



AUSTRALIAN RAISE DRILLING



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(A division of Macmahon Mining Services Pty Ltd)

CAPABILITY STATEMENT

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Introducing Australian Raise Drilling

Australian Raise Drilling (ARD) was formed early in 1988 to undertake a management buyout of WMC Resources (WMC) raise drilling fleet. It is based in Adelaide, South Australia, with offices in Perth in Western Australia. It has expanded from a raise drilling contractor to an organisation which has the ability to undertake both mining and engineering design and fabrication work in addition to the raise drilling capacity. With the acquisition by Macmahon Mining Services Pty Ltd (MMS) of the ARD assets in September 2006, ARD became part of the Macmahon group.

At the time of its original establishment, ARD acquired five raise drills and all of their associated equipment from WMC. ARD has since added seven machines to the original fleet and is now Australia's premier raise drilling contractor, particularly in its proven ability to undertake large diameter deep shafts. The rigs owned by ARD range from the Robbins 121R, one of the largest rigs in the world, capable of drilling holes of up to 6 metres diameter to a depth of 1,000 metres, to the Dresser 480 rigs which are capable of drilling 1.8 metre diameter raises to a depth of 200 metres. ARD also has two Robbins 34R rigs capable of drilling blind up-holes of up to 1 metre in diameter.

ARD has all of the associated equipment, including a mud plant for drilling in adverse ground conditions, reaming heads, forklifts, and air compressors to undertake any raise drilling programme successfully. It has also developed techniques for horizontal raise drilling for use where poor ground conditions or proximity to structures renders conventional drill and blast methods inappropriate.

MMS includes Combined Resource Engineering (CRE), which was originally formed to provide engineering design, manufacturing and maintenance services as well as a project management capability. It now specialises in the design, manufacture and installation of underground mining facilities, including winders, headframes, shaft steelwork, loading stations, conveyances, pump stations and other associated installations.

ARD, in conjunction with CRE, is also able to offer shaft lining and support services. These include the fabrication and installation of steel liners, the installation of ground support and other lining, including full concrete lining.

A summary of ARD's capabilities is set out in the following pages.

Adelaide:

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Drilling history

At the time of its acquisition by ARD in April, 1988, the WMC raise drilling department had successfully drilled 331 raises for a total of 41,128 metres.

In addition to this, ARD has now drilled over 100 kilometres of raise in 1,076 holes, which are made up as follows;

<i>Raise diameter</i>	<i>Metres Drilled</i>
0.6 metres diameter	1,161 metres
1.0 metres diameter	7,437 metres
1.2 metres diameter	39 metres
1.4 metres diameter	22,863 metres
1.5 metres diameter	1,652 metres
1.8 metres diameter	14,023 metres
2.1 metres diameter	673 metres
2.4 metres diameter	19,067 metres
3.0 metres diameter	10,556 metres
3.5 metres diameter	8,048 metres
3.7 metres diameter	576 metres
3.8 metres diameter	916 metres
4.0 metres diameter	13,469 metres
4.5 metres diameter	14,250 metres
4.8 metres diameter	797 metres
5.0 metres diameter	295 metres
5.3 metres diameter	124 metres
5.8 metres diameter	170 metres
6.3 metres diameter	100 metres

Total	116,216 metres

Clients

ARD has undertaken contract raise drilling for almost all of Australia's major mining companies and mining contractors in every state in Australia. Below is a list of the ARD's major raise drilling clients.

Company	Location
Aberfoyle Resources Limited	Hellyer, Tas
Anglocoal Ltd	Moranbah North, Qld
Anglogold Ashanti	Sunrise Dam WA
Aztec Mining Company Limited	Bounty, WA
Bendigo Mines Ltd	Bendigo, Vic.
Capricorn Coal Pty Ltd	German Creek, Qld
Cobar Mines Limited	CSA Mine, Cobar, NSW
Cyprus Minerals Australia	Selwyn, Qld
Coolgardie Gold NL	Coolgardie, WA
Denehurst Pty Ltd	Woodlawn, NSW
Exstrata	Beltana NSW
Goldfields (Tasmania) Pty Ltd	Henty, Tas
Henry Walker Eltin Ltd	Jabiluka, NT Kanowna Belle, WA Sons of Gwalia, WA Northparkes NSW
Hill 50 Gold Mines Ltd	Mt Magnet, WA
Homestake Australia	Darlot, WA Plutonic, WA
Kalgoorlie Consolidated Gold Mines	Kalgoorlie, WA
Macmahon Underground	Mt Isa, Qld Argyle WA
Mount Isa Mines	Oaky Creek North, Qld McArthur River, Qld
Murchison United	Renison, Tas

