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**ontheoutcrop** is a Geological Survey of New South Wales (GSNSW) e-newsletter. For more information about newsletter items go to: [www.dpi.nsw.gov.au/minerals/geological](http://www.dpi.nsw.gov.au/minerals/geological)

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## TAKE NOTE!

### Christmas interruption of support services

#### *Online services*

Support services for the Department's on-line mineral applications **MinView** and **DIGS/EROL** will be unavailable from **24 December 2010 – 2 January 2011** inclusive. This service interruption applies to email and phone enquiries only. Full support service will resume **3 January 2011**

#### *Core Library Christmas closure*

Drill core library services such as viewing and sampling core will be unavailable at both the Londonderry and Broken Hill core libraries **23 December 2010 – 7 January 2011** inclusive.

### Reforms to the mining regulatory framework

The Mining Regulation 2010 and related amendments to the Mining Act 1992 commenced on 15 November 2010. The NSW Government has reviewed the regulation of mining and exploration with the aim of improving the environmental management of these activities whilst streamlining administrative processes.

See: [Reforms to the mining regulatory framework](#)

See: [Summary Guide of changes as a result of the Mining Amendment Act 2008, Mining and Petroleum Legislation Amendment \(Land Access\) Act 2010 and Mining Regulation 2010](#)

See: [Exploration Reporting Guide](#) for a revised version of the exploration reporting guidelines

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## UPCOMING EVENTS

### EROL & Coal Reporting Training Seminar, 17 February 2011, Maitland Minerals Office

A seminar will be held to provide instruction to stakeholders on reporting to the Department and the use of the on-line reporting system EROL.

To register email: [robyn.merchant@industry.nsw.gov.au](mailto:robyn.merchant@industry.nsw.gov.au)

### PDAC, 6–9 March 2011, Toronto, Canada

I&I NSW Minerals will join Team Australia at the [Prospectors & Developers Association of Canada international mining investment show](#) to promote exploration and mining opportunities in NSW. Last year, the show received 22,000 registrations, 25.5% of which were international attendees representing 118 countries.



Industry &  
Investment

## **APPEA 2011 Conference & Exhibition, 10–13 April, Perth**

I&I NSW, Minerals will promote its petroleum exploration programs at the conference.

## **Resources & Energy Symposium, 22–25 May 2011, Broken Hill, NSW**

The 4 day Symposium will showcase Australian resources and energy companies to international investor delegations looking at the activities of Australian companies both in Australia and overseas. I&I NSW will have a presence at this event in the Exhibition area to showcase its recently published Broken Hill region and Thomson Orogen geoscience publications.

## **Exploration in the House, June 2011, Parliament House Theatre, Sydney,**

The GSNSW seminar, 'Exploration in the House', will be held in June 2011. Watch the [GSNSW events website](#) for confirmation of dates and program.

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## **NEW PRODUCTS AND SERVICES**

### **Thomson Orogen work-in-progress update**

Version II of the work-in-progress on the mapping of the Thomson Orogen includes a revised geophysical–geological interpretation, new age dating, improved depth-to-bedrock 3d model, and upgraded geophysical imagery. Depth to basement data is included as gridded and point data on the DVD.

Contact: [geoscience.products@industry.nsw.gov.au](mailto:geoscience.products@industry.nsw.gov.au)

### **Age dating Thomson Orogen rocks**

Preliminary results of age dating of rock samples from the Thomson Orogen are presented in report **GS2010/0379** available in [DIGS](#).

Contact: Dick Glen, Principal Research Scientist: [dick.glen@industry.nsw.gov.au](mailto:dick.glen@industry.nsw.gov.au), 02 4931 6722

### **Explanatory Notes to the Manilla 1:100 000 geological sheet**

This is a study of the rock types, structures, tectonostratigraphic terranes and mineralisation of the Tamworth Belt and the Central Block of the New England Orogen. Potential exploration targets identified include: orogenic gold and skarn-related gold-polymetallic mineralisation as well as orogenic gold associated with the Peel and Namoi faults. Igneous intrusions, volcanic-rich sequences and the possible correlation of Tertiary lavas with other New England volcanic fields also have exploration significance.

Contact: [geoscience.products@industry.nsw.gov.au](mailto:geoscience.products@industry.nsw.gov.au)

### **1:250 000 map sheet area image and gridded geophysical datasets**

Geophysical image and gridded datasets have been generated for all NSW 1:250 000 scale map sheets, and are available on DVD for each sheet.

Contact: Dave Robson, Chief Geophysicist: [david.robson@industry.nsw.gov.au](mailto:david.robson@industry.nsw.gov.au), 02 4931 6717

### **Geophysics products catalogue 2010**

The [geophysics catalogue](#) has been updated and can be downloaded from the GSNSW webpages.

