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All eyes to Africa

When you think of Africa you think of vast spaces, adventure, great riches reflecting starkly against great poverty, civil and social unrest sometimes verging on anarchy. But at the same time there is the undeniable huge potential for future stability and strength.

The African landscape is riddled with reminders of prior ventures in mineral exploration and mining. Most colonial cities in Africa from the 19th century still display faded reminders of the opulence and the potential wealth that is still buried under ground.

Africa's wealth of potential across the commodities spectrum has been well documented. Most economic commentators make mention of the huge rewards available to

those that take the plunge into the less developed markets of Africa.

Since 1986, CSA Global's consultants have always been willing to take that plunge and have been fortunate to work on a diverse range of projects in Africa across almost all mineral commodities and covering all stages of the exploration and mining cycle.

Currently CSA are involved in projects in Malawi (U), Botswana (U), Mauritania (Cu, Au), ROC (U, K, P), Ghana (Au), and DRC (U, Cu), Tanzania (U), Guinea (Fe, U), Zambia (Cu), Eritrea (Au), Ethiopia (Au, BM), Morocco (Au), Burkina Faso (Au) to name a few. In these projects we are involved at all stages from exploration to data management to mine resource and planning.

CSA is always happy to work in locations many of our competitors would shy away from. As we have the on-the-ground experience and prior history in these regions we know the best way to set up a project and are able to predict risks and develop strategies to minimise potential threats before they develop into issues.

Looking forward

Hello readers. I am sure I am not alone when I look back at 2011 and just see a blur of frenetic activity. It will be interesting to see what the history books make of these current times when the distance of years puts a clearer perspective on things.

For this reason I feel it is more important to be looking forward at this early stage of the

year. This edition of Picks n Bits focusses on topics such as innovative services, integration of divisions and offices, as well as regions where CSA Global is starting to see increasing demand for our services.

Please enjoy and feel free to provide feedback by contacting PicksnBits@csaglobal.com.
Editor





Message from the MD

Welcome back everybody – I hope you fitted in a bit of a break to see in the new year. Here at CSA 2012 has started with a bang and we have hit the ground running, however I do not think I am alone in feeling a little uncertain about what the year ahead is going to bring. On one hand we have cashed-up companies ramping mine production, maintaining aggressive exploration programs and vigorously pursuing M&A opportunities. Whilst at the same time we have the ongoing European financial crisis, uncertain equity markets and global recession forecasts.

How long can this two speed economy continue? Will China grow, slow or blow? Who knows – but whilst the sun shines you might as well get on with making hay, being sure to store enough for times ahead.

However, as we expand our global footprint and workforce, it is vital that we uphold our key values of care, respect and integrity. We recognise and value the importance of our company culture. It is not just about how we feel in the work place, our culture is a unique selling point to our clients.

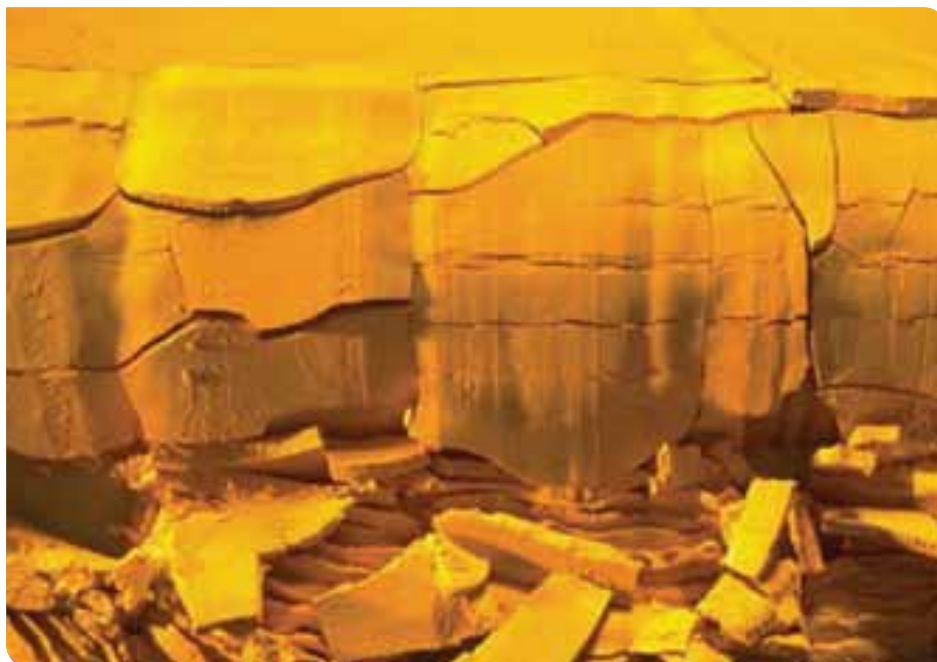
In this edition many of our stories highlight how integration between our different divisions and offices ensures that our culture and values are maintained and in turn leads to better solutions for our clients and greater opportunities for our staff.

