

On the Rocks



A Newsletter of the Michigan Basin Geological Society

2006-2007 Number 3

www.mbgs.org

November 2006

EVENTS

November 8, 2006: SPE will sponsor our November meeting with a presentation by P.V. Suryanarayana, on **Is Underbalanced Drilling the Right Answer for your Reservoir?** This is also MBGS's **Mentors Meeting**. Retirees are welcomed as guests of MBGS for no charge for their meal. We encourage our members to extend invitations to those they wish to honor as a mentor.

December 13, 2006: **John French**, will present MBGS's Kids Night program with **Pluto and Beyond**. We encourage members to bring children who may appreciate a discussion of Pluto's status in our solar system.

Last Notice For Dues

This is your LAST CALL to renew your MBGS dues for the 2006-2007 season, please take the time to return the information below with your dues. **Your newsletter editor encourages distribution by e-mail** as a more timely and cost efficient way to receive your newsletter. Timely renewal helps your officers plan for the upcoming year and is the best way to ensure there will be no interruptions in receiving your On the Rocks newsletter. Please use the following dues notice.

Michigan Basin Geological Society Dues Notice

Please fill out this form when paying your dues for 2006-2007. Dues are \$25.00 for active member and \$10.00 for students. **Make check payable to: MBGS**

Name _____

Address _____

Phone _____

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Amount enclosed _____

Send Newsletter by e-mail _____ or Mail _____ @ address above

Mail your remittance to: Tom Hoane, 1748 Danby Lane SE, Grand Rapids, MI 49506

2006-2007 MBGS Officers

The Executive Committee meeting minutes are available on our website at www.mbgs.org

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MEETING CANCELLATION POLICY

Monthly meetings will be automatically cancelled whenever the National Weather Service issues a "Storm Warning" for the Lansing area. If driving conditions are poor but a "Warning" has not been issued please contact any member of the Executive Committee for the status of the meeting.

MICHIGAN BASIN GEOLOGICAL SOCIETY PUBLICATIONS

Historical CD #1: Nine out-of-print publications from 1949 through 1965 and 1998, Devonian to Silurian Rock Fieldtrips to MI, WI, IL and Ontario, 2000, \$15

Historical CD #2: Four out-of-print publications from 1947, 1959, 1983 and 1991, Northern Devonian and UP Fieldtrips in MI, 2001, \$15

Historical CD #3: Six out-of-print publications from 1948, 1952, 1990 - 1995, Northern Devonian and UP Fieldtrips in MI, 2001, \$15

Historical CD #4: Six out-of-print publications from 1957, 1958, 1961, 1967, 1968 and 1970, Northern LP and UP Fieldtrips in MI, 2004, \$15

Historical CD #5: Five out-of-print publications from 1971, 1989, 2001, Southern LP, MI and Ohio Fieldtrips and **Oil & Gas Fields Vol. 1 & 2, 1969 & 1992**, 2006, \$50

Special Price - Historical CDs #1, #2, #3, #4, & #5 for \$75

NE Lower Peninsula Geological Field Conference, 2004, T. Black, M. Wollensak, 133 pp., illus., maps. On CD \$10

Stratigraphic Lexicon for Michigan, 2001, prepared by MBGS and published by DEQ, 56 pp., chart, \$2.65 picked up or \$4 mailed, Can be ordered from MBGS or Office of Geological Survey of the DEQ

Price Includes postage, handling and any applicable sales tax. Orders for publications should be prepaid in U.S. Funds and addressed to: MBGS - Publications, P O Box 18074, Lansing MI 48901-8074

SPE – MBS Meeting

Wednesday November 8, 2006

Location: Coyote Creek
6951 Lansing Road,
Diamondale, MI 48821

5:00 to 6:00 PM – Social Hour
6:00 PM – Dinner
Presentation after Dinner
Cost (includes dinner): \$25.00 (Students \$15.00)

Topic: “Is Underbalanced Drilling the Right Answer for your Reservoir?”

by P.V. (Suri) Suryanarayana

SPE Dinner Meeting Reservation

Name: _____

Number Attending: _____

Fee Enclosed: _____

Will Pay at Door: _____

Please make checks payable to **SPE** and return to Luke Dewig by November 6

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Is Underbalanced Drilling the Right Answer for Your Reservoir?

P. V. (Suri) Suryanarayana

Blade Energy Partners

Abstract:

Underbalanced drilling (UBD) has evolved from a drilling technique into a reservoir exploitation tool. The primary benefits of UBD motivating its increasing consideration are *enhanced productivity* through mitigation of invasion damage, and *reservoir characterization* using UBD data. However, selection and valuation of UBD candidates still remains a largely arbitrary and heuristic process. In this lecture, we present a rigorous, integrated approach that takes into consideration cost, value and risk to evaluate the UBD candidature of a reservoir. The benefits and risks (particularly contra-indicators) of UBD are first articulated through numerous examples. The emerging art of reservoir characterization using UBD data is also presented with examples. Since the main premise of UBD is that it mitigates damage from conventional overbalanced drilling, it is important to first characterize such damage, and evaluate the potential for UBD to improve performance. We present an approach that combines results from special core tests with dynamic invasion modeling using fine-grid simulators to assess and quantify invasive damage and its impact on production. Results are illustrated using video clips. Finally, we present a rational valuation approach that uses probabilistic productivity estimation tools together with dynamic simulation methods to obtain expected production curves when UBD is applied. Selection of appropriate candidates in the context of these methods is discussed. The lecture provides a broad coverage of recent developments and new challenges in reservoir application of UBD.

Biography:

P. V. (Suri) Suryanarayana is a founding partner and Executive VP of Blade Energy Partners, an independent engineering, research, training and project management company. Prior to starting Blade in 2000, Suri was Senior Technologist in Mobil in their E&P technical center, and Drilling Engineering Advisor in Mobil North Sea Ltd. Suri's contributions span a wide range of upstream energy topics, including advanced mechanics, well construction engineering, quantitative risk analysis, stochastic design, Coiled Tubing, UBD, and reservoir engineering. He has over 40 archival publications on various technical subjects, and has given numerous invited talks on a range of industry topics. Current interests include reservoir application of underbalanced drilling, reservoir characterization, formation damage assessment, deepwater engineering, stochastic optimization for design, and multiphase flow. Suri received his PhD in Mechanical Engineering from Rice University in 1991. Several recent papers by Suri discuss the subjects covered in this lecture.