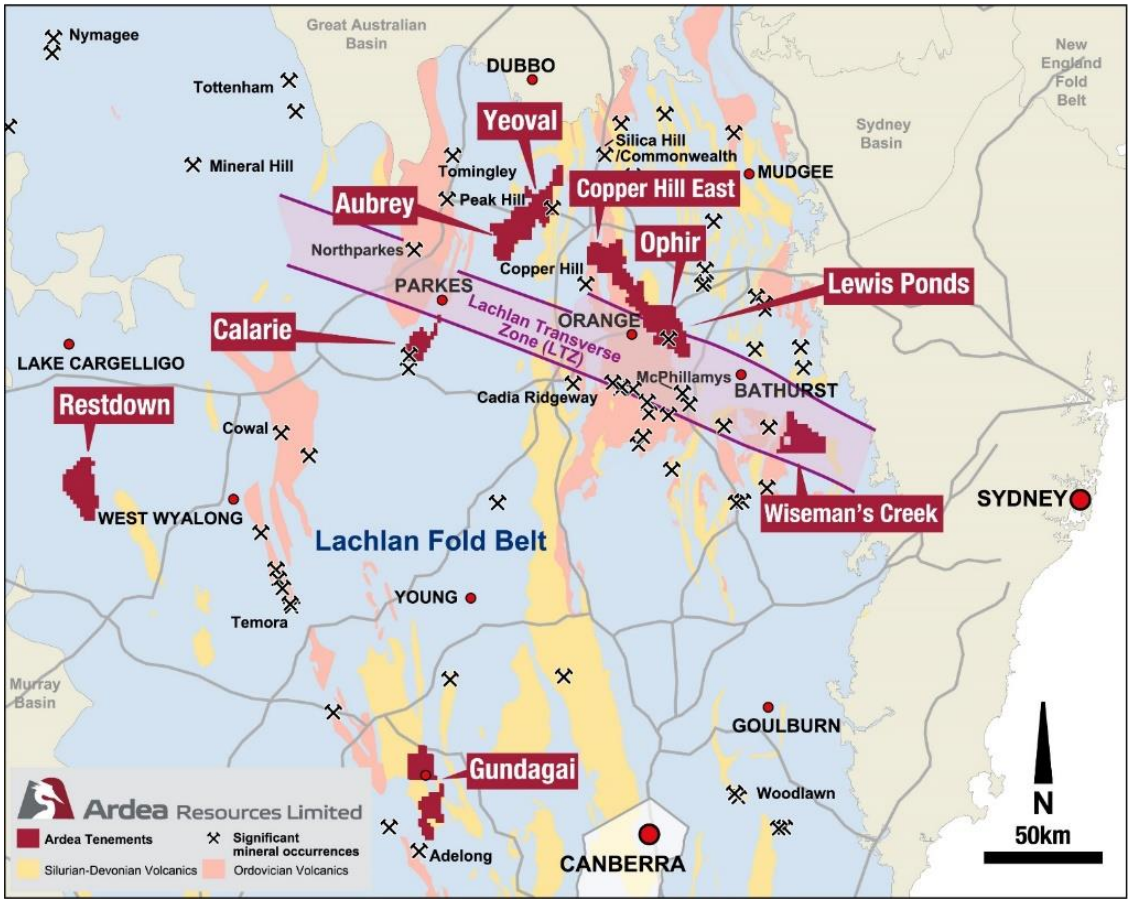

Figure 6 – Map of Ardea's projects in the Lachlan Fold Belt of NSW. Lewis Ponds is, like many of the region's major deposits, located in the highly prospective Lachlan Transverse Zone.

Previously, Lewis Ponds has been explored as a high-grade underground deposit, with a historic resource of 6.6Mt at 1.5g/t Au, 69g/t Ag and 2.4% Zn[1] estimated (refer Prospectus Table 3.2 for full description of resource status). This resource is presently being re-estimated for a bulk tonnage mining operation.