Integration allows us to provide our clients with a comprehensive service, utilising staff from multiple offices and drawing on a skills pool which comprises the breadth and depth of our collective knowledge and experience. It also allows us to make the best use of this reservoir of talent through cross-pollination of innovative ideas, mentoring and professional development opportunities, and knowledge management strategies aimed at harnessing this valuable resource for the benefit of all our stakeholders.

I hope you enjoy our newsletter and wish you all the best for 2012.

Jeff Elliott

Africa has its (Yellow) cake



Uranium took a bit of a public relations hit on the world stage last year with the press coverage of the Fukushima disaster in Japan. However, due to the relentless global need for cheap, reliable and clean energy, the commodity is still being hotly pursued by explorers and developers alike. Fortunately for many African nations the continent is well endowed with uranium.

CSA is currently involved in multiple uranium projects across Africa. One such client is Forte Energy.

Our UK office has been assisting Forte Energy with exploration planning and data management services, producing a maiden resource estimate for their Bir Moghrein uranium project in Mauritania. Concurrently we have been assisting with exploration planning at their Firawa uranium project in Guinea.

The CSA Global team working on these projects has been headed up by Galen White (Principal Geologist UK) who is coordinating a team comprising, Robyn Belcher (Senior Data Management Consultant), Maria O'Connor (Senior

Geologist) and Thomas Branch (Geologist).

These comprehensive projects have seen Maria conducting a recent site visit to Mauritania to satisfy NI 43-101 compliance, Robyn providing valuable database management and advice, and Galen and Thomas planning drill holes and producing resource estimates.

CSA has been successful in this role and we continue to assist Forte Energy in developing data collection procedures and drill hole planning to optimise the development of their resources in keeping with their value-adding corporate objectives.

Other success stories in African uranium that CSA has been involved in include the previously reported Mkuju River Uranium project in which we have been involved from Maiden Resource with Mantra Resources all the way through to the project being purchased by ARMZ for U\$1.16B, and neighbouring Uranex with their Mkuju Uranium Project; including the Likuyu North Prospect for the mineral resource estimate.

Apart from this, Simon Döring (Principal Geologist) has been undertaking exploration work for clients in Malawi and Botswana.

ROC... The other Congo



The Republic of Congo (ROC) is often confused with its war ravaged and politically unpredictable neighbour the Democratic Republic of Congo (DRC), but in truth the two nations could not be more different from each other.

Republic of Congo borders the DRC, Gabon, Cameroon and the Central African Republic. This former French colony has had its fair share of political and social unrest.

Between 1993, when ROC collapsed into civil war due to disputed parliamentary elections, and 2002, the Republic of Congo saw running internal disputes between government and the “Ninja” rebels. In recent years this has subsided considerably and ROC has remained predominantly stable.

The current government is taking a proactive role in increasing the ROC’s investment potential. Keen to diversify away from oil, currently the most prominent resource, the government is becoming increasingly supportive of international mining companies.

CSA Global has worked extensively in the country on uranium, phosphate, potash and iron projects.

Currently CSA’s Principal Geologist Karen Volp is working with Cominco Resources making site visits to their Hinda Uranium Phosphate Project, located inland from Point Noire in the south west of the country.

Close by to the Hinda project, you may remember Elemental Minerals’ Sintoukola Potash Project from our article in PnB issue 18. CSA Global is still working with Elemental completing geological and resource modelling, mineralogical and mine geology studies as part of studies into its development. We are proud to have been involved in this project from exploration concept through to it now being at feasibility stage.

