

# Dr Richard Daniel

## Current Position and Location

- Senior Research Fellow (Carbon Dioxide and Hydrocarbon Cap Seals); Cooperative Research Centre for Greenhouse Gas Technologies.
- Australian School of Petroleum, The University of Adelaide, Australia

## Key Prior Positions

- Senior Research Fellow, CO2CRC, ASP, The University of Adelaide (2005 – present)
- Post Doctoral Fellow, Seals Data Acquisition and Research, APCRC (2001 - 2004)
- Lecturer and Demonstrator (Part-time), Flinders University, Adelaide (1990 - 1998)
- Senior Drilling Fluids Engineer, Baroid International (1979 - 1985)

## Degrees & Awards

- PhD, The University of Adelaide (2002) Carbonate Sediments of a Cool-Water Embayment, Streaky Bay, South Australia, Lithofacies and Controlling Factors.
- BSc (Sedimentary Geology), Macquarie University (1969)

## Affiliations

- American Association of Petroleum Geologists (AAPG)
- Petroleum Exploration Society of Australia (PESA)
- Australian Quaternary Association (AQUA)

## Expertise

- Researching hydrocarbon and CO<sub>2</sub> sealing lithologies from sedimentary basins in Australia and New Zealand using MICP, SEM/EDS and XRD analysis (4 years).
- Sedimentology (modern and ancient carbonate and clastic) research and teaching (8+ years).
- Engineering drilling fluids (types and problems) and mudlogging in various fields around the world. Drilling engineering experience in the more remote locations.

## Recent Projects

- Petrographical and Diagenetic Modelling to Characterise Palaeoenvironmental Settings for CO<sub>2</sub> Storage Reservoirs and Architecture.
- Compilation of an Atlas of Australian and New Zealand Hydrocarbon Seals with over 75 examples from major basins in Australia and the Taranaki Basin in New Zealand. The atlas includes MICP, XRD and SEM/EDS images and analyses with 400m 'V' shale plot of the adjacent well interval.
- Characterisation of cool-water carbonate mud particles according to principal marine biogenic carbonate contributors using breakdown pathways, comparative resultant particle structure and morphology, and chemical properties.

## Key Papers & Publications

- **Daniel, R** and Kaldi, J, 2009. Evaluating seal capacity of caprocks and intraformational barriers for CO<sub>2</sub> containment. *In* M. Grobe, J. C. Pashin and R. L. Dodge, eds., Carbon dioxide sequestration in geological media – State of the Science: AAPG Studies in Geology 59, p. 335-345.
- **Daniel, R**, Menacherry, S and Bunch, M, 2012. Characterisation of Dolomitic Intraformational Barriers, CRC-2b Injection Interval, Paaratte Formation, CO2CRC Otway Project, Otway Basin, Victoria. Cooperative Research Centre for Greenhouse Gas Technologies, Canberra, Australia, CO2CRC Publication Number RPT12-3532.
- **Daniel, R.** and Kaldi, J., 2012. Atlas of Australian and New Zealand Hydrocarbon Seals: World-wide analogues for caprocks and intraformational barriers in clastic depositional settings. AAPG Studies in Geology, No. 60, 260pp.
- Kaldi, J., **Daniel, R.**, Tenthorey, E., Michael, K., Schacht, U., Nicol, A., Unterschultz, J., and Backé, G., 2010. Caprock Systems for CO<sub>2</sub> Geological Storage. IEA GHG (IEA/CON/10/179) CO2CRC Report No. RPT10-2774.