# September 2014

# **SPWLA Houston Chapter Newsletter**

Luncheon meetings in September (see details on pages 3-5)		
Northside		
Mon, Sept 8, 2014	Rick Reischman, Schlumberger	
Talisman Energy USA Inc.	Using Measurements Obtained in Horizontal Wells	
Suite 1200, 2445 Technology Forest	for Completion Optimization	
Blvd, The Woodlands, TX 77381		
Westside	Richard Bloemenkamp, Schlumberger	
Wed, Sept 10, 2014	Design and Field Testing of a New High-Definition	
BP Plaza Westlake 4	Microresistivity Imaging Tool Engineered for Oil-	
	Based Mud	
Downtown	Mark G. Kittridge, HESS Corp.	
Tue, Sept 17, 2014	Investigating the Influence of Mineralogy and Pore	
Kinder Morgan	Shape on the Velocity of Carbonate Rocks:	
	Insights from Extant Global Data Sets	

### **Houston Chapter News Highlight**

- Meet the team! Please welcome our new team new offices of the SPWLA Houston Chapter for the 2014-2015 term.
- New exciting **Venue for Northside** with reduced lunch price Talisman Energy at the Woodlands, TX.



### **SPWLA Upcoming Events**

**2014 SPWLA FALL TOPICAL CONFERENCE** | Mineralogy and Elemental Composition: Measurement and Interpretation from Core Cuttings, Samples, and Logs | October 19-22, 2014, Fort Myers, Florida

SPWLA JAPAN CHAPTER 20th FORMATION EVALUATION SYMPOSIUM October 1-2 2014 JOGMEC-TRC, Chiba, JAPAN

SPWLA 56TH Annual Symposium | Long Beach, CA, July 18-22, 2015



## **President's Corner**

Dear Chapter Members,

Welcome back to another speaker season for the Houston SPWLA chapter! As many of you will be aware the board elections were held this spring and the new board is now up and running with several speaker sessions already confirmed and more on the way. Some things are changing this year, the largest of which is our new location for the Northside lunch meetings. After some consideration we have decided to discontinue the use of the Greenspoint club and instead join the migration north to the Woodlands. As noted elsewhere in this newsletter we will now be holding the Northside meetings at the Talisman office and I would like to thank Talisman for allowing us the use of their conference facilities. The Northside will be kicking off the speaker season on Monday September 8<sup>th</sup>, when Rick Reischman (SLB) will be presenting on the use of horizontal well measurements for completions optimization. We will then follow with speaker sessions at the both the Westside and the Downtown venues. This year we will continue to use the BP Westlake 4 facility for the Westside meetings and the Kinder-Morgan office for the Downtown meetings. Once again a big thank you to both BP and Kinder Morgan. Details of the speaker sessions can be found in the newsletters, email announcements and on the chapter website (www.spwla-houston.org). Don't forget to register early to ensure your place, particularly for those session that require prepayment to secure lunch.

We are also in the process of updating our webpage to bring it into the 21<sup>st</sup> century, preliminary planning for this year's chapter events and investigating ways to increase student involvement in the chapter events. All of which I hope to bring you more details of in future newsletters.

Finally I wanted to mention that even though the Houston chapter is affiliated with the global SPWLA organization membership of one is not included with the other. I strongly encourage you to join the global SPWLA organization if you are not already a member. As always if your company is interested in sponsoring the Houston Chapter or one of our events then please contact our chapter treasurer (Zhipeng 'Z" Liu) for details <u>treasurer@spwla-houston.org</u>. Once again thank you to all those that attended our past speaker sessions and I hope to see you again during this season. Remember, we always welcome your feedback and ideas and for more information on chapter events please visit our website.

Regards, Matt Blyth Houston SPWLA Chapter President

SPWLA Houston Chapter Officers 2014 – 2015	
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#### Useful links

Houston Chapter spwla-houston.org

<u>SPWLA International</u> spwla.org

<u>Join SPWLA – become a</u> <u>member</u> http://www.spwla.org/me mber/join

> Houston Chapter LinkedIn page

SPWLA Symposium 2015

# **Northside Luncheon Meeting**

Monday, Sept 8th, 2014 | Lunch: 11:30 | Talk: 12:00

## Using Measurements Obtained in Horizontal Wells for Completion Optimization

### Rick Reischman, Schlumberger

Most horizontal wells are evaluated with nothing more than an MWD-Gamma Ray and survey data. A significant portion of a well's total costs are attributable to the completion which usually includes several frac stages. Often frac execution and production results of wells in close proximity, and in areas that are thought to have consistent geology, are inconsistent. Operators are frequently left in the dark without any petrophysical data other than a gamma ray to explain these inconsistencies.

