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RESERVOIR

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VOLUME 32, ISSUE 11

DECEMBER 2005

- 2006 Executive Committee
- CSPG 2005 Strategic Planning Session
- Geoscience Mixer 2005
- William (Bill) Carruthers Gussow (1908-2005)
- 2006 CSPG CSEG CWLS Joint Convention

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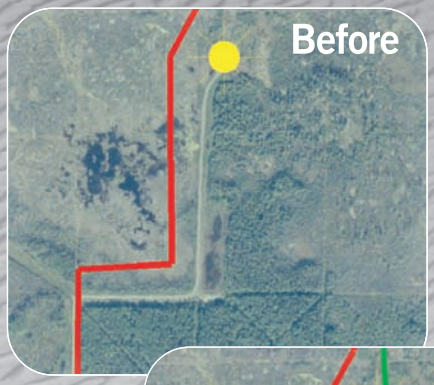

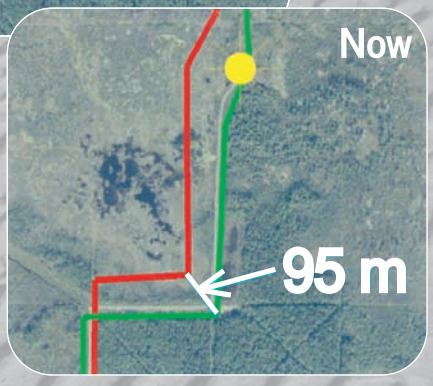

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To publish an article, the CSPG requires digital copies of the document. Text should be in Microsoft Word format and illustrations should be in TIFF format at 300 dpi. For additional information on manuscript preparation, refer to the Guidelines for Authors published in the CSPG Bulletin or contact the editor.

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Additional copies of the RESERVOIR are available at the CSPG office for $3.00.

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Elmerson Peninsula, Northern Ellesmere Island, Nunavut. View to the north of unconformity-bounded estuarine to marine sandstone cycles within the upper Permian (Kungurian) Sabine Bay Formation, which was deposited between the underlying platformal Great Bear Cape and overlying basinal Assistance formations. Friable sands of the Sabine Bay comprise a very porous potential reservoir unit within the Sverdrup Basin. Photo by Michael McDonough.

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CORPORATE RELATIONS
Vacant

A MESSAGE FROM THE FINANCE DIRECTOR

I am pleased to report that the CSPG ended its fiscal year on August 31, 2005 in a very strong financial position. It is worth noting that almost all of the Society's activities showed strong performance, providing a diversified revenue stream and thereby reducing the Society's exposure to success or failure in one or two key areas.

Despite the strong financial performance, the CSPG's balance sheet shows a small operating deficit (revenue minus expenses) of $36,632 for the year. This deficit reflects the Executive's decision in 2004 to donate an incremental $100,000 to the Educational Trust Fund in addition to the annual $75,000 donation. Without the $100,000 donation to the ETF, the CSPG had a surplus of $63,368 which is in line with the 2005 budget and with the 2004 surplus.

The CSPG's income from operations for the year totaled $1,851,374 while expenses were $1,888,006. Highlights for the year were the AAPG Convention, the success of which was due in large measure to the CSPG Convention Committee and CSPG staff. The Core and Gussow Conferences were also very successful, as was the Technical Luncheon program. The Reservoir continues to yield significant surpluses and the Bulletin, while operating at a deficit, increased the number of issues and significantly reduced costs.

PROGRAMS

Technical programs consist of the Annual Convention, Conferences, Technical Luncheons, Continuing Education, and Technical Divisions. Revenue from the AAPG Convention, which includes CSPG-sponsored events and the Society's profit share, was $494,545 while expenses were $252,984 to yield a profit of $241,561. At the time of writing, the AAPG had not completed their audit of the convention and these numbers are subject to change based on the audit. Revenue and expenses from the other programs were $483,668 and $431,125 respectively, most of which were generated by the Luncheons.

SERVICES

Services include membership, social activities, awards, and outreach programs. Revenue was $458,835, most of which was from membership dues, while expenses were $228,053.

COMMUNICATIONS

Communications, which includes the Reservoir, Bulletin, and electronic communications, enjoyed a very successful year with overall revenues of $347, 685 and expenses of $295,268. Revenues from the Reservoir grew substantially to $237,449 while expenses stayed relatively flat at $133,742 to yield a surplus of $103,707. Bulletin costs of $98,445 were below budget due to significantly lower printing costs. 2005 saw the start of our website overhaul which resulted in costs of $24,905 against revenues of $9,501. Once the new website is completed, costs are expected to decrease.

OPERATIONS

The Society's operations consist of office expenses, staffing, finance and banking, amortization, and administration. Operations income, principally from investments, was $66,640 while expenses, principally salaries and office costs, were $467,547.

INVESTMENTS

The CSPG's long-term investment portfolio consists of about 70% income investments and 30% equity investments. In November, 2004 the Executive added $200,000 to the portfolio from our short-term account. The portfolio enjoyed strong performance throughout the year and, at August 31, had an estimated market value of $973,934 against a cost of $878,235.

In conclusion, I would like to express my appreciation to the Executive members with whom I have served for their dedication and support and to Tim Howard and the office staff for their guidance and commitment to the Society. Finally I would like to thank all the CSPG volunteers for making the Society so successful.

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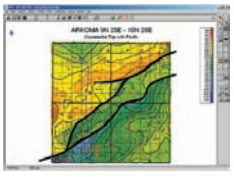
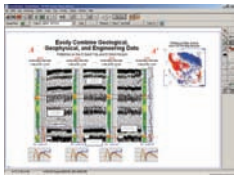


CONTOURING
Faulted contours
Isopachs
Volumetrics
Grid operations
New flexing options



CROSS SECTIONS
New Unassigned Tops
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Geocolumn shading
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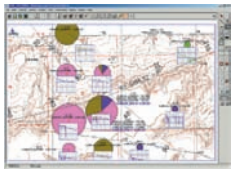

MAPPING OPTIONS
Expanded GIS Functions
Bubble maps
Production charts
Log curves
Posted data
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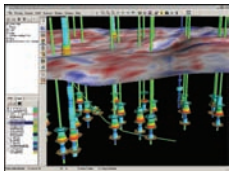

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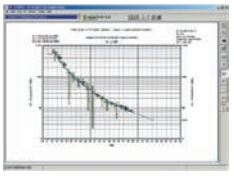
Digital logs
Grid surfaces
Tops, Shows and Perfs
Land grid overlay
Map images



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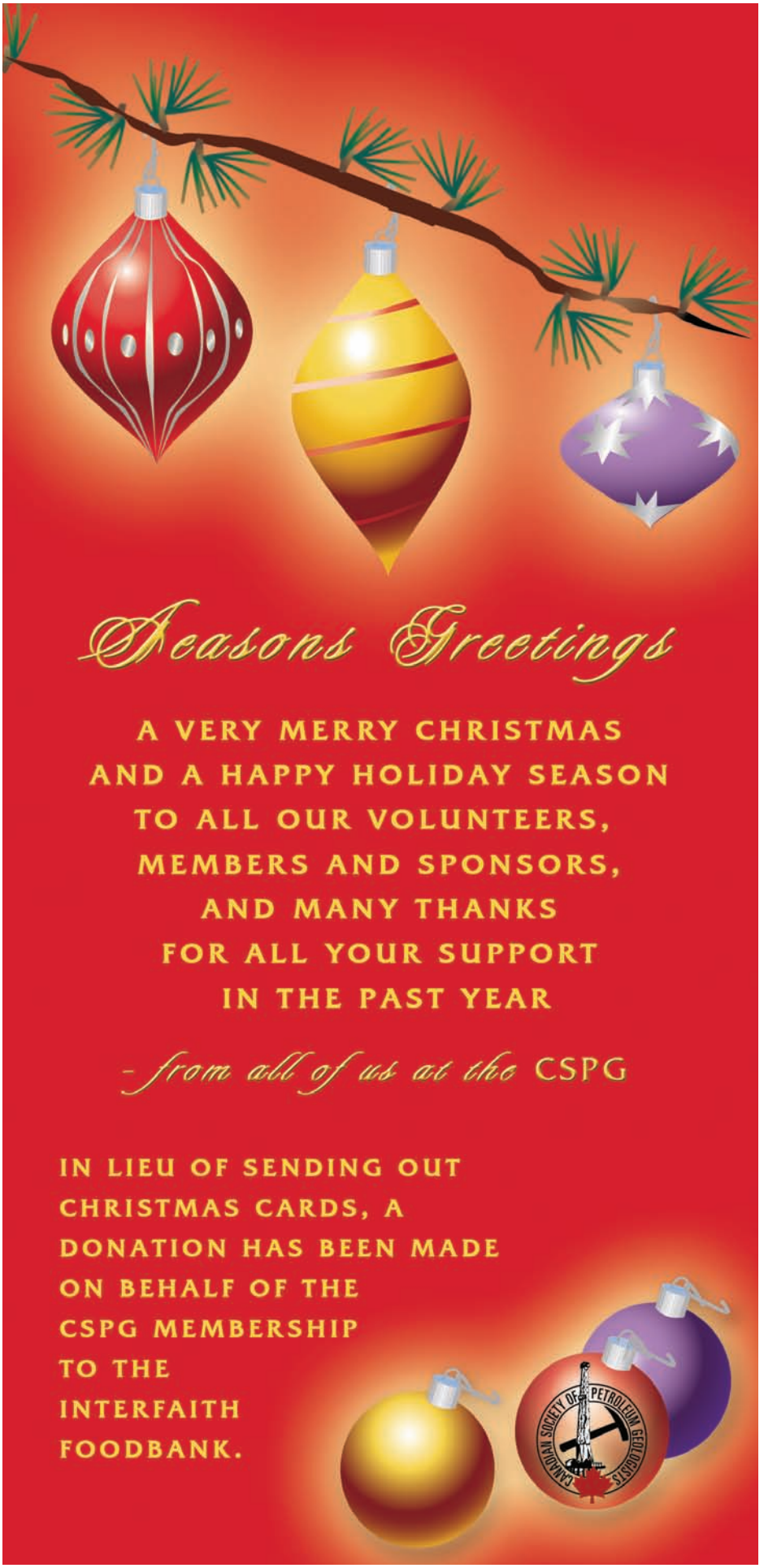

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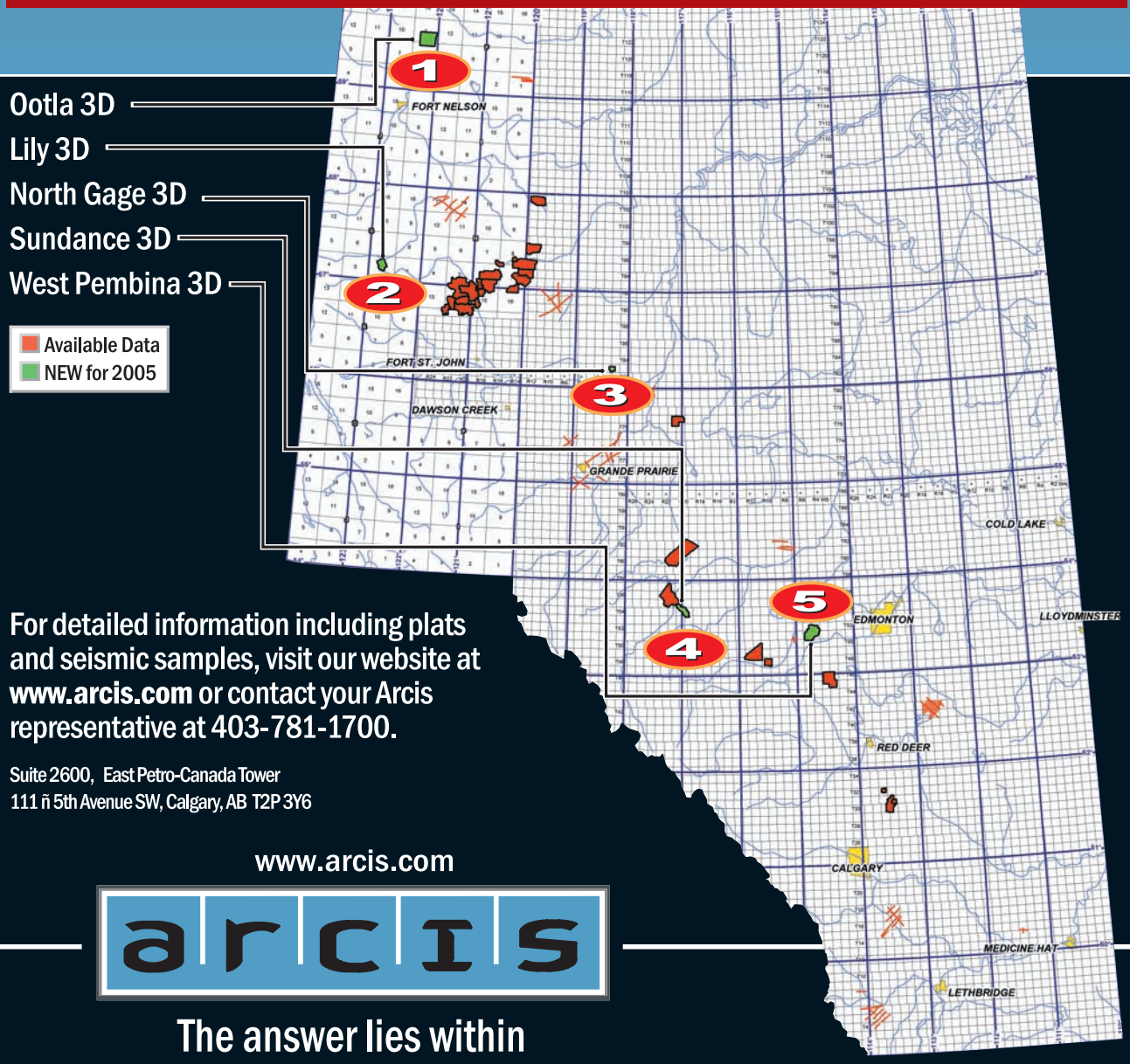

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DECEMBER LUNCHEON

Stratigraphy, sedimentology, and paleogeography of the Lower Jurassic Gordondale Member, west-central Alberta

SPEAKER
Michèle Asgar-Deen
University of Calgary

10:30 am Christmas Social
Exhibition Hall Foyer
11:30 am Luncheon
Exhibition Hall E
Tuesday, December 6, 2005

TELUS CONVENTION CENTRE
CALGARY, ALBERTA

Please note:
The cut-off date for ticket sales is 1:00 pm, Thursday, December 1st.
Ticket price is $28.00 + GST.

Detailed stratigraphy of fine-grained strata is crucial to our understanding of basin evolution, stratigraphic traps, and source rock potential. Appreciation of these parameters becomes even more important as we begin to exploit unconventional resources such as shale gas. Although the stratigraphy of coarse-grained strata within the Western Canada Sedimentary Basin is well known, much work remains before the stratigraphy of fine-grained packages are well understood.

Regional Lower Jurassic stratigraphic correlations based on detailed petrography, new biostratigraphic data, geophysical log correlations, and detailed core and outcrop descriptions have yielded surprising results. Discrepancies in the previous stratigraphic framework were resolved by introducing a new member, the Gordondale Member of the Fernie Formation, to replace the informal "Nordegg Member" terminology.

The Gordondale Member is Hettangian to late Toarcian in age. It consists of highly organic, radioactive, phosphatic, and fine-grained strata that are lithologically distinct from adjacent Nordegg Member cherty limestones. The Gordondale Member includes Hettangian basal Fernie strata of northeastern British Columbia, and is correlative with the Red Deer Member, cherty limestone of the Nordegg Member, and the lower Poker Chip Shale.

This new stratigraphic framework has also helped reveal a surprisingly dynamic Lower Jurassic paleogeography. During the Hettangian to Pliensbachian, the Gordondale Member transgressed, from west to east, over the North American craton. A west-facing, north-south oriented carbonate ramp was prominent during the Pliensbachian. The northern portion of the ramp was drowned during the Toarcian and overlain by fine-grained strata, and the southern portion of the ramp prograded northwards. A raised sill area developed in northeastern British Columbia during the Toarcian. Later during the Toarcian, the sill migrated eastwards and became broader. A basin-wide episode of erosion occurred during the late Toarcian as evidenced by a regionally extensive phosphatic conglomerate. The changes in Toarcian paleogeography, as well as a shift to coarser sedimentation, are discordant with proposed global sea-level changes.

The single largest influence on the deposition of the Gordondale Member was its silled-basin morphology. The sill restricted circulation with more marine conditions, particularly during periods of low relative sea-level, and may have contributed to a stratified water column resulting in poorly oxygenated bottom waters. These poorly oxygenated conditions are associated with an absence of bioturbation and benthic fauna. These conditions also facilitated the preservation of organic matter, resulting in total organic carbon contents ranging up to 28 weight percent.

