



“Pore Pressure and Geomechanics from Exploration to Abandonment”

**6-7 June 2018
Perth, Australia**

You are invited to submit an abstract for this event.

Abstract Submission Deadline: 30 January 2018

Submit abstracts using these guidelines to: [Adrienne Pereira, AAPG Asia Pacific](#)

Please note :

- **Abstracts received by AAPG are deemed to already have corporate approval and the affirmation that the Presenter / Poster Author will register and participate in the Workshop if paper is accepted for the Program.**
- AAPG is not able to provide financial aid for travel. All presenters, whether for oral presentations or for static posters, must register and pay for their attendance per AAPG guidelines.
- **Important:** In order to finalise the program, all accepted presenters, whether for Oral or Static Posters, should register and pay at least 10 weeks before the event commences. This is to facilitate the technical committee confirming the final program.
- The committee reserve the right to release short or extended abstracts (or both) to Delegates, either in print or digital format. There is no requirement for full papers. For extended abstracts, should you not wish to provide a copy, please advise apereira@aapg.org.
- In view of corporate regulations, full power point presentations will not be released to delegates; hence the requirement for extended abstracts. Delegates may approach the speakers directly to obtain a copy of the presentation slides, or await their permissioned upload to AAPG's [Search and Discovery portal](#). AAPG will contact all presenters after the event to seek their permission to digitally upload these, or extended abstracts.

Instructions for Short Abstract Submission : [\(See sample abstract below\)](#)

- In Word format; A-4 regular size and regular margins; normal white background; without border.
- Please insert a Header (that will appear on all pages): – in grey; Calibri, 11-point font, *centralised*. [Click on Insert in your Word document, select Header; select option 3 with the underscore]

AAPG Geosciences Technology Workshop
Pore Pressure and Geomechanics : From Exploration to Abandonment
6-7 June 2018, Perth, Australia

- Line 1 : Please add : Submitted for Oral presentation OR Submitted for Static Poster presentation. (or both). The committee will make the final decision on which abstracts will best fit the Oral sessions and which abstracts will be invited as Static Posters.
- Line 2 : Name, Email / telephone number, with country code, of Presenter(s) only
- Line 3 : Indicate if this paper has been presented at another technical meeting; with details.
- Double-Line space to be provided before Line 4
- Line 4 : Title of abstract (Bold), Calibri Light, 12-point font, *centralized*.
- Follow by all contributing authors' names which should be arranged in the correct order for publication. List should be centralised. Do not include titles (Dr, Prof, Etc). See sample below. Avoid subscripts to facilitate copying into program.
- Authors' names should appear as Name, Company, Country. Do not list departments. If all authors are from a single company, there is no need to indicate by ¹.

Separate authors and companies to be listed after principal author.

- Presenting Author(s) to be indicated with *
- *AAPG will liaise solely with the presenting author unless advised otherwise. The onus is on authors to advise apereira@aapg.org if presenting author changes. Same applies if there are changes to abstract title, author line-up.*
- Body of abstract – Between 500-600 words. Calibri Light font, 11-point, justified text, single-line spacing. No charts, pictures, tables. These can be added to extended abstracts should abstract be accepted for event.
- CV of presenting author below body of abstract, with heading "CV of presenting author". Max 80 words, in single paragraph. Avoid use of personal pronouns. No photos will be necessary.
- Footer – No footers/page numbers required as short abstracts, if accepted, may be compiled into a master document.
- Word-format document submitted to carry file name : Presenting Author +Company, up to 5 words of abstract title) eg John Brown (Chevron) Influence of Volcanism

- Abstracts will be reviewed by the Technical Committee and notification will be sent to all presenting authors in due course. Abstracts not accepted for oral presentation may be accepted for static poster presentation.

AAPG GTW
Influence of Volcanism and Associated Magmatic Processes on Petroleum Systems
Oamaru, New Zealand; 14-15 March 2017

**A PETROGRAPHY-BASED MODEL OF IGNEOUS AND HYDROTHERMAL ACTIVITY IN DIVERSE
PETROLEUM BASINS**

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Andy Gize, Lucid Microscopy, United Kingdom
Janell Edman, Edman Geochemical Consulting LLC, USA

Organic and inorganic petrography of rock samples from exploration wells worldwide shows that convective heat flow resulting from movement of hydrothermal fluids is an important process in many petroleum basins. Pyrolytic carbon and coked organic matter provide evidence that this hydrothermal activity is often associated with igneous intrusion. VIRF (vitrinite-inertinite reflectance and fluorescence) analysis sensitively reveals complex maturity profiles in sedimentary basins affected by hydrothermal activity. Accurate characterisation and interpretation of these hydrothermal signatures requires petrographic analysis of the entire stratigraphic succession.

Initial models of burial history and hydrocarbon generation for Clipper-1 assumed a steady state geotherm controlled by basal heat flow, and predicted maximum hydrocarbon generation from coaly source rocks during the Pliocene. At Parshall Field in the Williston Basin the Devonian Bakken Formation source was thought to be only marginally mature, and much of the reservoired oil was consequently assumed to have migrated from higher maturity areas further west. Although vitrinite reflectance (VR) for both successions was broadly compatible with these models, VIRF analysis shows that VR substantially underestimated maturity. This is partly because standard VR relies on visual identification of vitrinite based on morphology, which is notoriously ambiguous in the dispersed organic matter (DOM) assemblages of many sedimentary rocks. The maturity of DOM in black shales, which are important source rocks in many hydrocarbon plays, is routinely underestimated due to measurement of vitrinite-like populations that have lower reflectance than true vitrinite. Also, the maturity of DOM in some paleo-aquifer units has been “write-protected” by brief exposure to igneous-associated volatiles at the onset of intrusion. Failure to recognise these paleo-maturity signatures results in under-estimation of burial temperatures. Correct identification of complex maturity profiles is critical for accurate burial history modelling.

To summarize, petrography is a cost effective and uniquely visual technique that allows direct and detailed observation of key igneous and hydrothermal characteristics. However, it is typically undervalued and under-resourced resulting in an inferior product that fails to show the true potential of the technique. When petrographic analysis integrates mineralogy, microstructure, and maturity, as in the Clipper-1 and Long 1-01H examples, it provides powerful new information regarding geological controls on maturation and hydrocarbon generation. For example, Long 1-01H petrography shows that Bakken source rocks in the Parshall Field have higher maturity than previously thought, which obviates the need for substantial migration to explain full saturation of the middle Bakken with petroleum. Furthermore, the petrography of Clipper-1 shows that the coaly source rocks are over-mature, and reveals a remarkable suite of previously unrecognised melt rocks and mineral assemblages that are now

being used as markers for igneous intrusion and associated hydrothermal activity in petroleum basins worldwide.

CV

Jane Newman obtained BSc (Hons) Geology (1st) and PhD from the University of Canterbury, Christchurch, New Zealand, where she led a multidisciplinary group of graduate students and Post-Doctoral Fellows researching the paleofloral and paleoenvironmental controls on New Zealand's coal resources. During the 1990's Jane developed VIRF, a new petrographic method for maturity assessment of dispersed organic matter in petroleum well samples. Since 1998 Jane has operated as Newman Energy Research Ltd, providing services to the coal and petroleum industries. She has expanded VIRF to encompass mineralogy, microstructure and hydrocarbon occurrence, and provides pro bono advice and assistance to graduate students.

Adrienne Pereira; 28 November 2017