Overview

- Australian mineral exploration spending in 2007-08\(^1\) rose by 41% to a record $2461.4 million\(^2\) of which 44% was spent on the search for new deposits\(^3\).

- Spending rose in all States and the Northern Territory; Western Australia dominated with 51% of Australian mineral exploration spending.

- Base metals were the dominant target with 32% of exploration spending while gold was the major commodity sought with 24% of total spending.

- Exploration results were announced for a wide range of commodities from across the country with significant increases in resources at the Prominent Hill copper-gold project in South Australia, Cadia gold-copper project in New South Wales, Cloncurry copper and gold project in Queensland and the Solomon iron ore project in Western Australia. High-grade nickel intersections were reported from the Spotted Quoll and Lounge Lizard deposits in Western Australia.

Exploration review

Australian mineral exploration expenditure rose by 44% to $2461.4 million in 2007-08\(^1\) according to the Australian Bureau of Statistics (ABS). This was a record for exploration spending in Australia in both current and constant dollars (Figure 1).

Base metals were again the major exploration target in 2007-08, having overtaken gold in 2006-07, as spending rose 41% to $783.4 million with nickel up 68% to $303.3 million, zinc-lead-silver up 34% to $186.6 million, and copper exploration expenditure rising 25% to $293.5 million. This was a record in constant dollar terms, exceeding spending at the peak of the ‘nickel boom’ in 1970-71 and the peak in base metal (and other) exploration in 1980-81. Iron ore exploration spending rose 58% to reach a record $449.8 million. Coal exploration was up 21% to $234.8 million, the highest in constant dollar terms since 1981-82 and the third highest ever recorded. Uranium exploration spending doubled in 2006-07 and more than doubled again in 2007-08 to reach a record $231.6 million, exceeding (in constant dollar terms) the last peak in uranium exploration in 1981-82.

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\(^1\)Australian financial year from 1 July 2007 to 30 June 2008.

\(^2\)All monetary references in this paper are to Australian dollars unless otherwise stated.

\(^3\)Exploration spending on the search for new deposits covers exploration for previously unknown mineralisation or exploration on known mineralisation which is not yet classified as a resource.
Gold remained the largest commodity targeted in 2007-08 but, in contrast to the last two major peaks in exploration which were based on gold, gold's share of total exploration spending fell to 24% ($592.7 million), its lowest share since the peak of the last mining boom in 1981-82 (Figure 1). This fall, despite recent high gold prices and increased gold exploration, is due to growth in spending on base metals, iron ore, coal and uranium.

Spending increased in all States and the Northern Territory. Western Australia remained dominant attracting $1259.8 million, an increase of 51%. In Queensland, spending rose by 46% to $397.8 million while in South Australia an increase of 36% saw spending rise to $355.2 million. Other increases were: New South Wales up 32% to $189.9 million; Victoria up 14% to $93.7 million; Northern Territory up 44% to $132.7 million and in Tasmania spending rose by 37% to $32.4 million.

ABS survey data showed that, nationally, 41% of spending was on exploration for new deposits, a significant increase compared to 36% in 2006-07. This compares closely with the Metals Economics Group (MEG) world survey of non-ferrous minerals exploration budgets for 2008 which found that 40% of exploration budgets in Australia were for grassroots exploration.

In 2007-08, ABS reported that exploration drilling totalled 9.756 million metres, an increase of 1.301 million metres (15%) from 2006-07. Of this increase, exploration drilling in the search for new mineralisation rose to 3.92 million metres. Exploration of existing mineralisation rose by 0.621 million metres to 5.736 million metres. In line with the exploration spending data, 40% of exploration drilling was for the search for new mineralisation.

The MEG survey of world non-ferrous mineral exploration budgets for 2008 reported an increase of 26% to an estimated record total budget of US$13.2 billion. Including uranium, MEG estimates that world budgets for non-ferrous mineral exploration totalled US$14.4 billion. Of the total, including uranium, US$2080.9 million or 14.5% was directed to exploration in Australia. Australia's share of global non-ferrous mineral exploration budgets (excluding uranium) rose to 13.6% as Australia retained its position as the country with the second highest share of budgets after Canada.

According to the MEG survey, 56% of the 2008 non-ferrous mineral exploration budgets for Australian-based companies was for exploration in Australia. The survey included 519 companies with non-ferrous exploration budgets of more than US$100 000 that were exploring in Australia. Budgets for Australian non-ferrous mineral exploration included: gold (US$700.4 million), base metals (US$824.5 million) and uranium (US$268.3 million).

Some 49 Initial Public Offerings on the Australian Securities Exchange in 2008 were fully or partially for mineral exploration in Australia. This is a substantial reduction from the 122 listed in 2007. The major listing in 2008 was Ivanhoe Australia Ltd which raised $125 million out of total minerals IPO raisings of $486 million.

**EXPLORATION**

Record levels of exploration in Australia in 2008 resulted in a very large number of drill intersections of significance for most commodities. A selection of these results is reported below. In addition, earlier stage exploration activities including, rock chip sampling, geochemical and geophysical surveying identified many prospects for further, more detailed exploration. In Table 1, a selection of Australian mineral discoveries in recent years is shown.
Table 1: A selection of Australian mineral discoveries since 2000.

<table>
<thead>
<tr>
<th>Year</th>
<th>State</th>
<th>Deposit/Project</th>
<th>Commodities</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>WA</td>
<td>West Musgraves</td>
<td>Ni, Cu, Co</td>
<td>Exploration; Preliminary resource: 392 Mt @ 0.3% Ni, 0.33% Cu</td>
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<tr>
<td>2000 and</td>
<td>WA</td>
<td>Golden Grove orebodies</td>
<td>Cu, Pb, Zn, Ag</td>
<td>Mine; Resource: 1.4 Mt Zn, 0.8 Mt Cu, 0.13 Mt Pb, 44 Moz Ag, 1 Moz Au</td>
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<td>later</td>
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<tr>
<td>2000 and</td>
<td>WA</td>
<td>Flying Fox orebodies</td>
<td>Ni</td>
<td>Mine; Resource: 105 598 t Ni</td>
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<td>later</td>
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<tr>
<td>2000</td>
<td>NSW</td>
<td>Hera</td>
<td>Au, Zn, Pb, Cu, Ag</td>
<td>Evaluation as source of ore for Endeavor Mine plant; Resource: 2.2 Mt @ 3.4g/t Au, 4.2% Zn, 3.1 Pb, 0.2% Cu, 18g/t Ag</td>
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<tr>
<td>2001</td>
<td>NSW</td>
<td>Wyoming</td>
<td>Au</td>
<td>Exploration with feasibility study due mid-2009; Resource: 0.6 Moz Au</td>
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<tr>
<td>2001</td>
<td>SA</td>
<td>Prominent Hill</td>
<td>Cu, Au</td>
<td>Production due early 2009; Resource: 2.5 Mt Cu, 7.4 Moz Au, 22.6 Moz Ag</td>
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<tr>
<td>2001</td>
<td>NSW</td>
<td>Hera</td>
<td>Cu, Au</td>
<td>Evaluation as source of ore for Endeavor Mine plant; Resource: 2.2 Mt @ 3.4g/t Au, 4.2% Zn, 3.1 Pb, 0.2% Cu, 18g/t Ag</td>
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<tr>
<td>2002</td>
<td>WA</td>
<td>Jaguar</td>
<td>Cu, Pb, Zn, Ag</td>
<td>Mine; Ore Reserve: 1.2 Mt @ 2.8% Cu, 6.1% Zn, 147g/t Ag</td>
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<tr>
<td>2002</td>
<td>WA</td>
<td>Copernicus</td>
<td>Ni, Cu, Co</td>
<td>Mine not currently operating; Resource: 10 600 t Ni, 6900 t Cu, 420 t Co</td>
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<tr>
<td>2004</td>
<td>WA</td>
<td>Alec Mairs orebodies</td>
<td>Ni</td>
<td>Mine with production from AM1 orebody</td>
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<td>2004</td>
<td>WA</td>
<td>Trident</td>
<td>Au</td>
<td>Mine; Resource: 1.45 Moz Au</td>
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<tr>
<td>2004</td>
<td>SA</td>
<td>Jacinth &amp; Ambrosia</td>
<td>Mineral sands</td>
<td>Mine construction; Production due mid-2010</td>
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<tr>
<td>2004</td>
<td>WA</td>
<td>Prospero</td>
<td>Ni</td>
<td>Development; Probable reserves 1.19 Mt @ 4.45% Ni</td>
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<tr>
<td>2005</td>
<td>WA</td>
<td>Tropicana</td>
<td>Au</td>
<td>Pre-feasibility studies; Resource: 5 Moz Au</td>
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<tr>
<td>2005</td>
<td>SA</td>
<td>Four Mile</td>
<td>U</td>
<td>Decision to mine Four Mile West; Resource: 3.9 Mt @ 0.37% U₃O₈</td>
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<tr>
<td>2005</td>
<td>SA</td>
<td>Tripitaka</td>
<td>Mineral sands</td>
<td>Prefeasibility study; Resource: 28 Mt @ 2.3% HM</td>
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<tr>
<td>2005</td>
<td>SA</td>
<td>Carapateena</td>
<td>Cu, Au</td>
<td>Exploration; 905 m @ 2.1% Cu, 1.0g/t Au</td>
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<tr>
<td>2006</td>
<td>NSW</td>
<td>McPhillamys</td>
<td>Au</td>
<td>Exploration; 366 m @ 1.85g/t Au</td>
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<tr>
<td>2006</td>
<td>WA</td>
<td>Cooljarloo North</td>
<td>Mineral sands</td>
<td>Scoping study completed; Resource: 260 Mt @ 2.4% HM</td>
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<tr>
<td>2006</td>
<td>QLD</td>
<td>Rocklands</td>
<td>Cu</td>
<td>Prefeasibility study; Exploration continuing: 133 m @ 6.13% Cu</td>
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<tr>
<td>2007</td>
<td>WA</td>
<td>Spotted Quoll</td>
<td>Ni</td>
<td>Exploration; 12 m @ 9.6% Ni; Resource: 1.05 Mt @ 7.2% Ni</td>
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<tr>
<td>2007</td>
<td>SA</td>
<td>Dromedary</td>
<td>Mineral sands</td>
<td>Exploration; Eucla Basin</td>
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<tr>
<td>2007</td>
<td>WA</td>
<td>Cyclone &amp; Hurricane</td>
<td>Mineral sands</td>
<td>Exploration; Resource for Cyclone 60 Mt @ 3.1% HM; Eucla Basin</td>
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<tr>
<td>2008</td>
<td>SA</td>
<td>Mojave</td>
<td>Mineral sands</td>
<td>Exploration; HM grades from 1-22.2% HM; Eucla Basin</td>
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<tr>
<td>2008</td>
<td>WA</td>
<td>Musket</td>
<td>Au</td>
<td>Grassroots discovery; Exploration; 18 m @ 10.9g/t Au</td>
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<tr>
<td>2008</td>
<td>VIC</td>
<td>Stavely</td>
<td>Cu, Pb, Zn, Ag</td>
<td>Exploration; Resource 47 300 t</td>
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<tr>
<td>2008</td>
<td>QLD</td>
<td>Merlin (Mt Dore)</td>
<td>Mo, Re</td>
<td>Exploration; 10 m @ 6.73% Mo, 150.7g/t Re</td>
</tr>
</tbody>
</table>
Government Programs

Geoscience Australia

Geoscience Australia continued its $59 million five-year geoscience program. It completed a 550 km seismic reflection traverse across the Gawler and Cumamona cratons and the Arrowie Basin and a 640 km seismic and magnetotelluric transect from the northern Gawler Craton, across the Officer Basin and Musgrave Province to the Amadeus Basin. The 2007 seismic transect from Mount Isa to Croydon discovered a buried sedimentary basin (Millungera Basin), and imaged major deep crustal penetrating structures that may control mineralisation. The program also included AEM surveys in the Paterson province and the Pine Creek Inlier. Major products released: a digital 1:2.5 million map of the surface geology of Australia, 3rd edition gravity anomaly map of the Australian region, and a map of the Proterozoic mafic-ultramafic rocks of Australia. The first gamma-ray spectrometric map of Australia is to be released in early 2009.

