PETROLEUM HISTORY SOCIETY

ARCHIVES

Newsletter of the Petroleum History Society *February 2012; Volume XXIII, Number 2*

P.H.S. Lunch and Learn Meeting – Wednesday, February 29, 2012

3D Seismic: The oil and gas looking glass

by Easton Wren, Geophysicist

Following Roy Lindseth's fascinating narrative on the early days of digital seismic processing this presentation will complete the story by providing an explanation of three-dimensions, the rationale behind 3D seismic and its contribution to modern day oil and gas exploration and development. The material, in part historical, will be highly illustrative and intuitive and there will be no reference to mathematics. This promises to be a highly entertaining talk.

Easton Wren was born and raised in Scotland and has a B.Sc. in Geology and a Ph.D. in Geophysics from the University of Glasgow. Between these degrees he spent four years in North and East Africa on both oil and gas and mining exploration field work. He came to Calgary in 1968 with Amoco Canada and subsequently joined PanCanadian and other smaller oil companies, taught semesters at both The University of Calgary and Mount Royal College (now University), did some geophysical consulting, and taught industry courses. For the past six years has been V.P. Exploration on the Board of Americas Petrogas, a Calgary junior with oil and gas operations in Argentina. Easton is a registered Professional Geophysicist with APEGGA, a Past President and Honourary Member of the Canadian Society of Exploration Geophysicists, and a former Distinguished Lecturer for the American Association of Petroleum Geologists. For several years he was also host and producer of Science Spectrum for CFAC-TV in Calgary.

TIME: 12 noon, Wednesday, February 29, 2012.
PLACE: Calgary Petroleum Club, 319 – 5th Avenue S.W.
COST: Members $30.00 and Guests $35.00 (most welcome) (cash or cheque only)

R.S.V.P. if you wish to attend to: Micky Gulless, 403-283-9268 or micky@fuzzylogic.ca by noon, Monday, February 27, 2012, if not sooner.

Individuals who indicate that they will be attending - but do not materialize - will be considered "no shows" and will be invoiced for the cost of the luncheon. Individuals who do not R.S.V.P. by the deadline cannot be assured of seating.

Next Luncheons: Following the February 29 luncheon, our next event is our Annual Meeting that will take place on Wednesday, March 28 at the Petroleum Club starting at 4:00 p.m. This meeting will feature a report of our activities over the last year, election of new officers and Board for 2012-2013, our Annual Awards Program and a keynote address by Bob McClements, a former senior executive with Suncor who will describe for us some of the many historical aspects surrounding the construction and operation of the Great Canadian Oil Sands (GCOS, later Suncor) plant at Fort McMurray. We are always seeking speakers and interesting subjects. If you are considering making a presentation, please contact Clint Tippett, President P.H.S., at 403-691-4274.

Call for Nominations: The Petroleum History Society is seeking individuals who might be interested in joining our organization in a volunteer capacity as either a member of the Board of Directors or on the Executive. If you would like to take this opportunity, please contact Clint at the number given above.

Annual Awards Program: The Petroleum History Society annually seeks nominations for its five awards for works and accomplishments. These awards are Book of the Year, Article of the Year, Multimedia Award, Preservation Award and Lifetime Achievement Award. This cycle will focus on 2011 with the obvious exception of the last-named award. Winners receive an engraved plaque. Please forward your suggestions to Clint (above), to Director Doug Cass at 403-268-4203 or to Director Hugh Leiper at 403-249-0707.

