



## **Ho, DOUG W.C., P.Eng.**

### ***Vice-President, Engineering***

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Doug is a Director and an Associate of Sproule and is involved in the management of Sproule's Heavy Oil and Oilsands Department. Doug has been a Sproule professional since 1995 and has experience in Australia (Gippsland Basin Gas Deliverability Study with 3 Tcf Reserves), Canada (Western Canada Sedimentary Basin), China (Conventional and Heavy Oil Reserves and Economic Evaluations and Field Development Studies in the Daqing, Shengli, and Liaohe Oilfields), Inner Mongolia (Gas Potential Assessment), Myanmar (Heavy Oil Reserves and Economic Evaluations of Htaukshabin and Kanni Oilfields)

### ***Diplomas and Degrees***

- ❖ B.A.Sc. Chemical Engineering (1980), University of Toronto, Toronto, Ontario, Canada

### ***Continuing Education***

- ❖ Production Operations, Production Logging, Reservoir Analysis, Open-Hole Logging Analysis, OGCI, Calgary
- ❖ Horizontal Well Development, University of Calgary, Calgary
- ❖ Thermal Recovery, Farouq Ali, Calgary
- ❖ Reservoir Simulation, Exxon USA, Houston

### ***Memberships***

- ❖ Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA)
- ❖ Petroleum Society of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM)
- ❖ Society of Petroleum Engineers (SPE)

### ***Work Responsibilities***

- ❖ Estimate reserves and economic values of oil and gas properties in Western Canada, United States, Australia, China and Southeast Asia.
- ❖ Conduct in-depth reservoir analyses to assess field development potential.
- ❖ Develop detailed deliverability studies for gas fields.
- ❖ Provide expert witness testimony for arbitration and in courts of law.
- ❖ Provide investment advice on corporate divestitures and acquisitions and technical advice on conventional, heavy oil and oil sands recovery projects.

### ***Previous Employers***

- ❖ 1986-1994      **Imperial Oil Resources Ltd.**, Calgary, Alberta

#### *Senior Reservoir Engineer*

- ❖ Conducted reservoir engineering for the Cold Lake Cyclic Steam Stimulation project. Responsible for project execution, equipment design, and contract management of production equipment used in the commercial project. Provided reservoir engineering support to district operation. Developed and implemented alternate recovery processes (i.e., horizontal well, steamflood, fireflood and cold flow) to piloting stage.

#### *Senior Development Engineer*

- ❖ Responsible for providing reservoir engineering support on reservoir depletion strategies and exploitation opportunities of conventional oil and gas fields in Alberta and Saskatchewan.

- ❖ 1980-1985      **Gulf Canada Resources Limited**, Calgary, Alberta

#### *Production Engineer, Stettler Field Office*

- ❖ Responsible for production optimization and well test design and analysis of conventional oil and gas fields in southern Alberta.

#### *Production and Facilities Design Engineer*

- ❖ Responsible for facilities and production equipment design for a fireflood project.

### ***Special Expertise – Heavy Oil and Oil Sands Recovery***

- ❖ Reserves and economic evaluations, and resource assessment on heavy oil and bitumen in Western Canada. Evaluation projects include:
  - ❖ Geological and reserves evaluation for various producing companies with thermal oil production of >100,000 barrels per day using cyclic steam stimulation and steam-assisted gravity drainage processes in the Cold Lake and Athabasca areas.
  - ❖ Reserves and economic evaluation of various producing companies with cold production of heavy oil of >100,000 barrels per day in Western Canada.
  - ❖ Oil sands resource assessments of surface mining and in-situ oil sands recovery potential of >100,000 acres in the Athabasca area.

### ***Publications and Presentations***

- ❖ Ho, D.W.C. and Morgan, B.T., "Effects of Steam Quality on Cyclic Steam Stimulation at Cold Lake, Alberta." Paper presented to the 65th Annual Technical Conference and Exhibition of the Society of Petroleum Engineers, New Orleans, Louisiana, September 23-26, 1990.
- ❖ Co-authored and presented a technical paper on "Cyclic Steam Stimulation Steaming Strategies" at the 1992 SPE Annual Technical Conference.
- ❖ Provided expert witness testimony for arbitration and in courts of law.
- ❖ Participated in a panel discussion session on heavy oil reserves determination in the 2000 SPE International Conference & Exhibition on Horizontal Well Technology.
- ❖ Taught an introductory course on thermal and cold production recovery methods.
- ❖ Guest speaker on "Disclosing non-conventional (oil sands) reserves" in the October, 2002 Conference Board of Canada Conference.
- ❖ Presented an overview of SAGD potential in Western Canada to the management team of a producing company.

### ***Professional Experience in Hearings, Arbitrations and Litigations***

My experience falls under two headings:

- A. Appearance as an expert witness in a proceeding, encompassing the preparation of evidence, assistance in cross-examination of the opposing party and submission to cross-examination of our evidence.
- B. The provision of technical support in a proceeding, with or without the preparation of evidence but without appearance as an expert witness.

**A. APPEARANCE AS AN EXPERT WITNESS:**

1. Confidential Arbitration, Calgary, 1998:
  - a. Forum: Binding arbitration
  - b. Issue: Defence against a claim of damage to a reservoir by water injection into a shallower reservoir, Saskatchewan
  - c. Legal counsel: Borden Ladner and Bennett Jones
  - d. Outcome: The panel found that damage had occurred but awarded minimal costs.
  
2. Archean v Wilde and Schott, Court of Queens Bench, Calgary, 2004:
  - a. Forum: Litigation
  - b. Issue: Ex-employees sued the company, claiming their profit sharing payout was incorrectly calculated. The company counter-sued.
  - c. Legal counsel: Osler, Hoskin, Harcourt;
  - d. Sproule conducted technical evaluations for the company and audited internal and third-party reports. My role was to conduct and defend the engineering evaluation.
  - e. Outcome: No decision has been made public.

**B. TECHNICAL SUPPORT FOR HEARINGS, ARBITRATIONS & LITIGATIONS:**

1. Eagle Resources (plaintiff) vs Bud MacDonald (defendant), Canada, 2002:
  - a. Forum: Litigation
  - b. Issue: Seller of property (defendant) misrepresented the value of a property by withholding a Sproule updated evaluation report.
  - c. Legal counsel: Osler, Hoskin, Harcourt
  - d. Sproule provided technical expert assistance to support the plaintiff on well performance and reserves evaluation issues. My role was to provide technical support on reservoir engineering.
  - e. Outcome: Settled in favor of plaintiff.