New South Wales

The New South Wales Government extended the New Frontiers exploration initiative for the three years 2008 to 2011 with a budget of $16.5 million. The minerals component will focus on areas that are both undercover and under-explored such as the Thomson province and the Delamerian Orogen, that provide new exploration opportunities for gold and base metals. The program will include the acquisition of deep seismic, teleseismic and gravity data in addition to basement validation drilling, 3D mapping, mineral systems studies and hyperspectral scanning of selected drill holes.

Northern Territory

The BRINGING FORWARD DISCOVERY initiative is a four-year, $14.4 million program that commenced in 2007-08. This initiative includes extensive regional gravity surveys and field-based prospectivity assessments with an emphasis on under-explored ‘greenfields’ regions. It also includes improvements in web-based delivery of data. The initiative has been expanded in 2008-09 with the inclusion of funding of collaborative drilling and geophysics with explorers.

Queensland

The SMART EXPLORATION and SMART MINING – FUTURE PROSPERITY programs with funding of nearly $50 million from 2005-06 to 2009-10 are providing new data including airborne magnetic and radiometric, gravity, deep seismic, airborne hyperspectral surveys and geological mapping programs. The program includes funds for collaborative drilling with explorers, for mobilisation costs for drilling and geophysical surveys, and funds for junior mineral explorers for research and interpretation for target generation. Major collaborative programs to search for sites for carbon dioxide storage, and for geothermal energy potential, are also underway.

South Australia

The Plan for Accelerating Exploration (PACE) is a seven-year $30.9 million initiative to increase exploration and mineral production by ensuring that the state is regarded as a premier destination for resource exploration and investment. Following previous Memorandums of Understanding with the China National Nuclear Corporation, related to sandstone-hosted uranium geology, mechanisms were put into place for knowledge exchange with Chinese and South Australian researchers. Canadian collaborations were initiated with Geoscience BC, and with the government of Saskatchewan for investigations into sediment-hosted uranium systems. An initiative is being established with the Yukon Geological Survey for exchanges related to breccia-related IOCG mineralisation.

Tasmania

TasExplore is a four-year $5.05 million program consisting of $4.1 million for new geoscientific information and $0.95 million for promotion of exploration opportunities. Aeromagnetic and radiometric data have been acquired over NE Tasmania and interpretive reports published. Updated geological mapping has been completed in the central North and is now published. Mapping is under way in NE Tasmania and on King Island. The aim of the project is an upgraded 3D geological model of Tasmania.

Victoria

The $5 million Rediscover Victoria initiative comprises: a grants program to encourage greater minerals exploration drilling, geological understanding of Victoria’s resource potential, and a 3D model of Victoria’s onshore and offshore geology at a scale of 1:250 000 or better. The Gold Undercover initiative showed there is over 70 Moz of gold to be found in the Bendigo and Stawell zones. An exploration toolkit has been produced to assist gold exploration.

Western Australia

With a change in Government in late 2008, the ban on uranium mining in Western Australia was lifted and a major exploration stimulus package announced. Western Australia has many, very large and easily accessible uranium deposits, some of which could be brought into production in the next 5 years. The new five year $80 million Exploration Incentive Scheme, part of the Royalties for Regions initiative, includes subsidies for companies drilling in greenfields areas, completion of the State’s 400 m line-spacing airborne magnetics and radiometrics survey coverage, and additional support to accelerate government approvals.
COPPER, LEAD, ZINC, SILVER (FIGURE 2)

Australian copper exploration spending in 2007-08 totalled $293.5 million with Queensland and South Australia accounting for 72.7% between them in even proportions. In the first 9 months of calendar year 2008, copper exploration spending rose by 22.6% to $237.3 million compared to the first 9 months of 2007. Lead-zinc-silver exploration spending rose by 33.9% to $186.6 million in 2007-08 and was dominated by Western Australia with 19% of total spending. However, in the first 9 months of 2008 it fell by 17% compared to the same period of 2007. Adverse price movements for these commodities in the last quarter of 2008 indicate potential for reduced exploration for them in that quarter and into 2009.

Northern Territory

Rox Resources Ltd confirmed the discovery of significant zinc-lead mineralisation at the Myrtle prospect, SW of the McArthur River mine. Results received included: 19 m @ 4.14% Zn, 1.34% Pb, 0.9 g/t Ag from 179 m, including 5 m @ 6.03% Zn, 2.94% Pb, 1.0 g/t Ag from 189 m; 4 m @ 5.57% Zn, 0.49% Pb, 1.4 g/t Ag from 160 m; and 4 m @ 3.01% Zn, 1.08% Pb, 1.0 g/t Ag from 217 m. Mineralisation is sphalerite, galena and pyrite in a calcareous shale unit. The company reported a maiden Inferred Resource of 38 Mt @ 4.2% Zn, 1.0% Pb at a 3% Pb+Zn cut off.

Westgold Resources Ltd announced an Inferred Resource estimate for the Explorer 108 prospect, near Tennant Creek, of 8.7 Mt @ 5.6% Pb+Zn, 20 g/t Ag, 0.3 g/t Au at a cut-off grade of 2.5% Pb+Zn. Mineralisation is open in several directions and contains a higher grade component of 4.0 Mt @ 8.2% Pb+Zn, 25 g/t Ag, 0.3 g/t Au at a 5% Pb+Zn cut-off. The resource contains 320,000 t Zn, 171,000 t Pb, 5.6 Mozs Ag and 71,000 ozs Au.

TNG Ltd reported a resource upgrade for the Manbarrum project in the Bonaparte Basin, which resulted from increased resources at its Sandy Creek deposit, to 15.97 Mt @ 2.3% Zn+Pb and 5.4 g/t Ag and a maiden resource estimate of 19.9 Mt @ 16.4 g/t Ag for the new Djibitgun Prospect.

New South Wales

Perilya Ltd announced initial resource estimates for the Henry George and 11:30 deposits in the Pinnacles region of Broken Hill. At Henry George, the company reported an Inferred Resource of 1.3 Mt @ 7.7% Zn for 100,000 t contained zinc. At the 11.30 deposit there is an Inferred Resource of 220,000 t @ 12.2% Zn for 27,000 t of contained zinc. These are potential ore sources for future Broken Hill production.

Sultan Corporation Ltd reported a drill intersection from its Peelwood prospect, 75 km S of Bathurst, of 4 m @ 3.16% Cu, 1.64% Zn, 62 g/t Ag and 0.35% Pb from 30-34 m, which included 1 m at 9.03% Cu, 5.43% Zn, 90.8 g/t Ag and 0.35% Pb. A deeper intersection was 3 m @ 1.99% Zn, 1.04% Pb, 0.15% Cu and 6.2 g/t Ag from 81-84 m. The company later announced an initial Inferred Resource estimate for Peelwood of 259,063 t @ 2.82% Zn, 0.30% Cu, 1.28% Pb and 17 g/t Ag. Peelwood is 1 km SSE of Sultan’s John Fardy Project which has a combined Measured, Indicated and Inferred Resource of 862,000 t @ 4.2% Zn, 1.0% Cu, 0.5% Pb and 13 g/t Ag.

Malachite Resources NL released a new mineral resource estimate for the Conrad Silver Project, 25 km S of Inverell. The Conrad mineralisation is made up of three principal components and the new resources for these are: Conrad Lode: Indicated and Inferred Resources of 2.25 Mt @ 106.2 g/t Ag, 0.22% Cu, 1.24% Pb, 0.46% Zn, 0.23% Sn and 6.7 g/t In; King Conrad Lode: 397,000 t
Queensland

Ivanhoe Australia Ltd announced an Indicated and Inferred Resource estimate of 30 Mt @ 0.9% Cu and 0.8/g/t Au for its Starra Line Project near Cloncurry. The company also reported an Indicated and Inferred Resource for its Mount Dove project of 80 Mt @ 0.6% Cu for a contained 480,000 t Cu. At the Mount Elliott project, Ivanhoe reported an estimated 475 Mt @ 0.5% Cu and 0.3/g/t Au for a metal inventory of 2.3 Mt Cu and 4.3 Mozs Au. Ongoing drilling at Mount Elliott returned 342 m @ 1.21% Cu and 0.80/g/t Au, and 114 m @ 0.92% Cu and 0.76/g/t Au.

CuDeco Ltd continued to report significant copper mineralisation in drilling at its Rocklands project near Cloncurry. At Las Minerales, intersections included 133 m @ 6.13% Cu which included 118 m @ 6.84% Cu; 26 m @ 4.37% Cu and 0.56/g/t Au which included 11 m @ 9.17% Cu and 1.17/g/t Au; and 71 m @ 3.85% Cu which included 28 m @ 5.36% Cu. In the Rockland central zone intersections included: 42 m @ 1.30% Cu which included 10 m @ 2.35% Cu, and 31 m @ 2.61% Cu. CuDeco announced the discovery of a mineralised system 250 m south of Las Minerales Central with an intersection of 112 m of visible sulphides from 165 m.

Conquest Mining Ltd announced encouraging drill results throughout the year from the Silver Hill deposit, part of its Mount Carlton project near Collinsville. Infill drilling at the Area 39 silver zone resulted in high-grade intersections, including 43 m @ 5.40/g/t Ag, 0.03/g/t Au and 0.14% Cu from 132 m which included 5 m @ 3.32/g/t Ag, 0.05/g/t Au and 0.71% Cu from 148 m. Also at Area 39, intersections of 16 m @ 2.91/g/t Ag, and 10 m @ 1.69/g/t Au and 474/g/t Ag extended high-grade mineralisation to the south. On the northern edge of the Silver Hill deposit an intersection of 20 m @ 8.49/g/t Au, 94/g/t Ag and 2.3% Cu, increased the depth extent of high-grade mineralisation. In the V2 Hill gold zone, intersections included 19 m @ 2.54/g/t Au, 17/g/t Ag and 0.41% Cu. Conquest announced that a combined Measured, Indicated and Inferred Resource of 23.1 Mt @ 1.70/g/t Au, 61/g/t Ag, and 0.29% Cu had been estimated for the deposit.