As a potential Massive Sulphide underground operation, the published Lewis Ponds resource (refer below) was calculated at a 3% zinc equivalent cut-off. This is opposed to Ardea's 1.5% zinc equivalent cut-off for an envisaged open pit Stringer Sulphide mining operation. The Ardea concept is consistent with bulk tonnage operations in the central Lachlan Fold Belt which are all low grade, bulk excavation-based (Table

[1] The breakdown for the full Lewis Ponds resource categories is as follows:

Resource Category	Quantity(Mt)	Zn(%)	Au(g/t)	Ag(g/t)	Pb(%)	Cu(%)
Indicated						
Main Zone	5.82	2.1	1.5	59	1.1	0.1
Tom's Zone	0.54	5.5	1.7	172	3.8	0.3
Total Indicated	*6.35*	*2.4*	*1.5*	*68*	*1.4*	*0.2*
Inferred						
Main Zone	0.17	1.7	0.9	47	0.8	0.1
Tom's Zone	0.10	5.0	1.4	174	3.6	0.2
Total Inferred	*0.27*	*3.0*	*1.1*	*96*	*1.9*	*0.1*
Total Mineral Resource	**6.62**	**2.4**	**1.5**	**69**	**1.4**	**0.2**

2). Both Cadia and Northparkes produce sulphide concentrates with precious metal credits, whereas Cowal and the undeveloped McPhillamys deposit utilise (or propose to utilise) a carbon-in-leach (CIL) flowsheet. In terms of metal value (i.e. zinc and gold equivalent values), the mineralised zones intercepted in Ardea diamond core holes ALD0003 and ALD0004 match or exceed those of the major Lachlan Fold Belt operations (Table 2).

Table 2 – Examples of Lewis Ponds mineralisation compared to some of the major mining operations (current and proposed) of the Lachlan Fold Belt.

Operation	Mining	Processing	Mtpa	Example intercept	Zn (%)	Au (g/t)	Ag (g/t)	Pb (%)	Cu (%)	Zn Eq (g/t)	Au Eq (g/t)
Lewis Ponds	Open pit	Zinc con	?	ALD0003[1]	1.54	0.33	26.7	0.54	0.10	**3.00**	**1.80**
Northparkes	Block cave	Copper con	6.0	–	–	0.24	–	–	0.85	**1.80**	**1.21**
Cadia	Block cave	Copper con	22.0	–	–	0.94	0.5	–	0.29	**1.80**	**1.27**
Cowal	Open pit	CIL	7.3	–	–	1.11	–	–	–	**1.52**	**1.11**
McPhillamys	Open pit	CIL	–	–	–	0.94	–	–	–	**1.29**	**0.94**

[1] ALD0003, 100.35-161.23 m.

These results justify Ardea's updated Exploration Target for the Lewis Ponds deposit, estimated at **15–25 Mt at 2.2–3.7 % ZnEq** or **1.2–2.0 g/t AuEq**[2] (Heron Resources announcement, "Ardea Project Update" dated 6 January 2017).

For further information regarding Ardea, please visit www.ardearesources.com.au or contact:

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[2] *Details of the Exploration Target were described in full in the announcement by Heron Resources dated 6 January 2017. An Exploration Target is a term used within the JORC2012 Code for an estimate of the exploration potential of a mineral deposit. As used in this release the stated Exploration Target is based upon the parameters described in the text, however the potential quantity and grade is conceptual in nature and there is insufficient information to estimate a Mineral Resource and it remains uncertain if further exploration will result in the estimation of a Mineral Resource in this area of drilling. For this previously published Exploration Target, Zn equivalents were defined using the following values (21/12/2016 US$ price, recovery): Zn ($2617/t, 100%), Au ($1133/oz, 90%), Ag ($16.00, 80%), Pb ($2259/t, 80%), Cu ($5488.5/t, 80%). Zn equiv. = Zn(%) + 1.253Au(g/t) + 0.016Ag(g/t) + 0.665Pb(%) + 1.678Cu(%). Values used for zinc equivalent calculations throughout this announcement (except for the previously announced Exploration Target). Zinc equivalents used as zinc contributes most to the metal equivalent calculations. Au equivalents were defined using the following values (21/12/2016 US$ price, recovery): Zn ($2617/t, 80%), Au ($1133/oz, 100%), Ag ($16.00, 80%), Pb ($2177/t, 80%), Cu ($5488.5/t, 80%). Au equiv. = 0.575Zn(%) + Au(g/t) + 0.016Ag(g/t) + 0.478Pb(%) + 1.205Cu(%). Gold equivalents used for direct comparison to major deposits of the region. Scoping study level financial model for a 1.5Mtpa open-pit with base metal float circuit indicates 1.6% ZnEq is a suitable break-even cut-off grade.*