We have also worked with Equatorial Resources on their Mayoko – Moussondji Iron Project, located in the Southwest region of the ROC. In this project we provided geologists to work as part of a team conducting extensive drilling and exploration programs.

For more information on our capabilities and experience in Africa please contact csauk@csaglobal.com



Data for Africa: Robyn Belcher

Since starting with CSA Global early last year, Robyn Belcher has held a key role in expanding our database management capabilities and developing a consistent and industry-leading approach to coordinating and managing data across all types of client projects.

One of her main contributions has been to develop and train our Data Management staff in a uniform code of practice which she has developed over the past ten years working across many disciplines in the mining industry.

She has shared her knowledge and experience through providing a series of training sessions for the Data Management & Mapping team in Perth as well as for key Data Management staff in Africa and the UK.

Robyn plays a pivotal role alongside Alex Goulios (Manager - Data Management and Mapping division) in Perth and Rebecca Tyler (GIS & Database consultant) South Africa in providing clients in Africa with a suite of innovative and reliable data management solutions.

If you would like to know more about how CSA’s Data Management team can help with your project please contact GIS@csaglobal.com

Investing in Innovation



CSA Global recognizes that innovation is vital to productivity and sustainability in the mining industry. For this reason we see it as a crucial investment for the ongoing growth and development of our company.

We have established an Innovation Committee to identify, promote and develop innovative ideas generated internally. Part of the innovation committee's role is to encourage all staff to think creatively and to pursue innovative ideas.

Some of our successes have been the development of a comprehensive leads system and the development of a company intranet, the development and subsequent commercial use of numerous data storage and project collaboration tools.

We also get involved in external research projects. Currently CSA is involved through sponsorship in three major research and development projects.

The CAMIRO Project - 'Quality Control Assessment of Portable XRF Analysers' aims at independently assessing various portable XRF instruments to

determine their capabilities. The first phase covered testing laboratory standards to determine the effects of variables such as time, geochemical matrix, precision, drift and detection limits across various XRF models.

This project is aimed at quantifying some of the unknowns in regards to portable XRF analysis to help people use these tools more effectively and to better understand the limits of the technology.

The OSNACA Database - The Ore Samples Normalised to Average Crustal Abundance (OSNACA) database is a proposed publicly available ore sample database. This will be available along with a new mathematical technique for unravelling ore elemental relationships.

DET CRC - The Deep Exploration Technologies Cooperative Research Centre (DET CRC) is a joint government/industry funded research centre dedicated to addressing major challenges and finding safer, more cost effective and environmentally sustainable ways to drill, analyse and target deep mineral deposits.

This research project is the world's best supported independent research initiative in mineral exploration with a total of AU\$112M funding raised by government and industry partners such as CSA Global.



Indonesians Abroad

Dwiyoko (left), Mongolian driller called "Freedom" and Irwan (right)

During October and November 2011, Dwiyoko TU Taruno and Irwan Mardohirawan swapped the tropical warmth of Indonesia for the cold steppes of Mongolia to assist ASX listed Modun Resources (formerly TVN Corporation) with their 7000m coal resource drilling program at Nuurst.

Adjusting to snowy conditions and overnight lows of -25°C was an experience they will not forget quickly. Both Dwiyoko and Irwan are Coal Resource Geologists with extensive experience in the exploration and resource development of relatively thin coal seams of tropical Kalimantan.

Their knowledge is readily applicable to the thicker coal sequences of Mongolia, including the Nuurst Project where Seam Group A is up to 171m thick. Not surprisingly a total Coal Resource Estimate of 0.5 Bt was reported by Dwiyoko for the Nuurst Project.

During 2011 Dwiyoko completed several Mongolian Coal Resource Estimates which together exceed 1.7Bt, a significant contribution by Indonesia to the rapidly developing Mongolian mining industry.

To find out how CSA Global can help you with your coal resource project please contact Resources@csaglobal.com

Hotting Up Around Bryah Basin



Following the 2008 discovery by Sandfire Resources Ltd of the exceptional De Grussa deposit in their Doolgunna Cu-Au Project (10.67Mt at 5.6% Cu, 1.9g/t Au and 15g/t Ag), the Bryah and Padbury Basins have seen a renewed interest with significant exploration activities being undertaken by numerous companies targeting copper, gold and iron ore.

In addition, recent resource upgrades in the area have also been announced by several ASX listed companies.

