



# Geo-soundings

NEWSLETTER – SEPTEMBER 2005

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## WELCOME

Welcome to our 3rd Edition of Geosoundings for 2005. During the past quarter, 4 journal publications have been accomplished and 4 conference papers were presented.

You will also note that during this past quarter, students and staff have been very actively involved with fieldwork programs and expo and school visits. We appreciate the commitment provided by staff and students alike in endeavouring to make these events a success and it should also be mentioned that the Department acknowledges the support provided by the relevant research partners.

It is also pleasing to advise that 2 senior students completed their HDR degrees during July/August.

## JOURNAL PUBLICATIONS

**Ciz, R., Urosevic, M. and Dodds, K.,** 2005, *Pore pressure prediction based on seismic attributes response to overpressure*: APPEA Journal.

**Brajanovski, M., Gurevich, B. and Schoenberg, M.,** 2005, *A model for P-wave attenuation and dispersion in a porous medium permeated by aligned fractures*: Geophysics Journal International.

**Muller, T., and Gurevich, B.,** 2005, *Wave-induced fluid flow in random porous media: Attenuation and dispersion of elastic waves*, The Journal of the Acoustical Society of America **117** (5) p2732-2741.

**Meyers, J.,** 2005, *State of the art in ground and airborne electromagnetic prospecting for mineral deposits*, Mineral Exploration Through Cover – June p18-19.

## CONFERENCES PRESENTATIONS

**Galvin, R., and Gurevich, B.,** 2005, *Scattering from a penny-shaped crack in a poroelastic medium*; Presented at the Rainbow in the Earth 2nd International Workshop 17-18 August, California.

**Li, R., and Urosevic, M.,** 2005, *Estimation of anisotropic properties from surface seismic survey and log data*; Presented at the 7th International Conference on Theoretical and Computational Acoustics, Hangzhou, Zhejiang, China, 19-23 September.

**Li, R., and Urosevic, M.,** 2005, *Numerical prediction of 4-D seismic response to CO2 storage*; Presented at the WCU/UI'05 Technical Exhibition, World Congress on Ultrasonics Merged with Ultrasonics International, Beijing, China, 28 August - 1 September.

**Lambert, G., Gurevich, B., and Brajanovski, M.,** 2005, *Frequency dependent properties of porous rocks with planar fractures*; Presented at the Rainbow in the Earth 2nd International Workshop 17-18 August, California.

## BROOKDALE SURVEY

The Department of Exploration Geophysics is currently involved with several other joint partners to survey land at Brookdale. Brookdale is a semi rural area located 20 kms South East of Perth city.

Over a ten day period, students Ben Wielstra, Paul Wellington and Simon Abbott, under the planning and supervision of Brett Harris and Paul Wilkes, completed the acquisition by surveying the site.

The survey was highly productive and preliminary results show clear relationships between the electrical conductivity distribution, sub-surface solute concentrations and water logging in pastures with low topographic relief. Surveying is now approximately 80% complete. Some 1200 small loop TEM soundings and 100 large loop TEM were acquired over the 10 day period.



Ben, Paul and Friends collecting TEM data at Brookdale.

## THIRD YEAR FIELD TRIP

This year's third year geophysics fieldtrip took place 9<sup>th</sup> - 16<sup>th</sup> September. Fifteen students and five staff members (Paul Wilkes, Anton Kepic, Milovan Urosevic, Jayson Meyers and Dom Howman) went 650 km north-east to Cue. During this time the group worked at Comet – Webb's Patch with Alloy Resources Ltd.

The students worked very efficiently with the staff using seismic reflection, transient EM, gravity, magnetics and GPS surveying techniques and produced useful data to assist mineral exploration in this area. The realistic, hands-on experiences gained by the students will be very valuable in their future careers.

The group stayed at Nallan Station (14 km north of Cue) where they were made very welcome by the station owners – Mike and Sandy Clinch. Also we thank Nigel Cantwell, one of our recent Geophysics honours graduates, and Tim Doonan from Haines Surveys, who came for a few days to teach us GPS surveying.



A 'group' photo of students and staff, taken at Nallan Station.



Lee Davies and Russell Eade measure at a gravity station.



Jayson Meyers (the client) addressing the student/staff group at the mine-site.

## CURTIN OPEN DAY

Curtin Open Day was held on the Bentley Campus on Sunday 14th August. Despite the discouraging weather the day was a great success for the University.

The Resource and Environment Division displays were interactive and received a positive response from the public. The Department of Exploration Geophysics encouraged the public to become a source for our new distributed array seismic system using a sledge hammer. The sensitivity of the system was well demonstrated with many pint sized hammer hitters able to get great refraction data with a single small hit. Thanks also to the many foot stompers who ensured the geophone connected to an oscilloscope remained popular.

Another highlight was demonstrating the induced magnetic field around iron filing models to the DVC who was touring the displays during the day.

A positive feature not seen in previous years was the large number of requests to visit our actual premises at ARRC.

**Thankyou to all staff members who helped out at this event.**

## EXPOS/SCHOOL VISITS

### Careers Choice Expo 2005 – Burswood Dome

The annual Careers Choice Expo was held in the Burswood Dome from 5-7 August. Thankyou to all staff and third year students who helped out on the ASEG booth. Also, to the staff who helped on the Divisional Section of the Curtin booth.

### RS & T School Visits

Staff have generously given their time to speak at career expos held at high schools in the metropolitan area. These schools included Applecross Senior High School, All Saints College, St Mary's College and PLC. These students were given the opportunity to speak to Geophysicists from our department regarding possible careers for their future.

## AWARDS/PRIZES

Congratulations are extended to **Troy Thompson** whose PhD was executively approved on the 4<sup>th</sup> August. His thesis entitled "*Prestack hyperspace propagation: Constraining and quantifying automatic event picking*" received two 'A' grades from his examiners and was recommended for a commendation by the Chancellor. His supervisor was Bruce Hartley.

Congratulations also to **Barrack Ouma**, an international student from Kenya, who completed his MSc by Coursework in July. Barrack's research project was supervised by Bruce Hartley and was entitled "*Simulation of the use of continuous sources for reservoir monitoring*".

We wish Troy and Barrack every success in their future careers.

## UPCOMING EVENTS

The **ASEG Student Night** is scheduled for the **19th October** and will be held at the **Irish Club**. See <http://www.aseg.org.au/wa> for further details.

The **Curtin Reservoir Geophysics Consortium (CRGC)** Annual General Meeting will be held at Rottneest Lodge on **8-9 December**.