BIOGRAPHY

Michèle Asgar-Deen is a Ph.D. student under the supervision of Dr. S. Larter at the University of Calgary, where she also received her B.Sc. and M.Sc. in 1997 and 2003 respectively. This presentation is based on her master's work, supervised by Dr. C. Riediger, which won the CSPG 2004 M.Sc. Thesis Award. She has presented at several conferences including the GAC-MAC and AAPG annual meetings and received the 2003 Andrew Baillie Award for best student paper at the CSPG convention. Michèle also has three years work experience with Crestar Energy Ltd.

CSI: Dinosaur Provincial Park

SPEAKER
David A. Eberth
Royal Tyrrell Museum of Palaeontology

11:30 am
Tuesday, January 10, 2006

Annual General Meeting

TELUS CONVENTION CENTRE
CALGARY, ALBERTA

Please note:
The cut-off date for ticket sales is 1:00 pm, Thursday, January 5th.
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Since the onset of the Great Dinosaur Rush in 1910, the strata exposed at Dinosaur Provincial Park (upper Belly River Group, Upper Cretaceous) have yielded tens of thousands of vertebrate fossils, including hundreds of complete-to-partial articulated dinosaur skeletons. By any measure, Dinosaur Provincial Park is one of the richest Mesozoic dinosaur 'graveyards' in the world! Why such fossil abundance and species richness? Multidisciplinary taphonomic and geologic studies conducted during the past 20 years by paleontological and geological 'CSIs' can now answer this question.

Skeletons of large dinosaurs are common, whereas those of small dinosaurs and other vertebrates are rare. Dinosaur skeletons are overwhelmingly associated with paleochannel facies and, thus, represent animals that probably died in, or were quickly washed into paleochannels following death. The frequent presence of skin impressions suggests significant numbers of geologically instantaneous, meter-thick burial events. Isolated bones are orders of magnitude more abundant than articulated or associated skeletons. They occur in both overbank and paleochannel facies, but are most common in paleochannel lags.

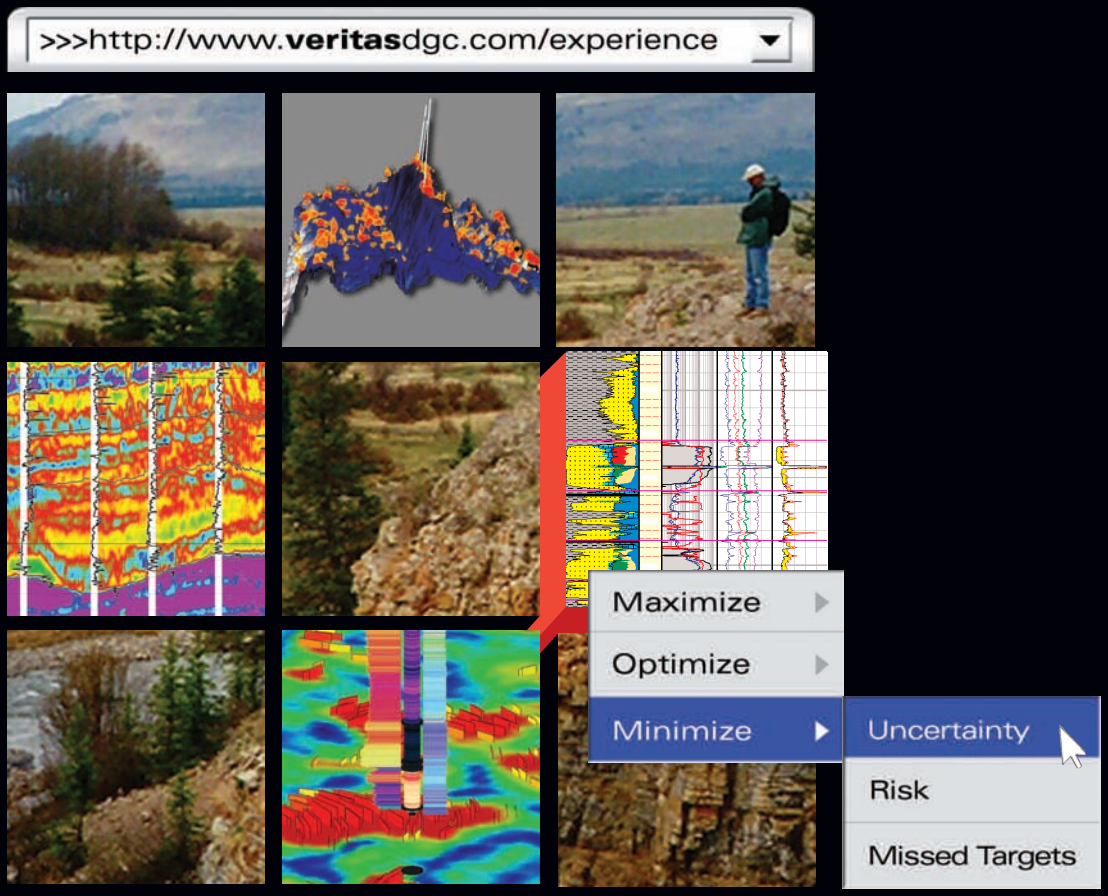
Two kinds of bonebeds are present at the Park: multitaxic and monodominant. More than 200 multitaxic bonebeds are known and consist largely of poorly sorted channel-hosted bone assemblages. Bonebed assemblages are interpreted as having been 'dumped' and buried in paleochannels during meandering or avulsion. At least 20 monodominant bonebeds, consisting mostly of bones from ceratopsian (horned) dinosaurs, have been documented at the Park. Intensive study has shown that they are derived from herds of ceratopsians that were episodically overcome by floods.

Catastrophic coastal plain flooding is the most parsimonious explanation for the taphonomic patterns observed at Dinosaur Park, and is also the best explanation for the cause of death for many of the Park's dinosaurs. Under the influence of severe coastal tropical storms and associated storm surges, southern Alberta's very-low-gradient coastal plain was episodically submerged by fresh water 200 km up-dip from the coastline. These regional floods episodically annihilated the dinosaurs, but probably spared many smaller aquatic, volant, and arboreal vertebrates. As water receded, significant numbers of bloated dinosaur carcasses were either swept into channels or stranded on the flood plain. Over a period of days to weeks, high rates of decomposition and sedimentation favored the rapid burial of many of the channel-hosted carcasses.

Across the coastal plain, carcasses of solitary dinosaurs littered the landscape. Sparse groups of carcasses from dinosaur "family" groups were also present, and, very occasionally, football-field size death assemblages of migrating centrosaurs were present. In the warm temperate to subtropical Campanian climate, a few seasons of scavenging, trampling, and rotting on the coastal plain resulted in the nearly complete disarticulation of carcasses. Over many years, meandering channels and channel avulsions reworked large areas of the floodplain, dumping partial skeletons and isolated bones into the channels, creating channel-lag bonebeds.

Crime scene evidence from the Park's dinosaur victims is critical in unraveling the mystery of 'who done it' at the Park. Accordingly, it probably pays to think like a CSI when interpreting the depositional history of any vertebrate-fossil-rich unit.

(Continued on page 16...)



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SPEAKER
Rocky Mottahedeh
United Oil and Gas Consulting Ltd.

11:30 am
Tuesday, January 24, 2006

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CALGARY, ALBERTA

Please note:
The cut-off date for ticket sales is 1:00 pm, Thursday, January 19th.
Ticket price is $28.00 + GST.

Convergence of improved directional drilling technology and advanced communication systems with real-time geo-model mapping tools has made geo-navigation while drilling possible. Geo-navigation and geo-steering while drilling have the potential to increase focused geologic placement of horizontal wells and lead to improved production recoveries with reduced operating cost per BOE.

A pre-drill/static geo-model framework and dynamic updates while drilling to the geo-model provide the context for pre-drill planning and real-time geo-navigation of drilling horizontal wells. Real-time WD data from systems such as Pason Data Hub's WITSML is incorporated to the geo-model at required frequencies. When structure deviation from the expected horizontal well prognosis is detected, a geo-model can be updated within minutes to provide a forward-looking window of the drilling process in a geologic context. Fast updates to the geo-model can facilitate focused geologic placement of horizontal wells within a short stratigraphic target reservoir window.

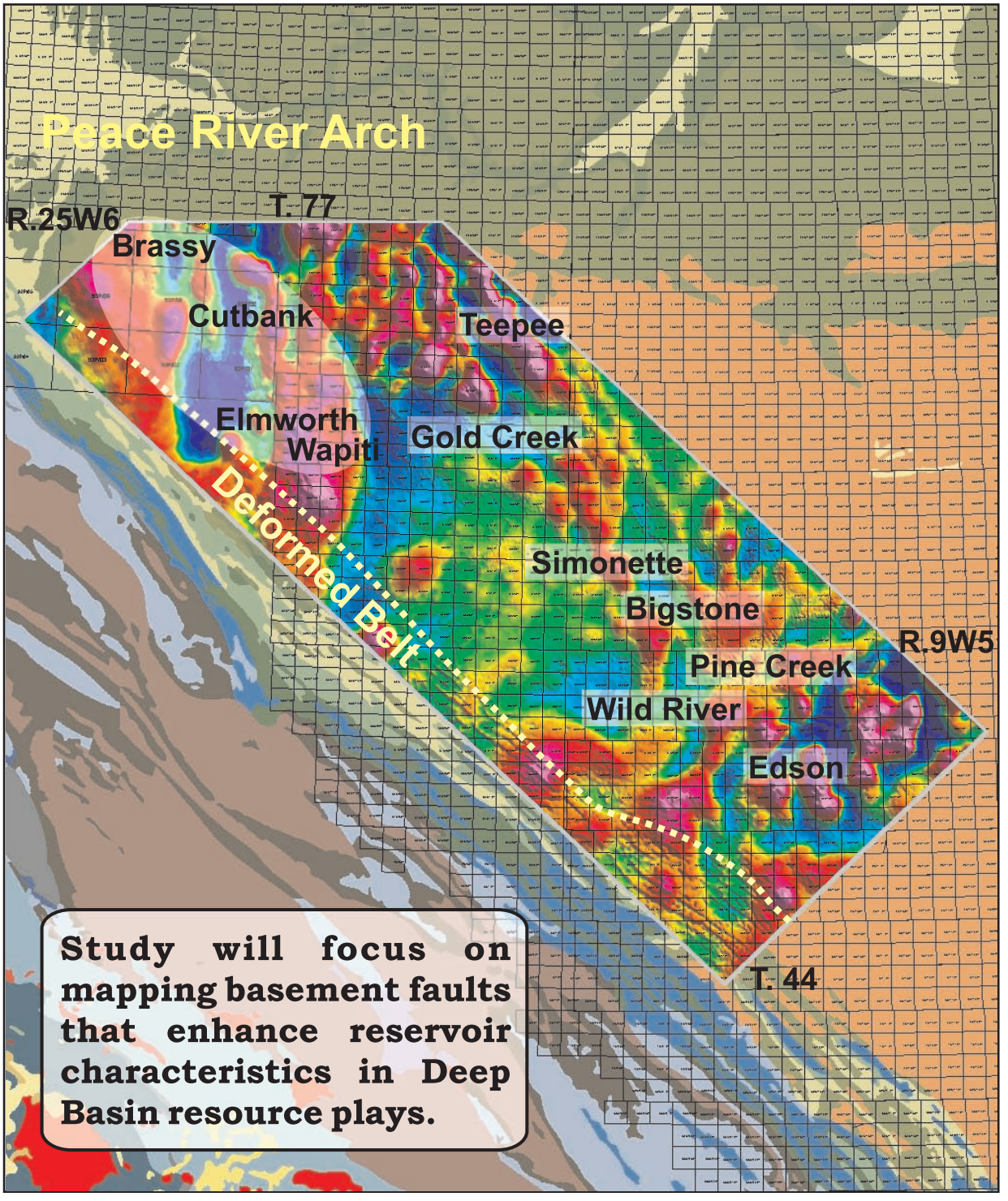
Minimums of three components are required for success of the process:

- An agile geo-model to keep up with changes in the structure while drilling,
- Location of the bit at any time using the WD survey and stratigraphic positioning of the bit using the Gamma Ray and other rock property MWD logs.
- Real-time communication technology such as WITSML and advanced directional drilling

Project wells will illustrate how data can be brought into a geo-model while drilling to update a geo-navigation roadmap in real time and facilitate geologically focused well placement. The impact of the frequency of real-time geo-model updates will be discussed. Concerns of collision avoidance are addressed with incorporation of cones of uncertainty around the horizontal wells. An economic case for the geo-navigation process and its impact will be reviewed with emphasis on operational improvements, collision avoidance, and mitigation of gas and water in oil reservoirs. The paper will demonstrate how geo-navigation can improve the drilling success of a range of resource types such as gas, tight gas, oil, and heavy oil in horizontal well placement applications.

BIOGRAPHY

Rocky Mottahedeh, P. Eng., P.Geol., is the President of United Oil & Gas Consulting Ltd. He graduated University of Toronto, 1981 with a B.Sc. in Geological Engineering. Rocky has 23 years of oil and gas experience with emphasis on new technology and integrated reservoir studies in gas, CBM, oil sands, and heavy oil at E&P companies in Canada and internationally. In the past eight years, Rocky has been involved in technology development focused on geo-modeling and geo-navigation through his company, United Oil and Gas Consulting Ltd.



Aeromag/Tectonic Study of the Deep Basin

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Martin Layzell
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12:00 Noon
Wednesday, December 7, 2005

Encana Amphitheatre
2nd floor, east end of the
Calgary Tower Complex
1 Street and 9th Avenue S.W.
Calgary, Alberta

First Calgary Petroleums Ltd. ("FCP") has been active in Algeria since 1997 when the company undertook a "Convention d'Etude" (a regional geological and geophysical study) in the northern part of the country. Since then, FCP has signed two blocks, shot 2,000 sq km of 3D seismic data and drilled 15 wells. Of these, 11 were completed as successful, one is pending testing, and three have been abandoned or suspended. FCP's activities have centred on the Berkine Basin of eastern Algeria, which has multiple clastic reservoirs ranging from the Lower Devonian at 4,500m to the Triassic at 2,300m. The Berkine Basin forms the westerly extension of the Ghadames Basin, an intra-cratonic basin covering portions of Algeria, Libya, and Tunisia and is one of the most prolific hydrocarbon provinces in North Africa. FCP's drilling has resulted in cumulative test rates in excess of 200,000 BOE/d (normalised to 2,000 psi) with much of the reserves in the form of liquids-rich gas.

Algeria's history as a significant hydrocarbon province goes back to 1956 with the discovery of two giant fields: Hassi Messaoud, with more than 6 BBOR and Hassi R'Mel with more than 80 TCF gas. These two fields still dominate the country's petroleum infrastructure with Hassi Messaoud being Algeria's centre for oilfield operations and Hassi R'Mel the gas hub for the country. Algeria has been the focus of several major exploration and development success stories involving foreign companies, including Anadarko, BP, BHP, and most recently, FCP. First Calgary has now established reserves estimated at more than 4 TCFE, gross Proved and Probable and more than 12 TCFE, gross Proved, Probable, and Possible on Block 405b. FCP's story in Algeria is one of persistence and application of technology, and the company has overcome environmental, logistical, and technical challenges to become a leading explorer for gas and condensate in Algeria.

BIOGRAPHY

Martin Layzell has been a geophysicist and exploration geoscientist since 1979. He joined Dome Petroleum Ltd. in 1980, was appointed Division Geophysicist in 1986 and Exploration Supervisor for the Beaufort Sea in 1988 after the merger with Amoco Corp. He has since held the positions of Chief Geophysicist for Westcoast Petroleum/ Numac Energy Ltd. and was a technical advisor to an investment bank from 1997 to 1998. Mr. Layzell joined First Calgary in 1999 as Exploration Manager and is currently Vice President, Exploration and Operations. Mr Layzell holds degrees in the earth sciences from the University of London (1977) and Windsor, Ontario (1978), is a Fellow of the Geological Society of London and a member of the SEG, CSEG, and PESGB.