The Palaeoproterozoic Bryah and Padbury Basins forms part of the Capricorn Orogen, a collision zone between the Archaean Yilgarn and Pilbara Cratons. The Bryah and Padbury Basins are bound to the north by the Mesoproterozoic Edmund Basin, to the south and west by the Archaean rocks of the Yilgarn Craton, and in the east by the older Yerrida Group and Archaean Marymia Dome. The Padbury Group largely comprises clastic sedimentary rocks and unconformably overlies the Bryah Group.

CSA has multiple clients in the district targeting gold (Grosvenor Gold), iron ore (Padbury Mining, Sino Steel Midwest) and copper (Horseshoe Metals, Kumarina Resources, Thundelarra Exploration), all of whom

have been very successful to date at locating the target commodity.

The basin includes the Peak Hill Goldfield which has a significant gold and copper endowment with recorded production (open pit and underground) of 1.6M oz principally from Fortnum-Labouchere (950,000 oz), the Peak Hill Gold Mine (400,000 oz) and the Harmony Gold Mine (200,000 oz).

This gold endowment is hosted in mesothermal orogenic gold deposits. The Peak Hill Goldfield is also prospective for iron ore, uranium and volcanogenic massive sulphides (VMS) copper-gold (Cu-Au) deposits. Recorded production from the Horseshoe Lights Cu-Au deposit was 78,700 oz Au and 48,000 t Cu metal.

CSA has been involved in managing exploration of Grosvenor Gold Pty Ltd's Bryah Basin tenements. Grosvenor Gold have resources totalling in excess of 1M ounces of gold in the district. During 2011, CSA managed airborne and ground geophysical surveys, geochemical exploration and drilling.

A number of these clients have ongoing exploration and evaluation programs and due to recent success have resource estimates underway. However, so far no-one has located a deposit of the same quality as Sandfire's initial discovery - hopefully this will change.

If you would like information on how CSA Global can help you on your next exploration project please contact us on E&E@csaglobal.com



Karen Volp, a World of Experience

Karen Volp has an essential balance of technical, managerial and cultural skills which make her an key ingredient in the fabric of CSA Global's ethos of innovation, experience and cultural awareness.

Karen's broad experience and skills in management and technical geological expertise have been built up over fifteen years working in remote regions of South America, Africa, Asia and Eastern Europe (FSU countries in particular).

Commodity-wise Karen is multi-skilled having worked on porphyry and epithermal Cu-Au-Mo deposits, iron-ore, iron oxide Cu-Au, placer Au, and mesothermal Au, as well as mineral sands, base metals, nickel sulphide, uranium and coal.

Having varied experience across deposit types, regions and stages of project provides Karen with a background which is ideal for completing project reviews, due diligence and evaluation studies. However she is equally happy on exploration assignments and still completes her fair share of field work

Currently Karen is working on gold projects in several African countries and the FSU, phosphate in Republic of Congo, Pb-Zn-Cu in Southern Africa and Turkey, and iron ore in several regions.

Karen's inclusion in the CSA team ties neatly in with our short to mid-term plans of expansion into Africa, the FSU and North and South America.

Meet Karen at CSA's booth (No. 249) at this year's PDAC convention, 4-7 March in Toronto.

Western Australian Iron Storming Ahead



A Pilbara storm brewing, viewed from the Rico campsite

CSA continues to have strong involvement with the international, and particularly the Western Australian, iron ore industry at all stages of the exploration and mining cycle.

Project work has ranged from targeting studies in the Wheatbelt and Darling Range through to large field-based exploration programs in the Midwest and Pilbara. We have also completed resource modelling and estimation and detailed mining studies and valuations for magnetite and DSO projects throughout the state and overseas.

Two of the larger projects in exploration

have included drill program design, implementation, field support and data management for Rico Resource's Wonmunna Project and Padbury Mining Ltd's Peak Hill Iron Project.

The Wonmunna Project is targeting DSO mineralisation in the heart of the Pilbara within 30km of Rhodes Ridge, West Angelas, Mining Area C and Hope Downs. The field work ran through to the end of December and now the resource work has begun.

The evaluation programs at Peak Hill Iron Project in the northern Murchison are aimed at upgrading and extending the known magnetite resource as well as investigating the potential for DSO within the project. Work to date has been very positive on both accounts.