How Times Change: It was recently reported that the National Energy Board had approved the construction of a ethane import pipeline connecting a processing plant in North Dakota with the Alberta Ethane Gathering System Network at Empress, Alberta. During the 1980's the Alberta Government encouraged the development of an Alberta-based petrochemical industry that included a series of ethane lines connecting major gas plants with a petrochemical hub near Joffre, adjacent to Red Deer. The facilities built there, in turn, produced feedstocks for other industrial complexes, like the one around Fort Saskatchewan. As an example, Joffre used ethane to produce ethylene, and that ethylene was used in Shell's world class plant northeast of Fort Saskatchewan to produce styrene monomer that was exported globally. The entire setup was based upon the premise of cheap and abundant natural gas and natural gas liquids. This favourable arrangement did persist for several decades but now, unfortunately, Western Canada's natural gas production is in decline (although the price aspect is still true in spades) and in order to maintain the petrochemical industry it has become necessary to import some of the basic building blocks. I think that Bob Blair (ex-Nova Corp.) would be upset!

The Cultural Side of Oil: The industry has been in the news on the more social side lately:

- The Globe and Mail ran a feature on Feb. 11 entitled "*Big oil's latest byproduct: exploratory plays*". No, this wasn't a reference to geological play concepts but rather to a couple of theatre-style plays that had gained their inspiration from events in the patch. The first was *Enron,* staged by Theatre Calgary and said to be "a British play about the rise and fall of the infamous Houston-based energy company that once had an office here [Calgary]". The second is a production of Alberta Theatre Projects and is called *Good Fences* – and said to be seemingly "ripped from the current headlines trumpeting the ongoing high stakes political debate over TransCanada Corp.'s proposed Keystone XL pipeline to the United States." On a favourable note, both appear to be facilitating genuine discussion amongst attendees and, indeed, are being supported by corporations like Enbridge for exactly this purpose. Members of the P.H.S. have an added advantage, of course, given our access to the historical reference material related to such controversies over the years!
- A new epic movie called *Black Gold* has been co-produced by Qatar's Doha Film Institute and Quinta Communications. As reported in Upstream Newspaper, "It tells the story of the rivalry between two Emirs in the Arabian Peninsula in the early 20th Century, just as oil was being discovered, and the rise of a young, dynamic leader who unites the tribes of the desert kingdoms." Amongst the actors is Antonio Banderas. The movie is an adaptation of a novel by Hans Ruesch called "*The Great Thirst*". Budget was $55 million and apparently it will be released globally early this year.
- As reported in the Winnipeg Free Press on January 28, a controversy has erupted between, on the one hand, the Canadian Science and Technology Museum, and, on the other, Imperial Oil and the Canadian Association of Petroleum Producers. The subject is a display about the oil sands that is part of a show called "*Energy: Power to Choose*" towards which the Imperial Oil Foundation has donated $600,000 over six years. The problem is that the depiction of the oil sands industry is seen as too negative. Industry believes that it has some right to have input into the displays whereas some feel that this constitutes meddling in freedom of expression and violation of the charters of museums. The consensus seems to be that some avenue needs to be found for all sides of a story to be told.
- The Glenbow Museum is holding an exhibit of the photographs of Edward Burtynsky that runs from January 21 to April 9, 2012. He is best known for his panoramic views of industrial and urbanized settings including refineries, mining and quarrying operations, and oil fields. Somewhat cryptically, the Glenbow's ad says "The remarkable photos of Edward Burtynsky as seen through the eyes of over 30 Canadians." So would that be 31 Canadians and what's the significance of that small a number anyways? Interestingly, the Calgary Herald also reported on January 31 that the photographer's works are being featured in London, England in Britain's main photographic art gallery this Spring where they are expected to play a role in the debates over Alberta's oilsands. Given the level of anti-oilsands sentiment there already, this cannot be seen as a good thing.

Archives is published approximately eight times a year by the Petroleum History Society for Society members.