STRUCTURAL DIVISION

Structural analysis of the southern Agrio Fold and Thrust Belt, Neuguen Basin, Argentina

SPEAKER
David G. Repol
Shell Canada

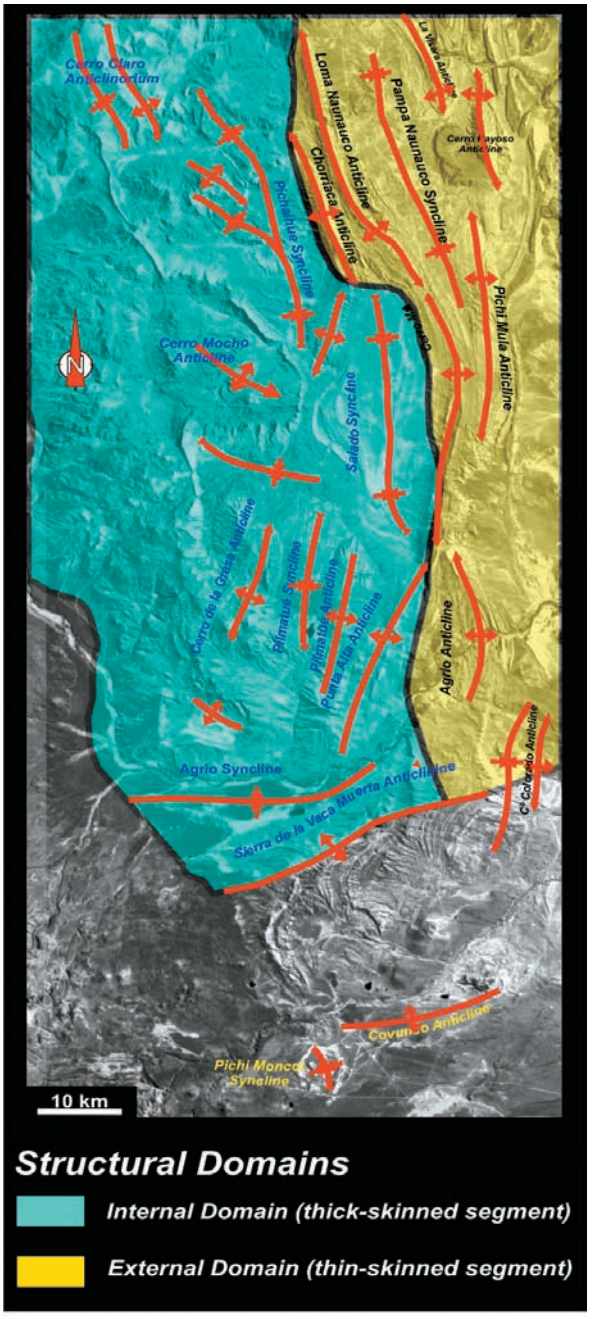
12:00 Noon
Thursday, December 15, 2005

Petro-Canada
West Tower, room 17B/C (17th floor)
150 6th Avenue SW
Calgary, Alberta

The Agrio fold and thrust belt (AFTB) is a world-class example of a tectonically inverted belt comprising both thin- and thick-skinned structures. Using surficial morphostructural patterns derived from satellite image attributes; paleostress inversion of populations of small faults, fold shape, and fault-plane seismic reflections; and integration of the trishear theory for cross-section balancing, we characterize and model the structural styles and kinematics of the main fault-related folds of this tectonic inversion-driven folded belt. The forward-modeled cross-sections devised provide a better understanding of the geometries and kinematic relationships of the transition between the thick- and thin-skinned domains within the southern Agrio Folded Belt. Moreover, the singular seismic properties of the sandstones of the Tordillo Formation are utilized as a regional stratigraphic marker in the reconstruction of a 3D structural model of the subsurface of the study area. Analysis of this key horizon shows how the Jurassic half-graben system controlled the orientation, structural style, and vergence direction of the fault-related folds in this part of the Andean belt.

BIOGRAPHY
David Repol is an Argentine national and a M.Sc. candidate in structural geology and tectonics at the University of Calgary. He received a B.Sc. degree in geosciences from the National University of La Plata, Argentina in 1996. He worked as a regional geologist at the Geological Survey of Argentina from 1997 to 2001. During 2002 David worked as structural consultant for Wintershall Energy of Argentina. He is presently at Shell Canada where he is a structural geologist working at Foothills E&D. Dave's current interest is the application of 2D and 3D structural analysis of fault-related fold features to the exploration and development of hydrocarbon fields in fold and thrust belts.

INFORMATION
Talks are free; please bring your lunch. Goodies and drinks are provided by HEF Petrophysical Consulting, and the room is provided by Petro-Canada. If you would like to be on the Structural Division e-mail list, or if you'd like to give a talk, please contact Elizabeth Atkinson at (403) 296-3694 or eatkinso@petro-canada.ca.



JANUARY LUNCHEON

(...Continued from page 10)

BIOGRAPHY
David A. Eberth is a Research Scientist and the Curator of Geology at the Royal Tyrrell Museum in Drumheller, Alberta, where he has worked for the past 20 years. He received a B.Sc. in Zoology from the University of Massachusetts in 1977, an M.A. in paleontology from the University of California, Berkeley, in 1981, and a Ph.D. in Geology from the University of Toronto in 1987. His primary research interests include the study of dinosaur paleoenvironments and vertebrate taphonomy (the influences on vertebrate fossil preservation). He has conducted field research in Canada, Argentina, Germany, China, Mexico, and the USA, and is currently engaged in three multiyear studies:

(1) the paleoenvironments and faunal changes in the Edmonton Group of southern Alberta,
(2) the stratigraphy and paleoenvironments of middle and upper Jurassic strata in the Junggar Basin of northwestern China, and
(3) the stratigraphy and paleoenvironments of upper Cretaceous non-marine strata in Coahuila, Mexico.

He is currently enjoying the ongoing interest in Alberta's dinosaurs and upper Cretaceous gas-bearing formations.

The grandfather of the buffalo: fossils in the culture and beliefs of the Nitsitapii

SPEAKER
Cory Gross
University of Calgary

7:30 PM
Friday, December 9, 2005

Mount Royal College
Room B108
4825 Richard Road S.W.
Calgary, Alberta

Traditionally, the Nitsitapii (Blackfoot) people occupied a territory stretching from the Rocky Mountains to the Great Sand Hills, and from the North Saskatchewan to the Yellowstone Rivers. This territory includes many sites of rich palaeontological significance.

Archaeological finds suggest that the Nitsitapii have been making ritual use of ammonite fossils for over 600 years. Called "iniskim", or "buffalo stones", segments of ammonite are included in a variety of sacred bundles and are central to rituals for summoning the buffalo during times of scarcity. Legends place the discovery of the iniskim at a site near the Siksika reserve, well known to fossil collectors.

Early adventurer Jean L'Heureux was the first to record the term "Grandfather of the Buffalo" in connection with dinosaur fossils of present-day Dinosaur Provincial Park. In a modern synthesis, Percy Bullchild associates dinosaur remains with an ancient race of snakes destroyed by Natosi, the Creator Sun.

The presentation will be held in conjunction with a Christmas Social, please bring a snack to be shared.

BIOGRAPHY

Cory Gross began his post-secondary education studying geology, and is currently finishing a degree in Museum and Heritage Studies. First Nations culture and history is his special academic focus, and this talk summarizes research begun in that program. Having an avid, lifelong interest in palaeontology, Cory has also been a past member of the APS executive.

INFORMATION

This event is jointly presented by the Alberta Palaeontological Society, Mount Royal College and the CSPG Palaeontology Division. For information or to present a talk in the future please contact CSPG Paleo Division Chair Philip Benham at 403-691-3343 or programs@albertapaleo.org. Visit the APS website for confirmation of event times and upcoming speakers: http://www.albertapaleo.org/

IHS Energy raises the bar—again

AccuMap has become the industry standard for desktop browse and query applications and has kept its market strength since its inception. Now, AccuMap's next generation product, Enerdeq™ Desktop, will raise the bar even higher.

AccuExpo 2005—unveiling the future

IHS Energy launched its next generation AccuMap product, Enerdeq Desktop, at AccuExpo 2005, a complimentary user conference held exclusively for IHS Energy customers on Nov 2nd & 3rd at the Telus Convention Centre.

AccuExpo was a forum to introduce new products, highlight developments in recent products, introduce new and growing datasets, and bring in high profile industry leaders to address important industry concerns. Over 1600 attendees came to both AccuExpo and the Customer Appreciation event. AccuExpo was the first look at Enerdeq and a chance to dialogue with IHS product experts, colleagues and world-renowned industry experts about the opportunities and challenges ahead.

The introduction of a next generation product was an exciting and significant announcement for IHS Energy.

Kris Howery, Manager, Marketing Communications, says, "Our user conferences are important events for connecting with our customer base. Hosting an event like AccuExpo over two full days provides a unique opportunity for our customers to network with key industry leaders and their peers and associates. We want to show our customers what we've done for them, will be doing for them, and ask how we can partner with them both today and in the future."

So why a next generation product?

The current state of our industry demands that companies be more productive and innovative to stay competitive. In turn, their professionals need the information access and integration to facilitate that competitive goal.

Enerdeq is a next generation tool that builds on the strength of AccuMap and will deliver greater data management in addition to data content. As well, building "a new AccuMap" in new technology means IHS can implement more of their customer's requests with a greater degree of expediency. The next generation AccuMap was a Canadian vision to meet these regional needs and quickly became a global product direction across the entire IHS enterprise.

"At AccuExpo we launched Enerdeq Desktop V1.0 and explained how we will smoothly transition our AccuMap/AccuLogs customers to this exciting new product," says Chris Jones, President, IHS Energy (Canada). "We received much positive feedback from our customers, including a lot of interest in test driving the first version."

Geared toward enhancing productivity with fast and up to the minute access to critical information, Enerdeq will increase the speed to develop new capabilities, remove technological limitations, increase flexibility for integrating propriety data, and provide one IHS platform to deliver global data more efficiently.

Jackie Forrest, Enerdeq Product Manager, says, "Our teams are working closely with our customers to build a new product that can truly address future needs. Customer input along the way is of utmost importance, and we've hosted a series of user sessions including focus groups, usability sessions, and beta testing at customer sites to gather that crucial guidance."

The AccuMap evolution continues

So what does Enerdeq mean for the future of AccuMap? Christine Bovaird, AccuMap Product Manager, comments that customers are gaining tremendous advantages in their day-to-day workflow. "This is a long term transition and the powerful developments continuing in AccuMap today are actually the "road map" for what our customers will experience in Enerdeq," says Bovaird. "AccuMap is a tool far too established and powerful to be replaced "overnight", but rather the new product will, over

time, take all that AccuMap is and even exceed its strength."

At AccuExpo Bovaird covered the many features coming to AccuMap users in 2006 including support for ESRI shapefiles, managing multiple user tops databases, improved Map Features, more Land data, support for SK grid v2.5, and shared components with Enerdeq Desktop. As well, AccuMap will soon support NAD 27/83 exports.

More data, better data and faster access—it's the IHS promise

With drilling activity in the Canadian oil and gas industry at an all time high, companies are even more reliant on fast, easy access to quality, timely data to enable them to make accurate decisions quicker. Brian Hall, Director, Data Services, says, "The requirement to analyze more data faster is compounded by the influx of change in our industry. This change directly impacts the way in which data and information are gathered, managed and prepared, for the decision making process."

IHS Energy's SuperFile set of datasets is the most complete file available to the Canadian oil and gas industry, and will meet the need for a new and dynamic data solution. Alberta SuperPipes was released in June, and a complete online demo is available from www.ihsenergy.ca

Also, in 2008 NAD83 replaces NAD27 as the datum interchange standard for all upstream Canadian spatial data and companies must be aware of the issues, scope, and significance of this change. Together with their partner Geomatics Data Management (GDM), IHS Energy will provide a full data conversion service to NAD83 compliance.

"We want to show our customers what we've done for them, will be doing for them, and ask how we can partner with them both today and in the future."

Chris Jones, President, IHS Energy (Canada) Ltd.

Global issues and the expert voice

IHS provides their customers opportunities to connect with leaders who objectively understand the issues affecting the decisions their companies are making on a daily basis, and AccuExpo brought in some of the best.

Cambridge Energy Research Associates (CERA, an IHS company) experts James Burkhard, responsible for CERA's short- and long-term global oil market outlook, and Michael Zenker, head of CERA's North America Natural Gas advisory service, were just two of the featured speakers at AccuExpo.

In their separate breakfast addresses, Burkhard and Zenker gave an inside look at how today's high oil prices and competitive environment could change in a flash in response to politics and power half a world away. As well, IHS Energy's own Pete Stark, Vice President of Industry Relations, joined AccuExpo to share his perspectives on the global scramble for oil and gas resources.

Says Jones, "the presentations by our colleagues from CERA (a key strategic addition to IHS Energy) illustrate the depth and breadth of our offerings, from global data, to best-in-class software, to leading industry expertise and insight."

Leading the way in 2006

With new products and strategic datasets, unparalleled partnerships, a global footprint and access to industry thought-leaders internationally, IHS customers are empowered and fully supported anywhere they go in their search for oil and gas both today and tomorrow.

IHS Energy is committed to being a trusted source for critical information and solutions that improve business results. Enerdeq Desktop in the Canadian market will soon prove itself as the leading solution for managing information access and analysis in our challenging industry.

Call IHS Energy today and ask what they can do for you. Enerdeq v.1.0 trials are available now.

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ROCK SHOP

Coalbed methane: an unconventional reservoir with challenging petrophysical needs

SPEAKER
John R. Kovacs
Schlumberger Canada Ltd.

12:00 Noon
Tuesday, December 13, 2005

ConocoPhillips Auditorium
(3rd Floor – west side of building)
401-9th Avenue SW
(Gulf Canada Square)
Calgary, Alberta

The Coalbed Methane (CBM) business in Canada began in earnest in 2000. The Pan Canadian – MGV partnership and their Horseshoe Canyon exploration brought an exciting new dimension to the conventional oil and gas exploration in the Western Canada Sedimentary Basin. Unlike previous CBM exploration and drilling, this initiative proved to be the beginnings of the first commercial CBM production.

From the first few wells in 2000, activity is growing dramatically with PSAC forecasting two to three thousand CBM wells for 2005.

This explosion of drilling and production brings with it new challenges for the geological, petrophysical, completion, and production communities, including the Canadian Society of Petroleum Geologists members. Typical lithology, porosity, and water saturation techniques we are familiar with in conventional reservoirs have little application in coals. Alternate methodologies using wireline logs and core must be considered.

With well production similar to shallow gas wells (3.4 e3m3/Day or 120,000 mscf/day), economics play an important role. Maximizing financial returns from coalbed methane production requires optimizing the production rates and gas recovery, while keeping development and operational costs low. A key component of this process is optimizing production well design through: well placement, reservoir evaluation, completion, stimulation, and production. Selecting and implementing project development strategies requires knowledge about important subsurface characteristics of target CBM reservoirs.

Well evaluation is the primary means of obtaining this information. In particular, wireline logs provide rapid, continuous, in-situ subsurface measurements of key properties relating to CBM resources, providing valuable input to project development decisions.

This luncheon talk will focus on a variety of unconventional measurements and interpretation techniques to aid in resource evaluation and production understanding.

BIOGRAPHY
John has 32 years of experience with Schlumberger in Canada and is currently the Unconventional Gas Business Development Manager. After graduating with a Bachelor of Science degree in Mechanical Engineering from the University of Calgary in 1973, John joined Schlumberger. His field career spanned seven years throughout Canada. A three-year operations manager position in Grande Prairie was followed by a number of technical sales and sales coordination positions in Calgary.

John began his unconventional reservoir pursuit in 1990 and has been extensively involved in the Canadian CBM growth since 2000. John has authored/co-authored numerous new technology and application presentations. He is a member of CSUG, CWLS, and APEGGA and served as the President of the Canadian Well Logging Society 2002-2003.

INFORMATION
All EPRD noon-hour talks are free and do not require registration. Non-CSPG members are also welcome to attend. Please bring your lunch. If you would like to join our email distribution list, suggest a topic, or volunteer to present a talk, please send a message to Michelle.Hawke@bp.com or fredhyland@mcleay.ab.ca

JACK PORTER-
VIGNETTES OF CANADIAN PETROLEUM GEOLOGY

J.B. TYRRELL'S FIELD WORK IN THE SOUTHERN REGIONS OF THE WESTERN CANADA SEDIMENTARY BASIN 1883-1891

For nine consecutive field seasons, between 1883 and 1891, Joseph Tyrrell's early career with the Geological Survey of Canada primarily involved examining, describing, and positioning representative sections of exposed bedrock occurring in the southern regions of the Western Canada Sedimentary Basin. As well, his duties included the recording of observations pertaining to the occurrence of natural resources, principally metallic and nonmetallic minerals, arability of land traversed, and the linguistics and customs of local natives. He and his party travelled progressively eastward from the Crow's Nest and Kicking Horse passes of the Rocky Mountains to the Basin's truncated edge in Manitoba. Donaldson B. Dowling served as Tyrrell's field assistant during this period with the exception of the first field season.

