

### **3D GEOLOGICAL ANALYSIS AND TARGETING AT MURPHYS**

#### **Highlights:**

- Structural controls and coherent gold and base metal distribution patterns confirmed.
- Mineralisation is open at depth and potential for gold resource extensions identified.
- The plunge of mineralisation is towards major historic gold-base metal workings.
- Project area is crossed by the Lachlan Transverse Zone, interpreted to be related to emplacement of some major gold and gold-copper deposits in the Bathurst region.
- Reprocessing and modelling of detailed geophysical data is in progress.

Managing Director, Dr Jeffrey Malaihollo, commented:

*“The 3D analysis of the historic drill data and mapping has significantly advanced our understanding of Murphys gold prospect, mapped the distribution of gold grades and associated base metal anomalism, and has highlighted potential for additional resources located down-plunge of the known mineralisation that has had insufficient drill testing. These encouraging results have helped set a platform for future exploration work in the immediate area.*

*Another consultant is currently reprocessing and modelling detailed geophysical data previously acquired over the entire tenement, including airborne gravity, magnetics and radiometrics using Falcon Aero-gravimetric technology. Results from this will be used to help explore for new gold targets and for porphyry gold-copper targets in the underexplored Ordovician rock units within the tenement.*

*We look forward to reporting the results of this work in the coming months.”*

Arc Exploration Limited (ASX Code: ARX) is pleased to announce the results of a 3-Dimensional (“3D”) exploration targeting analysis of Murphys gold prospect on the Oberon Project, which was done by Perth-based geological consultants, Orefind Pty Ltd.

Murphys lies at the northern end of EL 6525, an exploration tenement held by New South Resources Limited (“NSR”) and on which ARX has an option to joint venture. The tenement is located about 180 km west of Sydney in the Southern Highlands of New South Wales.

An inferred resource of about 150,000 ounces gold (5,300,000 t at 0.89 g/t gold) has been estimated at Murphys (see ASX announcements of 3<sup>rd</sup> and 10<sup>th</sup> July 2013). This is based on previous drilling that produced broad low-grade gold intercepts including 49m at 0.75 g/t gold and 23m at 1.05 g/t gold.

The 3D analysis is based on a gold & base metal assay database, derived from 2990 metres of drilling in 27 Reverse Circulation Percussion holes and one diamond hole, and on geological data derived from past geological mapping. These datasets were analysed using Leapfrog mining software with the aim of helping to improve the geological knowledge of the mineralisation controls and to highlight potential for gold resource extensions.

The analysis confirmed that the gold resource is hosted in a multiple-deformed felsic volcanogenic sedimentary rock package located in the hanging of major fault structure. Faulting and folding have influenced the orientation and geometry of the deposit.

It was concluded from the gold & base metal distribution patterns and integrated structural information that the mineralised system has an open low to moderate plunge to the south and that the gold mineralisation may extend at depth in this direction. This plunge direction is toward the major historic gold-base metal workings at Wisemans, located about 1 km to the south, and which is also located within EL 6525. An alternative structural model was also assessed but considered less likely.

The analysis supports potential for extension to the gold resource at Murphys. This gold prospect has been drill tested to generally less than about 150 m vertical depth. It has not been explored down the interpreted open plunge direction derived from this study and the area between Murphys and Wisemans has yet to be thoroughly explored.

### **Background on the Oberon Project**

The **Oberon Project** is located in the Bathurst region on the eastern side of the Lachlan Orogen in New South Wales. It comprises one large licence EL 6525 and a smaller adjoining licence EL 8110. The total area of the exploration tenement package under option by ARX is approximately 265 square-kilometres.

The Bathurst region is highly endowed in metallogenic resources and contains a number of major mineral deposit styles including orogenic gold (e.g. Hill End), gold-rich volcanic-hosted massive (& disseminated) sulphide ("VHMS") (e.g. Lewis Ponds, McPhillamys), porphyry copper-gold ("PCD") (e.g. Cadia), and granite-related gold skarn (e.g. Browns Creek, Lucky Draw).

The tenements cover Siluro-Devonian felsic volcanosedimentary rocks (prospective for VHMS & orogenic gold), Ordovician mafic volcanosedimentary rocks (prospective for PCD & orogenic gold), and Carboniferous granites (prospective for granite-related gold skarns).

