

November 2007

Thursday, Nov. 29

MGS Luncheon
"Athabasca Oil Sands:
Understanding Oil
Sands from the Regional
Scale"
AAPG Distinguished
Lecturer, Dr Mike
Peacock.

The menu will be TBA,
Dessert, and coffee or
iced tea
for \$14.00.

Members who do not
Receive an e-mail reminder
can RSVP by calling
Doretta Brush at Ballard
Petroleum (406) 259-8790

**All meetings are held at
the Billings Petroleum
Club at 11:45 a.m.
unless otherwise noted.**

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PRESIDENT'S LETTER – Bob Schalla

This is the time of year for the Geological Society to have it's annual house cleaning. We should all try to profit by the progress or mistakes of the previous administrations, and it will be the primary job of the board of directors to anticipate the pleasure of the members of the society for the forthcoming year. We will endeavor to rid ourselves of prejudices or doing nothing attitudes, rather than sweep them under the carpet to plague us and the administrations to follow. The board of directors does not have a "corner on the market of ideas". Therefore, we would appreciate the ideas and thoughts of the members and earnestly request that the members make their thoughts and wishes known so that we can act upon them.

We trust that with the cooperation of the board and the members we can make this administration worthy of the society's heritage.

All of the above sounds like sage advice to me and I wish I had written it, but alas it was copied from the November 1957 Billings Geological Society Newsletter (or News Bulletin, as it was called back then), the author is Jim Staggs, the society's newly elected President. What struck me about Jim's message was how little things have changed for the society in the past fifty years. As I begin my tenure as MGS President I see lots of things that I'd like to get done, fixed or changed in the next twelve months. In future Newsletters I will share some of these ideas and hopefully get some feedback and support from the membership so we can forge ahead together to make the MGS a meaningful and relevant part of the geological community in Billings, in Montana and the northern Rockies in general.

One other thing I gleaned from the November 1957 BGS News Bulletin was an appreciation for the kind of "hard-partying" geo-types who once inhabited this area. I say this because that issue of the Bulletin had an announcement for the society's annual Christmas Party. This event, which was held at the Lake Hills Golf Club, ran from 9 p.m. to 2 a.m. the night of December 12th, with a breakfast of ham, sausage or bacon, and eggs being served at 1 a.m.! The cost of the party was \$5.00 per couple with six drink tickets and breakfast included. I tried to learn more about this event from longtime MGS member Jack Warne, but he claimed he was sitting a well near Saco that particular December (sure Jack...) --- plausible deniability, I guess. Well then, I guess I need to hear from Herb Hadley, or some of the other "hard-drinkin" boys from the fifties to get the low-down on these late night festivities. Herb, did you go out and play a round of golf after breakfast too? And what about our current membership? Is anybody up for a 9 to 2 Christmas breakfast party?

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AAPG Distinguished Lecturer

Dr. Mike Peacock: Exploration/Development Manager, Imperial Oil, Calgary



Abstract:

Athabasca Oil Sands: Understanding the Oil Sands from the Regional Scale to the Project Scale, Kearl. - A Case History

The Lower Cretaceous McMurray Formation in the Athabasca area of northern Alberta, contains Canada's strategically important oil sands resource with an estimated 800 billions barrels in place. Approximately 120 billion barrels can be exploited through surface mining. Kearl is a mining opportunity operated by Imperial Oil with regulatory approval to develop 4.4 billion barrels. The development would be a truck and shovel operation similar to other current mine developments. The regional geology of the Western Canada basin and the Athabasca area will be reviewed with Kearl positioned within that framework. The regional reservoir distribution of the McMurray formation is critical to understanding oil sands opportunities. The source and migration model for the Athabasca oil sands will also be presented. The reservoir for the Kearl deposit, are the unconsolidated fluvial and estuarine sands of the Lower Cretaceous McMurray formation. These form complex reservoir channel systems with significant reservoir heterogeneity. Net pays range from 25 to 75 meters with excellent reservoir parameters. The bitumen has an 8-degree API and a viscosity of 1.7 million cp. Fluvial-estuarine point bar reservoirs represent a large fraction of the resource that can be developed. Similar facies from the Syncrude mine can be organized into a hierarchy that subdivides channel-fills into bedsets, stories, bars and barsets. Inclined heterolithic stratification (IHS) surfaces can be identified. Significant resource delineation drilling has occurred and some regional 2D seismic lines acquired, prior to project approval, to reduce the reservoir uncertainty and improve resource definition. This allows for a unique opportunity to analyze a complex depositional system with abundant well and core control. Software techniques that quickly interpret large datasets have been successfully tested on an analogue dataset. Laser imaging of the mine face, will also be useful for recording stratigraphy and determining the mined volume of ore.

