



**Andrew J Buffin**  
ResEval Consulting Pty Ltd  
BSc Geology & Post Graduate Diploma Mineral Resources

**Languages:** English, Basic French  
**Previous Position:** Reservoir Development Manager  
**Present Work Commitment:** Integration of Sub-surface data.  
**Referees:** Supplied on request

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## AREAS OF EXPERTISE

- Trained and highly competent in Petrophysics, petrophysical software and its geological applications to any play type, reservoir and carbon storage
- Business development of formation evaluation and sub-surface projects throughout Europe and Australasia
- Project management of a diverse range of Australian sub-surface projects
- Extensive sub surface petroleum industry experience
- Full range of technical experience in numerous onshore and offshore regions throughout the world and particularly across Australia
- Experience in various types of reservoirs with diverse geological settings
- Access to a well-established Australian network of leading industry personnel comprising a variety of CEOs, MDs, VPs and Exploration Managers from a large cross section of the Australian energy market

## CAREER HIGHLIGHTS

- Managed Baker Hughes Australian subsurface Geoscience Team, integrated processed and interpreted data with Baker Hughes product lines and services to provide clear conventional and unconventional reservoir development opportunities and solutions.
- Established a new Senergy regional consultancy office in Perth and developed the concept of the ‘virtual team’ using a global team of Senergy experts and consultants
- Introduced “Quicksilver” Formation Tester Sampling into Browse Formation Evaluation Program at Woodside reducing evaluation costs of expensive Production Testing



- Investigated of the use of wireless logging technology for underbalanced drilling (alliance between Reeves Wireline and Shell)
- Initiated expansion of business development / project management skills with PGS based in Oslo and a client base throughout Europe
- Introduced early Nuclear Magnetic Resonance trials in the Cooper Basin with Santos
- Successfully implemented career progress from Development Geologist to Petrophysicist at Boral
- Introduced Formation Evaluation Software into the workplace at Gas and Fuel
- Developed the onshore Otway Basin gas fields with Beach Petroleum

## PAPERS & PRESENTATIONS

Buffin A.J., 1989, *Waarre Sandstone Development within the Port Campbell Embayment*, APEA Journal, vol. 29, p299-312

Buffin A.J., 1996, *Permeability from waveform sonic data in the Otway Basin*, paper GG, in 37th annual logging symposium transactions: Society of Professional Well Log Analysts

Buffin A.J., 2010, *Petrophysics and Pore Pressure: Pitfalls and Perfection: AAPG Geosciences Technology Workshop*, Singapore

Buffin A.J., Avila J., John Z.P., Sinha B., Tan C.P., 2008, *A New Approach in Building a Mechanical Earth Model Using Acoustically Derived Shear Moduli* – SPWLA Asia Pacific Regional Conference

Buffin A.J., Daniels G. and McPhee C., 2009, *Petrophysics: The Key to Good Sand Management*, SPE News, April

Buffin A.J. and Hendry W., 2010, *Are you FIT to Drill? We Are!* The Good Oil Conference, Fremantle

Buffin A.J., Kollien T., and Andersson S., 2000, *The Use of Fluid Substitution and Seismic Modeling for Well Planning* – EAGE

Buffin A.J., Sutherland A.J. and Gorski G., 1995, *Gas Detection in the Onshore Otway Basin Using Array Sonic Waveform Data*, APEA Journal, vol. 35, p507-517

Hempton M., Buffin A.J, Smit D., Kittridge M., Taylor T. and Bryndzia T., 2002, *Rock and Fluid property studies in the Central North Sea - Support for reservoir management models: (Shell Internal Publication)*



Soroush H. and Buffin A. J., 2009, *Maximizing Value from Rock Mechanics Tests: Quality Control Practices and Pitfalls*, SPE News, May