Syndicated Metals Ltd announced a significant copper intersection at the Kalman South joint venture (Syndicated and Kings Minerals NL), 60 km SE of Mount Isa, of 7.65 m of massive chalcopyrite with a grade of 23.4% Cu, 0.51/g/t Au and 20/g/t Ag from 581.65 m.

Syndicated Metals Ltd reported that drilling at its Mount Remarkable project, 60 km NE of Mount Isa, intersected copper mineralisation at three targets: Barbara, Mount Margaret and Mount Hutchinson. Three holes drilled at Barbara returned intersections including 24 m @ 3.08% Cu and 0.25/g/t Au which included 15 m @ 4.55% Cu and 0.36/g/t Au; 15 m @ 1.35% Cu and 0.2/g/t Au; 5 m @ 2.37% Cu and 0.22/g/t Au and 6 m at 1.96% Cu and 0.22/g/t Au.

Kagara Ltd advised that an initial Inferred Resource of 3.44 Mt @ 5.1% Zn, 1.0% Cu, 22/g/t Ag and 0.14/g/t Au had been estimated for the Victoria deposit which is located 4 km from the Mungan treatment facility which is under construction.

Kagara Ltd reported an upgrade to resources at its Waterloo deposit to an Indicated and Inferred Resource of 464,000 t @ 15.5% Zn, 2.9% Cu, 2.2% Pb, 76/g/t Ag and 1.39/g/t Au. The deposit remains open along strike and down dip and has only been drilled to a depth of 250 m. Total resources in the Thalanga and Waterloo tenements are now 1.864 Mt @ 10.6% Zn, 1.8% Cu, 2.6% Pb, 64/g/t Ag, and 0.68/g/t Au.

Matrix Metals Ltd announced a resource estimate for Stage 1 of its Mount Watson project 123 km NW of Cloncurry. At the end of May, the Mt Watson resource was 8.1 Mt @ 0.88% Cu, composed of: Measured Resources of 2.6 Mt @ 0.95% Cu; Indicated Resources of 2.6 Mt @ 0.83% Cu and Inferred Resources of 2.9 Mt @ 0.85% Cu.

Perilya Ltd reported encouraging intersections from drilling at the Mount Oxide copper and cobalt project near Mount Isa, which included 16 m @ 5.4% Cu and 49/g/t Ag; 16 m @ 3.8% Cu, 38/g/t Ag, 58/ppm Co; 23 m @ 8.9% Cu and 12 m @ 15.3% Cu. The company also reported zones of cobalt mineralisation which are spatially associated with but distinct from the higher grade copper. Intersections reported using a 0.1% Co cut-off included: 17 m @ 0.37% Co and 0.1% Cu; 20 m @ 0.34% Co and 6.4% Cu, and 48 m @ 0.36% Co and 1.0% Cu.

South Australia

OZ Minerals Ltd announced a major increase in resources at its Prominent Hill copper-gold deposit 110 km SE of Coober Pedy. The company reported a 35% increase in its copper resource to 2.5 Mt Cu, a 100% rise in gold resources to 7.4 Mozs Au and a 43% increase in silver resources to 22.6 Mozs Ag.

Rex Minerals Ltd reported a copper-gold (IOCG) discovery with 100 m of mineralisation intersected at its Hillside project, on the Yorke Peninsula. Intersections included: 33 m @ 0.38% Cu, <0.1/g/t Au, 10% Fe, and 30 m @ 0.9% Cu, 0.22/g/t Au and 15% Fe. Other drilling included: 259 m (down hole) @ 1.7% Cu, and 0.4/g/t Au which included 26 m (estimated true width of 11 m) @ 4.4% Cu and 0.9/g/t Au, and 75 m (estimated true width of 31 m) @ 3.3% Cu and 0.8/g/t Au. In addition, the company reported uranium in drilling on part of the prospect with intersections of: 5 m @ 0.8% Cu and 276/ppm U3O8; 18 m @ 297/ppm U3O8, and 2 m @ 887/ppm U3O8.

As part of its feasibility study at the Kalkaroo project, 90 km WNW of...
Broken Hill, Havilah Resources NL continued to report encouraging results from drilling on the copper-gold deposit. One intersection from the deposit’s main zone was 38 m @ 2.13% Cu and 0.46g/t Au. The company noted that drilling at Kalkaroo West produced wide intersections in most holes including 78 m @ 0.56% Cu and 1.8g/t Au, and 86 m @ 0.64% Cu and 1.4g/t Au.

Hillgrove Resources Ltd announced a new resource estimate for the Kanmantoo Copper Mine, 40 km ESE of Adelaide, which substantially increased contained metal. The total resource is 32.2 Mt @ 0.9% Cu and 0.2g/t Au of which over 75% is in the Measured and Indicated Resource categories. Contained metal in the deposits now stands at 292,200 t Cu and 191,100 oz Au.

Perilya Ltd announced a new resource estimate for the Reliance deposit, 470 km N of Adelaide and 20 km S of Leigh Creek. Reliance is a zinc silicate deposit located close to the Beltana mine. The resource is 308,000 t @ 27.9% Zn for 86,000 t of contained zinc with over 90% in the Indicated Resource category. A preliminary scoping study is in progress.

IMX Resources NL’s Cairn Hill iron-copper-gold project, 55 km SE of Coober Pedy, has a current total resource of 15.2 Mt @ 48.1% Fe, 0.28% Cu, 0.09g/t Au. Mining is expected to commence in early 2009 and the first product shipped to China at this time.

Tasmania

Drilling by Bass Metals Ltd in the Fossey Zone, part of the Hellyer Mine Project, returned intersections including 12.75 m @ 18.5% Zn, 8.8% Pb, 0.6% Cu, 273g/t Ag and 2.83g/t Au from 243.1 m downhole. Others included: 9.2 m @ 20.8% Zn, 8.8% Pb, 0.9% Cu, 290g/t Ag and 3.01g/t Au; 12.6 m @ 22.4% Zn, 13.5% Pb, 0.5% Cu, 367g/t Ag and 4.2g/t Au; and 2.25 m @ 24.4% Zn, 9.7% Pb, 0.9% Cu, 259g/t Ag and 4.7g/t Au. An initial resource estimate for Fossey is: Indicated Resources of 410 kt @ 9.7% Zn, 4.7% Pb, 0.4% Cu, 140g/t Ag and 2.8g/t Au and Inferred Resources of 420 kt @ 8.5% Zn, 4.5% Pb, 0.3% Cu, 99g/t Ag and 2.2g/t Au.

Zinifex Ltd (subsequently part of OZ Minerals Ltd) reported that diamond drilling at the Jupiter prospect 5 km S of its Rosebery Mine, intersected significant mineralisation in three holes including 23 m @ 5.6% Zn, 1.1% Pb, 38g/t Ag and 0.8g/t Au from 61 m downhole. This intersection included 9.5 m @ 9.5% Zn, 2% Pb, 70g/t Ag and 1.2g/t Au.

OZ Minerals Ltd announced a 12.8% increase in the total zinc resource at the Rosebery mine in mid-year with a total Measured, Indicated and Inferred Resource of 15.21 Mt @ 11.5% Zn, 3.5% Pb, 0.36% Cu, 126g/t Ag and 1.7g/t Au.

Stonehenge Metals Ltd reported an initial Inferred Resource at the Sunshine prospect near Zeehan of 288 kt @ 2.8% Zn, 1.5% Pb and 31g/t Ag and 562 kt @ 0.5% Sn, 1.4% Zn and 36g/t Ag at the Sweeney greisen prospect near Trial Harbour.

Victoria

Beaconsfield Gold NL reported high-grade copper intersections from drilling at the Thursday’s Gossan Prospect in its Stavely Project, 110 km W of Ballarat. Intersections include: 6.0 m @ 4.2% Cu, 0.4g/t Au, 50g/t Ag which included 1 m @ 11.2% Cu, 0.7g/t Au, 125 g/t Ag; and 7.7 m @ 4.2% Cu, 1.1g/t Au, 25g/t Ag which included 5.0 m @ 5.1% Cu, 1.4g/t Au, 25g/t Ag. The company later announced an Inferred Resource for the Thursday’s Gossan Prospect of 10.6 Mt @ 0.45% Cu for a contained 47,300 t Cu at a cut-off grade of 0.3% Cu.

Western Australia

Abra Mining Ltd reported continuing strong lead-silver and copper-gold intersections from drilling at its Abra project 220 km N of Meekatharra. These included 65 m @ 3.9% Pb and 10g/t Ag from 597.0 m and, in a separate hole, 118.3 m @ 4.9% Pb and 18g/t Ag from 398.0 m. Abra also reported an intersection of 8.9 m @ 1.5% Cu, 3.4g/t Au and 12g/t Ag from 686.0 m. The deposit’s current Indicated and Inferred Resource in the lead domain is 93 Mt @ 4.0% Pb and 10g/t Ag and 14 Mt @ 0.6% Cu and 0.5g/t Au in the copper-gold domain.

Prairie Downs Metals Ltd reported encouraging drill intersections from its Prairie Downs project, 100 km SW of Newman. The deposit has an Indicated and Inferred Resource of 4.7 Mt @ 6.3% Zn, 18g/t Ag and 1.8% Pb for contained metal of 295,000 t Zn, 2.6 Mozs Ag and 83,000 t Pb. Recent drill intersections include: 1.5 m @ 14.3% Zn, 2.3% Pb and 37g/t Ag, and 1 m @ 3.8% Zn, 0.8% Pb, and 6g/t Ag.

Drilling by Jabiru Metals Ltd at its Bentley project, 5 km S of the Jaguar mine plant, intersected mineralisation similar to that at Jaguar and Teutonic Bore. An intersection of 10.55 m returned 2.3% Cu, 1.5% Pb, 18.0% Zn, 1.4g/t Au and 278g/t Ag including 5 m @ 3.5% Cu, 2.4g/t Au and 422g/t Ag. The company reported that the massive sulphide intercept is immediately underlain by footwall stringer mineralisation which yielded 17.0 m @ 1.9% Cu, <0.1% Pb, 0.6% Zn, 0.2g/t Au and 15g/t Ag.

A volcanogenic massive sulphide system with significant copper-zinc mineralisation was discovered at the Austin prospect by Silver Swan Group Ltd. The prospect is 55 km S of Meekatharra and is part the Quinns project. Intersections included: 49.1 m @ 7.2% Zn that included 25.2 m @ 13.7% Zn; and 33.55 m @ 1.7% Cu that included 7 m @ 4.2% Cu.
ABM Resources NL announced significant drill intersections from its King Prospect in the Erayinia Project, 150 km ESE of Kalgoorlie. Intersections included 5 m @ 5.35% Zn, 1684ppm Pb, 151ppm Cu and 23ppm Ag including 3 m @ 7.56% Zn, 1767ppm Pb, 182ppm Cu and 31ppm Ag. A previous hole returned 5 m @ 10.5% Zn.

An upgraded resource for the Manindi deposit, 20 km S of Youanmi, announced by Metals Australia Ltd was calculated at various cut-off grades. At a 1% Zn cut-off the resource is: Measured 479,526 t @ 7.57% Zn; Indicated 417,405 t @ 6.67% Zn and Inferred 335,142 t @ 5.06% Zn.