The mode of travel across this extensive area was on horseback or by buckboard with accompanying provisions and equipment freighted by Red River carts. The exposures of bedrock forming the islands and occurring along the shorelines of Lake Manitoba, Lake Winnipegosis, and Lake Winnipeg were reached by a sailboat known as a fishing smack. The bedrock outcropping on smaller lakes and along interconnecting steams and rivers were accessed by canoe. Distances between stops along prairie or parkland cart trails were measured by use of an odometer, which was attached near the hub and axel tip of the rear wheels of the buckboard.

Because of the Pleistocene drift cover over much of the region Tyrrell was assigned to investigate, access to the bedrock geology was restricted to the badlands, and to incised river and stream valleys. Alfred R.C. Selwyn, who became the second director of the Geological Survey of Canada in 1869, had made, during his tenure in 1873, a reconnaissance survey to ascertain the degree to which bedrock was exposed between Fort Garry (Winnipeg) and Rocky Mountain House, the latter located near the junction of the Saskatchewan and Clearwater rivers. His northwest journey, by buckboard, took him along the Fort Carlton trail to Edmonton House and thence southwest to Rocky Mountain House. His disappointment stemming from the lack of exposed bedrock led him to report later that: "From Fort Garry westward, on the route which we followed, no exposures of solid unmoved rocks were seen till within a few miles of Edmonton. For the whole of this distance – 885.52 miles as measured by odometer, an universal mantle of drift and superficial deposits, sand, clay and gravel is spread over the face of the country." This observation unquestionably led him to recognize that it would require exploratory drilling not only to aid in the interpretation of the stratigraphic succession of the plains but also to access the potential for coal, water, and petroleum resources. Selwyn, while at Edmonton House, had examined coal seams exposed of the banks of the North Saskatchewan River.

Accordingly, Alfred Selwyn authorized a stratigraphic drilling program, which, subsequently, resulted in ten boreholes being drilled between 1873 and 1880. Commencing at Fort Garry, drilling sites ranged to the northwest as far as Fort Carlton on the North Saskatchewan River and to the Souris River in the southwest. The drilling equipment, weighing six tons, was purchased in New York and was conveyed by the Northern Pacific Railroad to its terminus at Moorhead, Minnesota on the Red River. From there it was placed on a barge and towed down the Red River by a steamboat to Fort Garry. It consisted of a "Diamond Drill, a boiler with force pump and fittings, gearing for working the drill by horsepower, 400 feet of $2^1/_2$" diameter, tubular drill rods, 150 feet of 3" tubing (wrought iron), annular and hollow boring heads with diamonds, and an independent steam pump with hose and other fittings." This drilling equipment and boiler were transported along the Carlton Trail by oxen-drawn wagons, a tedious and time-consuming task. Derricks were built on the drill sites utilizing local timber. Because of the limited capability of the drill to penetrate the boulder clay and loose gravel associated with the glacial drift, six of the Geological Survey of Canada's stratigraphic boreholes failed to reach bedrock. The Geological Survey of Canada's third borehole was known as McKenzie's Farm, Rat Creek and was located 66 miles west of Fort Garry (W1/2, Sec. 35, Twp. 11, Rge. 8WPM). It was suspended in 1873 after bottoming in 70 feet of glacial drift. The following year the hole was re-entered and drilling reached a total depth of 210 feet, penetrating 88 feet of glacial drift and 122 feet of bedrock. Alfred Selwyn (1876) postulated that the "cream colored limestone shewn (sic) in the section is certainly either of Devonian or Silurian age" and further stated that "The dark grey fine-grained rock beneath the limestone is unlike any rock, that has so far as I am aware, been observed cropping out in this region." It now appears that the entire section of bedrock penetrated was probably of Middle Jurassic (Amaranth/Watrous formations) in age and that the underlying "grey rock" was actually anhydrite. No coal was encountered, and Selwyn correctly concluded that coal-associated sediments could not be found in sediments underlying the "first prairie steppe." This borehole appears to have been the first to have documented the penetration of pre-

Geological Survey of Canada field party resting after a lunch stop near the Riding Mountain – Duck Mountain area of southwestern Manitoba during summer of 1887. J.B. Tyrrell, the party chief, is seated on the left in front of buckboard and his assistant, D.B. Dowling is seated between the two freighters. Note the Red River carts were pony drawn as evident from harness. Photograph credit: Glenbow Archives NA-302-8

Pleistocene sediment associated with the Western Canada Sedimentary Basin. Likewise, the published subsurface stratigraphic log, based on rock cuttings of the McKenzie's Farm, Rat Creek borehole by Alfred Selwyn has the dual distinction of being the first recorded stratigraphic log, depicted by a geologist, in the Basin.

The second stratigraphic test to have encountered bedrock was the Survey's Fort Pelly borehole (Lsd 15 or 16, Sec. 8, Twp. 34, Rge. 32 WPM) drilled at Livingstone, in the district of Assiniboia, at the confluence of Snake (Spruce) Creek and Swan River. The location of the now-abandoned site of Livingstone had originally been selected because it was situated on Sanford Fleming's proposed north route of the Canadian Pacific Railway, as well as the Dominion Telegraph line. The Northwest Mounted Police had established a headquarters there in late October, 1874, during Fort Pelly's first year of operation. Known as the Swan River Barracks, it was established there because Livingstone had been selected as a temporary capital of the Northwest Territories. In 1876, following the massacre of Custer and his 7th Cavalry by the Sioux and Cheyenne at the Little Big Horn River in Montana on June 27th, 1876, the Swan River Barracks were closed as the police were transferred to new quarters at Fort Mcleod. The fear of an influx of Sioux into Canada and the perceived problems that conceivably could ensue, necessitated the transfer. Concomitantly, a southern prairie route of the Canadian Pacific Railway, which was to later materialize, had taken precedence over Fleming's northern parkland route.

The Fort Pelly borehole suspended drilling in late October, 1874, having reached a depth of 100 feet into the glacial drift. The hole was re-entered the following spring and drilled another 501 feet, exceeding the drilling contract by one foot. The pre-Pleistocene section penetrated a predominately shale sequence assigned to the upper Cretaceous Riding Mountain Formation of grey shale, with upper and lower Cretaceous darker grey shale of the Vermilion River Formation forming the much thicker part of the sequence penetrated. The Fort Pelly borehole can be recognized as being the first boring to have drilled into Cretaceous bedrock in the Western Canada Sedimentary Basin.

The last four wells to be drilled in the program were completed between July and October in 1880. They were located along a 115-mile corridor in close proximity to the international border and Souris River region. It was Alfred Selwyn's plan: "to obtain more precise information respecting the Tertiary

(Continued on page 26...)

Thank you fo

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Q-Byte Services, A Division of IBM Canada
Q'max Solutions Inc.
R E Newman Exploration Consultants Ltd.
Rakhit Petroleum Consulting Ltd.
Recon Petrotechnologies Ltd.
Reeves Wireline
Regent Resources Ltd.
Reinson Consultants Ltd.
Response Seismic Surveys Ltd.
RGI Resource GIS and Imaging Ltd.
RGS Consultants Ltd.
RigSkills
Roxar Software Solutions
Rubicon Energy Corporation
Samson Canada Ltd.
Schlumberger Information Solutions
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Seismic Processing Ltd.
Sensor Geophysical Ltd.
Serpa Petroleum Consulting Ltd.
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Shell Canada Ltd.
Sherwin Geological Consulting Ltd.
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Spirit Energy Inc.
Spirit Ridge Vineyard Resort & Spa
Sproule Associates Limited
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Suncor Energy Inc.
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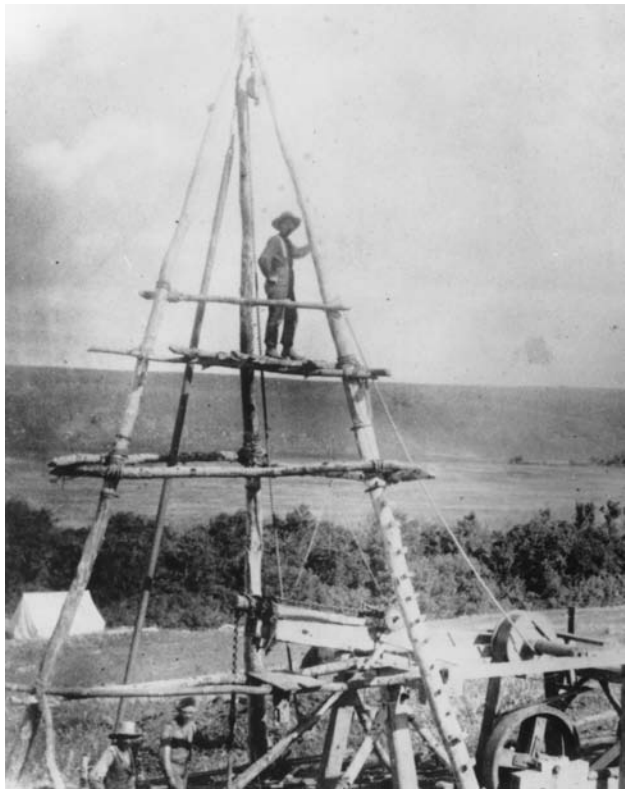
Talisman Energy Inc.
Taurus Exploration Ltd.
TELUS Convention Centre
Thunder Energy Inc.
Tiger Energy Limited
Total E&P Canada Limited
Trace Energy Services
TRIVISION Geosystems Ltd.
True Energy Inc.
Tucker Wireline Services
United Oil & Gas Consulting Ltd.
University of British Columbia
University of Brandon
University of Calgary
University of Tulsa
Upton Resources Inc.
Varidata Surveys Ltd.
Varco Canada
Veridata Surveys Ltd.
Veritas GeoServices
W.L. Gore & Associates Inc.
Waterous Securities Inc.
Wellsite Gas Detection Inc.
Wellsight Systems Inc.
Wild Rose Geological Services
Wildcat Scouting Services
Wood MacKenzie
Wyn Cal Resources Ltd.
Xperience Media
YMCA
Zokero Inc.

(...Continued from page 23)

lignite-coal seams of the Souris River, more especially as regards their eastern extension from the known outcrops in the vicinity of Roche Percée." Two of the four boreholes bottomed in the Pleistocene. The other two, Souris River and Turtle Mountain, reached total depths of 295 feet and 200 feet respectively – both having bottomed in the Tertiary Ravenscrag Formation. The drilling contractors were from Petrolia, Ontario and it was from there that the drilling works, engine, and boiler were transported by horse-drawn wagons from West Lynne, where the Red River crosses the international border, to Roche Percee. Of the two boreholes penetrating Tertiary bedrock, only the Souris River borehole encountered coal, with a six-foot seam of lignite intersected.



Geological Survey of Canada Souris River borehole flanking Souris River, near Roche Percée, district of Assiniboia in the summer of 1880. This Canadian-type pole rig was exploring for Tertiary coal seams. It was successful in encounting a six-foot seam, having bottomed at a depth of 295 feet in the Paleocene Ravenscrag Formation. The drilling equipment was transported from Petrolia, Ontario. Note walking beam and attached chain supporting drill poles. Upright bailer can be seen on left, supported by improvised timber derrick. Photograph credit: Glenbow Archives NA-302-10.

The terminology applied to Cretaceous and Tertiary strata described by George Dawson, was derived from interrelating the stratigraphy of his type sections with descriptions assigned to the prevailing American nomenclature. Formational names, such as Dakota, Benton, Niobrara, Pierre, Fox Hills, and Fort Union had been given to type sections of stratigraphic assemblages exposed along the banks of the Upper Missouri River by T.F.B. Meek and F.V. Hayden and were published in 1862 (Philadelphia Academy of Natural Sciences Proceedings, vol. 13). All the forementioned formational names, with the exception of Fox Hills, were named after military posts, which would indicate that the location of the formation's type section was identified by its proximity to a particular Upper Missouri fort.

George Mercer Dawson, however, did not entirely borrow Meek's and Hayden's nomenclature assigned to their Missouri River Valley stratigraphic sections, which he may have believed to be coeval with some of his described sections. As a result of his early geological mapping in the area of the Bow and Belly Rivers of Southern Alberta, with special reference to coal deposits (Geological Survey of Canada, Report of Progress 1880-1882), as well as his collaboration with his assistant, R.G. McConnell, in the same region (1882-1884); Dawson introduced local geographic names to identify his type Upper Cretaceous sections, namely: Belly River group (1883), St. Mary River Formation, the latter with McConnell; the Upper Cretaceous/Paleocene Willow Creek Formation (1883) and Paleocene Porcupine Hills Formation (1883) as well as his Tertiary Lignite Formation (1875) (Ref.: 1960, Workman, L.E., et al: Lexicon of Geologic Names in the Western Canada Sedimentary Basin and Arctic Archipelago, pub. Alberta Society of Petroleum Geologists, pp. 31, 139, 278, 300, and 371).

The resolutions of coeval stratigraphic sections were greatly aided by paleontologist F.B. Meek's publication of 1876 entitled: "A report on the invertebrate Cretaceous and Tertiary fossils of the Upper Missouri Country, United States Geological Survey, Terr., vol. 9, plates." His counterpart in Canada was Joseph Frederick Whiteaves, paleontologist with the Geological Survey of Canada. He was appointed by Director Selwyn in 1876. To quote Morris Zaslow, (Reading the Rocks – The Story of the Geological Survey of Canada 1842-1972, p.125) who refers to Whiteaves: "aid in identifying the field men's fossil collections from their widely-scattered areas of operations, and helping the officers with their correlations by establishing the position of their fossils in the stratigraphic column."

George Dawson was permitted leave from the Geological Survey of Canada to serve as Canada's official geologist and botantist on the North American Boundary Commission during the period 1873 to July, 1875. In the summer of 1874, Dawson was engaged in fieldwork for the Commission in the badlands south of the Metis settlement of Wood Mountain in what is now south-central Saskatchewan. The settlement was located on Traders Road, a Red River cart trail, which ran southwest and led to the trading post of Fort N. J. Turney on the Frenchman River in Montana.

George Dawson composed a general section derived from conical-shaped exposures of alternating sand, sandstone, arenaceous claystone, and basal grayish-black claystone, which represented a combined thickness of 320 feet. He reports that the "whole of the beds are conformable and horizontal to the eye." Surprisingly, this composite section included the junction of the Upper Cretaceous and Tertiary. Dawson subdivided his section into four units, based on their lithologic characteristics and sedimentary features. He identified them by letters of the Greek alphabet, which in descending order he named: alpha, beta, gamma, and delta, whose thicknesses he recorded as 50, 150, 80, and 40 feet, respectively. Near the base of his beta unit, he discovered a caudal vertebra of a dinosaur, which was identified by Edward D. Cope of the American Museum of Natural Histroy as belonging to a category of herbivores known as duck-billed dinosaurs of the class Hadrosaur. Also associated with this biostratigraphic zone, were fragments of other reptilian fossil bones, including those of turtles. The middle and upper portions, above the dinosaur evidence, were lignite-bearing, containing three coal seams, varying in thickness from one to two feet. George Dawson included his alpha and beta (coal-bearing units in his Lignite Tertiary Formation (Ravenscrag). He assigned the underlying two units of his division, gamma and delta, to the Cretaceous Frenchman Formation. With the former, he stated: "This bed, I believe, represents group No. 5 of the Cretaceous Fox Hill (sic) of Meek and Hayden." (1875, Dawson, G.M.; Report on the Geology and Resources of the Region in the vicinity of the 49th Parallel from the Lake of the Woods to the Rocky Mountains; North American Boundary Commission, 879 pp. and maps, pub., Dawson Brothers, Montreal; chap. V, pp. 103-106, Plates VI and VII). The Hadrosaur evidence, which George Dawson found near the base of his beta unit, may well be coeval with the zonal guide fossil, Triceratops, marking the closure of the Cretaceous period.

To be continued...

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CANADIAN SOCIETY OF PETROLEUM GEOLOGISTS 2006 EXECUTIVE COMMITTEE

The Canadian Society of Petroleum Geologists takes great pleasure in announcing the Executive Committee for 2006. The new Executive will take office following the Annual General Meeting at the Telus Convention Centre on January 10, 2006.

PRESIDENT – JAMES REIMER

BIRTH: Kitchener, Ontario (1955)

EDUCATION: Hons. B.Sc. Geology, University of Waterloo (1978); M.Sc. Geology, University of Waterloo (1980); Canadian Securities Course (1997)

EXPERIENCE: 1980-94, Home Oil Company Ltd.; 1995-96, Stampeder Exploration Ltd.; 1997-2001, Encal Energy Ltd.; 1999-2001, 2002-03, Race Rocks Resources Ltd.; 2004-present,Result Energy Inc.