### **Quarterly Note 134 — A revised Triassic stratigraphy for the Lorne Basin, NSW**

[Quarterly Note 134](#) presents a detailed stratigraphy of the Triassic Camden Haven Group with redefinition of some existing formations and the description of three new units.

### **New on-line service in MinView keeps local councils in the loop**

A variation of the Email Alerts tool in [MinView](#), supplies information requested by local government agencies (LGAs), on changes to authorisations which may impact on their planning processes. The service only generates an email alert when a new title or application is created within a specified area. The LGA email alerts tool is available to all registered users.

### **Koonenberry 1:100 000 scale geological maps at printers**

Six 1:100 000 scale Koonenberry region geological maps (Mt Arrowsmith, Milparinka, Olive Downs, Cobham Lake, Yancannia and Yantara) have gone to the printers.

Contact: [geoscience.products@industry.nsw.gov.au](mailto:geoscience.products@industry.nsw.gov.au)

## PROJECT HIGHLIGHTS

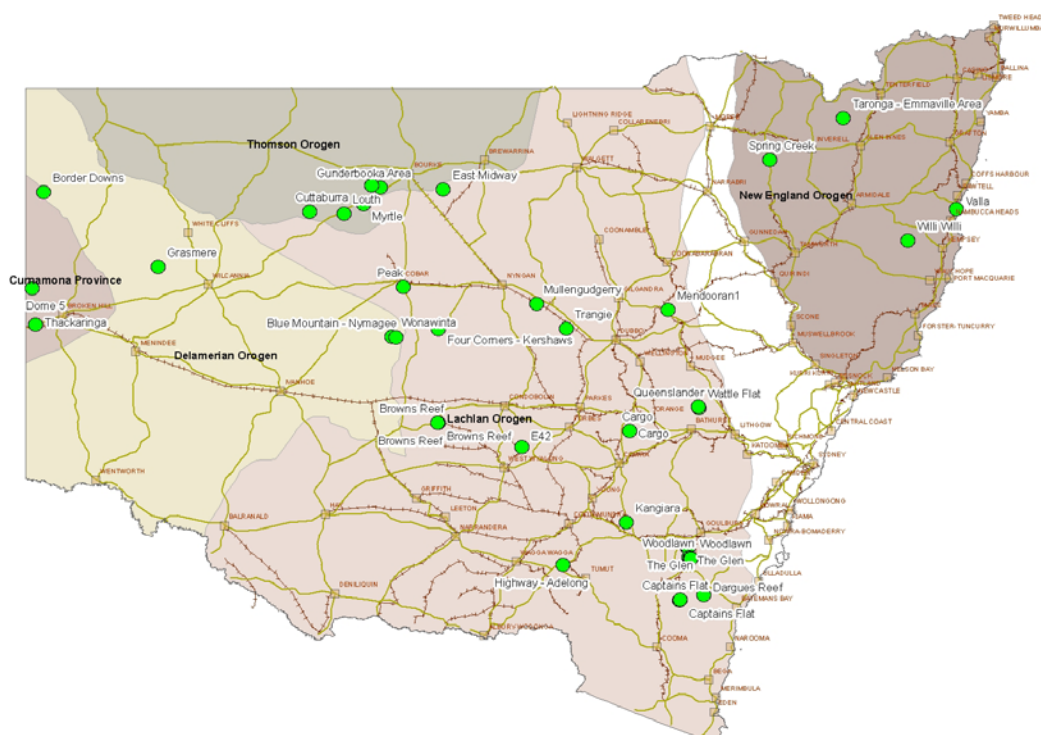
### National Virtual Core Library (NVCL)<sup>1</sup> update

The [NVCL project](#) continues to target alteration associated with NSW type-deposits. Scanning of non-hydrous silicate mineralogy will commence with the delivery of HyLogger3 this month. Collaboration with industry and academia remains strong and an agreement with the University of Western Sydney for access to X-ray diffractometry analysis, will provide validation to the HyLogger generated data. Implementation of an outward looking web-interface allowing internet access to the NSW data has commenced.

Scanning up to November 2010 includes over 23 000 metres of core, 248 bottom-of-hole RAB and RC samples, and 269 hand samples.

Contact: Bill Reid, Senior Geologist, [william.reid@industry.nsw.gov.au](mailto:william.reid@industry.nsw.gov.au), 02 4931 6731

<sup>1</sup> NVCL is an initiative of the Australian Government being conducted as part of the National Collaborative Research Infrastructure Strategy



The figure shows completed drillcore scans against broad scale tectonic divisions of NSW.

### COGENT II — Geoscience Data Management Project

The COGENT II (COmmon Geoscientific ENvironment) project has progressed to the point where the core warehouse application for storing and maintaining relational data is in place (drill holes, field observations, petrological thin sections, palaeontology, seismic lines, radiogenic isotopes, petrophysics and exploration geochemistry). Point data, spatial data from the department's spatial systems and file data such as photographs and raster data, can now be replicated into the COGENT II data warehouse ready for presentation via web services and also for download. Public access to various datasets will be available progressively through MinView in 2011.