DIAMOND (FIGURE 2)
Australian diamond exploration spending in 2007-08 fell by 19% to $21.7 million which was its lowest level since 1986-87 and the second lowest since ABS started reporting expenditures for diamond exploration. The Northern Territory accounted for $5.6 million of total expenditure and it is estimated that Western Australia had expenditure of about $14 million.

Northern Territory
Drilling of the PalSac and mini-bulk sampling of the Gwain kimberlites resulted in North Australian Diamonds NL increasing the Indicated and Inferred resource at their Merlin Mining Project to 13.64 Mt of ore. The company reported microdiamonds in reconnaissance loam samples from their tenements in Central Arnhem Land where all were 0.2 mm or finer.

Western Australia
Blina Diamonds NL sought approval to mine diamonds in alluvial gravels in part of the terrace 5 alluvial system, south of the Ellendale 12 pipe.

Paramount Mining Corporation Ltd reported the discovery of three small diamonds in gravel sampling of its Escape Creek and Wood River tenements in the Central Kimberley region.

GOLD (FIGURE 3)
Australian gold exploration spending rose by 30% in 2007-08 to $592.7 million with 59% of it spent in Western Australia while Victoria had the second largest proportion with 10.6%. In the first 9 months of 2008 spending totalled $449.5 million compared to $356.2 million in the same period of 2007, however, spending in the September Quarter 2008 was only $3.6 million higher than in the September Quarter 2007.

New South Wales
Newcrest Mining Ltd's Cadia Province is comprised of the Cadia Hill open pit and Ridgeway underground mines and the Ridgeway Deeps and Cadia East development projects. A significant increase was reported in resource and reserve estimates for Cadia East and an initial resource was reported for Big Cadia. The Cadia East mineral resource increased by 6.6 Mozs Au and 1.88 Mt Cu while its ore reserve rose by 5.0 Mozs Au and 1.0 Mt Cu. An initial mineral resource for Big Cadia, located NE of the Ridgeway mine, is estimated at 0.44 Mozs Au and 0.17 Mt Cu which are open pittable.

At the McPhillamys Prospect, 35 km SE of Orange, Alkane Resources Ltd and Newmont Australia Ltd reported a major gold intersection of 366 m @ 1.85g/t Au from 134 m depth. Later drilling returned numerous high-grade intersections including 15 m @ 5.26g/t Au as well as thick lower grade intersections including 236 m @ 1.23g/t Au. At the Kings Plains prospect, about 2 km S of McPhillamys, 78 m @ 1.04g/t Au from 70 m depth was reported which included 23.8 m @ 2.11g/t Au.

Cortona Resources Ltd announced results from drilling at the Dargues Reef prospect at Majors Creek where intersections included: 13 m @ 8.33g/t Au; 3.2 m @ 15.4g/t Au and 35 m @ 18.17g/t Au. Later drilling returned 14 m @ 6.95g/t Au, 11 m @ 6.85g/t Au and 12 m @ 6.80g/t Au. Drilling at adjacent prospects also generated good intersections including, at Plums Lode, 14 m @ 8.11g/t Au and 14 m @ 6.95g/t Au while deep drilling below Plums Lode returned 28.7 m @ 5.88g/t Au.

Goldminco Corp's exploration activities at its Monza prospect near Temora returned an intersection of 186 m @ 0.34ppm Au, 0.42% Cu and 23ppm Mo from 45 m, including 64 m @ 0.44ppm Au, 0.52% Cu and 41ppm Mo. The mineralisation was chalcopyrite-molybdenite in porphyry style quartz-pyrite seam veins and later carbonate-chlorite-pyrite veins.

Northern Territory
Emmerson Resources Ltd reported significant results from its maiden drilling program at the West Gibbet Prospect, 6 km W of Tennant Creek. The first hole returned 13 m @ 66.9g/t Au from 74 m including 9 m @ 95g/t Au from 74 m. Drilling by previous explorers reported a best intersection of 3.96 m @ 37.1g/t Au from 240.8 metres.

Westgold Resources Ltd advised that drilling at Rover 1 near Tennant Creek, returned significant high-grade mineralisation. Intersections included: 65.75 m @ 11.0g/t Au; 66 m @ 4.26g/t Au, 0.56% Cu, 0.08% Co, 0.20% Bi and 2.1g/t Ag which included 9 m @ 14.4 g/t Au; and 49 m @ 5.8g/t Au, 1.05% Cu, 0.10% Co, 0.42% Bi and 0.9g/t Ag.

Emmerson also reported encouraging drilling results from the Golden 40 project near Tennant Creek. Intersections reported included: 4 m @ 5.96g/t Au including 1 m @
15.4 g/t Au; 1 m @ 4.05 g/t Au, and 5 m @ 7.03 g/t Au which included 3 m @ 10.1 g/t Au. The company suggests these results demonstrate the potential for extensions to the historical Golden 40 Mine, which produced 144,056 t of ore at a recovered grade of 11.9 g/t Au between 1969 and 1983.

GBS Gold International Inc. announced increased resources for the Chinese Big Pit area of its Union Reefs operations. The new resource is: Indicated Resources of 7.2 Mt @ 1.7 g/t Au for 387,000 ozs Au and Inferred Resources of 2.9 Mt @ 1.6 g/t Au for 151,000 ozs Au. This is a 153% increase for the Indicated Resource and an increase of 81% for the Inferred Resources.

Queensland

At its Woolgar project, 120 km N of Richmond, Strategic Minerals Corporation NL, reported a gold discovery with an intersection of 5 m @ 39.3 g/t Au in the first hole in the new Big Vein target and 12 m @ 2.76 g/t Au at the Big Vein No. 2 target. At the Mowbray NE area about 1.75 km N of the Big Vein target, intersections included: 2 m @ 4.55 g/t Au and 2 m @ 1.71 g/t Au.

From drilling to test the extensions to the Red Dome gold–copper–molybdenum deposit, Kagara Ltd reported an intersection of 63.45 m @ 3.14 g/t Au from 1002 m. This intersection is the highest grade achieved during Kagara’s drilling program over the last 2 years and opens up the potential for the Red Dome system at depth.

InterMet Resources Ltd announced an initial Inferred Resource of 106,000 t @ 4.1 g/t Au containing 14,000 oz Au at its Union Mining Lease in north Queensland, part of the Percyvale project. This shallow resource is from 4 m below the surface to a maximum depth of 40 m.

South Australia

Dominion Mining Ltd reported good results from it Challenger Deeps Surface Drilling Program at its Challenger mine which aimed to test the depth continuity of mineralisation. Significant intersections reported included: 12.5 m @ 13.84 g/t Au from 997.5 m depth; 4.17 m @ 14.33 g/t Au from 887 m, and 4.00 m @ 22.28 g/t from 1005 m. These results add to the potential for an increase in resources and reserves at Challenger.

Southern Gold Ltd identified multiple high-grade shoots at its Golf Bore Prospect, 40 km NE of Dominion Mining’s Challenger Mine. Intersections reported included: 23 m @ 3.12 g/t Au from 24 m which included 9 m @ 7.65 g/t Au; 13 m @ 2.44 g/t Au from 29 m which included 8 m at 3.73 g/t Au, and 22 m @ 2.42 g/t Au from 28 m including 17 m @ 3.08 g/t Au.

At Havilah Resources NL’s Portia deposit, 100 km W of Broken Hill, coarse gold was discovered in Tertiary sediments overlying bedrock gold mineralisation. Resource delineation drilling and metallurgical studies were expected to be completed by end of 2008.

Tasmania

Frontier Resources Ltd has several drill intersections of Au skarn at the Stormont deposit in central N Tasmania, the best being 6.6 m @ 16.32 g/t Au, 0.29% Bi and 4.8 g/t Ag. The company announced an Inferred Resource of 0.19 Mt @ 2.74 g/t Au, 1.21% Zn, 1.59% Pb and 22 g/t Ag at nearby Narrawa Creek.

Greatland Gold plc announced results from a shallow drilling program at the Warrentinna goldfield in NE Tasmania. Best results were 3 m @ 2.9 g/t Au within intersections of 9 m @ 2.06 g/t Au and 51 m @ 0.51 g/t Au at the Derby mine and 3 m @ 2.1 g/t Au at the Golden Dyke prospect. Gold occurs associated with disseminated pyrite and arsenopyrite in sandstone.

Victoria

Castlemaine Goldfields Ltd announced an initial Inferred Resource of 2.1 Mt @ 8.3 g/t Au for to 574,000 ozs Au for the Chewton deposit adjacent to Wattle Gully mine. There is an additional Inferred Resource of 610,000 t @ 5.7 g/t Au for 112,000 oz Au in remnant areas of the adjacent Wattle Gully gold mine.

Beadell Resources Ltd announced high-grade drill intersections from three prospects at its Reedy Creek
project, 65 km N of Melbourne. At the Apollo Prospect an intersection of 9 m @ 5.3g/t Au included 4 m @ 10.8g/t Au while in the adjacent Golden Dyke Prospect 4 m @ 4.3g/t Au was reported. Drilling of a new mineralised zone between Apollo and Golden Dyke returned 20 m @ 14.5g/t Au from 65 m which included 5 m @ 54.2g/t Au.

Greater Bendigo Gold Mines Ltd announced an initial Measured, Indicated and Inferred resource estimate of 153,962 ozs from 1.55 Mt for its Inglewood and ISG projects. This resource is made up of 76,080 ozs from 715,950 t at Inglewood and a 77,882 ozs from 832,000 t from ISG.

GoldStar Resources announced a resource estimate for the Tubal Cain project of 857,000 t @ 9.9g/t Au for 274,000 ozs Au to an average depth of 500 m. GoldStar also announced an in-situ resource for their Eureka deposit of 153,000 t @ 10g/t Au for 48,000 ozs Au.

Western Australia

At the Tropicana joint venture, 230 km ESE of Laverton, AngloGold Ashanti Ltd and Independence Group NL reported further encouraging regional exploration results. Independence announced that aircore drilling defined a 45 km anomalous gold corridor trending northeast and southwest from the 5 Moz Au Tropicana–Havana deposit and lying between the Black Dragon and Kamikaze prospects. Rock chip sampling adjacent to a hole at Black Dragon, 30 km NE from Tropicana-Havana, returned assays including 22.2g/t Au, 16.7g/t Au and 15.9g/t Au. Follow-up sampling over the main high-grade zone returned 27 samples with grades in excess of 1g/t Au including 12 samples grading over 5g/t Au which included samples assaying at 573g/t Au, 324g/t Au, and 157g/t Au.

Avoca Resources Ltd announced the discovery of gold mineralisation at its Musket Prospect, 40 km SE of the Trident mine at Higginsville. An intersection from a diamond drill hole returned 18 m @ 10.9g/t Au from a depth of 68 m. This drilling was to test shallow mineralisation defined by earlier RC drilling that included intersections of 3 m @ 9.9g/t Au from 13 m; 10 m @ 2.9g/t Au from 67 m, and 16 m @ 2.1g/t Au from 73 m.