PROFESSIONAL MEMBERSHIPS: CSPG, APEGGA

CSPG ACTIVITIES: Chairman, Hydrogeology Division (1995-96); General Co-chairman GeoTriad '98, CSPG-CSEG-CWLS Joint Annual Convention (1998); HTD Technical Session Co-chair, 2002 Annual Convention

PUBLICATIONS: Numerous oral papers and short course notes concerning the occurrence and origin of Hydrothermal Dolostones (HTD) and related facies

AWARDS: CSPG Undergraduate Award (1977); Best Convention Paper (1991); CSPG Link Award (1994); CSPG Tracks Award (1996); CSPG President's Award (1998)

VICE-PRESIDENT – COLIN YEO

BIRTH: Dundas, Ontario (1951)

EDUCATION: Hons. B.Sc. Geology and Geography, McMaster University (1974)

EXPERIENCE: 1974-1999, Geologist, Petrophysicist and Team Leader exploration, exploitation and production business units, Amoco Canada Petroleum Co. Ltd.; 1999-2000, Evaluation Geologist, Acquisitions and Divestitures, Petrorep Resources Ltd.; 2000-present, Technical Advisor, Area Manager Shallow Gas Business Unit, Evaluation Geologist Acquisition and Divestitures, EnCana Corporation.

PROFESSIONAL MEMBERSHIPS: CSPG, APEGGA, CSEG, CWLS, AAPG

CSPG ACTIVITIES: Media and Public Affairs (1977-1980), Art Event (1985-1987), History and Archive Committee (1988-1992), Annual Convention Core Conference Chairman (1995), Executive Committee Services Director (1999-2000), Volunteer Management Committee (2001-present)

PUBLICATIONS: Co-authored papers on exploration activity in the WCSB; conducted many field trips within the Calgary – Banff corridor; several presentations to high school students in Alberta

AWARDS: Service and Volunteer Awards (1992, 2002, 2004)

FINANCE DIRECTOR – MARTY HEWITT

BIRTH: Hamilton, Ontario (1959)

EDUCATION: Hons. B.Sc. Geology, McMaster University (1982);Third European Summer School for Advanced Management, University of Leeuwarden,The Netherlands (1990); MBA, University of Calgary (1991)

EXPERIENCE: 1982-2000, Petro-Canada; 2000-02, PanCanadian Gulf of Mexico, Inc.; 2002-04, EnCana Oil & Gas (USA) Inc.

PROFESSIONAL MEMBERSHIPS: CSPG,AAPG, APEGGA, SEG, SPE, GSL, HGS

CSPG ACTIVITIES: Annual Convention Field Trips Committee (1982); Publications and Sales Committee (1982-85); Publications and Sales Committee - AAPG Publications, Chair (1986-87); Student Industry Field Trip (1986-87); Open Golf Tournament Committee (1991); 50th Anniversary Fund (1992-94);Annual Convention Finance Committee Chair (1996)

AWARDS: Service Award (1996); Volunteer Award (1998)

(Continued on page 30...)

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ASSISTANT FINANCE DIRECTOR – PETER HARRINGTON

BIRTH: Pembroke, Ontario (1961)

EDUCATION: B.Sc. Geology, Carleton University (1984); MBA, University of Calgary (1991)

EXPERIENCE: 1984-86, Staff Geologist, Sorrel Resources Ltd.; 1986-93, Exploration/Exploitation Geologist, Unocal Canada Limited; 1993-present, President, Rudyard Oil & Gas Ltd.

PROFESSIONAL MEMBERSHIPS: CSPG, AAPG, SEPM, CSEG, APEGGA

CSPG ACTIVITIES: Continuing Education Committee (1985-87); 1986 CSPG Annual Convention Committee - Liaison (1986); Advertising Committee (1987-1992, Chairman 1988-92); Publication Sales Committee (1987-1997, Chairman 1993-97); Exploration Update '89 Convention Committee – Logistics (1987-1989); 1990 CSPG Convention Committee – Field Trips (1989-1990); Membership Directory Committee (1990-1992); 1992 AAPG-CSPG Annual Convention Committee – Field Trips (1991-92); Open Golf Tournament Committee (1990-1991); Canadian Potential Gas Committee (1993-94); Publication Committee and Publication Review Board (1993-97); 1996 CSPG Annual Convention Committee – Exhibits (1994-1996); 1997 CSPG-SEPM Joint Convention Committee – Exhibits (1995-97); GeoCanada 2000 Convention Committee – Finance (1998-2000); Stanley Slipper Gold Medal Award Committee (1999-2005)

PUBLICATIONS: Various oral and poster presentations at CSPG conventions focusing on exploration activity and successes in the Western Canada Sedimentary Basin

AWARDS: CSPG Service Awards (1989, 1997, 2000); CSPG Tracks Awards (1991, 1996); People's Choice Award for an Oral Presentation, GeoCanada 2000 Convention

PROGRAM DIRECTOR – MEMORY MARSHALL

BIRTH: Moose Jaw, SK (1974)

EDUCATION: B.Sc. Specialization Zoology, University of Alberta (1997); B.Sc. Specialization Geology, University of Alberta (1999)

EXPERIENCE: 1999-2004, Senior Geologist, Husky Energy Inc.

PROFESSIONAL MEMBERSHIPS: CSPG, APEGGA

CSPG ACTIVITIES: Rock the Foundation Convention – Core Meltdown Subcommittee (2001); Diamond Jubilee Convention – Special Events Co-Chair (2002); I.C.E. Joint Conference – Marketing/Publicity Co-Chair (2004)

AWARDS: CSPG Volunteer Award (2001), CSPG Service Award (2002

ACTING PROGRAM DIRECTOR – DOUG HAMILTON

BIRTH: Pauls Valley, Oklahoma (1960)

EDUCATION: Geological Technology, Southern Alberta Institute of Technology (1983); B.Sc. Geology, University of Saskatchewan (1988)

EXPERIENCE: 1988-95, Geologist, Core Laboratories; 1995-98, Manager, Geological Services, AGAT Laboratories; 1998-2000, President, W.D. Hamilton Consulting Inc.; 2000-04, Geologist, EnCana Corporation

PROFESSIONAL MEMBERSHIPS: CSPG, AAPG

CSPG ACTIVITIES: Student Industry Field Trip - Committee member (1993-2004); Student Industry Field Trip - Chairman (2000-02); CSPG Educational Trust Fund - Director (2002-04)

PUBLICATIONS: Numerous oral presentations and written papers on regional geology and fracture reservoir characterization

AWARDS: CSPG Volunteer Award (1998, 2000); CSPG Service Award (2003)

ASSISTANT PROGRAM DIRECTOR – NADYA SLEMKO SANDY

BIRTH: Edmonton, Alberta (1975)

EDUCATION: B.Sc. Honours, Geology, University of Alberta; M.Sc., Earth and Atmospheric Sciences, University of Alberta

EXPERIENCE: 2000-present, Geologist, Imperial Oil Resources

PROFESSIONAL MEMBERSHIPS: CSPG, APEGGA

CSPG ACTIVITIES: 2002 - present CSPG University Outreach Committee (Chair 2004 - present)

AWARDS: Volunteer Award (2005)

SERVICE DIRECTOR – SHANNON NELSON EVERS

BIRTH: Edmonton, Alberta (1972)

EDUCATION: B.Sc. Geology, University of Alberta (1996)

EXPERIENCE: 1998-2005, Geoscientist, ConocoPhillips Canada, 2005-present, EnCana Oil and Gas Ltd.

PROFESSIONAL MEMBERSHIPS: CSPG

CSPG ACTIVITIES: Rock the Foundation Convention – Core Meltdown Subcommittee (2001); Diamond Jubilee Convention – Special Events Co-Chair (2002); I.C.E. Joint Conference – Marketing/Publicity Co-Chair (2004)

AWARDS: CSPG Volunteer Award (2001), CSPG Service Award (2002)

ASSISTANT SERVICE DIRECTOR – DAVID NEWMAN

BIRTH: Bay Roberts, Newfoundland, 1971

EDUCATION: B.Sc. Earth Sciences (Geology), Memorial University of Newfoundland, 1998

EXPERIENCE: 1998, Geophysical Technician, Earth Signal Processing Ltd.; 1998-2000, Junior Geologist, Sproule Associates Ltd.; 2001, Wellsite Geologist, McLeay Geological Consultants Ltd.; 2001-2003, Exploration Analyst, Canadian Discovery Ltd.; 2003-present, Geologist, McDaniel & Associates Consultants Ltd.

PROFESSIONAL MEMBERSHIPS: CSPG, AAPG, APEGGA, CWLS

CSPG ACTIVITIES: 2002 Diamond Jubilee Convention – Registration Sub-Committee; 2001 Rock the Foundation Convention – Registration Chair; 1999 Digging Deeper Convention – Registration and Logistics Chair

AWARDS: CSPG Service Award (1999, 2001, 2002).

COMMUNICATIONS DIRECTOR– ASHTON EMBRY

BIRTH: Washington, DC (1946)

EDUCATION: B.Sc. (Hon), U. of Manitoba (1968); M.Sc., U. of Calgary (1970); Ph.D., U. of Calgary (1976)

EXPERIENCE: 1970-72, Exploration Geologist, Mobil Canada; 1976-77, Exploration Geologist, BP Canada; 1977-present, Stratigrapher, Geological Survey of Canada

PROFESSIONAL MEMBERSHIPS: CSPG, AAPG, ISSC

CSPG ACTIVITIES: CSPG Volunteer since 1973 - currently Communications Director; Chair, Publications Committee; Chair, Stratigraphic Nomenclature Committee; Member, Honorary Membership Committee; Technical Program Coordinator, 2005 AAPG/SEPM Convention; Vice-Chair, International Subcommission on Stratigraphic Classification (ISSC)

PUBLICATIONS: Arctic geology, sequence stratigraphy, vitamin D and MS

AWARDS: CSPG Link Award, 2004, SEPM Best Oral Presentation, 2004 AAPG Convention

OUTREACH DIRECTOR – DAVID MIDDLETON

BIRTH: Victoria, B.C. (1961)

EDUCATION: Geology & Geophysics, University of Calgary (1982); Continuing Education Petroleum Technology, Southern Alberta Institute of Technology (1987)

EXPERIENCE: 1980-84, Geological Research Technician, Petro-Canada Geological Research & Services; 1985-92, Exploration Technologist, Petro-Canada Foothills & Frontier Exploration; 1992-97, Geological Systems Coordinator, Petro-Canada Geological & Geophysical Applied Technology; 1998-2004, Geoscience & Geomodeling Applications Specialist, Petro-Canada Upstream Information Systems

PROFESSIONAL MEMBERSHIPS: CSPG, AAPG, CSEG, SEG, SPE

CSPG ACTIVITIES: Mixed Golf Tournament Committee (2001-04); GeoMathematics and Computer Applications Committee (2003-04)

(Continued on page 32...)

(...Continued from page 31)

PAST PRESIDENT – JEFF PACKARD

BIRTH:	Montreal, P.Q. (1952)
EDUCATION:	B.Sc. Geology, Concordia University (1976); Ph.D. Geology, University of Ottawa (1985)
EXPERIENCE:	1974-77, uranium exploration, Urangesellshaft Canada; 1983-86, NSERC Visiting Scientist and contract, Geological Survey of Canada; 1986-90, carbonate specialist,Texaco Canada Resources; 1990-92, Senior Geologist, Imperial Oil; 1992-98, consultant and senior partner in Rhomb Carbonate Consulting; 1998-2001, Senior Geologist, Poco Petroleum; 2001-2004, Senior Geologist, Burlington Resources
PROFESSIONAL MEMBERSHIPS:	CSPG
CSPG ACTIVITIES:	General Chair of Canadian Reef Inventory Project (1985-89); CSPG Executive candidate (1988); co-founder of Carbonate Liar's Club of Calgary (1988); Geological Atlas Project (1989-94); CSPG Visiting lecturer (1992-93), technical coordinator for carbonate papers at CSPG Annual Convention (1994); CSPG Winterburn Advantage Committee (1995); Co-General Chair, Joint CSPG-SEPM Convention 1997 (1995-97); Co-Convener 2004 Dolomite Conference (2002-04)
PUBLICATIONS:	numerous written papers and oral presentations on carbonate geology of WCSB and Arctic Canada
AWARDS:	CSPG Tracks Award (1987); CSPG President's Award (1999), CSPG Service Award, 2005

CSPG 2005
STRATEGIC PLANNING SESSION

INTRODUCTION

Over the last decade, our industry and profession have experienced an unprecedented and accelerating rate of change. To highlight but a few of these changes, we can cite:

- Focus on "resource" plays
- Substantially increased Heavy Oil production
- Retreat from high-risk, high-reward plays (Paleozoic)
- Commodity price
- Resource ownership
- Company demographics (loss of Canadian-owned mid-size, proliferation of juniors)
- Rise of the royalty trust
- Non-conventional plays (CBM)
- Digital environment
- Harvest mentality

At the same time the demographic of our profession and membership indicates that an alarming proportion are nearing retirement age. ***What does the combination of industry changes and our demographic profile, mean for the current and future health of the CSPG? How can and how should our Society appropriately respond?***

Given this situation, the CSPG Executive decided in 2004 to embark on a new strategic planning process. The purpose of this planning is to ensure that the CSPG continues to meet the needs of its members while adapting to foreseeable changes in the industry and in our profession.

THE PROCESS

The strategic planning process was formally initiated in the spring. In order to provide a basis for the planning background, three existing documents were first reviewed:

- 2004 CSPG Membership Survey
- Strategic Human Resources Study of the Upstream Petroleum Industry (Petroleum Human Resources Council of Canada)
- AAPG Strategic Plan

A facilitator was hired to lead us through the process. At a brainstorming session with the Executive, a number of questions and issues were raised and these became the basis of questionnaires which were sent out to a variety of stakeholders. Those stakeholders included a representation of members, oil and gas executives, university geological departments, government, other industry associations, and geoscience students. The feedback received from those stakeholders was compiled and used for a second working session. The issues and comments arising from the stakeholder survey fell into the following major categories:

- Demographics
- Legislation/Regulation
- Global Business/Economic Climate
- Science/Technology
- Social Values/Politics
- Other/Miscellaneous

The above became the background for a second working session which, in addition to members of the Executive, included a representation of the membership.

At the second working session Goals and Objectives were developed and these were subsequently prioritized by the Executive. ***They are now presented here for review and comment by the general membership.***

STRATEGIC DIRECTION FOR THE FUTURE

In order to address anticipated demographic challenges to the profession and to the Society, the board determined that for the foreseeable future the strategic direction for CSPG will be:

50% Ensuring the sustainability of the Society through serving the membership well and adapting to the ebb and flow of external conditions.

50% Supporting the sustainability and advancement of the profession.

15-YEAR PLANNING HORIZON: MISSION AND VISION

Vision: The Society will be nationally recognized as the premier technical organization supporting the petroleum geosciences in Canada.

Mission: The Society will advance the science of petroleum geology, foster professional development and esprit de corps of members, and promote national awareness of the profession to help facilitate the effective exploitation of Canada's hydrocarbon resources while maximizing the benefits to society.

Our Goals (not in order of importance)

- Advance the professional development of members;
- Foster the spirit of scientific inquiry;
- Advocate a positive national image of our profession emphasizing the role and contributions of petroleum geoscientists to society;
- Nurture a sense of pride and community for all Canadian petroleum geoscientists;
- Become indispensable to petroleum geoscientists and employers in Canada; and
- Inspire the petroleum geoscientists of the future.

Our Guiding Principles

- We promote environmentally sustainable exploration and production of petroleum and petroleum-related fossil fuels; and
- We collaborate with other relevant organizations to maximize positive benefits for our members and society at large.

(Continued on page 34...)