The resources team have also been very busy completing new resource estimates for Macarthur Minerals, Radar Iron, Padbury Mining, Mindax, Indo Mines, Bellzone, Zenith and Avalon Minerals. The work has included DSO, Magnetite in BIF and Iron Sands.

In several cases the resource work has flowed on to our mining division to complete conceptual mining studies on the projects.

The experience we have garnered in iron ore is great for CSA and our clients, as it enables us to provide integrated services for our clients at almost any stage of a project.

If you would like to know more about our iron ore capabilities please contact us on E&E@csaglobal.com



SEP Success Stories

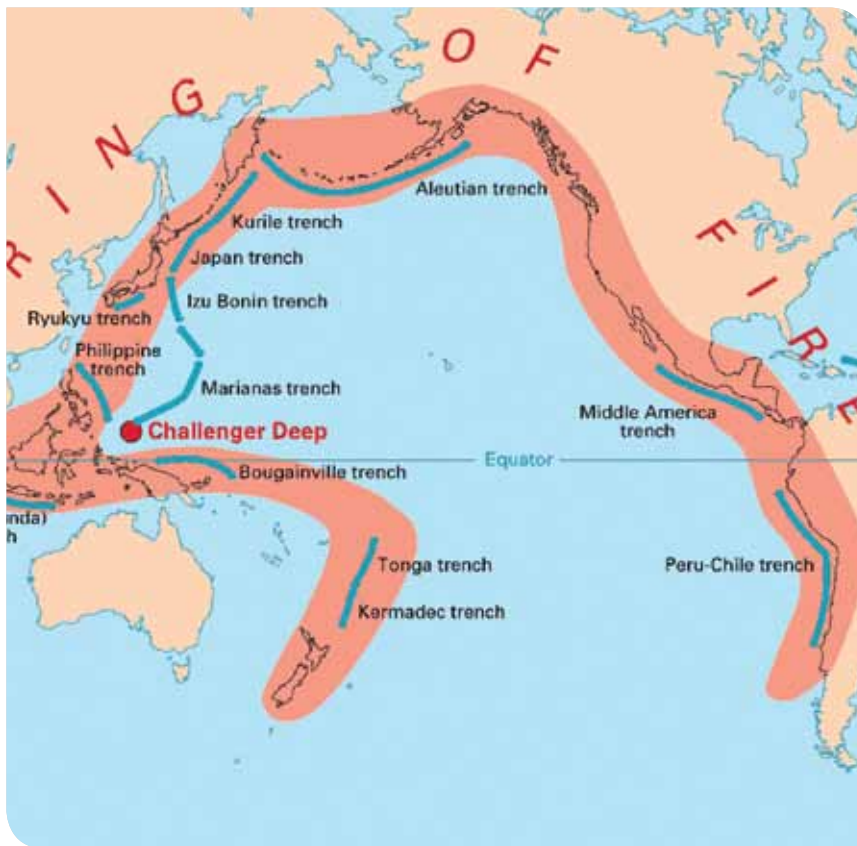
Since our last Picks n Bits (issue #22) story on Strategic Exploration Planning (SEP) the Mining & Projects division has been utilised by several clients for their exploration programs, particularly for planning effective drilling programs.

The uptake of the service to date has been highest amongst CSA's clients with Australian gold projects but there has also been some application on overseas deposits.

Client feedback to date has been very encouraging, with further requests for the service already in the pipeline.

For more detailed information on one of our SEP projects go to <http://www.csaglobal.com/display/index/featured-project>

Queensland from Spark to Fire



Since starting up the new Brisbane office in the city central area of Spring Hill a few months ago (see PnB issue 22), CSA Global's Queensland regional manager Patrick Maher has been busy developing new opportunities all along the eastern seaboard and beyond into the Ring of Fire.

Uranium, gold, copper, zinc, lead and coal projects are now featuring strongly among our Queensland office client list.

Dr Simon Dörling and Peter Geerdts recently finished off a structural geological review of a Cu deposit near Mt Isa.

Geoff Richards (Associate Principal Coal Geologist) has been completing due diligence on Bowen Basin coal tenements for one of our Indonesian clients.

Cormac Mealey and Roger Iranzo, two of our Brisbane based geologists, are part of a larger team evaluating a base metal deposit in the Mt. Isa region.