The project area is crossed by the west-northwest trending Lachlan Transverse Zone, an inferred arc-normal structural corridor that is interpreted by Glen *et al.* (2007) to have influenced the emplacement of mineralising monzonite intrusions (e.g. Cadia) and felsic volcanic centres (e.g. McPhillamys) in the Bathurst region. The same structure may have similarly influenced the distribution of gold-base metal prospects in the project area, including *Murphys*.

The project shows potential to increase in size through the discovery of new gold and gold-copper resources, and occurs near major mine operations and development infrastructure.

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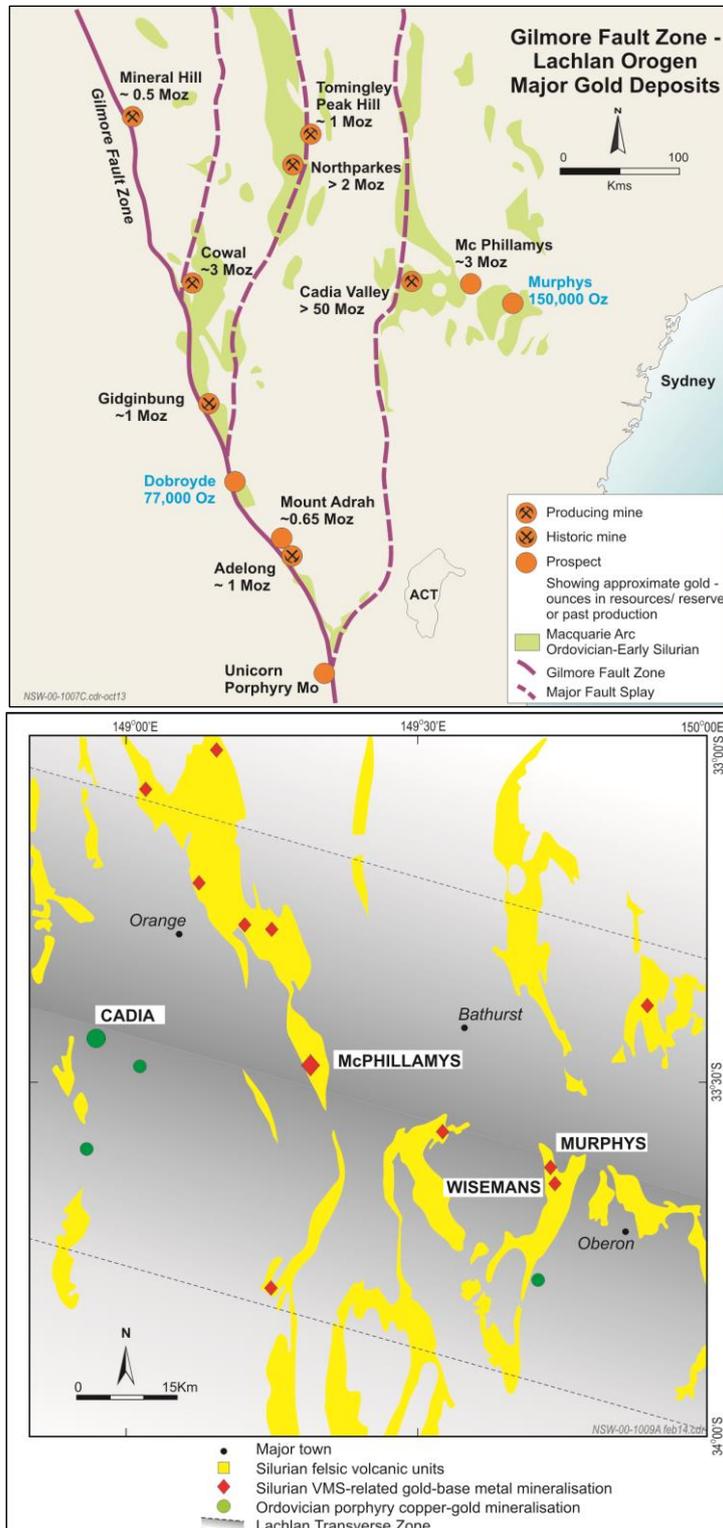
### **Competent Person Statement**

The information in this announcement that relates to Exploration Results from the Murphys gold prospect on the Oberon Project in New South Wales, Australia is based on information compiled by Mr Brad Wake, BSc(Applied Geology), who is a member of the Australian Institute of Geoscientists. Mr Wake has sufficient experience that is relevant to the styles of mineralisation and types of deposit under consideration and to the activity which is being undertaking 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 Wake is a full time employee of Arc Exploration Limited and consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