(...Continued from page 33)

GOALS, STRATEGIC OBJECTIVES, AND STRATEGIES

To achieve these goals, strategic objectives were developed for each. Tactical strategies were also developed for each objective. These strategies were prioritized by the members of the Executive and can be divided into:

High Priority:
Implement immediately or within one year

Medium Priority:
Implement in two to five years

Low Priority:
Implement in 5 or more years

The tactical strategies are not included in this document due to space limitations, but are available in the complete document which is posted on our website www.cspg.org

GOAL:
Advance the professional development of members

Strategic Objectives:
- Promote professional development and competency
- Provide networking skills training and opportunities
- Contribute to the specific and significant development of junior members
- Foster communication and understanding between different disciplines engaged in the petroleum sector
- Encourage retired members to publish non-refereed papers and to pass along their knowledge

GOAL:
Foster the spirit of scientific inquiry

Strategic Objectives:
- Facilitate financial and specific project support, guidance and recognition for graduate and undergraduate research
- Provide multiple arenas for presentation and debate of multidisciplinary collaborative efforts
- Partner with the broader scientific community in order to increase public perception and understanding of science

GOAL:
Advocate a positive national image of our profession emphasizing the role and contributions of Petroleum Geoscientists to society

Strategic Objectives:
- Work with the newly forming Canadian umbrella geoscience organization in its national advocacy role
- Get involved in public outreach in order to foster awareness
- Consider an Executive Director position whose principle raison d'etre is to be the "Face of the Society" to the public
- Partner with the broader scientific community in order to increase public perception and understanding of science in general.
- Enhance the national presence of the Society

GOAL:
Nurture a sense of pride and community for all Canadian Petroleum Geoscientists

Strategic Objectives:
- Recognize and celebrate milestone contributions to the petroleum industry, society, etc.
- Provide opportunities for social interaction
- Take a lead role in promoting and facilitating major technical petroleum geoscience related events outside Calgary

GOAL:
Become indispensable to Petroleum Geoscientists and employers in Canada

Strategic Objectives:
- To be "the source" for convenient, cost-effective technical information, intellectual exchange, and professional development

GOAL:
Develop the Petroleum Geoscientsts of the future

Strategic Objectives:
- Collaborate with universities to promote curricula best-suited to the petroleum geoscience profession
- Advocate for the petroleum sector amongst geoscience undergraduates across Canada
- Encourage junior high school and high school students to pursue geoscience, and in particular, petroleum geoscience, as a career
- Lobby governments to include geoscience in the high school curriculum

DISCUSSION

An examination of the above strategies indicates that our high-priority strategies are those that we are already doing and are doing well. The challenge is to determine which of the medium-priority items should be acted upon and in what timeframe.

Your Executive is anxious to proceed further by developing tactical plans to achieve our goals. Prior to doing that, however; we would like feedback from the membership.

Please note that an extended version of this strategy, including tactics, is available on the website at www. cspg.org/strategic_plan.html. To provide feedback, please send your comments/suggestions by January 31, 2006, using the e-mail subject heading "CSPG Strategy", to:

Craig Lamb
craig.lamb@huskyenergy.ca

Or to the office:
Tim Howard
tim.howard@cspg.org

Regular mail:
CSPG Strategy
c/o CSPG Office
#160, 540 5th Ave SW
Calgary, AB T2P 0M2

GEOSCIENCE MIXER 2005

BY PENNY COLTON/SHAHEEN KHAN

On Tuesday September 27th, approximately 180 people – including about 50 students and CSPG members – attended the CSEG-hosted 2005 SEG Distinguished Instructor Short Course (DISC). The Talk was entitled "Insights and Methods for 4D Reservoir Monitoring and Characterization" by Rodney Calvert.

CSPG, CSEG, and APEGGA co-sponsored a bus for the U of A students, which left Earth Science Building in Edmonton at 5 a.m. (Doug Schmitt from the U of A, monitored the coach). The DISC course instructor, Rodney Calvert, based in Houston with Shell, had canceled the course on the preceding Friday in order to evacuate his family from Houston due to the predicted arrival of Hurricane Rita. By Sunday, because current technology allowed planners to take advantage of 4D weather monitoring, he was able to re-plan and catch a flight to Calgary – and the DISC course was on again for Tuesday. Everyone scrambled to undo Friday's emails with Monday's updates. Rodney included slides showing the history of the tracking and projections of Hurrican Rita's path as an illustration of the adaptability in planning provided by up-to-date technology and real-time 4D tracking of earth properties.

A main point of the course was that 4D is cost-effective and easy because a survey doesn't have to be perfect nor noise-free in order to have value for reservoir management The benefits of monitoring 4D changes in a reservoir come primarily from taking differences between surveys, often through pseudo-seismic impedance rather than reflectivity. The increased integration of this information with engineering planning, is gaining recognition by many of the majors.

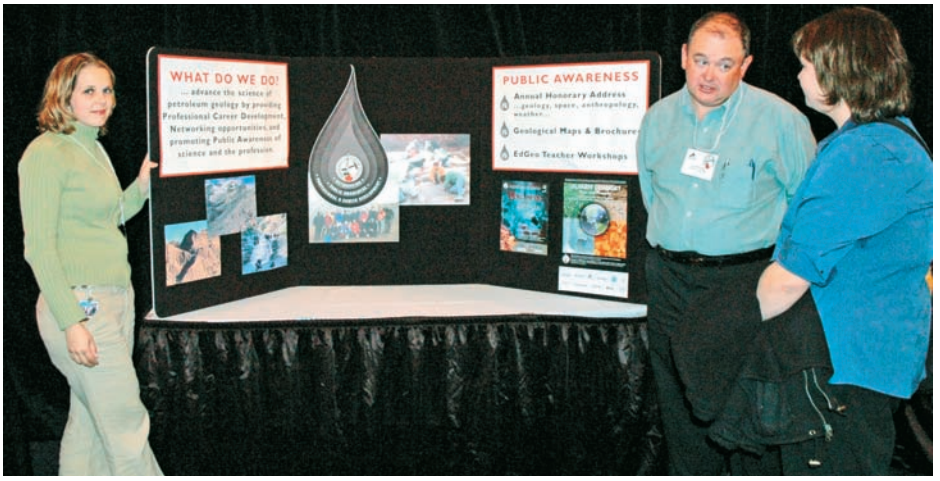

Photo: CSPG booth and volunteers, Erin Crerar, Dave Middleton CSPG Outreach Director, and Dr. Michelle Spila, geology instructor at U of Calgary.

The Geoscience Mixer was held right after, and next door to, the DISC Course. This mixer is coordinated by the APEGGA University Student Liaison Committee (composed of representatives from industry, faculty, and, most importantly, executives from the undergraduate Student societies in geology, geophysics, and engineering). Attendance at the mixer was just over 130 people – 50 industry professionals and approximately 80 geology and geophyiscs students from both the University of Calgary and the University of Alberta. There were nine organizations who had accepted invitations to the Mixer: CSEG, CSPG, CWLS, CHOA (Canadian Heavy Oil Association), CIM-Calgary Branch, Petroleum Society of CIM, Calgary MEG (Mineral Exploration Group), and CGC (Canadian Geoscience Council). The student society executives helped with the student sign-up for the mixers and the bus.

About two-thirds of the students were from Calgary and 80% were undergraduates. Many of the local students attending the mixer arrived after their late-evening classes or labs. There were representatives from each of the undergraduate student societies: GUSS, Rundle, P. S. Warren, and the U of A Geophysical Undergraduate Student Society.

Some of the "sound-bites" of advice to the students included:

Bob Mummery (Geophysicist and entrepreneur) – ***Be adaptable***

Henry Posamentier (Chief Geoscientist, Anadarko) – ***Keep learning***

Rodney Calvert (Shell, DISC Instructor) – ***Stay inquisitive and have fun***

John Peirce, (Geophysicist on APEGGA Counsel; GEDCO) – ***Communication is the most important asset in business and academia – learn how to write!***

CSEG hosted DISC (SEG Distinguished Instructor Short Course) 2005: About 180 geophysicists and geologists in attendance. Speaker was Rodney Calvert (with Shell in Houston), topic was 4D monitoring of reservoirs through seismic surveys.

GOOGLING GEOMORPHOLOGY

BY MATT HALL, CONOCOPHILLIPS CANADA

A new geological research tool has appeared on the world-wide web: Google Maps. The most popular search engine on the net has always been at the cutting edge, and is continually finding new ways to explore the web, and now the world.

Apart from being a handy way to find your nearest school, dry-cleaner, or video rental store, Google Maps is a brilliant way of flying at low altitude over modern depositional environments, wherever they are.

First, find the biggest monitor you can. A big-screen visualization room is ideal. Then visit maps.google.com in any web browser, switch to the Satellite view, and fly around using the simple interface. I have collected some examples, to get you started.

TECTONICS AND SEDIMENTATION

Much of northern Canada is still experiencing postglacial isostatic rebound after the last ice-age. As a result, parts of the coastline are evolving rapidly. These raised beaches in Manitoba (Figure 1) are spectacular testament to the importance of tectonics in paralic sedimentation. The small delta is experiencing forced regression, and responding with rapid progradation into Hudson Bay.

DUNES

Barchan dunes and parabolic dunes both form where there is limited sand and unimodally-directed wind. Barchans, like these in Qatar (Figure 2), migrate downwind as sand is blown around the tips of the crescent. Consequently, the slip face is concave.

In contrast, parabolic dunes (Figure 3) have a convex slip face. They form in vegetated areas. Vegetation causes drag on the arms of the crescent, resulting in the elongated shape.

CATASTROPHES

The Green Lake landslide in New Zealand occurred about 13,000 years ago (Figure 4). It is an enormous rockslide of around 27 km3 of gneiss and granodiorite. The mass of rock completely filled a lake, the bed of which is still visible as a flat, brownish area in the picture. A new lake has formed in the depression at the foot of the headwall scarp, at the southeast end of the extensive mounded landslide debris.

In contrast, the catastrophic eruption of Mount St Helens (Figure 5) in May 1980 is well-known. The nine-hour eruption killed 57 people and significantly changed the shape of the mountain.

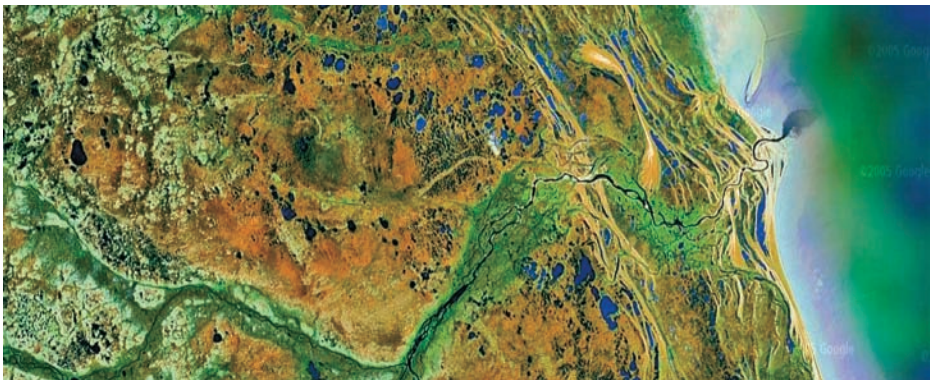

Figure 1. Valley incision, raised beaches, stranded barrier islands, and forced regression in Manitoba, Canada. The view is 25 km across.

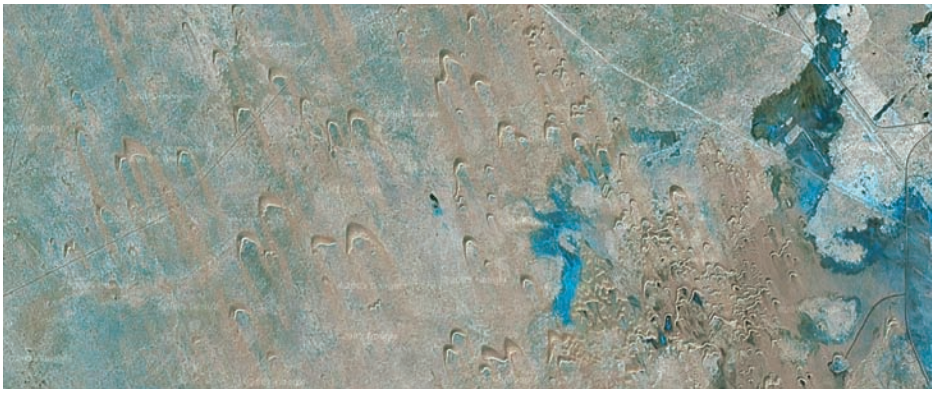

Figure 2. Barchan dunes in Qatar. Dominant wind direction is from the NNW. The dominant wind direction is from the northwest. The view is 25 km across.

Figure 3. Parabolic dunes in gypsum sand, New Mexico, USA. The dominant wind direction is from the southwest. The view is 1.5 km across.

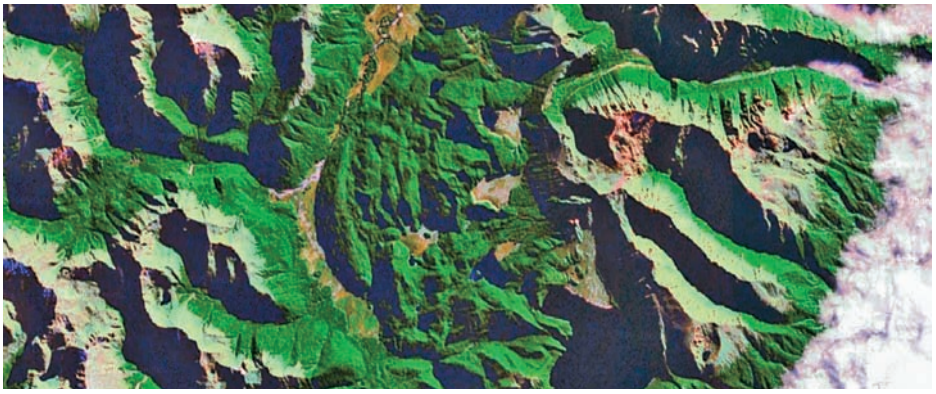

Figure 4. The Green Lake landslide, New Zealand, is now entirely vegetated. The slide debris is in the centre of the image and has a hummocky appearance. The headwall scarp is angled around the lake at the southeast end of the slide. The view is 18 km across.

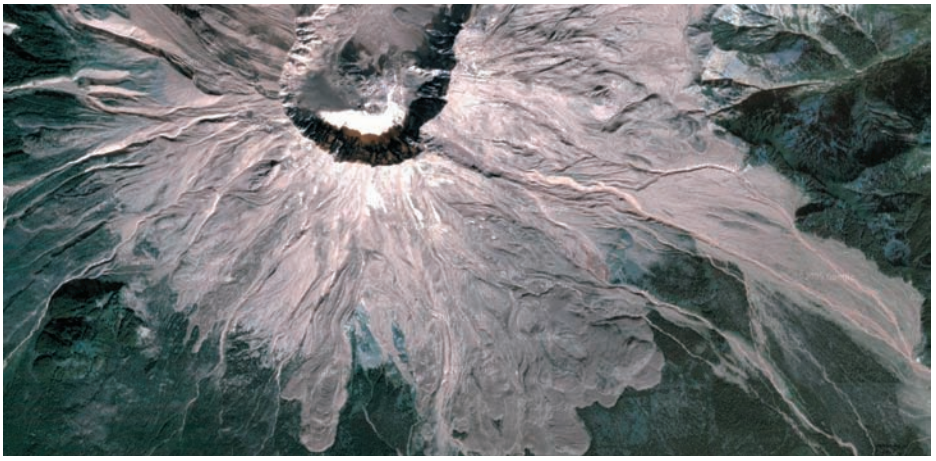

Figure 5. The collapsed crater of Mount St Helens, Washington, USA, and the large gravity flows, or lahars, on its southern flank. The view is 12 km across.

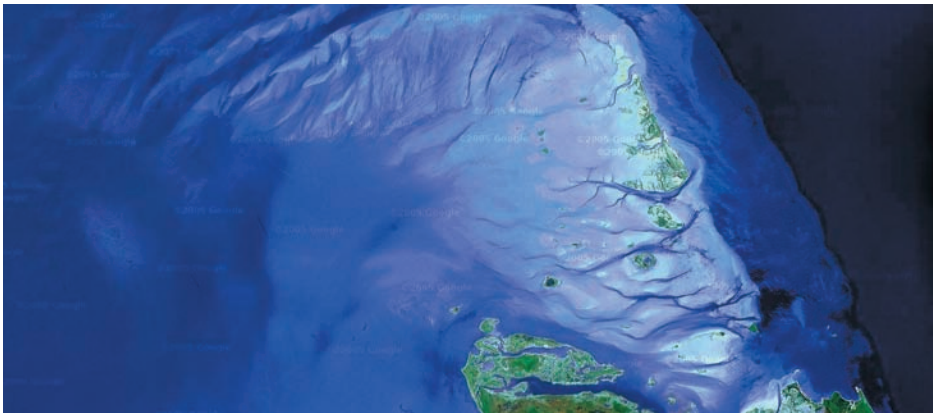

Figure 6. Tidal flats on Joulters Cay, Bahamas. The view is 50 km across.

Figure 7. Gulf of Aden rift margin, Somalia. Drainage patterns preferentially exploit relay ramps. The view is 50 km across.