## **EMPLOYMENT**

### **BAKER HUGHES**

#### **Reservoir Development Manager – Perth**

**2012 - 2015**

#### **Responsibilities and Outcomes:**

- Manager, Reservoir Development Services (RDS) Geoscience Team ; collaboration across Baker Hughes' business segments to provide fully integrated solutions achieving:
  - reduced drilling problems
  - improved reservoir performance and understanding
  - extended client knowledge
- Active member of Geomarket Leadership Team
- Business development for BHI Geoscience – RDS group throughout the Geomarket
- Managed Geoscience Teams in Perth and Adelaide
- Organised well received client workshops to demonstrate BHI Geoscience capability
- Organised successful shale gas workshops with BHI-CGG Alliance demonstrating integrated shale workflows to suitable clients
- Attended and successfully presented at numerous Conventional & Unconventional conferences and workshops highlighting BHI Geoscience – RDS shale gas capability
- Project managed an integrated shale gas project in the Arckeringa Basin
- Ensured Wireline and LWD data are properly QC'ed and presented to clients in a timely fashion
- Grew potential Geoscience Team revenue through strategic initiatives including integrated reservoir development studies, identifying additional WL/LWD pull-through opportunities, building the MPLT / PLT market and expanding the RPM/NEO evaluations for pad drilling projects

#### **Australia Based Baker Hughes Projects:**

**Woodside Energy Ltd** – Developed and presented customised integrated Geoscience workshop leading to successful awarding of Wire Line and Drilling Services (LWD contract), this displaced the incumbent service provider resulting in a significant value add for Baker Hughes.

**Conoco Phillips** – Award of major Drilling Services (LWD contract) achieved as a result of successful and effective Integrated Geoscience workshop activities.

**Santos** – Demonstrated continued value of running geochemical logging suite achieved through customised Integrated Geoscience Unconventional Workshop presentation



**Linc Energy** – Project managed sub-surface ‘virtual’ team review of Arckeringa Basin permits to select prime well locations for unconventional exploration of a sparsely explored Basin – this led to Baker Hughes supplying a complete ‘bundled’ service to the client for a three + three well programme

**Linc Energy** – role of Principal Petrophysicist: Arckeringa Basin sub-surface review

**Drillsearch / QGC JV** – Customised workshop presentation (Integrated Geoscience Unconventional); achieved continued running of geochemical / image logging suite.

**Drillsearch** – Presented End to End workflow demonstrating potential technical alliance between Drillsearch and Baker Hughes, possibly benefiting reservoir development and production costs

**Senex** – Significant value added by continued running of geochemical / image logging suite achieved through customised Integrated Geoscience Unconventional Workshop presentation

**Senex** – successful service provision in effective use of tensor resistivity logging for analysis and interpretation of thinly bedded oil reservoirs in Cooper Basin e.g. Murta and Birkhead Formations

**AWE** – Won wireline contract and added significant value for the product line, through effective promotion and service provision of geochemical logging information.

**New Standard Energy** – Won wireline contract, adding significant value for the product line, by demonstrating the value of information regarding geochemical logging

**Santos** – Formation Evaluation Course Instructor – demonstrating value of Baker Hughes logging technology in reservoir evaluation

**Buru Energy** – customised development and presentation of Integrated Geoscience Unconventional Workshop to their technical team

**Central Petroleum** – development and presentation of Integrated Geoscience Unconventional Workshops to company technical and management teams

**University of Adelaide** – Advisory Board Member for (Adelaide School of Petroleum) 2013-15

**Baker Hughes** – representative and panellist for South Australian Road Map for Unconventional Gas projects 2012-14

**Baker Hughes** – representative and invited speaker at Sydney unconventional workshop Sept 2012 “Australian Shale Gas Exploitation the Challenge and solutions”

**Baker Hughes** – representative and invited panellist on Technology Roundtable at Developing Unconventional Gas (DUG) conference Brisbane August 2013

**Baker Hughes** – representative and invited speaker at Perth Good Oil Conference Sept 2013 “Integrated Fast Track Workflow for unconventional Resource Exploitation”

**SPE** – Organising committee member and Baker Hughes representative on Applied Technology Workshop (ATW) “Marginal Field Development” June 2013 Langkawi Malaysia

**SPE** – Organising committee member and Baker Hughes representative on Applied Technology Workshop (ATW) “Brownfield Development” Aug 2014 Langkawi Malaysia