Compliance Statement (JORC 2012)

A competent person's statement for the purposes of Listing Rule 5.22 has previously been announced by the Company for:

1. *Lewis Ponds Project, 2016 Heron Resources Annual Report and 6 January 2017 Ardea Supplementary Prospectus;*
2. *ASX announcements on 6 January 2017*

The Company confirms that it is not aware of any new information or data that materially affects information included in previous announcements, and all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. All projects will be subject to new work programs following the listing of Ardea, notably drilling, metallurgy and JORC Code 2012 resource estimation as applicable.

The information in this report that relates to Lewis Ponds Exploration Results is based on information originally compiled by previous and current full time employees of Heron Resources Limited and after February 2017 employees of Ardea Resource Limited. The Exploration Results and data collection processes have been reviewed, verified and re-interpreted by Mr Ian Buchhorn who is a Member of the Australasian Institute of Mining and Metallurgy and currently a director of Ardea Resources Limited. Mr Buchhorn has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the exploration activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Buchhorn consents to the inclusion in this report of the matters based on his information in the form and context that it appears.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION

This news release contains forward-looking statements and forward-looking information within the meaning of applicable Australian securities laws, which are based on expectations, estimates and projections as of the date of this news release.

This forward-looking information includes, or may be based upon, without limitation, estimates, forecasts and statements as to management's expectations with respect to, among other things, the timing and ability to complete the Ardea spin-out, the timing and amount of funding required to execute the Company's exploration, development and business plans, capital and exploration expenditures, the effect on the Company of any changes to existing legislation or policy, government regulation of mining operations, the length of time required to obtain permits, certifications and approvals, the success of exploration, development and mining activities, the geology of the Company's properties, environmental risks, the availability of labour, the focus of the Company in the future, demand and market outlook for precious metals and the prices thereof, progress in development of mineral properties, the Company's ability to raise funding privately or on a public market in the future, the Company's future growth, results of operations, performance, and business prospects and opportunities. Wherever possible, words such as "anticipate", "believe", "expect", "intend", "may" and similar expressions have been used to identify such forward-looking information. Forward-looking information is based on the opinions and estimates of management at the date the information is given, and on information available to management at such time. Forward-looking information involves significant risks, uncertainties, assumptions and other factors that could cause actual results, performance or achievements to differ materially from the results discussed or implied in the forward-looking information. These factors, including, but not limited to, the ability to complete the Ardea spin-out on the basis of the proposed terms and timing or at all, fluctuations in currency markets, fluctuations in commodity prices, the ability of the Company to access sufficient capital on favourable terms or at all, changes in national and local government legislation, taxation, controls, regulations, political or economic developments in Australia or other countries in which the Company does business or may carry on business in the future, operational or technical difficulties in connection with exploration or development activities, employee relations, the speculative nature of mineral exploration and development, obtaining necessary licenses and permits, diminishing quantities and grades of mineral reserves, contests over title to properties, especially title to undeveloped properties, the inherent risks involved in the exploration and development of mineral properties, the uncertainties involved in interpreting drill results and other geological data, environmental hazards, industrial accidents, unusual or unexpected formations, pressures, cave-ins and flooding, limitations of insurance coverage and the possibility of project cost overruns or unanticipated costs and expenses, and should be considered carefully. Many of these uncertainties and contingencies can affect the Company's actual results and could cause actual results to differ materially from those expressed or implied in any forward-looking statements made by, or on behalf of, the Company. Prospective investors should not place undue reliance on any forward-looking information. Although the forward-looking information contained in this news release is based upon what management believes, or believed at the time, to be reasonable assumptions, the Company cannot assure prospective purchasers that actual results will be consistent with such forward-looking information, as there may be other factors that cause results not to be as anticipated, estimated or intended, and neither the Company nor any other person assumes responsibility for the accuracy and completeness of any such forward-looking information. The Company does not undertake, and assumes no obligation, to update or revise any such forward-looking statements or forward-looking information contained herein to reflect new events or circumstances, except as may be required by law.