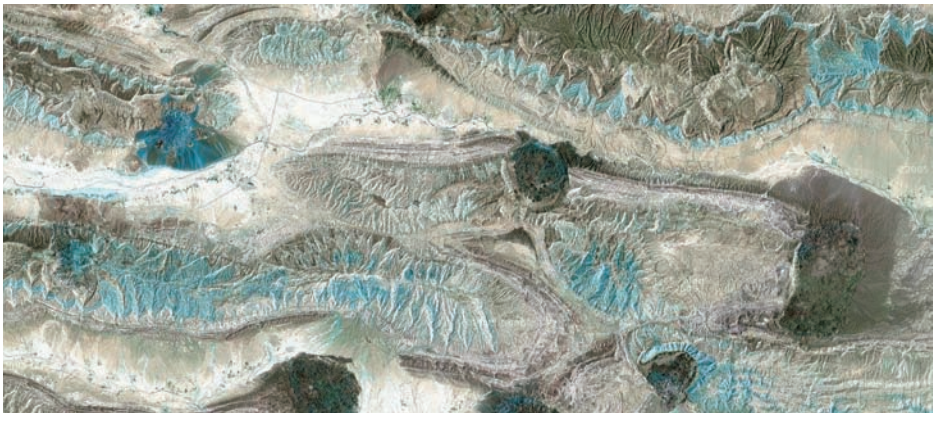

Figure 8. Sub-circular salt diapers punctuate thrusts and folds of the southern Zagros Mountains, Iran. The view is 100 km across.

CARBONATE ENVIRONMENTS

Google does not have high-resolution coverage for the whole planet (yet), but some features, such as the ooid and grapestone shoals and muddy tidal flats of Joulters Cay in the Bahamas, are large enough to marvel at anyway (Figure 6).

BASIN DYNAMICS

The tectonic signature of the Gulf of Aden rift between Africa and Eurasia extends to the coastal mountains of Yemen to the north, and Somalia to the south. These mountains (Figure 7) on the southern side clearly show the tilted fault blocks of the early rifting continent, and reveal the interplay between the fault blocks, their linking relay ramps, and the modern sedimentary environment.

In contrast, the Zagros Mountains of Iran are characterized by compressional tectonics, due to the collision of the Arabian plate with Iran. In the southern part of the chain, emerging among the spectacular folds, are giant, sub-circular salt diapirs. Several of these are clearly visible in the picture below.

It is easy to get lost, at least figuratively, in the world of Google Maps. Take some time out to explore earth's fascinating surface: there are wave-dominated deltas, beautiful ox-bows, and muddy estuaries. Fieldwork has never been so easy!

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Further information on this article may be obtained by emailing: hallmt@conocophillips.com

WILLIAM (BILL) CARRUTHERS GUSSOW (1908-2005)

BY CLINT TIPPETT, ARCHIVES & HISTORY CHAIR

A TRIBUTE

William Carruthers Gussow, geologist and engineer, was born on April 25, 1908 in London, England. At the age of one, he moved with his family to Ottawa, Ontario, Canada where his father, (Dr.) H.T. Güssow, took up office as the Dominion Botanist of Canada. Bill attended public school in Ottawa and after graduating from high school, joined the Geological Survey of Canada in 1926 as a map draftsman. There he was surrounded by many of the prominent geologists of the day including Dr. George Hume and Dr. Henry Gunning as well as biologist Dr. John Macoun. The atmosphere of learning enveloped him and he grew to love geology.

At the Survey, one of his tasks was to use some of the earliest aerial photographs taken in Canada to construct a base map for the region around Sudbury, Ontario upon which his supervisor, Dr. Collins (Director of the Survey), produced the first geological map using this technology. (Bill even flew in one of the airplanes.) During his time at the Survey, Bill worked in the field in many parts of Canada, including the Arctic. His focus during this period was on Precambrian geology and mineral deposits.

In 1929 he decided to return to school and enrolled at Queen's University in Kingston, Ontario. By 1933 he had earned his B.Sc. (Mining Engineering) and followed up with his M.Sc. (Geology) in 1935, also from Queen's. It was at that time that he met Margaret, his wife to be, when she took a geological course as part of her B.A. degree. They were married in September 1936 in Ottawa. Not yet satisfied with his level of education and being awarded a Royal Society of Canada Research Fellowship in 1935, he then enrolled at Massachusetts Institute of Technology where he was awarded his Ph.D. in 1938. Throughout this educational period, Bill continued to work for the Survey over the summers and during holidays when he returned to Ottawa. As he remembered it, as his graduation from M.I.T. occurred during the Depression and funds were tight, he chose to save the $50.00 that he would have had to pay to be sent his degree in absentia. Rather he chose to wait a year until he was in Boston on other affairs to drop into the university to pick up his diploma. In a way foreshadowing controversial positions to come, Bill's doctoral thesis was on the theory of "granitization" in which he proposed some new concepts that prevented his work from being published because, as he put it *"people didn't believe it"*.

Following his graduation, Bill returned to Kingston where he taught at Queen's and Royal Military College. It was planned to make R.M.C. a degree-granting university and he was to set up the geological department. With the outbreak of war in the fall of 1939, those plans were put on hold for another twenty years. During the war years Bill's engineering expertise came to the fore. As an office engineer with the Foundation Company, Bill was one of those engineers *"who jointly shared the honour of having planned and executed the largest [at that time] power project in Canada's history"*, the Shipshaw Power Development project. This was to produce electricity for the aluminum smelter that was nearby. With the completion of the power project Bill became the resident engineer at Arvida Works and at the end of the war Alcan offered him a position to head up their operations in British Guiana. Bill, however, decided to decline the offer.

In 1945 it was time for a change into the "soft rock" side of the business. Shell Oil was recruiting and had gained permission from the wartime Bureau of Technical Personnel to approach Bill about employment with them. Bill became the Chief Geologist and Exploration Manager for Shell Oil in Eastern Canada. He hired a number of Canadian geologists and geophysicists from different parts of Canada to supplement several transfers from Western Canada. Later geologists joined in from Shell's Dutch offices. Much of the work that followed was of a reconnaissance nature involving fieldwork in most sedimentary areas of the eastern part of the nation including southern Ontario, the Hudson Bay Lowlands, Nova Scotia and Newfoundland. Of all these, New Brunswick appeared to have the most promise, partly due to its proximity to markets, although there was a lingering concern over the apparent absence of suitable reservoir rocks. A series of domes involving evaporites appeared to have some similarities to the prolific salt domes of the Gulf Coast. After much deliberation and following Shell's withdrawal from Western Canada in late 1946 due to disappointing well results, the decision was made to begin a drilling campaign in New Brunswick. Five wells were drilled but despite the presence of numerous hydrocarbon shows, the lack of reservoir was indeed their undoing and the venture was abandoned.

One lasting consequence of the reconnaissance and fieldwork done was Bill's publication on the geology of New Brunswick. Many years later, in 1986, he received the Dr. W.J. Wright Award for pioneering geological mapping in New Brunswick by the Canadian Institute of Mining and Metallurgy. Throughout this period in the late 1940's Bill continued to do reconnaissance and field work travelling further afield. One trip with Peter Hacquebard, one of the geologists who had come over from Holland, took them to the Northwest Territories and northern Alberta where they examined the Tar Sands. They even travelled by canoe to visit some of the sites. Peter reminisced in his December 2004 Christmas Card about Bill's prescient remarks concerning the tar sands and how important these oil accumulations would be.

At this same time, the discovery of the Leduc Field in 1947 and numerous follow-ups in Western Canada had rekindled Shell Oil's interest in that region once again. Shell began investing significant amounts of capital in the Western Basin. As this was happening, Bill had been redeployed to Houston from where he worked on projects in Texas, California and Oklahoma while always keeping an eye on Canadian developments. During 1950 and early 1951 he worked for Shell out of their Midland, Texas office. In 1951 he was transferred to Calgary where, as he said, *"The excitement was just unbelievable and people hardly took time off to go to bed"*. Working as a Staff Geologist at

Shell, Bill sensed other opportunities and in 1952 resigned to start his own consulting business. There he prospered over the years 1952-1956, having many clients.

It was during this consultancy that Bill revealed his interpretation of the processes that were governing the distribution of oil and natural gas in the major reservoirs of the Leduc-Rimbey trend. The first to admit that it was a very simple but elegant explanation, Bill described a series of tilted, en echelon, inverted "cups" (in this case, reefs) being first filled from the west and progressively spilling into each other in an up-dip fashion. As gas followed oil with increasing source area maturity, so did it progressively flush the oil ahead of it into progressively shallower, more northeasterly traps. As expressed by Bert Bally in his American Association of Petroleum Geologists tribute to Bill: *"With its emphasis on fluid flow, regional migration paths for hydrocarbons and the displacement of oil by gas on a regional scale, his paper showed the way for petroleum system studies as we know them today."* On this basis he gained quite a good reputation for his ability to predict the results of new drilling. The model was published in 1954 as *"Differential Entrapment of Oil and Gas: a Fundamental Principle"* in the AAPG Bulletin and it was the subject of what he described as his shortest Alberta Society of Petroleum Geologists luncheon talk ever - being only 5 minutes in length. This concept has subsequently been applied globally and has been used in many basins where long distance migration is possible. He was prompted to undertake visiting lecturer tours to expound upon his groundbreaking ideas during the 1950's. Bill remembered this as being a very dynamic time in the oil patch with many new technical papers being published on a wide range of topics and of much related discussion within the geological community. Besides various papers on hydrocarbon migration, Bill's prolific contributions over the 1953-1956 period through the AAPG and ASPG included articles and discussions concerning the Carboniferous of New Brunswick, the Silurian of the Hudson Bay Lowlands, the piercement domes of the High Arctic, a tilted oil-water contact at Joarcam, and the origin of the Fort McMurray Oil Sands.

In 1956, Bill accepted an offer from Union Oil Company of California in Calgary. It was during this period that he was most active in the A.S.P.G. for whom he served as President in 1959. In his nomination for the position of President in 1958 his citation read: *"Bill Gussow: Ph.D., Massachusetts Institute of*

(Continued on page 40...)

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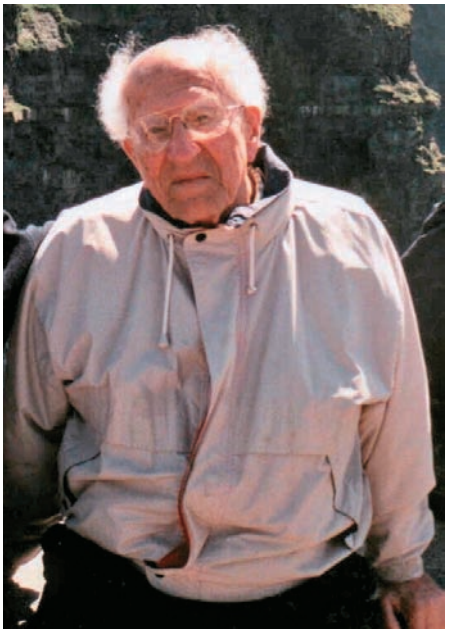
Technology. Staff Geologist for Union Oil Company of California. Bill has been chairman of several committees of the ASPG including Program, Research and Regional Cross Section. He has assisted the Executive in organizing corporate memberships and in organizing the Honourary Lecturer series. He has been a distinguished lecturer for the AAPG in 1955. Bill is a member and fellow of many [scientific,] engineering and geological associations including the Royal Society of Canada, the Geological Association of Canada, GSA, AAPG, CIM, EIC and of the Professional Engineers of Alberta and has been the author of several internationally known papers on geology." He served with Secretary R.J. Kirker, Treasurer R.B. McCrossan and Past-President R.H. Erickson.

One of his most lasting technical accomplishments also unfolded during this time when he edited the joint project of the ASPG and the G.A.C. entitled *"Regional Geological Cross Sections of the Western Canada Sedimentary Cover"* that comprised four large scale sections plus subsidiary diagrams in a bedsheet format. This beautifully crafted set of sections captured the stratigraphic nomenclature, lithological nature and structural geometry of the units in the basin while at the same time depicting the positions of key control wells and the habitat and distribution of the hydrocarbon pools that had been discovered to that date. It was a landmark publication whose lasting value is attested to by the fact that the sections were adapted for index purposes by the Geological Survey of Canada for their Oil and Gas Fields of Western Canada maps many years later. It was only superseded in more recent years by the CSPG - Alberta Geological Survey Western Basin Atlas. He was also a founding member of the GAC in 1947, served as a Councillor from 1958 to 1960, and in 1997 received his 50th Year Member Award.

In part because of his early training in both Geology and Engineering, Bill was an early



member of and proponent for the registration of both geologists and engineers in Alberta. In 1952 he became a P.Eng. in the Association of Professional Engineers of Alberta and, once geologists were welcomed to the Association in 1960, became a dual member with his P.Geol. He was a member for over fifty years and served in several volunteer positions with the A.P.E.A. and successor Association of Professional Engineers, Geologists and Geophysicists of Alberta. In recognition for his long service, Bill was made a Life Member.

In 1960 Bill moved to California to work with Union's research group. He retired from Union Oil in 1971 after a diverse career of some forty-five years. In the following years, Bill and Margaret travelled the globe and even spent a little more than two years in Japan where he was a consultant to the Japan Petroleum Development Corporation. He never, however, lost sight of the dynamic world of geological thought and he certainly never backed down from a situation in which he thought that some controversy would get people's creative imaginations going to re-examine old beliefs.

One of his more memorable beliefs was the concept that the Ice River Complex of the Western Main Ranges of the Canadian Rocky Mountains is actually an exposure of Precambrian Basement rock partly onlapped by and partly thrust into the surrounding Cambrian strata. Bill first expressed his interpretation in a 1958 paper co-authored with C.H. Hunt and followed it in later years with the subtly named 1977 paper *"The Ice River Complex, British Columbia, is Precambrian Basement"* published in the Bulletin of Canadian Petroleum Geology. Conventional wisdom was that it was an alkalic Devonian intrusion. Bill participated in an early 1980s field trip to the locale with other experts to try to resolve this issue but it does not appear that a conclusion was reached.

Among his memorable beliefs were his ideas regarding "Crustal Shifts." Bill's training in engineering as well as his interest in looking at the big picture geologically had led him to writing a paper that was published in the Bulletin of the ASPG in 1958. He felt that sudden crustal shifts were the only explanation for the geological evidence of mountain building, mid-oceanic ridges, giant rift valleys, the universal systems of basic dykes, worldwide unconformities and hiatuses, glaciation in present tropical regions and tropical conditions in what is now the arctic. All of these and others were believed to result from the simple mechanism of erosion.

Never one to leave the engineering side, Bill continued his innovative work in the late 1980's when he patented methods of tertiary oil recovery using any gas to displace oil in full or partially depleted reservoirs. This was a direct application of his theories on the regional migration of hydrocarbons and the displacement of one phase by the other. Originally, he intended to publish his ideas on tertiary oil recovery in the scientific journals, but was convinced by happenstance to try to have them patented. He was delighted when the patents were granted but disappointed that they were never officially tested and used for oil production. Many times, however, he saw that unofficially his ideas were confirmed in the literature.

Bill Gussow's accomplishments have been recognized throughout his career. In 1955 he was invited to be a Fellow of the Royal Society of Canada for his contributions to geology to that time. It was especially heartwarming for him to have received that honour because his father, Dr. H. T. Güssow,

was also a Fellow of the Royal Society of Canada, and to have father and son fellows at the same time was quite unusual.

In the year 1998 the Canadian Society of Petroleum Geologists awarded Bill, already an Honourary Member of the Society, the Stanley Slipper Gold Medal for *"contributions to oil and gas exploration in Canada"* while the American Institute of Petroleum Geology also made him an Honourary member in that year. In 2000 the AAPG named him as a winner of its prestigious Pioneer Award given to *"longstanding members who have contributed to the organization and who have made meaningful and significant contributions to the science of geology"*. One of his more lasting tributes occurred in 2002 when the CSPG named its annual topical conference for Bill as the William C. Gussow Geoscience Conference Series – an act most fitting given his life-long passion for discussion and the critical examination of important topics. Two successful conferences have been held in this series – the first in 2004 examined *"Water Resources and Energy Development"* and the second in 2005 focussed upon *"Coal Bed Methane: Back to the Basics of Coal Geology"*.

William Carruthers Gussow, Ph.D., P.Geol., P.Eng., passed away peacefully in Ottawa on August 20, 2005 in his 98th year having lived a life full of multiple careers and abundant, progressive thought. He is remembered by CSPG office staff as being frugal to the end, having preferred public transportation over a taxi when he attended the 1998 CSPG Convention at the ripe old age of only 90. In closing, perhaps the most eloquent tribute to Bill was paid by colleague Bert Bally in his citation for the Pioneer Award in which he said: *"Like some early naturalists, there was never any limit to the scope of Bill's interests. Always a passionate and persistent protagonist of often unorthodox views, he supported them with his own keen field observations. Bill is, for many of us, a classic role model, always coming up with new, often startling ideas and generous in sharing his experience with others. Perhaps most of all we appreciate his kindness, his friendliness and his gentle sense of humour."*

This memorial was composed by Clinton R. Tippett, Chair of the History and Archives Committee of the Canadian Society of Petroleum Geologists, and is based upon numerous sources including family contacts, published citations, personal anecdotes, and interviews that Bill did with the Petroleum Industry Oral History project in 1983 and with the Canadian Society of Petroleum Geologists 75th Anniversary Project in 2002.