## **SENERGY LTD**

### **Sub-Surface Project Manager / Principal Petrophysicist – Australasia 2008 –2012**

#### **Responsibilities and outcomes:**

- Developed strategic business plan for Senergy Asia Pacific region defining short and long term technical and budgetary targets, staff and resource acquisitions and allocations;
- Built and extended the business portfolio of Senergy Asia Pacific (focusing on Australia), through:
  - Promotion and marketing activities
  - Presentations and formal / informal liaison with appropriate personnel in government bodies, throughout relevant oil companies and industry organisations
  - Preparation and submission of high quality, competitive proposals and tenders
  - Provision of efficient, cost effective service to clients
- Developed and managed integrated and multidisciplinary projects for Senergy
- Formed “Virtual Teams” of Senergy global consultants
- Coordination of Senergy clients and Senergy teams through web based meetings
- Managed and supervised regional Petrophysical technical section; developed expert and efficient petrophysical services through facilitation of training, mentoring and coaching of team
- Ensured all petrophysical activities relating to co-ordination and management of staff, project planning and analysis, business development and the development and responsibility for integrated, multidisciplinary projects of Senergy Asia Pacific Region were undertaken efficiently, with clear expectations, on budget and to deadlines
- Undertook petrophysical peer reviews
- Developed benchmarks for Senergy global Petrophysical best practices

#### **Perth Based Senergy Projects:**

**WOODSIDE ENERGY LTD** – Principal Petrophysicist: Well Champion and formation evaluation coordinator for appraisal well Sunrise3

**WOODSIDE ENERGY LTD** – Project Manager: Sunrise Field sanding study

**WOODSIDE ENERGY LTD** – Project Manager: Core Analysis Best Practices

**INPEX Browse Ltd** - Project Manager / Principal Petrophysicist: Review Special Core Analysis Data

**INPEX Browse Ltd** - Project Manager: Review Relative Permeability Data



**BHP Billiton Petroleum P/L** – Project Manager / Principal Petrophysicist – Thebe Well bore Stability Study

**BHP Billiton Petroleum P/L** – Project Manager / Principal Petrophysicist – Minerva Field Stability Study

**Beach Petroleum** – Principal Petrophysicist: Formation Evaluation and Log analysis

**Clinton Foundation** – Project Manager / Principal Petrophysicist – Victorian Carbon Storage Network

**Conoco Phillips** – Principal Petrophysicist: Formation Evaluation support

**Conoco Phillips** – Principal Petrophysicist: Core Management

**Jupiter Energy** – Project Manager / Principal Petrophysicist – Petrophysical Support Kazakhstan

**Jupiter Energy** – Project Manager / Principal Petrophysicist – Competent Persons Report and Reserves Report

**AGL** – Principal Petrophysicist: Formation Evaluation Silver Springs #12 Gas storage well Queensland

**AGL** – Principal Petrophysicist: Formation Evaluation Galilee Basin petrophysical Study

**President Petroleum** - Principal Petrophysicist: Formation Evaluation Otway Basin

**Tately NV** – Project Manager / Principal Petrophysicist – Petrophysical Review of Budi Field (Onshore Indonesia)

**Nexus Energy Ltd** – Principal Petrophysicist: Gwydion-1 Log Analysis

**Rodinia Oil Corp** – Principal Petrophysicist: Operational Petrophysical Support

**PetroFrontier**– Principal Petrophysicist: Operational Petrophysical Support

**Murphy Sarawak Oil Company Ltd** – Principal Petrophysicist: Petrophysical input to Permas FDP

**Murphy Sarawak Oil Company Ltd** – Principal Petrophysicist: Petrophysical input to Endau FDP

**Cooper Energy** – Project Manager / Principal Petrophysicist: Hammamat West (offshore Tunisia) Reserves Review

**Chevron Australia** – Project Manager: Review Relative Permeability Data

**Otto Energy** – Project Manager: Review of Carbonate play types in off shore Philippines

**IOOC** – Petrophysical Peer Review: Soroosh Field (Offshore Iran)

**Pearl Energy** – Petrophysical Peer Review: Ruby Field (offshore Indonesia)

**Parsons Brinkerhoff** – Support Technical Advisory Team for CCS Flagship, GCCSI support and Victorian DPI CCS Technical Support



**Senergy Alternate Energy** – CO2 Geology Course Instructor: “Introduction to the Geological Storage of Carbon Dioxide”

**Senergy Ltd** – Petrophysics Instructor: “Petrophysics: Practices and Pitfalls”

**Senergy Ltd** – Interactive Petrophysics Instructor: Public, in-house courses and workshops throughout Middle East and Asia