Contact Trevor Barlin, Project Manager, [trevor.barlin@industry.nsw.gov.au](mailto:trevor.barlin@industry.nsw.gov.au), 02 4931 6586

### Hay–Balranald Project

Interpretation of high resolution airborne magnetic data, acquired in 2003 and 2006 in southwest NSW, identified over 500 small, circular magnetic anomalies that intrude two major tectonic zones (the Hay–Booligal Zone and the Stawell Zone). Ground magnetic and gravity measurements were taken across the anomalies to better define the position and depth-to-top of the modelled sources. The details, modelling, and results for the ground survey, including a discussion on their interpretation as volcanic pipes or diatremes are presented in a report **GS2010/0535** 'Possible diatremes in the Murray Basin' in [DIGS](#).

Contact: Astrid Carlton, Senior Geoscientist, [astrid.carlton@industry.nsw.gov.au](mailto:astrid.carlton@industry.nsw.gov.au), 02 4931 6732

## Teleseismic surveys

Results of the teleseismic survey arrays deployed since 2009 under projects EAL1 and EAL2 which cover central and western NSW, are available. The EAL3 array deployment of a further 45 site occupations in northwest NSW, is scheduled for 2011 and will largely complete the coverage of the state. The teleseismic survey completed over the Murray Basin in 2007 is published in [Quarterly Notes 129](#).

Contact: Dave Robson, Chief Geophysicist, david.robson@industry.nsw.gov.au, 02 4931 6717

## 3d Mapping Project

GSNSW is developing a new approach to regional mapping that incorporates traditional field mapping, geophysical data interpretations and historical data into an interactive 3d environment. It is built throughout the mapping process which allows changes to be made progressively. The final product is a traditional geological map with validated cross-sections and a 3d geological model. It will be viewed in a 3d framework and be available in a user friendly format that will enable the viewer to assess and query it.

The current projects areas being developed in a 3d framework as part of the 3D Mapping Project are: the Koonenberry Belt, the Thomson Orogen and the Braidwood 1:100 000 map sheet.

Contact: Stephen Dick [stephen.dick@industry.nsw.gov.au](mailto:stephen.dick@industry.nsw.gov.au), 02 4931 6721

## Upper Hunter Sydney Basin Regional Deep Seismic Survey Project

The Upper Hunter Sydney Basin Regional Deep Seismic Survey Project will provide the first continuous seismic assessment of the geological structure across the Sydney Basin. It will investigate the potential for geothermal and conventional oil and gas resources and for CO<sub>2</sub> sequestration. The first phase of the project conducted in June 2010, acquired 220 km of 2d Vibroseis reflection seismic data from west of Dunedoo, proceeding through Merriwa, to east of Muswellbrook in the Upper Hunter.

Contact: Ricky Mantaring, Manager, Petroleum Geology, [ricky.mantaring@industry.nsw.gov.au](mailto:ricky.mantaring@industry.nsw.gov.au)

## Oaklands Basin–Jerilderie 2d seismic survey

The Oaklands Basin 2d seismic survey was conducted under the *New Frontiers Petroleum program* to advance the understanding of Permian graben for oil and gas and geothermal potential. The seismic survey consisted of 250 km comprising 4 east-west trending lines. It included 222 km of sedimentary basin targeted acquisition at 6 seconds TWT, plus an additional 28 km configure for deep crustal survey with 22 seconds TWT.

Contact: Mike Fahey, Senior Geologist, Petroleum Geology, [mike.fahey@industry.nsw.gov.au](mailto:mike.fahey@industry.nsw.gov.au)

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## RECENT EVENTS

### NEO2010, Armidale, 16–19 November

The New England Orogen 2010 conference attracted over 160 registrants from academia, government and industry. The conference focussed on tectonics, alumni, granites and mineralisation. The NEO2010 Conference Proceedings volume edited by Dr Solomon Buckman (University of Wollongong) and Dr Phillip Blevin (GSNSW) is available as hardcopy or CD. Contact [pashley@une.edu.au](mailto:pashley@une.edu.au)

### Coastal Quaternary maps at 19th NSW Coastal Conference, Batemans Bay, 10–12th Nov

[GSNSW Coastal Quaternary maps](#) and [Bulletin 34: Coastal Quaternary geology – north and south coast of New South Wales](#) were favourably received by council employees, scientists, community groups, state government representatives and the Central Mapping Authority at the Conference which gave geomorphology and sedimentary processes a high profile.