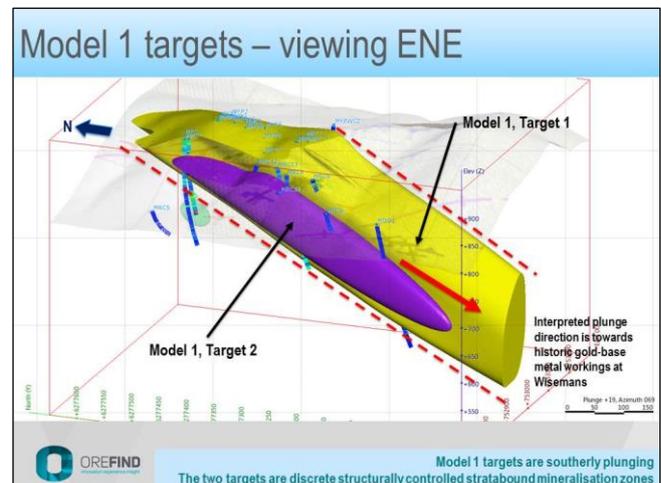
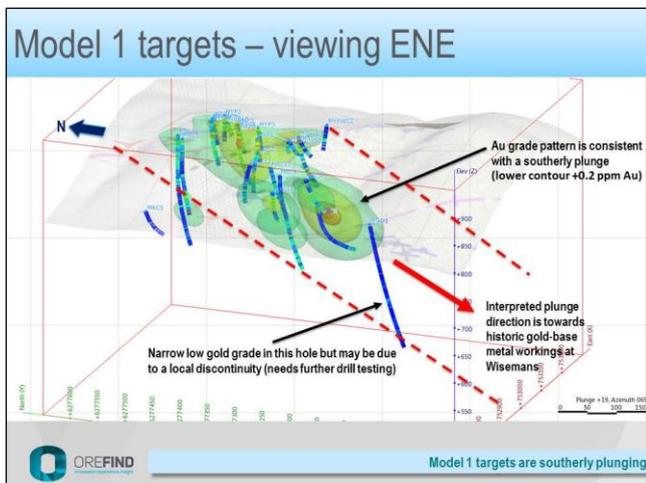
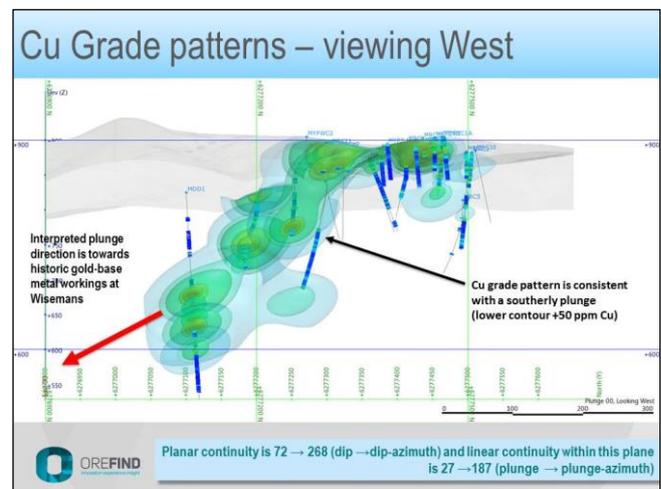
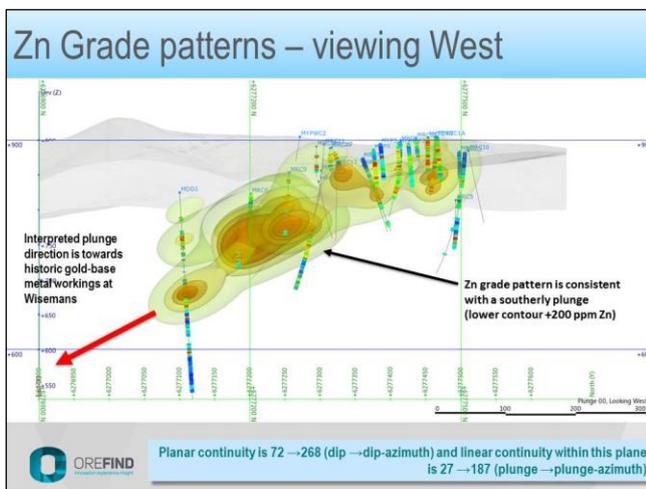
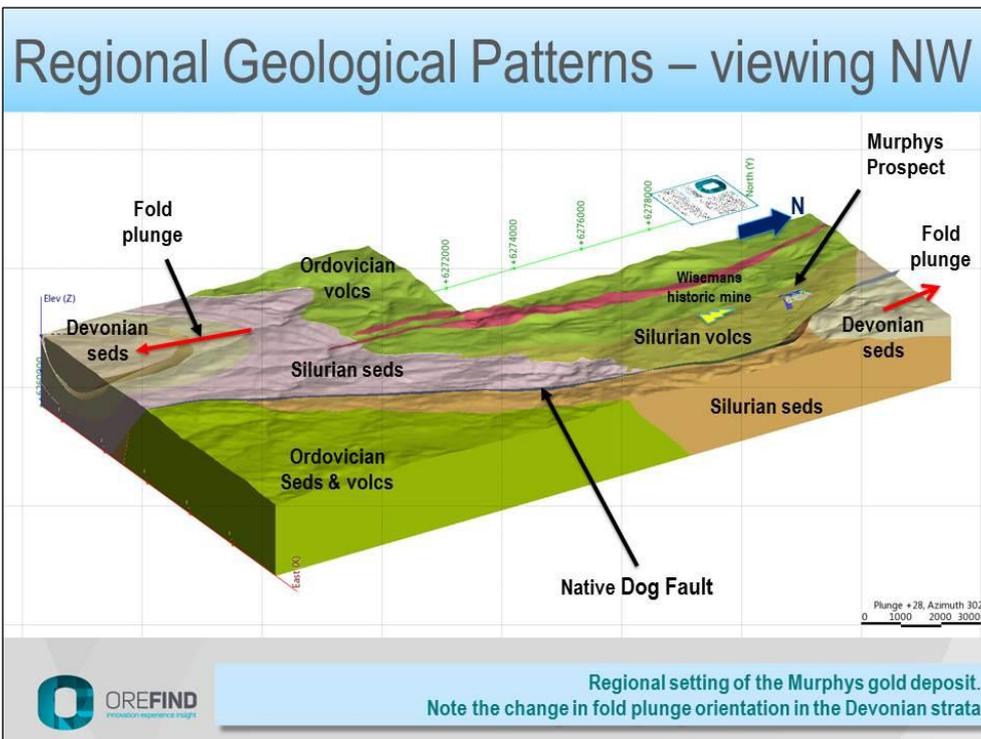
The information in this report that relates to:

- the *Murphys* gold resource is extracted from the report entitled June and Oberon Projects - Statement of Resources created and released to the ASX on 10 July 2013.

The report referred to above is available to view on the Company's website: [www.arcexploration.com.au](http://www.arcexploration.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.



Figures: Location of Murphys gold prospect, Oberon Project, New South Wales



**Figures: Selected Images from the 3D geological & targeting analysis of Murphys gold prospect by Orefind Pty Ltd**

## ANNEXURE: Assessment and Reporting Criteria according to 2012 JORC Code

### Section 1 – Sampling Techniques and Data

Criteria	Explanation
Sampling Techniques	<ul style="list-style-type: none"> <li>Not relevant; not reporting new sample results</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Not relevant; This 3D geological analysis is based on historic drilling data relating to ARX release on 10 July 2013 (Titled: <i>Junee and Oberon Projects – Statement of Resources</i>)</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques</i></li> </ul>
Logging	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques</i></li> </ul>
Sub-sampling techniques & sample preparation	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques</i></li> </ul>
Quality of assay data & laboratory tests	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques</i></li> </ul>
Verification of sampling & assaying	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques</i></li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques</i></li> </ul>
Data spacing & distribution	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques</i></li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques</i></li> </ul>
Sample security	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques</i></li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques</i></li> </ul>