**Senergy Ltd** – Australia Oil & Gas Business Development

## **WOODSIDE ENERGY LTD**

### **Senior Petrophysicist**

**2004 - 2008**

#### **Responsibilities and Outcomes:**

- Successfully completed wide ranging petrophysical activities relating to drilling, static/dynamic field studies and reservoir management in the following assets / groups:
  - 2004 Petrophysicist responsible for Perth Based North African Team primarily working on submissions for Woodside to gain entry into Libya (onshore and offshore)
  - 2005/08 Petrophysicist supporting Browse Asset (Brecknock / Calliance / Torosa Fields)
  - 2008 Petrophysicist responsible for Sunrise Asset
- Gained a thorough petrophysical understanding and built a Petrophysical data base for all Libyan acreage
- Performed successful sedimentological logging of core data in Libya
- Initiated a variety of RCA / SCAL programmes for Libyan core
- Involvement with Browse operational activities drilling eight fully appraised and cored wells preparing logging programmes, coring programmes, liaising with Woodside and third party personnel before, during and after the well operations
- Introduced the new Schlumberger sonic scanner tool to the asset – this was used for future geomechanical studies
- Initiated introduction of Schlumberger ‘rock scratcher’ tool to asset
- Successfully introduced new Schlumberger sampling module (Quick-Silver) to the asset (and the discipline)
- Used the module to acquire uncontaminated water sample and more efficiently acquire representative gas samples (saving valuable rig time)
- Used low-shock sulfinert coated sample chambers and H2S coupons to acquire accurate H2s concentrations (a first for Woodside)



- Successfully implemented high temperature packers with the sampling module to production test intervals (a first for Woodside)
- Championed the conversion of Woodside from Logic (Shell proprietary Petrophysics software) to Geolog (Third party Petrophysics software) package. Ensured all appropriate data was transferred, training was organized and work flows were revised

## **SHELL UK EXPLORATION AND PRODUCTION**

### **Senior Petrophysicist**

**2004 – 2001**

#### **Responsibilities and Outcomes:**

- Successful undertaking of all petrophysical activities relating to the drilling, static / dynamic field studies and reservoir management in the following assets / groups:
  - 2001 – Petrophysicist responsible for Mature Central Fields (Auk, Kingfisher, Kittiwake, Curlew and Bittern)
  - 2002 – Petrophysicist supporting 4D / Inversion Seismic Group
  - 2003 – Petrophysicist responsible for Gannet Cluster
- Built a relationship between the Asset and Shell Research (Holland) / Reeves regarding the development and possible use of a memory – wireless logging tool in an underbalance drilling campaign
- Built working relationship with Shell Research (Houston) regarding Rock and Fluid velocity measurements including at HPHT conditions
- Participated in high temperature – high pressure (HPHT) seismic inversion study
- Assisted in Development Information Management Focal Point and provided work flow practices to the corporate information management group
- Initiated and developed a Rock Physics and Fluid database
- Facilitated establishment of a UK based Rock & Fluid Property laboratory to supply rock & fluid physics data for 4D and AVO projects. Organised and presented the need for a Shell RFP lab to four institutes
- Raised the image of rock physics and seismic petrophysics within Shell UK
- Participated in a range of Shell peer reviews: realise the limit (RtL) drill the limit (DtL) and value added realisation (VAR)
- Participated in major water shut off major (WSO) project, use memory saturation logging to determine fluid contact movement.
- Integrated all petrophysical data into a new static and dynamic models e.g. Auk, Gannet