Jim Clavarino (Associate Senior Geologist) has been very busy on the Thomson Fold Belt in New South Wales assisting with the drill-out of base metal targets.

In Papua New Guinea we have been assisting our client to list on the AIM. We have completed a Competent Person Report on the projects, and provided data management services and FP-XRF training.

In the office we have installed high-end IT facilities which will allow us to support all our clients data storage and project portal needs. This will bring to the fore our capabilities in Data Management and Mapping for our Queensland clients.

As with all our offices, our main aim in the Queensland office is to provide our clients in the region at large with a complete package of services, seamlessly integrated between each of our divisions and with the backup of team of experts from across the globe.

If you want to know more about how we can assist in your next Pacific project please contact our Queensland office on csaqld@csaglobal.com.



Get a Room. Projects and Data

CSA Global's Data Management and Mapping division provides information management solutions across all stages of the exploration and mining lifecycle, with clients across many regions and project stages.

This service has taken on a life of its own in the last eighteen months with the development of competitive and industry leading tools known as Data Portals that are accessible through the web browser.

As the central business tool to manage your projects, the Data Portal is used as a repository for consolidating digital data and documentation related to a client's asset whilst focusing on automating core business processes and streamlining workflows.

This would typically include management of the exploration process, administration tasks, corporate reporting, database management, health and safety, project management and budgeting in order to coordinate teams towards a common goal.

The Data Portal can be customised to a client's business needs with modules designed for all stages of the mining cycle. The myriad of applications allows small and medium exploration and mining groups to implement additional modules as required. This expands on the existing system minimising implementation and training costs.

The key advantage is that information can be accessed and updated in real-time by the project team from different geographic locations and improves organisational effectiveness. This presents a single point of access for up-to-date information enabling faster decision making while alleviating the pain of time consuming paper processes and cumbersome spreadsheets.

If you would like to find out more please contact GIS@csaglobal.com

Last Word

Mines & Money UK

CSA Global was proud to be flying the company colours at December's Mines & Money UK. It was good to



catch up with some familiar faces and forge some new friendships at the same time. As always the event was a huge success and we look forward to exhibiting at the sister event Mines & Money Hong Kong in March.

Movember Madness

Last November was Movember around the offices with an unprecedented quantity and quality of upper-lip adornment.



CSA raised almost \$3000 this season and a big hats off to our biggest fund raiser Steve Rose (above) who single handedly raised AU\$608 for the charity.

Christmas Donation

While we are on the topic of donations; every year in lieu of sending out christmas cards, CSA Global makes a Christmas donation to a selected charity.



This year we chose to donate to the Brain Tumour Association Of Western Australia.



Indonesian Office turns Two

PT CSA Global Indonesia was honoured to be the sponsor of the November Jakarta's Miner's Night which coincided with our Indonesian office turning two.



PT CSA Global President Director John Bishop started off the proceedings before all got down to the business of celebrating.



All the Indonesian staff were present as well as CSA Global's Managing Director Jeff Elliott and Principal Mining Engineer Nick Holthouse who both made a special trip up to Jakarta to celebrate the auspicious occasion.



Staff Stuff

CSA welcome to the fold this quarter:

- **Christina Hemme** - Graduate Geologist, WA
- **Donny Osmon** - Geologist, Indo
- **Jaap Verbaas** - Graduate Geologist, WA
- **Nils Kollert** - Graduate Geologist, WA
- **Roger Iranzo** - Geologist, Qld
- **Simon Jones** - Senior Geologist, WA
- **Warick Brown** - Principal Geologist, WA

Meet Us At...

- **Mineral Exploration Roundup 2012**, 23-26 January. Vancouver, Canada
- **Mining INDABA**, 6-9 February. Capetown, South Africa (Booth No. 921)
- **RIU Explorers**, 21-22 February. Fremantle, Western Australia
- **PDAC**, 4 -7 March. Toronto, Canada (Booth No. 249)
- **Mines & Money Hong Kong**, 19-23 March. Hong Kong (Booth No. A30)
- **AGES / Mining Services Expo**, 26-28 March. Alice Springs, Australia (Booth No.9)
- **Asia Mining Congress**, 26-30 March. Singapore
- **Resource Evaluation & Mining 2012**, 30 March. Burswood, Perth
- **Valmin Seminar Series 2012**, 17 April. Brisbane, Queensland

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