Back issues are archived on our website at www.petroleumhistory.ca
Contacts: info@petroleumhistory.ca
President: Clint Tippett – clinton.tippett@shell.com 403-691-4274
Secretary: Helen Turgeon – heldon@telus.net 403-239-4863

The Problem Solver

"How Dee Marcoux helped resuscitate Suncor Energy and the entire oilsands sector"

By Robert Bott, and with thanks to Oilsands Review Magazine

In October 1991, a newly hired Suncor Energy Inc. executive got her first look at the company's oilsands mine and upgrader near Fort McMurray. Although as executive vice-president, oilsands, she would run the operation, she had not previously visited the site; apparently company officials did not want to upset the man she was replacing. And what she saw there was not pretty: rickety bucketwheels and conveyors, perilously perched tailings ponds, a problem-plagued upgrader and an unreliable power plant. Operating and maintenance costs were $19 per barrel at a time when oil was selling for $17. Many employees and observers thought she had been brought in to shut the place down. Edythe "Dee" Marcoux (who then went by her maiden name, Parkinson) had no such intention. For one thing, the environmental liabilities and other costs of closing the plant would be an even bigger burden for Suncor's balance sheet than the losses from ongoing operations. In any case, the petite engineer saw herself as "change manager" and was determined to find solutions. She spent the first six months talking to people at every level to identify the challenges and opportunities. Armed with that knowledge, she led a remarkable makeover that rescued the Suncor oilsands operation and helped set the stage for its subsequent growth into Canada's largest petroleum company.

The biggest challenge was the bucketwheel mining system that had been emblematic of the operation since it began commercial production as Great Canadian Oil Sands in 1967. Harsh weather and the abrasive, heterogeneous nature of the oilsand deposits led to frequent bucketwheel stoppages, expensive maintenance and inefficient resource recovery. Recognizing that mining was not her expertise, Marcoux recruited an experienced mine engineer, Cliff Britch, from the B.C. coal industry. As vice-president of bitumen production, Britch led the conversion to truck-and-shovel operations, the biggest single factor in Suncor's resuscitation and now the standard method for all surface mining of oilsands. "I didn't spend a lot of time worrying about what was happening in the mine after Cliff came along," Marcoux recalled. There had been vast improvements in trucks and tires during the preceding years, and truck-and-shovel mining was common practice in many open-pit mines. The key to making it work in the oilsands, Marcoux said, was to build good roads. "You go into any mine, anywhere around the world, you don't have good roads, and you don't have a good mine."

Marcoux worked in an office with glass walls and an open door. She listened to ideas and turned them into plans. She dealt with staff and unions, who would face a workforce reduction of nearly 40 per cent before growth resumed later in the 1990s. As the transition took shape, she had the crucial task of selling it to a board of directors newly liberated following Suncor's March 1992 initial public offering, the 1993 divestiture of the Ontario government's holding, and the reduced holding by Sun Co. of Philadelphia leading to Sun's complete departure in 1995. Marcoux said Suncor president and chief executive officer Rick George was supportive, and she was at ease making presentations to the board. "I'd written a book on capital cost" in the 1970s, she noted. "I had great board support." The board approved the $108 million transition to trucks and shovels in October 1992, and it was completed in December 1993 after acquiring and testing equipment, retraining more than 400 workers, and adapting mine design. The project came in on budget and produced immediate results – record high production in 1994 and a significant reduction in per barrel costs. Over several years, along with further capital investments totaling about $250 million, the transition raised efficiency and productivity, chopped operating costs by more than $5 per barrel, reduced environmental impacts and emissions, improved health and safety, and

generally proved that oilsands mining and upgrading could be economically viable even with the low oil prices of the 1990s.

Marcoux's success at Suncor, and the similar turnaround led by Jim Carter and Eric Newell down the road at Syncrude Canada, lent credibility to the bold proposal by the Alberta Chamber of Resources' National Oil Sands Task Force in 1995 for massive expansion of oilsands development. Marcoux was actively involved in the task force and became one of the spokespeople selling its ideas to government, industry and the public. Adoption of key recommendations by the federal and provincial governments in 1995 and 1996 launched the industry on the growth path that continues today. It is interesting that two of the other key players in that oilsands renaissance were also women, federal Natural Resources Minister Anne McClellan and Alberta Energy Minister Pat Nelson.