THANKS ENNIS- AWESOME FIELD TRIP!

All I can say is WOW! This Fall's MGS discussing Laramide structural features associated with Beartooth Mountains had it all; world class geology, world class scenery, and excellent geologic enlightenment. Ennis Geraghty, Stillwater Mining Company, led the informative field trip with stops that included the Upper Cretaceous to Cambrian section for the area and various igneous events that form the core of the Stillwater Complex, setting the basis for the fun discussion on the complex structural interpretation. It is always great to be on the rock for these discussions! The uniqueness of this complex and the importance of this resource to the state of Montana were clearly and concisely communicated. Ennis, thanks for responding to the MGS call for field trip ideas and stepping forward. If any other members have field trips they would like to cause to happen, please contact Steve VanDelinder, Ballard Petroleum at SVanDelinder@ballardpetroleum.com. It the goal of the MGS to have a minimum of two to three field trips per year.



Ennis standing on “Manly Rock”, a term coined by a Rocky Mtn. College student, pointing the way to enlightenment for neophyte “Soft Rockers”

MONTANA GEOLOGICAL SOCIETY **NEWSLETTER**

The MGS NEWSLETTER is printed 10 times per year (each month except July and August) by the Montana Geological Society, primarily for society members. Its purpose is to inform its audience about current geological trends and items of geologic interest. It has been continuously published since 1956 by MGS volunteer editors and contributors.

MGS HOME PAGE: <http://www.montanags.org> MGS E-mail: mgs@wtp.net

CONTRIBUTIONS: Letters, announcements, notices, comments, photos, news and information about MGS members, etc. are always welcome. The deadline for contributions is the 10th day of the month prior to publication.

CIRCULATION: over 225 to members and organizations across the United States and Canada. SEND MAIL TO: Newsletter Editor, P.O. Box 844, Billings, MT 59103

RMS AAPG Annual Executive Meeting Highlights

The annual AAPG Rocky Mountain Section Executive Committee meeting was held in Snowbird on October 9, 2007. The meeting was attended by the RMS Executive Committee, Affiliated Society presidents and representatives and officers and candidates from AAPG. A significant amount of business was conducted at the meeting chaired by President Steve Schamel and includes the following:

- Changes to the bylaws were voted on and approved including modifications of the RMS officer rotation, the creation of a Standing Committee on Conventions and the addition of South Dakota and Minnesota to the Rocky Mountain Section.
- The RMS Foundation report was submitted by Lou Bortz. The Foundation has a healthy balance sheet and dispersed \$22,000 this year. Lou encouraged the affiliated societies to take advantage of the AAPG Distinguished Lecturer matching funds program. Rob Diedrich will take Billy Roberts' seat on the RMS Foundation Board.
- The Imperial Barrel Award Program (see HOD notes submitted by Don French). \$10,000 was requested from the RMS Foundation.
- The RMS support of a Maps-in-Schools Program, modeled after a successful program in Corpus Christi. This is an outreach proposal to provide framed poster-sized geologic maps to local area schools. The RMS Foundation is considering a matching fund mechanism provided to the Affiliated Societies to assist with the implementation of Maps-in-Schools in their local communities. Affiliated Society presidents will be notified with more information.
- RMS Teacher of the Year is Candace Penrod from Salt Lake City, Utah
- Introduction of a RMS Service Awards program. The Exec Committee will review this during the upcoming year.

Overall attendance at the Snowbird conference was in the 650 range compared to the 566 attendance in Billings in 2006. The schedule for upcoming RMS AAPG meetings is as follows:

2008 Denver- Joint RMS -COGA

2009 Denver – Annual AAPG Convention, Host RMAG

2010 Durango – Host FCGS

2011 Casper – Host WGA

Rob Diedrich-MGS rep at Snowbird

Membership Dues:

Our 2008 MGS membership dues payment requests will be sent this month. Please review, make sure the information we have is correct, and **RETURN THE INFORMATION PAGE ALONG WITH PAYMENT**. Dues payment tends to drag on through the Spring of the year and tends to be incomplete. Please help us rectify these issues by replying promptly! Your cooperation will be greatly appreciated!