### Section 2 – Reporting of Exploration Results

Criteria	Explanation
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>EL 6525 is held 100% by a private company, New South Resources (“NSR”) Pty Ltd. ARX has an option to farm-in to the Oberon Project, which includes EL 6525. Details were announced in an ARX report released to the ASX 3 July 2013.</li> </ul>
Exploration by other parties	<ul style="list-style-type: none"> <li>EL 6525 contains significant historic mines (Wismens-Phoenix mining field) that were worked sporadically in the late 1800’s, early 1900’s, 1930’s &amp; 1940’s. Murphys gold prospect is located at the northern of this mining field.</li> <li>EL 6525 has been previously explored by various other companies under different exploration tenements since the 1950’s.</li> <li>Murphys gold prospect was discovered beneath shallow historic prospecting pits in shallow drilling by Newmont in the early 1980’s (3 percussion holes for 120.5m). It was explored and drilled under the Michelago-Allstate-Sipa JV in the 1990’s (6 percussion holes for 372m).</li> <li>EL 6525 was granted to NSR in 2006. Since then NSR has conducted geological mapping, soil sampling, a limited IP-R survey, and drilling at Murphys (18 percussion holes for 2130m; one diamond hole for 368.1m).</li> <li>Murphys prospect was covered by an airborne gravity, magnetics &amp; radiometrics survey using Falcon aerogravimetric technology under an agreement with BHP Billiton in 2007.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Located on the eastern side of the Lachlan Orogen</li> <li>EL 6525 covers curvilinear belts of Ordovician metasedimentary rocks (Adaminaby Group) &amp; mafic metavolcanosedimentary rocks (Rockley Volcanics), Late Silurian felsic metavolcanosedimentary rocks (Mumbil Group), Early Devonian sedimentary rocks (Crudine Group); intruded by late Carboniferous granites (Bathurst Batholith, Oberon Granite, Mt Stromlo Granite) and minor Tertiary basalt flows.</li> <li>Influenced by two phases of deformation (folding &amp; faulting) that have imposed the strong meridional strike orientation of the Ordovician-Devonian strata; the two principal structural domains within the tenement are separated by a major regional thrust structure, the Native Dog Fault.</li> <li>The entire tenement lies <i>within</i> the Lachlan Transverse Zone, an inferred west-northwest trending arc-normal structural corridor of metallogenic significance in the region.</li> <li>Prospective for VMS-related gold-base metal, porphyry gold-copper, orogenic &amp; granite-related gold deposits.</li> <li><b>Murphys Geology:</b> The mineralisation is stratabound by Silurian rock units. Gold is associated with pyrite, pyrrhotite, base metal sulphides &amp; other polymetallic sulphosalts disseminated through quartz-mica (muscovite/talc)-chlorite schists &amp; phyllites (felsic metavolcanosedimentary rocks) and in diffuse thin-quartz stockworks cutting these rocks. Gold residence and paragenesis in relation to the sulphide mineralisation is uncertain. Metallurgical characteristics of the gold are unknown. The 3D geological analysis of multielement geochemical data and mapped geology performed by Orefind concluded that the mineralisation trends approximately north-south; parallel to an S1 cleavage system developed within folded Silurian units located in the hanging wall of a major reverse thrust structure, the Native Dog Fault. The mineralisation most likely has a low-moderate plunge toward the south/south-southwest within fold-cleavage planes that steeply dip to the west.</li> <li><i>Reference:</i> Glen et al (2007). Tectonic setting of porphyry Cu-Au mineralisation in the Ordovician- Early Silurian Macquarie Arc, Eastern Lachlan Orogen, New South Wales. <i>Australian Journal of Earth Sciences</i>, 54: 465-479</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques (under Section 1)</i></li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques (under Section 1)</i></li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>Not relevant; See comment on <i>Drilling techniques (under Section 1)</i></li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>Diagrams representing the project area and relating to the 3D analysis are attached to this report.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>Representative reporting of all relevant results have been provided in this announcement.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>The <b>3D exploration analysis of Murphys gold prospect</b> using Leapfrog presented in this announcement was performed by Dr Jun Cowan, Principal Structural Geologist and a Director of Orefind Pty Ltd.</li> <li>The analysis incorporated historic drill hole data – gold and multielement assays (Ag, As, Cu, Pb, Sn and Zn) &amp; lithological logging – topographic elevation data, interpreted geology &amp; geological consulting reports, and the published regional geology sheet.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>Follow-up work is planned at Murphys to include further soil sampling &amp; litho-geochemical studies to test the structural models presented in the 3D geological analysis.</li> <li>Reprocessing and modelling of historic airborne geophysical data is in progress and will be used to help explore for possible gold resource extensions in the Murphys prospect area.</li> </ul>