Not content to rest on her laurels, Marcoux seized another opportunity in October 1996. Exactly five years after joining Suncor, she was named president of CS Resources, a junior company with big ideas for oilsands development. Unfortunately, CS was taken over by Gulf Canada Resources a year later. Marcoux stayed for a year as president of a subsidiary before moving to consulting and a series of directorships that have included SNC Lavalin and, until recently, OPTI Canada. She and her husband now live on B.C.'s Sunshine Coast.

The making of a change manager

Born in Nova Scotia, Marcoux grew up on a dozen military bases in Canada, England and Scotland. Her father, an officer in the Canadian Navy, was an electrical engineer who worked on nuclear energy projects. Marcoux graduated from Queen's University in 1970 with a degree in chemical engineering. Initially finding few jobs in her field, she co-authored a handbook on mineral processing equipment costs and preliminary capital cost estimations, published by the Canadian Institute of Mining and Metallurgy in 1972. She returned to Queen's for an honours MBA in 1976, then joined the planning department of Imperial Oil in Toronto.

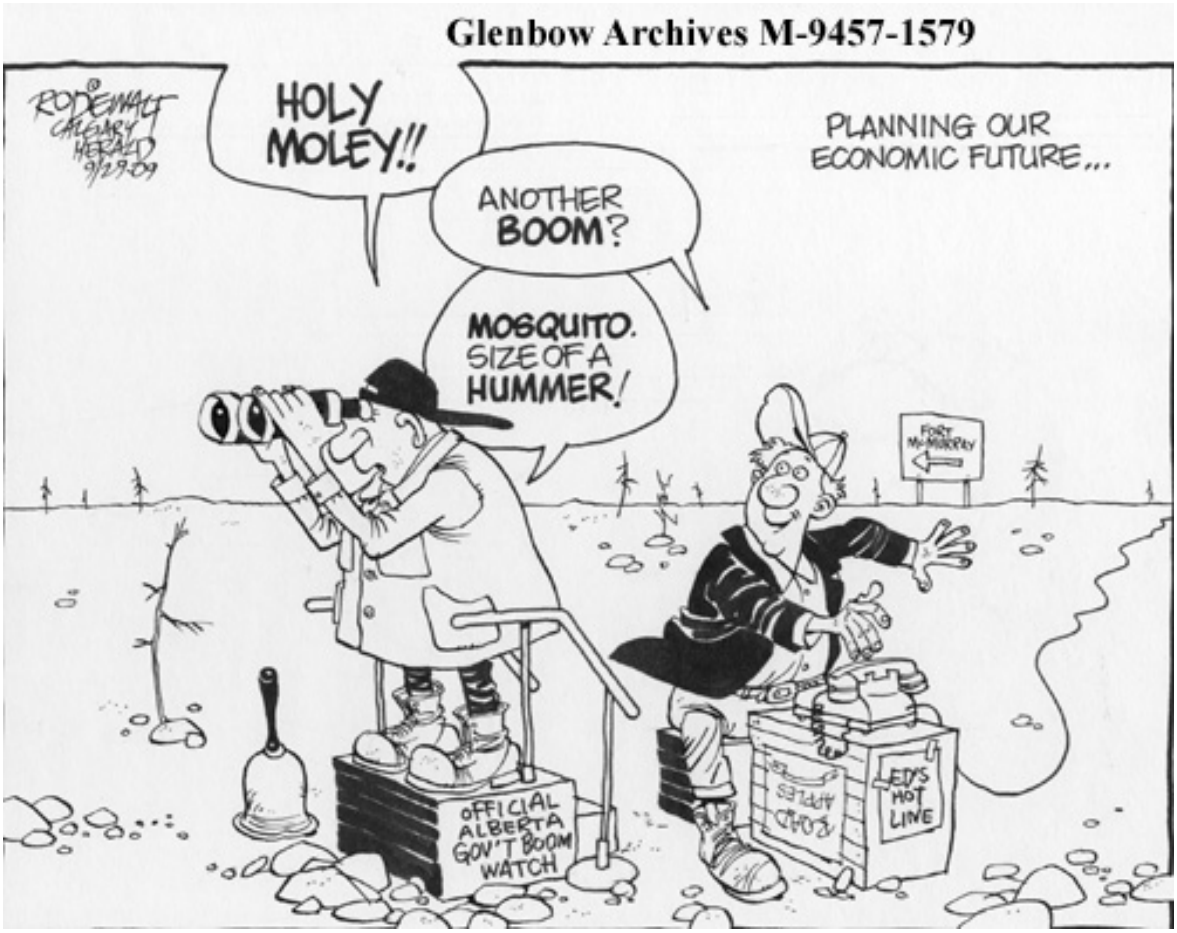
Marcoux got her first experience as a "change manager" planning the transition of refineries to make unleaded gasoline, then implementing the changes from 1978 to 1982 at Imperial's refinery in Dartmouth, Nova Scotia. Soon after returning to Imperial's Toronto offices, she moved over to Petro-Canada in 1983 to work on planning as the company absorbed downstream operations first from BP Canada and subsequently from Gulf Canada. "I kept on saying I really wanted to do something, which is different than thinking about doing something, and they gave me the opportunity to run the Edmonton refinery." At the Edmonton refinery from 1987 to 1990, Marcoux got her first exposure to oilsands, as a customer for upgraded crude from Syncrude and occasionally Suncor. She also learned to manage a large workforce. In 1988 she was made Petro-Canada's general manager for refining in Western Canada, responsible for refineries in Vancouver, Prince George and Moose Jaw as well as Edmonton. It was not an easy time, with a fierce focus on cost-cutting after the oil price and stock market crashes of 1986 and 1987.