RMS AAPG House of Delegates Meeting

The AAPG House of Delegates met during the Rocky Mountain Section Meeting held at Snowbird October 7-9. Representatives from the affiliated regional societies were present, as well as some of the AAPG officers and candidates, and some of the Tulsa staff. Items discussed:

- The AAPG is in the process of taking over the Petroleum Technology Transfer Council (PTTC) which lost funding from the Dept. of Energy. A board of directors is being set up in cooperation with the Society of Petroleum Engineers. AAPG Sections will have positions in an advisory group that will be set up in the next 2 months.
- A new statement on climate change was prepared last July. The Division of Environmental Geosciences of the AAPG is the lead group in this work.
- A membership drive has begun.
- The Imperial Barrel Award Program will expand in 2008. The program is a prospect-generation competition for students. Student teams receive a data set from the AAPG, use the data to prepare a prospect, and present the prospect to judging panels. AAPG Sections and Regions will manage competitions at the local level, and the winner from each will advance to finals that will be held at the Annual Convention next April in San Antonio. The winners get trophies and cash awards, \$30,000 was mentioned, will go to their schools. A web site will be ready soon to provide details and the data sets. The AAPG is looking for sponsors to defray student and department expenses. Steve Sonnenberg and Randi Martinson will co-chair and spearhead efforts this year. The RMS competition will be in Golden in March 2008.
- An additional dues category for academicians is under consideration.
- A proposal to broaden degree requirements for membership is being studied. The intention is to make degrees such as Geoscience Engineering acceptable for membership application.

Don E. French (unofficial scribe)Rob Diedrich

Montana's Governor Woos Oil And Gas Investors In Calgary: Montana Governor Brian Schweitzer invited Western Canadian petroleum producers this week to shift capital to his state where "taxes are much lower than Alberta." Schweitzer noted that the Alberta Royalty Review Panel report failed to include Montana in its comparison chart of international royalty rates. The state's crude production rose to 20.9 million bbls in 2006 from 10.3 million in 2004. Schweitzer said new horizontal wells enjoy an 18-month royalty and tax holiday in Montana, vertical wells 12 months. The state's royalties peak at 15%. The governor, first elected in 2005, spent time with visiting Canadian oilmen on his first day in office and stressed his state's eagerness to construct new refineries for processing Canadian bitumen. "We've reduced property taxes on industrial infrastructure like refineries and pipelines," Schweitzer told a breakfast meeting of the Calgary Chamber of Commerce. An aide noted that the Democratic governor fought factions within his own party to achieve the lowest property taxes in the West. Schweitzer said the oil-bearing Bakken formation covers the greater part of Montana and estimates of the resource in place continue to increase with improvements in horizontal drilling and frac technology. The visiting politician refused to offer an opinion on Alberta's recent decision to raise royalty rates but suggested that the neighboring jurisdictions should cooperate on infrastructure planning. Reprint from Calgary Daily Oil Bulletin.

Excellent October Friday Afternoon Club!

Little did we know the always humble, always soft spoken Don French has an alter ego named "BRECCIA MAN"! Not phased by the initial, confused looks of his audience, the laser pointed armed crusader systematically guided the audience through abundant examples of brecciated outcrop, educating the masses on their complexities. Now we all know how to defend ourselves when someone says "It's a Grant Canyon look a like!" Thanks Don!

Very special thanks go to MAKOIL, Inc., Double D Energy – Nevada, and Yellowstone Valley Brewing for their generous support of the MGS Friday Afternoon Club



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MARK YOUR CALENDARS!

**THE MGS/SPE/MAPL/BGS CHRISTMAS
PARTY**



**THURSDAY, DECEMBER 13TH
6:00 P.M. BILLINGS PETROLEUM CLUB**

Enjoy the evening with the entire Oil and Gas Community. Great hor'd ourves, great beverages great friends! Make it a memorable event by attending...the more the merrier!



IN MEMORIAL

*Fred Meissner
September, 2007*

*Roger N. Borchert
October, 2007*



GEOLOGY QUOTE

**“WE LEARN GEOLOGY THE MORNING AFTER THE EARTHQUAKE”
RALPH WALDO EMERSON**

Submission deadline for the MGS Newsletter is the **10th** of each month. Submit requests to Brad Thompson, Editor, bthompson@nancepetro.com or 245-6248.

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