Integra Mining Ltd reported a 60% increase in the mineral resource estimate for its Salt Creek deposit, which is part of the Aldiss-Randalls project near Kalgoorlie. The new resource is 4.6 Mt @ 2.7g/t Au for 400,000 ozs Au. Of the total resource at Salt Creek, 820,000 t @ 3.2g/t Au (84,000 ozs Au) are Indicated Resources and 3.8 Mt @ 2.6g/t Au (320,000 ozs Au) are Inferred Resources. This increase takes the consolidated resource estimate for the Aldiss-Randalls project to 20 Mt @ 2.7g/t Au for 1.8 Mozs Au.

Integra Mining Ltd reported high-grade gold intersections from an initial drilling program at the Lucky Bay prospect which is part of its Aldiss-Randalls project near Kalgoorlie. An intersection of 5 m @ 25.93g/t Au was recorded. Other intersections include 14 m @ 5.39g/t Au and 16 m @ 4.64g/t Au which included 2 m @ 10.57g/t Au.

Barra Resources Ltd reported a high-grade gold intersection from its Burbanks mine, 8 km SW of Coolgardie. The intersection, from a depth of at 285 m down hole, was 4.0 m @ 62.0g/t Au and included 1.0 m @ 139.2g/t Au. It is beneath historic workings at Burbanks’ Hadfield Reef. Barra also intersected significant gold at Kambalda West, 20 km west of Kambalda, including: 11.0 m @ 5.0g/t Au, including 3.0 m @ 15.6g/t Au; 17.5 m @ 4.6g/t Au, including 4.0 m @ 15.8g/t Au; and 8.0 m @ 8.9g/t Au.

At the Barlee Gold project Halleys East prospect, 175 km N of Southern Cross, Beacon Minerals Ltd reported encouraging drill results including: 11 m @ 24.9g/t Au, including 2 m @ 32g/t Au and 3 m @ 64.7g/t Au; 8 m @ 6.6g/t Au including 2 m @ 18.5g/t Au, and 2 m @ 55.1g/t Au. Later drilling included: 19 m @ 4.9g/t Au including 2 m @ 28.7/t Au from 13m, and 5 m @ 4.6g/t Au from 15 m depth.

Ramellus Resources Ltd reported high-grade mineralisation at the Golden Orbit prospect, 600 m S of the Wattle Dam mine, 25 km W of Kambalda. Drill intersections reported included 7 m @ 10.8g/t Au (including 2 m @ 27g/t Au) and 4 m @ 6.9g/t Au from 103 m (including 2 m @ 12.2g/t Au). An intersection of 12 m @ 5.5g/t Au from 28 m (including 4 m @ 10.5g/t Au) was located 300 m S of Golden Orb. At Wattle Dam, extensional drilling returned high-grade intersections from beneath the pit, including 1 m @ 78g/t Au and 5.5 m @ 148g/t Au including 0.2 m @ 1846g/t Au.

Apex Minerals NL announced high-grade drill intersections from its East Lode open pit at Wiluna including: 17 m @ 12.4g/t Au (~12.0 m true width) from 20 m; 25 m @ 18.5g/t Au (~17.7 m true width) from 11 m; 14 m @ 13.6g/t Au (~9.9 m true width) from 5 m, and 21 m @ 7.3g/t Au (~14.8m true width) from start of hole. These intersections are not included in the current resource estimate for the deposit which stands at: Indicated Resources of 289,000 t @ 4.0g/t Au (38,000 oz Au). Total resources for the Wiluna project are now in excess of 1.5 Mozs Au.

Carbine Resources Ltd announced that drilling at the Backflip prospect, 40 km NE of Kalgoorlie, confirmed the discovery of a high-grade gold mineralisation. Intersections reported include: 9 m @ 6.53g/t Au from 80 m; 4 m @ 15.0g/t Au from 120 m; 5 m @ 6.63g/t Au from 117 m, and 1 m @ 21.5g/t Au from 99 m.

Aragon Resources Ltd announced encouraging drill intersections from its Mission and Cables prospects, 7 km N of the Darlot Gold Mine.
At Mission, intersections included: 4 m @ 3.56g/t Au, and 4 m @ 3.69g/t Au while later drilling returned 7 m @ 11.35g/t Au, 2 m @ 9.45g/t Au and 1 m @ 72.42g/t Au. At Cables they included 4 m @ 8.89g/t Au and 8 m @ 3.30g/t Au and later drilling gave 2 m @ 23.94g/t Au; 3 m @ 6.63g/t Au and 7 m @ 4.46g/t Au.

Mount Magnet South NL reported encouraging intersections below the Curara Well pit including 33 m @ 7.8g/t Au; 25 m @ 3.1g/t Au and 7 m @ 3.8g/t Au. In places, repeat assays returned for one metre composites indicates nugget-like mineralisation which is also confirmed by the presence of visible gold in core.

**IRON ORE (FIGURE 4)**

Spending on iron ore exploration rose by almost 58% in 2007-08 to $449.8 million, the highest ever recorded, of which 94% was spent in Western Australia. South Australia had spending of $19 million while the Northern Territory and Tasmania received $3.9 million and $4.4 million respectively.

**IronClad Mining Ltd announced a resource estimate for the magnetite mineralisation the Wilcherry Hill Project, 30 km N of Kimba, and an initial resource of 215 Mt of iron ore at the Hercules Prospect.** At Wilcherry Hill, the combined Indicated and Inferred Resource is 59.6 Mt @ 30.6% Fe in the Weednanna and Ultima Dam deposits. Bulk sampling returned concentrates from the Weednanna deposit (prepared from -4+2 mm size feed) with a grade of 70.9% Fe, 0.43% SiO₂, 0.40% Al₂O₃, 0.041% S. Concentrate from a similar sized feed of Ultima Dam ore returned 67.5% Fe, 1.13% SiO₂, 1.08% Al₂O₃ and 0.006% S.

Centrex Metals Ltd reported initial results from drilling on its Bungalow magnetite deposit, 9 km N Cowell. First Davis Tube Recovery (DTR) results show mass recoveries ranged from 20% to 39% with iron grades of concentrates ranging from 65.6% Fe to 71.4% Fe and silica from 1.4% SiO₂ to 8.4% SiO₂. Centrex also reported new drill results and an updated resource estimate for its Wilgerup hematite deposit. Drill intersections included: 20 m @ 62.39% Fe, 2.80% SiO₂, 2.57% Al₂O₃, 0.125% P; 44 m @ 63.23% Fe, 2.43% SiO₂, 1.66% Al₂O₃, 0.203% P, and 10 m @ 64.16% Fe, 1.72% SiO₂, 1.13% Al₂O₃, and 0.560% P. The revised resource is: Indicated Resources of 13.2 Mt @ 57.7% Fe, 4.9% SiO₂, 2.8% Al₂O₃, 5.1% LoI, 0.5% P and an Inferred Resource of 0.75 Mt @ 56.0% Fe, 5.5% SiO₂, 2.6% Al₂O₃, 5.1% LoI and 0.53% P.

Lincoln Mineral’s The Gum Flat Iron Ore project consists of a number of shallow magnetite and hematite targets within 20 km of Port Lincoln in the southern Eyre Peninsula. Drilling intersected hematite Banded Iron Formation (BIF) with up to 56.6% Fe and high-grade magnetite BIF with up to 40.6% magnetite concentrate grading 68.4% Fe.
Fortescue Metals Group Ltd announced a major iron ore discovery at its Solomon project, 60 km NNW of Tom Price in the Pilbara region. The company reported an Inferred Resource at the Serenity area of 1.01 Bt @ 56% Fe, 7.3% SiO₂, 3.8% Al₂O₃, 0.81% P which includes a Channel Iron Deposit resource of 337 Mt @ 56.7% Fe, 6.3% SiO₂, 2.9% Al₂O₃, 0.079% P and 9.2% LOI. Subsequently, Fortescue also announced an Inferred Resource for the Solomon East area, composed predominantly of Channel Iron Deposits, totalling 702 Mt @ 55.9% Fe, 6.6% SiO₂, 3.0% Al₂O₃, 0.61% P and 9.1% LOI.

BHP Billiton Ltd announced a major increase in its Western Australia iron ore resource which grew by 3.7 Mt to 11.7 Mt, and its iron ore reserves increased by 571 Mt to 3 Mt. About 2.3 Mt of the resource is in the Jinaiyri and Marillana deposits, 1 Bt at Mining Area C and Yandi, and 442 Mt has been defined at its Eastern Pilbara mining hub. As the result of the strategy to blend Yarrie production with Newman and Mining Area C ore, the Yarrie resource has risen to 171 Mt and the reserve to 24 Mt. The overall increase in reserves included 180 Mt of Brockman ore at Packaddle in Mining Area C, 41 Mt of Brockman ore at Newman, 172 Mt of Brockman ore at Jimblebar and 178 Mt of Channel Iron Deposit ore at Yandi.

Initial drilling at its Brockman Iron Project, 60 km W of Tom Price in the Pilbara region by Jupiter Mines Ltd returned encouraging results including: 7 m @ 59.4% Fe, 5.88% SiO₂, 2.43% Al₂O₃, 0.049% P, 6.03% LOI; 7 m @ 56.9% Fe, 5.56% SiO₂, 6.29% Al₂O₃, 0.029% P, 5.83% LOI, and 7 m @ 56.6% Fe, 4.21% SiO₂, 3.11% Al₂O₃, 0.045% P, 10.99% LOI.

United Minerals Corporation NL reported drill intersections in Marra Mamba iron ore at its Railway prospect, 330 km S of Port Hedland including 100 m @ 61.1% Fe, 80 m @ 64.4% Fe, and 57 m @ 63.1% Fe. The company subsequently reported an Inferred Resource of high-grade Direct Shipping Ore (DSO) of 84.5 Mt @ 60.15% Fe, 3.65% SiO₂, 2.46% Al₂O₃, 0.061% P and 7.33% LOI within a total Inferred Resource of 111.3 Mt @ 57.7% Fe, 5.13% SiO₂, 3.53% Al₂O₃, 0.061% P and 8.06% LOI.

At the McPhee Creek project, 30 km N of Nullagine, Giralia Resources NL reported intersecting potentially DSO grade channel iron mineralisation. These intersections included: 12 m @ 56.1% Fe, 0.03% P, 5.6% SiO₂, 5.5% Al₂O₃, 10.66% LOI; 10 m @ 57.2% Fe, 0.02% P, 4.8% SiO₂, 3.9% Al₂O₃, 11.05% LOI; and 14 m @ 55.9% Fe, 0.02% P, 4.8% SiO₂, 3.9% Al₂O₃, 11.05% LOI. All mineralisation started at the surface.

The Yallen Joint Venture (70% API Management Pty Ltd, 30% Helix Resources Ltd) announced initial Inferred Resources for the Kumina Creek and Robe Exit Channel Iron Deposits in the West Pilbara. Resource estimates were: Kumina Creek, 68.7 Mt @ 56.16% Fe, 6.60% SiO₂, 4.20% Al₂O₃, 0.058% P and 8.23% LOI and for Robe Exit 43.5 Mt @ 54.65% Fe, 6.84% SiO₂, 4.58% Al₂O₃, 0.065% P and 9.97% LOI.