A totally different opportunity arose in 1990 when she took on a vice-presidency at Ontario Hydro. "I was sitting at my desk [at the Edmonton refinery] one day, staring at the hydrocracker flare, wondering why I was sitting so close to it because the windows were vibrating," she recalled. "Shortly thereafter I got a phone call from Ontario and they said they wanted a change manager…. They were very persuasive, talked a lot about the kind of skills they were looking for and I talked myself into thinking that this would be terrific, if they were serious."

Only months after she arrived in Toronto, the NDP government of Bob Rae was elected in May 1991 and installed a new chairman at Hydro. The chairman told Marcoux to stop giving pro-nuclear speeches and to start taking direction from above. “I actually wrote a letter of resignation and while I sat at my desk gazing at Queen’s Park, I got a phone call. It was from a head-hunter: ‘I understand you like the wilderness?’ I said, ‘I do’ and he said, ‘How do you feel about Fort McMurray?’ And I thought, it’s a little past wilderness isn’t it? But he had me.

“So a year and a half after I’d left, I was right back in the thick of where I wanted to be, and in fact, I was in deeper and had more fun in those five years at Suncor. Because I understood the crude oil from a customer’s perspective and I’d visited Syncrude many times because we were big customers of both Syncrude, and little customers of Suncor when Syncrude had a problem, but Suncor was unreliable, you couldn’t count on their quality, you couldn’t count on anything and so I thought, they’re a mess, this is great!”

This article is one in a series based on information from the Petroleum History Society’s Oil Sands Oral History Project, which is recording the stories of oilsands pioneers in their own words. As with the society’s previous oral history projects, transcripts and recordings will reside in Calgary’s Glenbow Archives. Robert Bott is a member of the team of researchers/writers behind the project.



Cartoon from 2009 by Vince Rodewalt and the Calgary Herald,
Courtesy of the Glenbow Archives whose photo collection also contains a wealth of cartoons related to the history of the oilpatch.

History of Land Conservation and Reclamation

By Bruce Patterson

A project in progress as discussed at the November 2011 luncheon of the P.H.S.