Newcrest Mining Limited	Kalgoorlie, WA Ridgeway NSW Telfer WA Cracow, Qld Cadia NSW
Newmont Australia Ltd	Tennant Creek, NT Cue, WA Bronzewing, WA Scuddles, WA Gossan Hill, WA Jundee, WA Wiluna, WA Granites, NT
Northside Storage Tunnel Alliance	Sydney, NSW
Outokumpu Australia	Forrestania, WA Black Swan Mine, Kalgoorlie WA
Pancontinental Resources	Thalanga, Qld
Pasminco Mining Pty Ltd	Broken Hill, NSW Elura Mine, Cobar, NSW Rosebery, Tas
Rio Tinto Ltd	Peak Mine, Cobar, NSW Argyle WA
Sons of Gwalia Ltd	Greenbushes, WA Leonora WA Marvel Loch, WA
Springvale Coal Pty Ltd	Springvale, NSW
Sydney Metropolitan Water, Sewage and Drainage Board	Sydney, NSW
Ulan Coal Mines Limited	Mudgee, NSW
Western Metals Ltd	Kapok , WA Pillara, WA Goongewa, WA
WMC Resources Ltd	Kambalda, WA Laverton, WA Olympic Dam, SA Leinster, WA
Worsley Alumina Pty Ltd	Boddington, WA

Projects Completed

Some of the more major projects successfully undertaken by ARD are set out below.

Client	Nature of Work	Value
<i>BHP Billiton</i>		
Olympic Dam SA	26 ventilation shafts, including, 647m x 4.5m vent shaft	\$1.7 million
	646m x 4.5m vent shaft	\$1.5 million
	614m x 4.5m vent shaft	\$1.4 million
Lancefield WA	390m x 4.1m vent shaft	\$1.0 million
Leinster WA	6 x 90m x 4m horizontal drives	\$1.0 million
	249m x 4.5m shaft	\$1.3 million
	807m x 2.4m shaft stripped to 7m diameter with 57m concrete lined pre-sink	\$7.8 million
Kambalda WA	530m x 3.1m shaft	\$1.4 million
<i>Pasminco Mining</i>		
Broken Hill NSW	588m x 4.1m shaft	\$2.1 million
	820m x 1.8m shaft	\$1.4 million
Rosebery, Tas	650m x 4.5m shaft, inc. 38m lined pre-sink	\$3.0 million
<i>Newmont Australia</i>		
Scuddles WA	350m x 4.1m shaft	\$1.0 million
Jundee WA	312m x 4.0m shaft	\$1.2 million
Callie NT	300m x 4.5m shaft inc. strip and line from 1.8m drilled shaft for top 115m.	\$2.2 million
<i>Ulan Coal Mines</i>		
Ulan, NSW	180m x 5.0m shaft fully concrete lined with a 50m pre-sink	\$2.2 million
<i>Aztec Mining</i>		
Southern Cross WA	270m x 3.8m shaft	\$0.4 million
	370m x 2.4m inclined shaft	\$0.8 million
<i>Renison Goldfields</i>		
Henty Tas	377m x 3.0m underground shaft 570m x 3.7m ventilation shaft	\$1.0 million
<i>Capricorn Coal Management</i>		
German Creek, Qld	Two 200m x 4.8m shafts, inc. ground support and lining	\$2.6 million
<i>Springvale Colliery</i>		
Lithgow, NSW	Two 140m x 4m shafts fully concrete lined	\$2.5 million

Northside Storage Tunnel Alliance:

Sydney NSW	154m x 5m shaft	\$1.0 million
	170m x 4.5m shaft, inc. ground support	\$1.2 million

Homestake Australia:

Darlot, WA	355m x 3.8m shaft, inc. 70m deep lined pre-sink and installation of ground support	\$2.8 million
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Rio Tinto Ltd:

Cobar NSW	Three ventilation shafts	
	883m x 3.1m	
	874m x 4.0m	
	844m x 4.0m	\$6.0 million
	The work included support to the shafts after drilling was completed.	