Dear CSPG Volunteers,

HAPPY HOLIDAYS!

2005 has been a wonderful year due to ALL of CSPG's hard working and dedicated members!

We want to celebrate 2005 by inviting you to the **Volunteer Appreciation Day Social** sponsored by Baker Atlas and geoLOGIC.

When: Tuesday, January 24th, 2006

10:30 am - 11:30 am

Where: Telus Convention Centre

Mark your calendars! January 24th is also when the **Volunteer Awards will be presented at the Technical Luncheon**. So come out and support your peers and friends.

For more information visit **www.cspg.org** and click on **VOLUNTEER SOURCE**! This is a site specifically tailored for CSPG volunteers or for people who are interested in becoming a volunteer.

Jump in... and get involved!

We wish you and your families a very happy and safe Holiday Season!

Best Regards,

The Volunteer Management Committee

geoLOGIC systems ltd.

BAKER HUGHES

Baker Atlas

CANADIAN SOCIETY OF PETROLEUM GEOLOGISTS

WHAT'S NEXT?
Where is our Industry Heading?

TECHNICAL PROGRAMME AND ABSTRACT SUBMISSION INFORMATION

The 2006 convention will be a joint meeting of the Canadian Society of Petroleum Geologists (CSPG), the Canadian Society of Exploration Geophysicists (CSEG) and the Canadian Well Logging Society (CWLS). Our theme is WHAT'S NEXT? Where is Our Industry Heading? The technical programme is soliciting scientific, technical and business presentations that address the "What Next" for Canada's upstream petroleum industry in a sustainable and societially responsible manner. The "Key Challenges" to what's next are posed as a series of thematic questions intended to motivate contributors to address the issues of replacing production, finding new reserves, and identifying future resources in a variety of settings. Please join us in this quest to create a roadmap to the future, with your contributions to the oral, poster, core, short course, and field trip components of the meeting. You are invited to submit an abstract to the following proposed oral and poster sessions:

SESSION TITLES

3D Seismic Imaging I

3D Seismic Imaging II

Acquisition/Magnetic/ Resistivity

Are recent discoveries a template for the future?

AVO Case Studies

AVO Methods

Can the dolomite problem be solved I?

Can the dolomite problem be solved II?

Can the promise of the Frontiers be fulfilled? - Session I Mackenzie Corridor and Mackenzie Delta

Can the promise of the Frontiers be fulfilled? - Session II Other Basins (Oceanic Margins, High Arctic, Intermontane, etc.)

Geophysical Papers

Heavy Oils and Tar Sands - What are the promises and limits I?

Heavy Oils and Tar Sands - What are the promises and limits II?

How are the Cordillera and the Foreland linked?

How can Data and Information Management add value?

How do we get new petroleum from old basins?

How do we insure access and achieve sustainability?

How will petroleum systems analysis facilitate future developments and discoveries?

How will we extract value in the future?

International Session - What is happening outside of Canada and where is it going?

Migration Techniques I

Migration Techniques II

Multi-component and Time Lapse Processing

Petrophysics I: Tight Gas and CBM

Petrophysics II: Case Studies

Seismic Processing I

Seismic Processing II

What are the promises and limits of Unconventional Gas I?

What are the promises and limits of Unconventional Gas II?

Where do we go next in the Foothills?

Where is sequence stratigraphy going I?

Where is sequence stratigraphy going II?

Wireline, LWD, and Core I: New Technology and Techniques

Wireline, LWD, and Core II: New Technology and Techniques

SUBMITTAL PROCESS

You must submit an abstract in conformity with the requirements below if your presentation is to be accepted for presentation. The deadline to submit abstracts for oral, poster, and core presentations is **JANUARY 31, 2005**. Late submissions will not be accepted. All abstracts should be submitted online at www.GEOconvention.org. Only electronic submissions will be accepted.

Abstracts submitted by the deadline should be either a short abstract of 250 words or less or a final extended abstract, not exceeding four pages, following instructions and format that will be available on the convention website at www.GEOconvention.org. Authors of accepted presentations who submitted short abstracts by the January 31st deadline will have the opportunity to submit extended abstracts, prior to a later date for inclusion on the conference CD-ROM. To maintain a high quality within the 2006 Technical Programme, abstracts will be accepted based on the review and recommendations of session chairpersons and the availability of oral and poster session slots. All

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accepted abstracts will be published on the CD-Rom for distribution to delegates attending the 2006 Convention. Abstracts may also appear on-line on the convention website. Abstracts will not be edited before publishing so please ensure you have edited it prior to submittal.

ORAL PRESENTATIONS

Oral presentations will be 25 minutes in length with a short question/answer period. Presentations should be prepared in single screen electronic format (i.e., power point presentation) exclusively.

POSTER PRESENTATIONS

Poster Presentations will be set out for the duration of the convention. Posters will be presented as either one (1) or two (2) 4' x 8' panels. Presenters are required to indicate their preference for the number of poster boards with their abstract submission by the January 31st deadline. They are also responsible for additional materials including laptops, spot lights, microscopes, etc., at poster booths.

CORE PRESENTATIONS

Core presentations may also be submitted online. Submission procedures and deadlines are the same as those for Oral and Poster Presentations. Core samples will be presented at the AEUB Core Research Centre on Wednesday, May 17 and Thursday, May 18.

FIELD TRIPS & SHORT COURSES

Individuals interested in leading a field trip or delivering a short course are encouraged to contact the Technical Co-Chairs.

FOR MORE INFORMATION, PLEASE CONTACT

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Kirk Osadetz
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Kevin Marsh
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WHAT'S NEXT?
Where is the industry heading?
2006 CSPG CSEG CWLS Joint Convention
c/o CSPG Office
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Calgary, Alberta T2P 0M2

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403.264.5898 fax

www.GEOconvention.org

CSPG/CSEG 23rd ANNUAL SQUASH TOURNAMENT

This year's tournament will be played at the **WORLD HEALTH EDGEMONT CLUB**, 7222 Edgemont Blvd. N.W., Calgary, on **February 2 - 4, 2006**. The emphasis is always on having fun, but there is keen competition for the serious players. In past years, we have had beginners through to provincially ranked players in both the men's and women's divisions. We expect the same this year, so there is sure to be a level of play suited to you. Please register now while you are thinking of it!

PLEASE NOTE: THIS YEAR THERE WILL BE A MAXIMUM OF 125 PLAYERS, SO GET YOUR ENTRY IN EARLY TO AVOID DISAPPOINTMENT!

EVENTS: Men's & Women's A, B, C, D, and Novice.

Open only to members of the C.S.P.G. (or an affiliated society) and their spouse or equivalent.

ENTRY FEE: $50.00 includes GST ($50.00 Students sponsored by Encana)

- Fee includes two guaranteed matches (Saturday teams tourney), shirt, refreshments and food during the tournament, Saturday night dinner (Please specify Meat (M) or Veggie (V)), and draw prizes. Saturday's dinner will be held at the Edgemont Club.
- Pre-tournament drop-in squash at Bow Valley Racquet Club (2nd Street and 5th Avenue S.W.) on Wednesday, January 18th and 25th from 6 to 9pm, sponsored by Tucker Wireline Services.
- Pre-tournament registration social will be at Bow Valley Racquet Club on Tuesday, January 31st at 5:00pm. Pick up your tournament kit and first draw time, and enjoy a free pint of Ale with munchies, sponsored by Tucker Wireline Services.
- All door prize draws Saturday evening - must be present to win.
- Extra Dinner Ticket: $35.00 for non-playing guests only. (Will be limited to 15 due to venue space.)

ENTRY DEADLINE:
January 20, 2006. EARLY BIRD DRAW PRIZE for entries received prior to January 6, 2006. *(No refunds after January 20,2006)*

FOR FURTHER DETAILS CONTACT: Colin Thiessen 650-0086; David Caldwell 554-7711; Jessie Mitton 850-3578; Alan Rutherford 861-2643; Dell Pohlman 781-7279; Chris May 645-5193; Randy Smith 263-0449; Jolene Wood 243-0820; Ryan Barnett 781-1712; Travis Brookson 261-9290; Kris Jewett 645-3827; Warren Dublonko 232-1715; Mark Dzikowski 645-2851.

REGISTRATION FORM:

NAME: _____ ❑ **M** ❑ **F** **Email:** _____

❑ **CSPG** ❑ **CSEG** ❑ **Other:** _____ **Company Affiliation:** _____

Phone: Day: _____ Evening: _____ **Shirt size:** ❑ S ❑ M ❑ L ❑ XL ❑ XXL

Level/Frequency of Play: _____ (A-E) **Banquet Dinner (As described above):** ❑ M ❑ V

FEE: $50.00_____

STUDENT: $50.00_____

PLAYING SPOUSE NAME: _____

Phone: _____(Day) _____(Evening) **Shirt Size:** ❑ S ❑ M ❑ L ❑ XL ❑ XXL

Level/Frequency of Play (A-E): _____ **Banquet Dinner (As described above):** ❑ M ❑ V

FEE: $50.00_____

WILL YOU ATTEND THE DINNER: ❑ YES ❑ NO

ADDITIONAL DINNER TICKET: ❑ YES ❑ NO (for non-playing guest Max 15) **FEE:** $35.00_____

TOTAL FEES REMITTED: $_____

NOTE: Games commence Thursday, February 2, 2006.
All participants must be available to play after 4:30pm Thursday, Friday afternoon, and all day Saturday.

ADDRESS REGISTRATION TO:

Hycal Energy Research Laboratories Ltd.
1338A 36 Ave. NE
Calgary, AB T2E 6T6

Please make cheques payable to the CSPG SQUASH TOURNAMENT, (no cash).
No refunds after January 20, 2006.

CSPG ANNUAL MIXED GOLF TOURNAMENT

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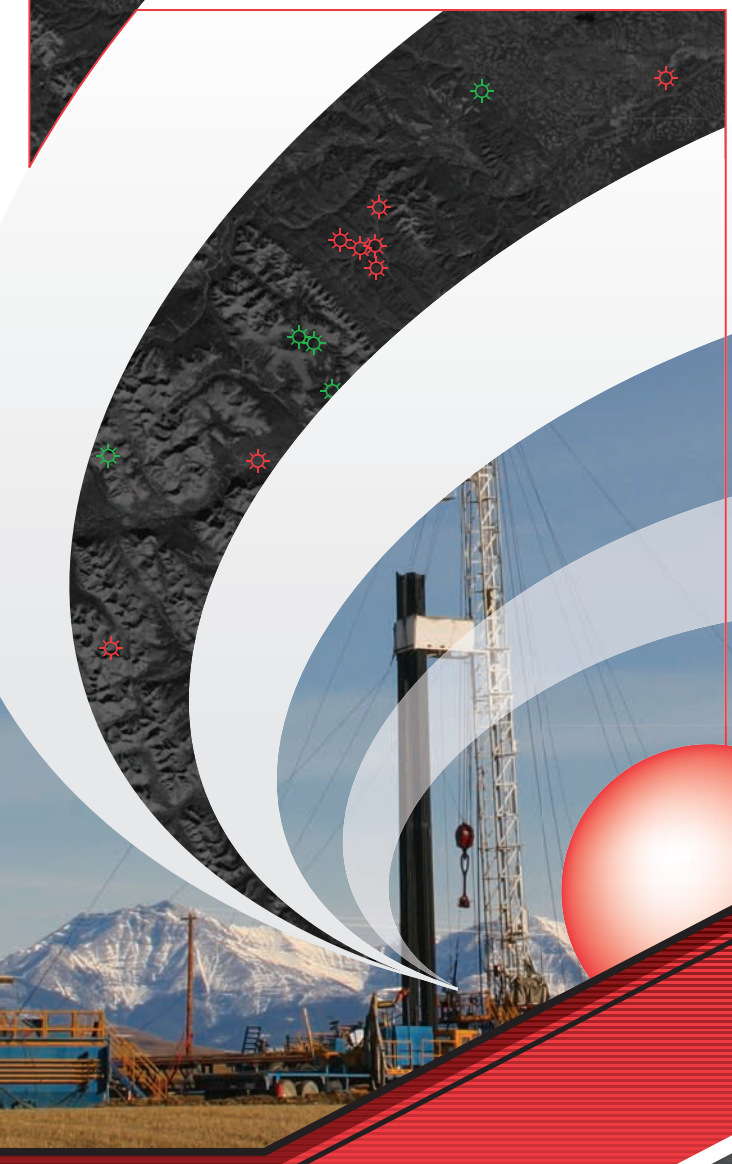

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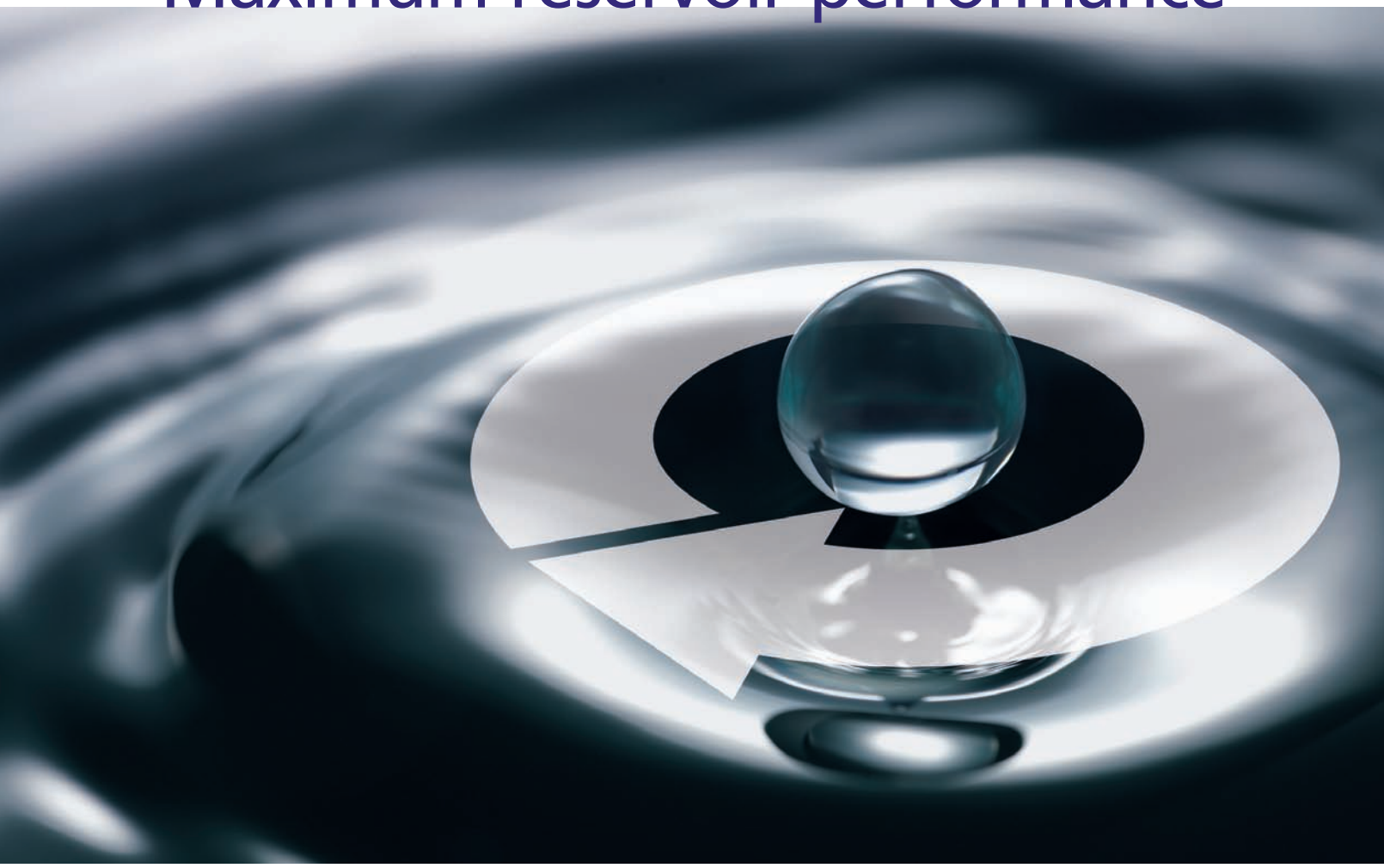

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