No stock exchange, regulation services provider, securities commission or other regulatory authority has approved or disapproved the information contained in this news release.

Ardea Resources Limited

JORC Code, 2012 Edition, Table 1 report

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Sample preparation and assaying is being conducted through ALS Laboratories, Orange, NSW with certain final analysis of pulps being undertaken at the ALS Laboratory in Brisbane QLD. • Gold is determined by 30g fire assay fusion with ICP-AES analysis to 1ppb LLD. • Other elements by mixed acid digestion followed by ICP-AES analysis. • Laboratory quality control standards (blanks, standards and duplicates) are inserted at a rate of 5 per 35 samples for ICP work.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• An internal review of results was undertaken by Company personnel. No independent verification was undertaken at this stage. • All field and laboratory data has been entered into an industry standard database using a contract database administrator (DBA) in the Company's Perth office. Validation of both the field and laboratory data is undertaken prior to final acceptance and reporting of the data. • Quality control samples from both the Company and the Laboratory are assessed by the DBA and reported to the Company geologists for verification. All assay data must pass this data verification and quality control process before being reported.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• The drill collars were initially located with a combination of handheld GPS and licenced surveyor using a DGPS system, with accuracy of about 1m. The final drill collars are "picked up" by a licenced surveyor with accuracy to 1 centimetre. • While drilling is being undertaken, downhole surveys are conducted using a downhole survey tool that records the magnetic azimuth and dip of the hole. These recordings are taken approximately every 30 metres downhole. Where possible holes are also being surveyed with gyroscopic methods, with some 80 percent of holes drilled in the current program also surveyed by this method after drilling has been completed.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• The diamond drilling is mostly following-up in various directions from previous intercepts with a nominal spacing in the range 50-100m. This drill hole spacing will be sufficient to provide Mineral Resource estimates in the future.
Orientation of data in relation	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• The drilling orientation is designed to intersect the mineralised lenses at a close to perpendicular angle. The mineralised lenses are dipping at approximately 50-60 degrees to the northeast and the drilling is approximately at 60 degrees to the southwest. This will vary from hole to hole.

to geological structure		
Sample security	• *The measures taken to ensure sample security.*	• Samples are being secured in green plastic bags and are being transported to the ALS laboratory in Orange, NSW via a courier service or with Company personnel/contractors.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• A review and assessment of the laboratory procedures was under taken by Company personnel in late 2016.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Lewis Ponds project is located 14km east-northeast of the city of Orange, central New South Wales, and has an elevation 700 m and 900 m above sea-level. • The exploration rights to the project are owned 100% by the Ardea Resources through the granted exploration licence EL5583, which expires on 24 June 2017. 5 year renewal of the licence. • A capped (A$2M) royalty and finder's fee is payable to a private third party if the project is sold or commences production. • The project is on partly cleared private land, most of which is owned by Ardea. Access agreements are in place for the private land surrounding the main deposit area. There are no national parks, reserves or heritage sites affecting the project area.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Lewis Ponds deposit and surrounding workings were part of Australia's first recognised gold field, discovered 1835. Various surface and shallow underground mining operations and associated processing and smelting operations were present at various times between discovery and approximately 1920. The detailed history for this period is presently the subject of research. • Amax Exploration Australia Inc entered a Joint Venture Agreement which Metals Investments Holdings NL and A.I.Consolidated Gold Pty Ltd held with the owner of the title ,Wentworth Mining Corporation Pty Ltd, over ground which included the Lewis Ponds deposit. Amax drilled four DD holes totaling 875 meters in 1971-1972 which contributed four intercepts above 7% ZnE to this Resource estimate. The only drilling done prior to Amax was by Cominco in 1969. Three holes were abandoned after entering disused workings at the Spicers Mine location, Lewis Ponds. • Subsequent drilling by Aquitaine Australia Minerals Pty Ltd in 1975-1976 was under joint venture agreement with Amax and Shell Company of Australia. 10 (BOA series) holes were drilled totalling 2102 metres, which also contributed four intercepts. • Between 1979 and 1981 a further 7 holes totaling 2274 metres (SLP series) were drilled by Shell