Newcrest Mining Ltd:

Telfer WA	831m x 4.5m vent shaft	\$5.0 million
	813m x 2.4m shaft	\$2.9 million

Anglocoal Ltd:

Moranbah Nth Qld	170m x 5.8m vent shaft a 32m pre-sink	\$3.2 million
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Equipment available

ARD has the most comprehensive range of raise drilling equipment in Australia. All rigs are hydraulically driven to provide maximum flexibility in operation, protect the drill string and in-hole equipment and reduce usage of consumables such as bits and cutters. Set out below is detail of the rigs available to ARD clients and a summary of their capabilities. Note that the capabilities shown are nominal and will depend on the ground conditions on the site.

Rig	Capability
Robbins 121R	Up to 600m depth at 6m diameter Up to 1,000m at smaller diameters Suitable for surface use only
Robbins 85R	Up to 400m at 4.5m diameter Suitable for surface or underground use
Robbins 84R	Up to 300m at 4.0m diameter Suitable for surface or underground use
Robbins 73R	Up to 300m at 3.5m diameter Suitable for surface or underground use
Tamrock Rhino 1296	Up to 300m at 3.5m diameter Suitable for surface or underground use
Dresser 800 (2 rigs)	Up to 200m at 2.4m diameter Suitable for surface or underground use
Dresser 480 (2 rigs)	Up to 200m at 1.8m diameter Suitable for surface or underground use
Robbins 34R (2 rigs)	60m at 1.4m diameter Suitable for surface or underground use Capable of drilling blind up-holes up to 1m diameter

In addition, ARD has a substantial inventory of in-hole equipment, including rods, reaming heads and stabilisers, and a range of surface equipment such as forklifts for rod handling, a mud plant for pilot hole drilling where required and high pressure air compressors. The availability of such equipment enables ARD to gain the maximum flexibility in meeting job requirements - for example, in the event of a failure of a rod string, ARD is able to replace rods from its inventory with only minimal interruption to the work.

Key Personnel

The personnel employed by ARD have extensive experience at senior level in the mining industry and are familiar with the demands of contracting. The combination of skills enables the group to provide a wide range of services from complete "turnkey" packages to specific individual requirements.

The Company's key personnel are:

Mr. Kim Anderson (Operations Manager Drilling) has been responsible for the successful operation of ARD's raise drilling division since 1990. Prior to that, he has had 25 years of practical experience with Western Mining Corporation as a driller, raise drill foreman and, latterly as ARD's Drilling Superintendent and now Operations Manager Drilling.

Simon Putna (Commercial Manager ARD/CRE) is a qualified Accountant with over 30 years of experience within a number of industries including Manufacturing, Retail, Wholesale Supply and Consulting. He has been the General Manager of a number of businesses and led them to vastly improved performances. Simon has studied Engineering, Marketing and is a Graduate of The Australian Institute of Company Directors.

Mr. Russell Wood (Special Advisor) is a qualified Electrical Engineer and has had over 30 years experience in areas covering maintenance, design, construction and management within the mining and mineral processing areas of the industry. As well as his extensive experience in his own discipline he has held senior management positions of Chief Engineer of the Kambalda Nickel Operations and Project Manager within the industry.

Mr. Don Aldridge (Special Advisor) is a qualified Economist and was responsible for the preparation of the environmental impact statement for the Olympic Dam Project. He was also overall project controller for that project and for other projects then being undertaken by Western Mining Corporation's Eastern Operations, responsible for cost reporting and control.