To understand where we're going, we must understand where we've been

July 2013 marks the 50th anniversary of Alberta's land conservation and reclamation program. This book will chronicle the history of this program from its original focus on cleaning up surface debris at wellsites to its current emphasis on cumulative-effects management and recovery of ecosystem function. Since settlement, Alberta has been transformed by urbanization, agriculture and industrial development resulting in alteration of the natural landscape. In response to public reaction to these changes, regulatory processes and organizations were established to manage, mitigate or avoid the effects of development – conflicting land uses, loss of productivity, contamination of land and water, abandoned mines/pits with safety hazards, loss of wildlife habitat and general aesthetic concerns. Alberta's conservation and reclamation specialists are proud of all they have accomplished. This book will celebrate the successes, but will also acknowledge the stumbles along the way, for it is often the journey that tells us more than the destination.

The focus of the book will be to document and explain **why and how** the program evolved. It will provide a valuable reference for students and new professionals who are interested in understanding what led to the current regulatory requirements and practices.
The program's history is chronicled by describing the rationale for, and implications of, a series of changes:

- some revolutionary – marked by major step changes in approach and focus such as the passage of legislation or the move from on-site reclamation certification inquiries to an audit system
- others evolutionary – marked by incremental changes that emphasize continuous improvement to policy and practice based on science and experience

Our history was shaped by people as well as events. The program's origins stem from a response to the concerns of agricultural landowners to the environmental and economic impacts of oil and gas development in the late 1950s and early 1960s. Since then individuals, government agencies, industry organizations, stakeholder organizations and committees made up of various combinations of these participants have worked to shape the program. The book will describe their efforts and the impacts they had.
Examples will be drawn from key industrial sectors such as upstream oil and gas, coal, oil sands, sand and gravel; programs and committees to illustrate the changes and to highlight the similarities and differences between sectors. Extensive use of photos will provide context for the concepts discussed in the book.

Examples of common questions that will be discussed in the book:

What events led to the development and implementation of:

- The *Surface Reclamation Act* in 1963
- The *Land Surface Conservation and Reclamation Act* in 1973
- Environmental Impact Assessments
- The *Environmental Protection and Enhancement Act* and *Conservation and Reclamation Regulation* in 1993
- Approvals
- Codes of Practice
- Reclamation criteria

Who made up the following groups and what did they do:

- Land Conservation and Reclamation Council
- Land Conservation and Reclamation Division / Land Reclamation Division
- Development and Reclamation Review Committee?
- Reclamation Research Technical Advisory Committee
- Exploration Review Committee
- Crown Mineral Disposition Review Committee
- Conservation and Utilization Committee
- Task Force on Surface Disturbance and Reclamation
- Right-of-way and Pipeline Corridor Task Force
- Alberta Pipeline Environmental Steering Committee
- Oil and Gas Reclamation and Remediation Advisory Committee
- Cumulative Environmental Management Association
- Oil Sands Mining End land Use Committee

What government agencies were involved in land conservation and reclamation?

- Mines and Minerals
- Alberta Environment / Alberta Sustainable Resource Development (and predecessors)
- ERCB
- Farmer's Advocate
- Surface Rights Board
- Orphan Fund

What industry organizations were involved in land conservation and reclamation?

- Canadian Association of Petroleum Producers
- Canadian Energy Pipeline Association
- Alberta Chamber of Resources
- Coal Association of Canada
- Alberta Sand and Gravel Association
- Alberta Roadbuilders and Heavy Construction Association

What public and environmental organizations were involved in land conservation and reclamation?

- Surface Rights Federation
- Roundhill Dodds Agricultural Protection Association
- Committee on Keephills Environment
- Genesee Power Project Advisory Committee
- Onoway River Valley Conservation Association
- Oil Sands Environmental Coalition
- Environmental Law Centre

What were Municipal reclamation inspectors and why are they no longer used?
How did the Alberta Chamber of Resources' Reclamation Awards program come to be created?
What did the Alberta Heritage Savings Trust Fund Land Reclamation program do?
When did conservation become part of the program and what role has it played?
When and why did we shift to capability as a measure of reclamation success?
What techniques and technologies have been developed in response to the program and how has the program been shaped by changes in technology?
What are some examples of government, industry and stakeholders working together to shape the program?