### NSW Minerals Council Exploration Forum 2010, Orange, 9 November

The first [Minerals Council Exploration Forum](#) was aimed primarily at mineral explorers in central western NSW and covered environmental issues and community engagement. Cameron Ricketts (GSNSW) presented an overview on the impacts to the exploration industry of Mining Regulation 2010 and the Mining Act Amendments. The talk covered changes to titles processes, exploration reporting requirements, and environmental approvals processes. See the revised [Exploration Reporting Guide](#).

### Mines and Wines 2010, Mudgee, 23–24 September

At [Mines and Wines 2010](#), over 200 delegates focussed on developing projects for eastern Australia, many featuring GSNSW geophysical, mapping and age dating work. There were presentations on mining at Cadia and Northparkes and mineral exploration at Hera, Wonawinta, McPhillamys, Cobar, Hill End,



Hargraves, Mineral Hill, Temora, Dargues Reef, Trundle, Webbs Silver, Attunga and Wild Cattle Creek. Developments along the Peel Fault and in the Thomson Orogen were also covered.

## **Geodiversity, Geological Heritage & Geotourism Symposium, Port Macquarie, 6–10 Sept**

The [Symposium](#) brought state and federal government officers together with private tourist interests, teachers, university academics and Australian Museum researchers to discuss themes of geodiversity, geological heritage and in particular, geotourism. The presentations ranged from the strategies of government policy makers, to techniques and methodologies, and the experiences of small geotourist operators.

## **Gold talks at VIEPS, Melbourne, 2010**

Diane Kemp, GSNSW, presented an overview of concepts related to gold mineralisation styles in her talk 'The Geology of Gold' at the Gold Course, Victorian Institute of Earth & Planetary Sciences, University of Melbourne, Victoria.

## **Visits by eminent international geoscientists**

GSNSW hosted a talk by Emeritus Professor John Dewey from University of California. Prof Dewey spoke about the lithosphere and its role in tectonics and sedimentary basins.

Prof Petr Kraft, a world renowned palaeontologist from Charles University, Prague is working with GSNSW geoscientists, Dr Ian Percival and Dr Laurie Sherwin on NSW Ordovician graptolites, to increase the precision of mapping strata in the Lachlan Orogen and to correlate NSW rocks with gold bearing Victorian Ordovician rocks. They will be conducting their work at the W B Clarke Geoscience Centre, Londonderry, where the GSNSW palaeontological collections are housed.

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## **STAFF MOVEMENTS**

**Brad Mullard** is Acting Director of GSNSW.

**Rob Barnes** has retired from his position of Team Leader Minerals after 41 years with the GSNSW.

**Karen Horne** has accepted a position as administration coordinator in Regional Mapping and Exploration Geoscience.

**Trevor Barlin** has commenced as Project Manager for COGENT II Geoscience Data Management Project and the NVCL Data Services Project.

**Paul Parker**, a geology student with UNE and University of Newcastle, is on temporary contract as data processor with the COGENT II team.

**Steve Saul**, a recent graduate from the University of Newcastle, is on temporary contract, working with Bill Reid on the Broken Hill Interpretive Mapping project.

**Simone Meakin** has returned to GSNSW from secondment to the Environmental Sustainability Unit.

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## **PRODUCTS AND ENQUIRIES**

### **Internet product catalogue**

The online [Geoscience Products Catalogue](#) includes over 240 hard copy maps and over 70 geoscience data packages (including geophysical data) on CD or DVD ROM.

### **Enquiries about purchasing products**

Maps and data packages: [geoscience.products@industry.nsw.gov.au](mailto:geoscience.products@industry.nsw.gov.au): Tel: 02 4931 6503

Geophysical images and data: [geophysics.products@industry.nsw.gov.au](mailto:geophysics.products@industry.nsw.gov.au): Tel: 02 4931 6717

Counter sales: [mineralpublication.orders@industry.nsw.gov.au](mailto:mineralpublication.orders@industry.nsw.gov.au) Free call: 1300 736 122 Tel: 02 4931 6666

Online sales: [www.shop.nsw.gov.au/index.jsp](http://www.shop.nsw.gov.au/index.jsp)

### **On-line Systems**

Geoscientific and spatial data: [www.dpi.nsw.gov.au/minview](http://www.dpi.nsw.gov.au/minview)

Document and exploration report archive: [www.dpi.nsw.gov.au/digs](http://www.dpi.nsw.gov.au/digs)

Exploration and Environmental Reports Online Lodgement: [www.dpi.nsw.gov.au/erol](http://www.dpi.nsw.gov.au/erol)

### **General enquiries about products and services**

Contact: Michael Hallett, [michael.hallett@industry.nsw.gov.au](mailto:michael.hallett@industry.nsw.gov.au): Tel: 02 4931 6724

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## SUBSCRIPTIONS

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**Compilation:** Joan Henley, Geoscientist, Geoscience Knowledge Management

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