Criteria	JORC Code explanation	Commentary
		and Aquitaine under the JV agreement with Amax. This drilling contributed five intercepts including one twinned in a wedge hole. In total, other party exploration contributed 15 percent of the database which now determines the geometry of potentially ore grade mineralisation for this Resource estimate. • In 1987-1988, the Homestake subsidiary Sabminco drilled 33 RCP holes totaling 2300 metres (LPRC series). This drilling contributed 21 intercepts of the 230 used to interpret the Resource. • Prior to the acquisition of TriAusMin by Heron in August 2014, Tri Origin Australia drilled 42232 metres in 124 holes, followed by Tri Origin Minerals with 3812 metres in 30 holes.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The most recent statement of the Lewis Ponds geology by Dr Peter Gregory (2005) has also built on much prior geological insight by other parties in the 1970s and 1980s, and by geologists employed by predecessor companies to Tri Origin Minerals since 1992. Also between 1999 and 2003 a comprehensive Ph.D study of the geology was made (Agnew 2003) A re-cast of Peter Gregory's summary is as follows: • Type: Results of the study show that primary volcanogenic mineralisation of Late Silurian age developed within an extensive axial zone over 1200m in a moderately deep water trough (extensional back arc). Mineralisation deposited at one horizon close to and possibly on the seafloor within sediments and volcaniclastics and at the end of a rhyolite-dacite volcanic episode involving lava domes. Tom's Zone in the south formed in a quieter sedimentary environment dominated by siltstones. Current work by Ardea is showing that late-stage gold mineralisation overprints the earlier VMS style mineralsation. • Setting: The Lewis Ponds mineralised zone is located on the eastern limb of a major regional F1 anticline and within several subsidiary anticlinal and synformal zones on that limb. Plunges are variable with Main Zone plunging moderately northwest, but there appears to be little or no plunge along other sections of the mineralised trend. Various reverse faults probably emanating from a basal sole thrust at the contact of the Ordovician basement and the Silurian rift succession cut the axial zones of several of these folds and leave most volcanic sediment contacts as fault zones. The Lewis Ponds Fault, a ductile and brittle fault zone cuts a synform axis and has caused, kinking and reorientation of cleavage and remobilisation of sulphides. An interpreted southwest-northeast dip slip fault near 1220N is suggested to downfault the mineralised package to the northwest • Style of mineralisation: Main Zone mineralisation to the north is largely composed of massive to semi-massive sulphide replacement as well as veining and dissemination within the host polymict breccia-volcaniclastic-siltstone package. Mineralising fluids emanating from syn-volcanic faults in the footwall porphyry moved laterally through porous zones in the host package causing sulphide replacement. The mineralising fluids may have exhaled on the seafloor at some stage based on the minor occurrence of interpreted reworked sulphide clasts and interstitial bands of fine sulphide in some carbonate dominated breccias. Tom's Zone in the south consists of a narrow massive sulphide stratiform zone in reasonable proximity to interpreted footwall feeder pyrite-chalcopyrite