Atlas Iron Ltd upgraded its resource estimates for DSO at its Pardoo and Abydos projects. At Pardoo, 50 km E of Port Hedland, DSO resources at >53% Fe were estimated at 24 Mt @ 56.0% Fe, 8.0% SiO₂, 2.1% Al₂O₃, 0.11% P, 8.7% LOI. DSO resources at Abydos, 130 km S of Port Hedland, were estimated at 15.1 Mt @ 56.9% Fe, 6.9% SiO₂, 1.8% Al₂O₃, 0.05% P and 9.4% LOI. Atlas also reported increased resource estimates for its Ridley magnetite resource, 75 km E of Port Hedland, after a major drilling program. Magnetite resources at Ridley are estimated at 1.3 Bt @ 36.8% Fe, 40.9% SiO₂, 0.09% Al₂O₃, 0.08% P, 3.7% LOI yielding a Davis Tube Concentrate with a 34.5% mass recovery and grade of 69.0% Fe, 3.8% SiO₂, 0.02% Al₂O₃, 0.01% P.

At the Weld Range project, 70 km SW of Meekatharra, Midwest Corporation Ltd reported a 12% increase in the resource inventory. Total resources by rose to 149.2 Mt @ 58.4% Fe, at a cut off grade of 50% Fe, and are made up of Measured Resources of 72.9 Mt @ 58.8% Fe; Indicated Resources of 35.1 Mt @ 58.5% Fe and Inferred Resources of 41.2 Mt @ 57.7% Fe. A pre-feasibility study was scheduled for completion by the end of 2008.

Polaris Metals NL announced an updated resource estimate for the Yilgarn Iron Ore Project, 60 km north of Kooyanobbing in the Yilgarn region, to an Inferred Resource of 30.4 Mt @ 58.1% Fe. The project covers five active prospects, Carina, Bungalbin East, Chamaeleon, J4 and J5 but the resource estimate is only for Carina, J4 and J5.

Aurox Resources Ltd announced a significant increase in resources at its Balla Balla magnetite project, W of Port Hedland. The increase saw the total resource grow by 46% to 473 Mt made up of a Measured Resource of 167.7 Mt @ 43.0% Fe, 0.60% V₂O₅, 13.5% TiO₂, an Indicated Resource of 45.1 Mt @ 42.8% Fe, 0.62% V₂O₅, 12.9% TiO₂, and an Inferred Resource of 260.3 Mt @ 43.4% Fe, 0.63% V₂O₅, 13.7% TiO₂.

Warwick Resources Ltd announced encouraging iron ore intersections from drilling at its Jimblebar Range project near Newman. Intersections reported included: 76 m @ 60.35% Fe, 3.34% SiO₂, 1.06% Al₂O₃, 0.025% P, 9.07% LOI; 54 m @ 59.20% Fe, 4.56% SiO₂, 4.58% Al₂O₃, 0.062% P, 8.25% LOI, and 22 m @ 62.06% Fe, 3.54% SiO₂, 1.69% Al₂O₃, 0.085% P, 5.40% LOI. Warwick also reported intersections from its Caramulla South project, near Newman, which included: 36 m @ 57.73% Fe, 5.98% SiO₂, 2.60% Al₂O₃, 0.142% P, 8.11% LOI; 22 m @ 59.29% Fe, 5.97% SiO₂, 3.01% Al₂O₃, 0.030% P, 5.57% LOI, and 16 m @ 57.40% Fe, 8.20% SiO₂, 3.40% Al₂O₃, 0.095% P, 5.63% LOI.
Talisman Mining Ltd released the results of drilling at the Central Marra Mamba prospect of its Wonnunna project, East Pilbara region. The company reported that the results indicate a coherent body of iron mineralisation approximately 1.7 km long by 150-200 m wide. Intersections included: 28 m @ 57.90% Fe, 4.38% SiO₂, 2.92% Al₂O₃, 0.10% P and 9.8% LOI; 30 m @ 58.58% Fe, 4.21% SiO₂, 2.97% Al₂O₃, 0.10% P and 8.7% LOI; and 32 m @ 57.32% Fe, 6.39% SiO₂, 2.68% Al₂O₃, 0.11% P and 8.6% LOI. Other similar deposits are North and South Marra Mamba. The project has a total Inferred Resource of 78.3 Mt @ 56.0% Fe for the three deposits.

Giralia Resources NL reported that drilling at its Western Creek iron ore project, 10 km W of Newman indicates likely extensions to the northern zone with improved thickness and grade. But thinner than anticipated mineralisation in parts of the main or southern zone. Results from the northern zone include: 28 m @ 58.4% Fe and 32 m @ 55.1% Fe. Results from the southern zone include: 30 m @ 58.4% Fe, including 24 m @ 60.4% Fe, and 38 m @ 60.2% Fe.

Hannans Reward Ltd intersected high-grade iron mineralisation in drilling at the Mijinjii Iron Prospect within the Jigalong Project, 165 km East of Newman in the East Pilbara region. Intersections confirmed high-grade hematite mineralisation including: 20 m @ 62.8% Fe, 4.0% SiO₂, 3.4% Al₂O₃, 0.04% P and 2.3% LOI from 50 m, and 42 m @ 59.3% Fe, 5.1% SiO₂, 3.3% Al₂O₃, 0.11% P and 6.4% LOI.

**MANGANESE (FIGURE 5)**

South Australia

Monax Mining Ltd reported that drilling at its Waddikee project, on the Eyre Peninsula, to test for extensions of shallow high grade manganese (up to 54.1% Mn in rock chip samples) to depth was successful. Drilling at the Jamieson Tank prospect returned: 5 m @ 19.9% Mn which included 2 m @ 34.0% Mn; 20 m @ 6.8% Mn which included 1 m @ 33.5% Mn, and 22 m @ 12.4% Mn which included 4 m @ 22.3% Mn. At Pollinga, 8 km north of Jamieson Tank, rock chip samples returned manganese assays up to 41.9% Mn. Subsequently drill intersections included 4 m @ 14.5% Mn and 6 m @ 16.3% Mn.

Western Australia

In 2007, AusQuest Ltd intersected 3.9 m @ 47.5% Mn at a depth of 286 m at its Table Hill project, 200 km SE of Newman. The hole was drilled to identify the cause of an 18 km² electromagnetic anomaly. Subsequent drilling has confirmed manganese mineralisation with one hole returning 9.3 m of massive and disseminated manganese mineralisation. Drill intersections reported included 4.5 m @ 13.3% Mn and 1.3 m @ 47.7% Mn. Manganese mineralisation has been identified over a strike length of at least 300 m.

Hannans Reward Ltd reported encouraging rock chip samples from Hill 616, part of its Jigalong Project, 165 km E of Newman. Sampling over an 800 m strike length returned manganese grades peaking at 37.56% Mn and included 37.56% Mn, 5.31% Fe, 2.19% Al, 8.74% Si, 0.075% P, and 34.39% Mn, 10.28% Fe, 1.96% Al, 7.10% Si, 0.22%. Primary manganese mineralisation was intersected in drilling at the Marru prospect where seven of the fourteen holes intersected primary stratabound manganese. Mineralisation ranged in widths from 5 m to 30 m at depths from surface to 60 m, and is interpreted to continue along strike for 3 km.

Haoma Mining NL, following up earlier work on their North Pole tenements, 70 km NE of Marble Bar, reported that further rock chip sampling in Area 1 returned significant manganese assays ranging from 14.8 to 46.10% MnO, with two samples exceeding 40% MnO. One sample from Area 2 returned an anomalous manganese assay of 20.40% MnO.

Monetzuma Mining Company Ltd announced encouraging manganese results from their Mt Padbury gold project, 108 km NNW of Meekatharra. Rock chip sampling of near surface manganese identified six zones of mineralisation. Assays of 23 rock chip samples range from 25.1 to 55.8% Mn, with nine samples exceeding 40% Mn.

Pioneer Nickel Ltd’s joint venture with Galaxy Resources Ltd at the Mt Chester manganese prospect, part of its Elverdton-Desmond copper-gold project, is located 9 km from Ravensthorpe. Reconnaissance work by Pioneer has located a high-grade manganese-rich mineralized horizon. Of 21 surface samples taken sixteen assayed above 30% Mn with a maximum of 49.0% Mn. Additional rock chip assays of six samples ranged from 22.9% Mn to 34.8% Mn with two samples above 30% Mn.

The West Kundip prospect held by Galaxy Resources Ltd is situated about 18 km SSE of Ravensthorpe. Assay results of rock chip samples taken from surface exposures of massive manganese mineralisation have returned grades of up to 50% Mn.

Shaw River Resources Ltd reported encouraging results from rock chip sampling its Baramine project, 250 km east of Port Hedland. Composite samples included: 5 m at 50.7% Mn and 8.0% Fe; 8 m at 43% Mn and 3.4% Fe; and 3 m at 44.8% Mn and 9.5% Fe with individual 1 m samples of up to 57.9% Mn and 1.0% Fe. The company reported that the prospect’s geology is similar to Woodie Woodie manganese mine, 80km to the SE.

At Shaw River Resources’ Mt Minnie gold–base metals project, six new gravity anomalies were identified by a detailed survey in a prospective dolomite sequence. At least two of the anomalies are associated with
outcropping manganese-rich breccia samples assaying up to 41% Mn. The project is located 200 km south-west of Karratha on the western edge of the Pilbara Craton.

At Spitfire Resources Ltd’s South Woodie Woodie drilling recorded manganese intercepts ranging between 1 to 12 m thick including: 3 m @ 5.68% Mn and 2 m @ 4.94% Mn; 2 m @ 5.39% Mn; 9 m @ 2.54% Mn, 1 m @ 3.09% Mn and 9 m @ 3.11% Mn. Phase two drilling intersected near-surface manganese in most holes completed in the Southern Target Area with results from drilling at Tally-Ho including 6 m @ 20.48% Mn including 1 m @ 36% Mn; 7 m @ 21.8% Mn and 4 m @ 15.8% Mn.

MINERAL SANDS (FIGURE 5)
Mineral sands exploration spending fell slightly in 2007-08 to $37.1 million, just below the record of $37.4 million established the previous year. Of the total, $14.7 million was spent in Western Australia, $7.8 million in Victoria, $6.6 million in New South Wales and $6.2 million in South Australia.

South Australia
Iluka Resources Ltd reported the discovery of the Oolabinna mineralisation 65 km N of Penong. Iluka commenced an exploration drilling line to test the heavy mineral (HM) potential in the region between the Ooldea and Barton ranges over a length of approximately 70 km. This regional line, the Oolabinna traverse, intersected multiple, intervals of HM greater than 1%. The most northern occurrence of HM, the Mojave prospect is 100 km N of Penong and 90 km east of the Jacinth and Ambrosia deposits. At Mojave, drilling intersected HM sands over an apparent width of 1.0 to 3.5 km and a strike length of 8 km. Mineralisation averages 10 m thick from an average depth of 15 m. The HM grade ranges from 1% HM up to a maximum of 22.2%. The provisional mineralogy from composite samples indicates an average zircon assemblage of 13% and 30% leucoxene.

Western Australia
Image Resources NL reported that drilling had extended the strike length of the Helene mineralisation at Cooljarloo North to over 11 km. The high-grade drill intersections recorded include: 4 m @ 14.4% HM; 4 m @ 13.4% HM, and 2 m @ 19.0% HM. Total resources at Cooljarloo North are 260 Mt @ 2.4% HM.