## **PETROLEUM GEO-SERVICES**

### **Advisor Petrophysics**

**2001 – 1998**

#### **Responsibilities:**

- All petrophysical activities relating to co-ordination and management of staff, project planning and analysis, business development and the development and responsibility for integrated, multidisciplinary projects of the Production Group of PGS Reservoir Consultants.
- Develop a strategic business plan defining short and long term technical and budgetary targets, staff and resource acquisitions and allocations
- Build and extend the business portfolio of the Formation Evaluation Group within PGS, Norway and overseas, through;
- Promotion and marketing activities
- Presentations and formal and informal liaison with appropriate personnel in government bodies and throughout relevant oil companies and industry organisations
- Submitting high quality, competitive tenders
- Providing efficient, cost effective service to clients
- Manage and supervise the Group technical staff; enable training and development to form an expert and efficient petrophysical services team
- Develop and manage selected integrated and multidisciplinary projects for the Production Group of PGS Reservoir Consultants both externally (throughout the oil industry) and internally
- Selected and allocated appropriate staff and resources for industry requirements for:
  - Petrophysical Field Reviews and re-determinations
  - Routine and Special Core Analysis
  - Integrated Reservoir Management Studies
  - Time Lapse Seismic and Fluid Substitution Modeling
  - Subsurface Data Management and Editing
- Provided leading technical advice to the development of PetroBank (Norwegian) database
- Development team member - designed and implemented new Corporate Database for Statoil



## **SANTOS LTD**

### **Senior Petrophysicist**

**1998 - 1995**

- Managed all preliminary log evaluations of wells in all operated SANTOS acreage
- Coordinated comprehensive petrophysical evaluations of all operated wells integrating and interpreting all logs, core and test data
- Managed junior exploration staff, goal setting, educating and mentoring
- Liaised with and managed representatives of numerous oil field service companies regarding all aspects of formation evaluation including budgets, work practices, quality assurance and safety
- Advisor in integrated reservoir management team developing marginal and mature oil and gas fields
- Member of tight gas team developing 3 trillion cubic feet of potential gas reserves by implementing 'leading edge' technology
- Assisted in acquisitions and advised in refining and implementing work procedures into the SANTOS work flow
- Participated in offshore and onshore unitization studies, discussions and debates
- Developed the use of new technology in SANTOS e.g. Nuclear Magnetic Resonance Logging, acoustic data for gas identification and rock typing
- Performed an oil based mud feasibility study with HSE group

## **BORAL ENERGY (now Origin Energy)**

### **Senior Geologist – Petrophysicist**

**1995 - 1991**

- Managed formation evaluation programme for all SAGASCO operated areas; Otway Basin (onshore/offshore), Bass Basin (offshore), Perth Basin (onshore), North Bonaparte Basin (offshore) and ZOCA (offshore)
- Liaised with various service companies regarding all aspects of formation evaluation, e.g. logging tool selection, mud systems, coring and core analysis techniques.
- Prepared and reviewed tender documents, set work budgets, ensured that safe work practices were followed and data quality assurance was maintained
- Managed integrated field reviews with geological and engineering personnel



- Prepared and presented various farm-out proposals. Prepared and presented work programme submissions to Federal and State Government bodies
- Managed exploration programme in license block comprising, seismic exploration, geological studies, play concept development
- Introduced new technology to company e.g. low invasion coring and the use of acoustic data for gas identification

## **GAS AND FUEL EXPLORATION OF VICTORIA**

### **Petrophysicist - Operations Geologist**

**1991 - 1989**

- Managed all petrophysical and operational geology functions for a continuous onshore Otway Basin Exploration programme
- Company representative at numerous Joint Venture, Technical Committee Meeting and various Federal and State Government meeting

## **CLAREMONT PETROLEUM**

### **Development Geologist**

**1989 - 1988**

- Managed the geological development planning of Port Campbell, Bodalla and Kenmore oil and gas fields
- Performed feasibility study into possible gas storage within Waarre Sandstone Reservoir – Port Campbell Western Victoria
- Coordinated formation evaluation of operated and non-operated wells within the company's portfolio
- Company representative at Joint Venture, Technical Committee and Government meetings

## **BEACH PETROLEUM (now Beach Energy)**

### **Well Site / Operations Geologist**

**1988 - 1985**

- As Operations Geologist managed all geological operations for Otway Basin Drilling programme supervising mudlogging and electric wireline logging operations
- Performed regional exploration studies of South East Australia and Central Australia and new venture basin analysis studies
- Company representative at Joint Venture, Technical Committee Meeting and Government presentations

## **GEOSERVICES**

### **Mudlogger**

**1981 - 1984**



- Mudlogger, North Sea, Argentina (offshore Southern Atlantic Basins) and Colombia, (Onshore Magdalena Basin) and Crew chief of offshore mudlogging unit in Australia and New Zealand (offshore Taranaki Basin), supervising a mudlogging unit and crew