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		stringers. Subsequent, possibly epithermal style precious metal mineralisation is present though its relationship to the earlier, well-documented mineralisation is not yet clear.
Drill hole Information	○ *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*	• The archival database carries 211 holes totalling 54,516 metres of drilling. Ardea is presently reviewing this database. • No significant drilling information has been generated by Ardea at this stage.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*	• No grade aggregation methods were used for this announcement. For treatment of historical data, see below. • Grades: Grade compositing was by averages above cutoff weighted for sample length. The maximum total inclusion of subgrade was 5m and the maximum consecutive inclusion of subgrade was 3m. Two sets of composites were prepared, one based on downhole cutoff of 1 percent Zinc Equivalent (% ZnEq) and the other based on 7% ZnEq (potentially economic). No cutting of high grades took place at the aggregation stage because grade composites were used only for the interpretation of the geometry of the mineralisation on cross section and in plan, prior to wireframing, not for Resource estimation. • Metal Equivalent: Being a multi-element deposit in terms of value, some synthesis of the contribution of five metals, Au, Ag, Cu, Pb and Zn to the application of any downhole (or block) cutoff was required. The standard technique of converting grade to $US per grade unit (gram, ounce, percent), adding the dollar contributions then converting back to a single metal equivalent was used, in this case Zn Equivalent percent. Conversion to Au equivalent grams per tonne would have served the same purpose. • For 2016 Ardea Prospectus purposes the question arises: would the use of current metal prices make an appreciable change to the estimated Resource figure via changes to the intercept lengths used to define the geometry of the mineralised lenses? Re-calculation of the project's zinc equivalents and comparison with the 2005 figures give interesting results for intercepts above the 7% ZnEq cutoff: the number of intercepts increases by 20 percent (although many lie between 7 and 8% ZnEq); the sum of intercept lengths increases 30 percent and the weighted average ZnEq grade of intercepts increases marginally, about 7 percent. Much of this lift is carried by the higher Au intercepts, the gold price having increased 300% since 2005. These changes in ZnE suggests that if the same cutoffs are retained (1% and 7% ZnEq), a somewhat larger mineralisation could be interpreted at a similar grade. For the purposes of this report it is sufficient to say that there is no ZnE penalty in respect of today's metal prices.
Relationship between mineralisation widths and	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	• Within the Main zone the strongest mineralisation dips about 50° northeast with vertical tails up to the west and down to the east, ie sigmoid. This has resulted in intersection angles effectively normal to the thicker parts of the mineralisation making true widths equal to downhole widths. Where the lens tails up to the west and down to the east, the angles reduce to 40° to 60° with much reduced true widths in the thinnest parts of the mineralised lenses.

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intercept lengths		• In Toms zone to the south of Main zone, dips of mineralisation are vertical or sub-vertical. In the upper levels, angles between hole and mineralisation are around 50° but at deeper levels can be as low as 30° or 20°, substantially reducing true widths. Interpretation of mineralised lenses honours the true widths.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• No new drilling to show at this stage.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Results.*	• The reporting is considered to be balanced and all relevant results have been disclosed for this current phase of exploration.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• The most material information affecting the resource estimates was the geological logging and core photography carried out by Dr Peter Gregory (Gregory, P., February 2004 and Gregory P., January 2005). This work was completed in time for this estimate (April 2005). Of particular interest were his views on the likely continuity of the massive sulphides as distinct from the enclosing dissemination, veins and stringers, especially as the highest grades are identified with massive or 'semi-massive' sulphides. A number of geologists, including Gregory, are of the opinion that mass flows incorporating carbonate and volcanic debris have disrupted earlier seafloor-deposited massive banded sulphides. This happened in situ without significant transport away from the original depositional site. Thus at say a 1% ZnEq cutoff, the mineralisation has good continuity which is the mining model Ardea is evaluating with its DMS concept. At a higher cutoff, say 7% ZnEq continuity could become an issue. With a drill spacing sometimes 50-100m there is every possibility of a massive sulphide 'bed' being disrupted into a series of "rafts" generally parallel to the axis of the +1% mineralisation. However, in seeking to model the deposit, statistically massive sulphide seems to be represented in adjacent holes as though it were a continuous or semi-continuous bed. • A number of metallurgical studies have now been made of Lewis Ponds mineralisation. These have centred on optimising the number of concentrates, predicting what percentage of the gold could report to a gravity circuit and whether refractory gold should go to CIL or be paid in the concentrates. These studies have been reviewed by R W Nice (2006).
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*	• In the 11 years since this estimate was prepared Au and Ag metal prices have trebled and Cu, Pb and Zn effectively doubled. To test the effect, zinc equivalents for Lewis Ponds have been re-calculated using metal prices current at 1 September 2016. Any intercepts with significant Au have increased 30 to 50 percent in terms of ZnEq and a significant number which were near below the 7 percent ZnEq cutoff are now above the cutoff. The result has been a 20 percent increase in

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		the number of intercepts, a 30 percent increase in the total intercept metreage, and a 6 percent increase in the average dollar value of the intercepts. Thus there could be case at some stage to re-model the geometry of the lenses and to re-estimate a block model. • Also the LPRC34-LPRC41 drilling done in 2011, which had some intersections of interest, with further comparatively short hole drilling, approximately 100m each, could add a useful tonnage and value to the Resource. The structure drilled is on the Torpey's Shaft line and is open south.