Diatreme Resources Ltd announced an Inferred Resource for the Cyclone Deposit, located in the Eucla Basin, of 60.0 Mt @ 3.1% HM for 1.8 Mt of contained HM. The deposit comprises a number of heavy mineral strand systems covering an area of approximately 5.0 x 2.5 km within 25 km of the border with South Australia. It appears to have a suite of minerals dominated by zircon and leucoxene. The company also announced the discovery of a body of mineralisation 4.5 km wide over a strike length of 8 km on its the Wanna East tenement in the Eucla Basin directly to the east of the Cyclone deposit. This discovery appears to be to be an eastern extension of Cyclone.

Image Resources NL reported that drilling at its Serpentine Lakes tenements in the Eucla Basin intersected mineralisation up to 2.5 km long along strike from Diatreme’s Cyclone deposit with intersections including: of 24 m @ 3.0% HM from 4 m and 16 m @ 2.7% HM from 8m. The width of the mineralisation is up to 600 m.

MOLYBDENUM (FIGURE 5)
Queensland
Ivanhoe Australia announced the discovery at its Mount Dore project, near Cloncurry, of high-grade molybdenum and rhenium mineralisation referred to as the Merlin Project. Drilling indicates a clearly defined, high-grade body of molybdenum and rhenium sulphide mineralisation from a depth of 100 m. Intersections reported include: 67 m @ 1.28% Mo, 29.2g/t Re and 0.13% Cu from 220 m including 10 m @ 6.73% Mo, 150.7g/t Re and 0.52% Cu from 230 metres; 59 m @ 0.67% Mo, 13.3g/t Re and 0.17% Cu from 213 m; and 32 m @ 0.41% Mo, 14.3g/t Re and 0.11% Cu from 166 m. The molybdenum, which occurs as molybdenite appears to be hosted in a sheared-fault breccia developed in black shale and siltstone beneath the main Mount Dore copper ore zone. Rhenium occurs in a fairly constant ratio within the molybdenite.

Aussie Q Resources Ltd announced high-grade molybdenum intercepts from the its Whitewash copper-molybdenum prospect in central Queensland. Intersections included: 143 m @ 0.1% Mo and 0.07% Cu from 10 m which included 19 m @ 0.48% Mo and 0.08% Cu from 64 m. The company released an initial Inferred Resource estimate for Whitewash of 68.5 Mt @ 0.033% Mo, 0.10% Cu, 1.2g/t Ag for a contained metal content of 22,600 t Mo, 68,200 t Cu and 2.5 Mozs Ag.

Zamia Gold Mines Ltd announced encouraging results from its Anthony molybdenum project in central Queensland. An intersection of 157.5 m @ 738 ppm Mo from 132.5 m included 64 m @ 1149ppm Mo. The hole ended in Mo mineralisation at 351.5 m. Earlier drilling returned a range of intersections including 22 m @ 710ppm Mo which included 2 m @ 1495ppm Mo; 8 m at 657ppm Mo; and 14 m at 625ppm Mo.
Western Australia

Moly Mines Ltd announced a 43% increase in the Spinifex Ridge project’s Proven and Probable Ore Reserves to 451 Mt @ 0.05% Mo and 0.08% Cu derived from a Measured and Indicated Resource of 652.2 Mt @ 0.05% Mo, 0.08% Cu and 1.3g/t Ag. There is also an Inferred Resource of 399 Mt @ 0.04% Mo, 0.07% Cu. The current ore reserve is sufficient to support 23 years at the planned 20 Mtpa mine production.

Victoria

Dart Mining NL announced that molybdenite mineralisation was visible throughout 540 m of diamond drilling in three drill holes on its Unicorn prospect 100 km ESE of Albury. The drilling shows Mo mineralisation extends beyond 180 m below surface in two holes. Assays include 44 m @ 584ppm Mo, and 88 m @ 1709ppm Cu.

**NICKEL** *(FIGURE 5)*

Nickel exploration spending surged by 67% to $303.3 million in 2007-08 in response to high metal prices and strong demand. Western Australia dominated spending with 92% of the total and was followed by Tasmania with 7.4% where spending would have been closely associated with activity around the Avebury deposit.

New South Wales

Jervois Mining Ltd reported the results of infill drilling in preparation for a trial pit on its Young deposit near the town of Young. Assays reported included: 5 m @ 1.17% Ni and 260ppm Co which included 3 m @ 1.48% Ni and 200ppm Co; 9 m @ 0.96% Ni and 630ppm Co which include 2 m @ 1.12% Ni and 240ppm Co and 3 m @ 0.83% Ni and 1200ppm Ni.

South Australia

Metals X Ltd reported that while Stage 1 of the feasibility study into possible development of the Wingellina lateritic nickel deposit on the Western Australian side of the Western Australia-South Australia border was completed exploration of the Claude Hills deposit on the South Australian side of the border continued. Drilling at Claude Hills intersected nickeliferous limonites under transported sands and initial assay data have been encouraging with results including: 60 m @ 1.20% Ni, 0.11% Co, 61.4% Fe₂O₃; 36 m @ 1.12% Ni, 0.11% Co, 55.3% Fe₂O₃; and 40 m @ 1.32% Ni, 0.18% Co, 58.0% Fe₂O₃.

Figure 5: Selected mineral exploration projects, 2008.
Resource definition drilling by Australian Mines Ltd at **Blair Deep**, 32 km from Kalgoorlie, below current workings at the Blair Nickel Mine returned downhole intersections of 11.85 m @ 4.06% Ni consisting of strong matrix sulphides and massive sulphides and 5.4 m @ 3.32% Ni.

At the **Mount Alexander** Joint Venture (BHP Billiton Ltd and Western Areas NL), 350 km north of Forrestania, two diamond drill holes intersected significant widths of massive, matrix and disseminated sulphides at shallow depth. Two representative chip samples of massive sulphide in the drill core analysed by BHP Billiton returned 5.95% Ni and 2.2% Cu and 7.49% Ni and 2.8% Cu respectively. Significant drill intersections include 14 m at 1.9% Ni, 0.8% Cu, and 1.8 g/t PGE from 81.5 m (including 4 m at 4.9% Ni, 1.7% Cu and 3.9 g/t PGE from 91.4 m) in hole MAD0-12 and 3 m at 3.8% Ni, 1.6% Cu and 2.7 g/t PGE from 56.3 m.

Drilling of nickel laterite mineralisation by Condor Nickel Ltd at its **Kuralpi** prospects, 90 km NE of Kalgoorlie, returned encouraging results including: 43 m at 1.09% Ni and 0.055% Co; 19 m @ 1.26% Ni, 0.058% Co from the surface; 20 m @ 1.4% Ni, 0.12% Co from 10 m depth, and 19 m @ 1.12% Ni, 0.063% Co from 28 m depth.

Thundelarra Exploration Ltd reported results of drilling at its **Jackal** prospect included 12 m @ 1.32% Ni, 0.20% Cu and 0.06% Co from 68 m down hole. The Jackal Prospect is part of the company’s the Mabel Hill Project and is approximately 50 km S of the Savannah Nickel Mine in the Kimberley Region.

**PHOSPHATE (FIGURE 5)**

**Northern Territory**

Minemakers Ltd announced drilling results and a resource upgrade at the **Wonarah** deposit in the Georgina Basin. The Main Zone deposit Inferred Resource estimate was quadrupled to 330 Mt @ 18.9% P2O5 at a 15% P2O5 cut off. In combination with the adjacent Arruwurra deposit which has an Inferred Resource of 131 Mt @ 18.6% P2O5 at a 15% P2O5 cut off, the total inferred resource estimate for the Wonarah Project is 461Mt.

Uramet Minerals Ltd announced that rock chip samples taken from its **Marqua** project, 400 km ENE of Alice Springs, returned grades of up to 39.4% P2O5 confirming the existence of high-grade phosphate mineralisation over an extensive area in the southern Georgina Basin, near the Queensland border.

Phosphate Australia Ltd reported that drilling at its **Highland Plains** project, 311 km NW of Mount Isa, returned encouraging results including 11 m @ 27.2% P2O5, 3.9% Fe2O3, 4.3% Al2O3, 36.6% CaO, 0.2% MgO and 21.9% SiO2 with a higher grade zone of 6 m @ 30.2% P2O5, 3.1% Fe2O3, 3.3% Al2O3, 40.7% CaO, 0.1% MgO and 17.5% SiO2.

**Queensland**

Uramet Minerals Ltd announced that rock chip samples taken from the D-Eight and Lancewood prospects in its **Barr Creek** project, 120 km N of Mount Isa returned high-grade phosphate analyses. Assay results of outcropping rock contain up to 31.2% P2O5 at D-Eight and 32.8% P2O5 at Lancewood.

**Western Australia**

Aurox Resources Ltd is continuing studies into the beneficiation of phosphate from its **Balla Balla** iron ore project near Whim Creek. The phosphate is contained in the hanging-wall waste rock located above the magnetite ore.

The apatite bearing material displays grades of 3-7% P2O5 with a total estimated resource of 89.7 Mt P2O5.

Heron Resources Ltd reported results of seven samples from a nodular phosphate horizon at the **Langey Crossing** project, 41km S of Derby, including 22.5% P2O5, 4.0% FeO, 3.9% Al2O3, 30.2% SiO2.

**TUNGSTEN (FIGURE 5)**

Vital Metals Ltd announced a new resource estimate for the **Watershed** deposit in North Queensland. The deposit’s total resource was estimated at 32.75 Mt @ 0.20% WO3 for 65,600 t contained WO3. Ongoing drilling at the deposit confirmed the presence of mineralisation outside the limits of this resource. Intersections reported include: 1 m @ 4.30% WO3 from 69 m; 3 m at 0.70% WO3 from 56 m; 1 m at 5.23% WO3 from 168 m and 14 m @ 1.13% WO3.

**URANIUM (FIGURE 6)**

Uranium exploration spending more than doubled in 2007-08 to $231.6 million with 51% spent in South Australia. This spending was a record exceeding the previous peak established in 1981-82. The rapid rise in uranium exploration comes on the back of a substantial number of new companies floated in the last few years specifically to undertake such work.

**Northern Territory**

Energy Metals Ltd (manager of the Bigryli Joint Venture) reported the results of chemical analysis which confirmed announced downhole gamma probe intercepts at Bigryli, 330 km NW of Alice Springs. The chemical analyses returned intersections of: 6 m @ 0.26% U3O8 and 0.79% V2O5 from 37 m; 5 m @ 0.48% U3O8 and 0.50% V2O5 from 80 m; and 4 m @ 0.44% U3O8 and 1.22% V2O5 from 114 m. The current resource at Bigryli contains 23.4 million pounds of U3O8 and
43.7 million pounds of V₂O₅ (500ppm U₃O₈ cut-off grade). Metallurgical investigations indicate that extraction rates of 94-95% for uranium and 45% for vanadium are achievable.

Uranium Equities Ltd announced drill intersections from their N147 deposit, near Nabarlek, including 36 m @ 0.172% U₃O₈ and 15 m @ 0.224% U₃O₈. The mineralised body remains open in both directions.

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Atom Energy Ltd advised that resource modelling and resource estimation on the Twin and Dam deposits in the Cleo's Uranium Project had been completed. They reported Inferred Resources of: Dam 585,000 t @ 286ppm U₃O₈ and for Twin 824,000 t @ 316ppm U₃O₈. The resource estimate is limited to a vertical depth of 60 m and remains open at depth and on strike.

Toro Energy Limited released an updated inferred resource for the Napperby calcrete-hosted deposit of 4.6 Mt @ 305ppm U₃O₈ for 1,420 t contained uranium oxide (at a 200ppm U₃O₈ cut off), an increase of 112%. A scoping study has commenced on the deposit.

Haddington Resources Ltd announced significant drill intercepts at the Liberator prospect in their Shoobridge project in the southwestern Pine Creek Orogen including 3 m @ 6.05% U₃O₈ from 39 m and 6 m @ 1.34% U₃O₈ from 19 m.

Queensland

Fusion Resources Ltd announced that significant drill intersections at the Duke Batman and Honey Pot prospects in the Valhalla North project in northwest Queensland. Intersections at Duke Batman included 14 m @ 1595ppm U₃O₈; 4 m @ 1237ppm U₃O₈, and 12 m @ 732ppm U₃O₈. At Honey Pot, intersections of 17 m @ 1294ppm U₃O₈, 10 m @ 1357ppm U₃O₈, and 8 m @ 1200ppm U₃O₈ were reported. Subsequently, the company announced a combined Indicated and Inferred Resource for these deposits of 4.67 Mt @ 690ppm U₃O₈ for a contained 7.06 million pounds of U₃O₈.

Summit Resources Ltd announced resource estimates for its Bikini and Skal deposits, near Mount Isa. Bikini has an Inferred Resource of 10.1 Mt @ 517ppm U₃O₈ for a contained 11.5 million pounds of U₃O₈ at a cut-off grade of 250ppm U₃O₈. The Inferred Resource at Skal is 7.6 Mt @ 508ppm U₃O₈ for a contained 8.5 million pounds U₃O₈ at a cut-off grade of 250ppm U₃O₈.

PepinNini Minerals Ltd undertook surface sampling program at Plain Creek, 190 km south of Charters Towers in the Drummond Basin, which confirmed high-grade uranium and phosphate mineralisation. Samples collected returned assays including: 22.9% P₂O₅, 1,450ppm U₃O₈; 16.3% P₂O₅, 2,288ppm U₃O₈; and 11.2% P₂O₅, 2,170ppm U₃O₈. Previous explorers reported up to 27% P₂O₅ and up to 4,200ppm U₃O₈.

Deep Yellow Ltd reported drilling results on the Conquest Prospect, 75 km N of Mount Isa which included: 14 m @ 1,008ppm U₃O₈; 4 m @ 1,012ppm U₃O₈ and 12 m @ 592ppm U₃O₈.

Thundellarra Exploration Ltd reported encouraging results from rock chip sampling undertaken at its Pandanus and Braden’s Gap uranium prospects in the Gregory Range region of north Queensland. Surface rock chip samples at the prospects returned elevated uranium with six samples assaying over 1,000ppm U₃O₈ with one high value of 11.2% U₃O₈ recorded in a sample from Pandanus Creek. The company reported that airborne radiometric data indicates that the two prospects may form part of a mineralised corridor that extends for some five km.

South Australia

The Four Mile uranium project, 550 km N of Adelaide and 8 km SE of the Beverley Uranium Mine, is a joint venture between Quasar Resources Pty Ltd (75%) and Alliance Resources Ltd (25%). In September, Quasar notified a decision to mine using ISR technology, with production commencing in January 2010. At the Four Mile West prospect there is an Inferred Resource of 32 million pounds U₃O₈ and drilling...
is expanding the area of high-grade mineralisation. Intersections reported included: 2.5 m @ 0.33% pU3O8, 7.0 m @ 1.27% pU3O8 and 0.9 m @ 1.00% pU3O8.

Fission Energy Ltd reported encouraging uranium results from drilling at Wynbring palaeochannel prospect, 100 km WNW of Tarcoola. Intersections reported included: 5.35 m @ 405ppm eU3O8; 6.05 m @ 254ppm U3O8, and 5.0 m @ 215ppm U3O8.

The Honeymoon Uranium mine with a resource of 2900 t U3O8 is located 400 km NE of Adelaide. Development of the mine was temporarily halted in 2008, while Uranium One sought a partner to jointly develop the mine. In October, 2008 they announced a an agreement with Mitsui & Co., Ltd. of Japan that will see Mitsui fund the ongoing development of the Honeymoon project through to commercial production which is expected to commence in 2010 at an annual output of 400 t of uranium oxide.

Western Australia

Toro Energy Ltd reported a substantial increase in the resource in the Lake Way – Centipede uranium mineralisation, near Wiluna. The resource estimate increased to 25.8 Mt @ 420ppm U3O8, for 10,835 t of contained U3O8 at a 200ppm cut off. The Centipede deposit resource increased with 90% of the deposit now Indicated Resources with 11.5 Mt @ 460ppm U3O8 for 4,542 t of contained U3O8.

Scimitar Resources Ltd announced an Inferred Resource of 4.8 million pounds of eU3O8 at a grade of 300ppm at the Bennet Well deposit in the Yanre project. Drilling aimed at expanding this resource and identifying new targets intersected promising uranium mineralisation. This drilling also targeted a new palaeochannel 16 km S of Bennet Well. Significant results from the program included: 1.1 m @ 566ppm eU3O8; 2.1 m @ 763ppm U3O8, and 1.2 m @ 680ppm U3O8.

Uranex NL announced an initial Inferred Resource estimate for the Thatcher Soak deposit of 17 Mt @ 290ppm U3O8, for about 4,900 t contained U3O8, at a cut off grade of 150ppm U3O8. The company announced that a Scoping Study will be done to provide an initial evaluation of project economics and identify further necessary technical and evaluation work.

Electra Mines Ltd announced an initial Inferred Resource estimate for its Thatcher Soak deposit, 150 km NE of Laverton, of 16.1 Mt @ 174ppm U3O8, for 6.2 million pounds (2,800 t) of contained U3O8.

Carbon Energy Ltd reported that drilling at its Nyang project, 210 km NE of Carnarvon, confirmed palaeochannel uranium mineralisation. The channel has a strike length of over 11 km and is up to 800 m wide. Significant intersections reported included: 9 m @ 635ppm U3O8 which included 2 m @ 1427ppm U3O8; 13 m @ 278ppm U3O8 which included 2 m @ 734ppm U3O8, and 4 m @ 839ppm U3O8 which included 2 m @ 1432ppm U3O8.

**Base metals**

» Compass Resources NL announced that the first production of copper from its Browns Oxide Project S of Darwin in the Northern Territory occurred in September.

» Terramin Australia Ltd shipped the first zinc concentrate from its new Angas mine, SE of Adelaide, South Australia.

**Gold**

» St Barbara Ltd commenced gold production at its Leonora operation in Western Australia where the pour was the culmination of three years of redevelopment of the Gwalia underground mine.

» Dioro Exploration NL and its partner La Mancha Resources Inc. poured the first gold from ore mined underground at its Frog’s Leg project near Kalgoorlie in Western Australia.

» Avoca Resources Ltd commenced gold production at the Trident mine at its Higginsville Gold Project in Western Australia.

**Nickel**

» The Avebury nickel mine in Tasmania was commissioned in August and produced 10,381 t of nickel concentrate before OZ Minerals Ltd placed it on care and maintenance at the end of the year due to market conditions.

» Thundelarra Exploration Ltd and Panoramic Resources Ltd started mining at the Copernicus mine in the Kimberley Region of Western Australia in July but placed the operation into care and maintenance at the end of the year due to prevailing market conditions.

**DEVELOPMENTS**

**COMPLETED PROJECTS (FIGURE 7)**

The Australian Bureau of Agricultural and Resource Economics (ABARE) reported that several projects came into production during 2008. These included coal and iron ore production and infrastructure developments and the metals projects summarised below. A comprehensive review of completed projects may be obtained at the ABARE website at www.abare.gov.au.
DEVELOPING PROJECTS (FIGURE 7)

ABARE reported that at the end of October 2008 there were 31 metal mining projects at an advanced stage of developments at a total capital cost of approximately $23 billion. These were dominated by 11 iron ore projects accounting for just over $12 billion. In addition they reported that there were coal mining and infrastructure projects at an advanced level valued at $10.3 billion. A summary of selected projects follows and a comprehensive review of developing projects may be obtained at the ABARE website at www.abare.gov.au.

Base metals

» Rio Tinto Ltd is expected to complete the $227 million expansion of its Northparkes copper operation NW of Parkes, New South Wales in 2009 with the E48 block cave program expected to extend the mine life to 2016.

» OZ Mineral Ltd’s $1.1 billion Prominent Hill project SE of Coober Pedy in South Australia is scheduled to have an annual production of 90,000 t Cu in concentrates, 115,000 oz Au and 420,000 oz Ag from 2009.

Coal

» Rio Tinto Ltd’s $1.5 billion Clermont open cut mine in Queensland is scheduled for completion in 2010, will produce 12 Mtpa of thermal coal and will probably replace production from the Blair Athol mine.

» Rio Tinto Ltd is expected to produce some 1.7 Mtpa of coking coal from the Kestrel project, near Emerald in Queensland. This project is expected to cost some $1.17 billion.

» In New South Wales Xstrata Coal’s $1.1 billion Mangoola (Anvil Hill) open cut mine development near Muswellbrook is scheduled to produce 10.5 Mtpa of thermal coal from 2011.

Gold

» Newmont Mining Corp and AngloGold Ashanti Ltd’s $3 billion redevelopment of the Boddington mine S of Perth, Western Australia is anticipated to produce 0.6-0.7 Mozs Au per year from around mid-2009.

Iron ore

» BHP Billiton Ltd’s $2.5 billion Rapid Growth Project 4 in the Pilbara Region of Western Australia will add 26 Mtpa to the company’s iron ore production capacity.

» Rio Tinto Ltd’s Brockman 4 project in the Pilbara Region of Western Australia is scheduled for completion in 2010 at a cost of $1.8 billion and will have a capacity of some 22 Mtpa of iron ore.

» The Rio Tinto Ltd/Robe River joint venture Mesa A-Warramboo Mine, 50 km from Pannawonica Western Australia’s Pilbara Region will add 25 Mtpa to production capacity at a cost of around $1 billion.

» CITIC Pacific Mining’s $5.2 billion Sino Iron project at Cape Preston, in the Pilbara Region, Western Australia, will have a production capacity of 27 Mtpa iron ore pellets and concentrates from about 2009.

Mineral sands

In the Eucla Basin of South Australia Iluka Resources Ltd’s Eucla Basin Mineral Sands project based on the Jacinth and Ambrosia deposits is expected to come on stream in 2010 at a cost of $420 million. Annual capacity is expected to be around 300,000 t zircon, 160,000 t ilmenite and 30,000 t rutile.

Molybdenum

» Moly Mines Ltd is developing the Spinifex Ridge Mo-Cu project, 50 km NE of Marble Bar in western Australia at a cost $1.3 billion with production scheduled for 2010. Anticipated capacity is almost 11,000 t Mo and 12,300 t Cu both in concentrates.
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