Other than well placement, the main reason for logging in lateral wells is to obtain data to be used in determining the optimum placement of the completion. Recently, workflows have been developed that prove the value of logging horizontal wells to improve the results of fracture stimulation and productivity. Examples of how this methodology has been applied in horizontal wells to positively impact stimulation results and well production will be shown from various basins in the US.

#### **Rick Reischman**

Rick Reischman is currently an Unconventional Domain Champion with Schlumberger in Houston, Texas. His past work experience includes 36 years with Schlumberger Wireline in various assignments including the last three years with ThruBit, a Shell Technology venture company, as a Petrophysical Advisor prior to being acquired by Schlumberger. Rick received a Bachelor's of Science in Mechanical Engineering from the University of Texas at Austin. He is a member of SPWLA, SPE and AAPG.

# Venue Details Northside

**Talisman Energy USA Inc.** Suite 1200, 2445 Technology Forest Blvd, The Woodlands, TX 77381

**Parking**: Parking Garage adjacent to the Talisman building. Visitor Parking available in 5th floor and above.

Reservations: Email <u>Robin Slocombe</u> northyp@spwla-houston.org

**RSVP** by Tue., Sept 2<sup>nd</sup>.

**Cost**: \$30. Lunch is included. Please use PayPal (<u>click this link to pay</u>)

Student discount rate \$15 (Students use this link)

# **Westside Luncheon Meeting**

Wednesday, Sept 10, 2014 | Lunch: 11:30 | Talk: 12:00

## Design and Field Testing of a New High-Definition Microresistivity Imaging Tool Engineered for Oil-Based Mud

## Presenter: Richard Bloemenkamp, Schlumberger

Richard Bloemenkamp, Tianhua Zhang, Laetitia Comparon, Robert Laronga, Shiduo Yang, Sihar Marpaung, Elodie Marquina Guinois, Glenn Valley, Patrick Vessereau, Ehab Shalaby, Bingjian Li, Anish Kumar, Rick Kear, and Yu Yang, Schlumberger

While they provide a recognized technical advance for wells drilled with oil-based mud (OBM), OBM-adapted microresistivity images of the last 13 years remain far from the geologic interpretability provided by imagers that operate in a water-based mud (WBM) environment. Recently the use of a high-definition WBM imager has been demonstrated in wells drilled with OBM, but its application has been principally limited to high-resistivity formations with excellent hole conditions or to cases where the drilling fluid has been engineered to favor acquisition.

To fill this gap, a new wireline microelectrical imager is introduced, engineered from the ground up to acquire high-definition, full-coverage images in any well drilled with OBM. The all-new physics architecture includes a strategy to minimize and eventually eliminate the inevitable contribution of the nonconductive fluid, and to optimize the mode of operation in accordance with formation parameters. New tool-specific processing steps complement the standard borehole image processing workflow to render images representative of the formation.

Examining the measurement response in detail, via both modeling and real-world examples, demonstrates several favorable characteristics, for example, sensitivity to vertical as well as horizontal features, reduction of shoulder-bed effects, and reduced sensitivity to desiccation cracks.

The novel mechanical architecture includes a new sonde design with significant operational advantages. It conveys a sensor array composed of 192 microelectrodes providing 98% circumferential coverage in an 8-inch borehole. Individual microelectrodes are smaller than those of industry-standard imagers for WBM, each with a surface area of only 10.8 mm2, which provides excellent spatial resolution.

From a field test comprising more than 60 operations in various OBM fluids, highdefinition images were acquired in a variety of environments, from high-resistivity carbonates to shales and low-resistivity clastics, demonstrating the robustness and widespread applicability of the new tool. The examples include challenging environmental conditions and they explore the limits of accurate measurement. Comparison to legacy images demonstrates that the new physics of measurement coupled with a high-resolution, high-coverage sensor array has achieved much more than just a step change. The new images faithfully reproduce formation geology with photorealistic clarity and promise to revolutionize geologic interpretation of wells drilled with OBM.

**Richard Bloemenkamp** is a physicist at Schlumberger-Riboud Product Centre (SRPC), Clamart, France. He is the physics and interpretation team leader of the new OBM-adapted microresistivity imager project. He joined Schlumberger in 2003 and has worked on experimental physics, electromagnetic modeling, and interpretation products for borehole imaging. He received an MSc in electrical engineering in 1998 and a PhD in electromagnetic inverse scattering in 2002, both from Delft University of Technology in the Netherlands.

## Venue Details Westside

#### BP Plaza Westlake 4 Townhall Room 107

200 Westlake Park Blvd Houston, TX 77079

Reservations: Email to <u>Rohollah A. Pour</u> westyp@spwla-houston.org

RSVP by Sep 9

#### Cost: Free

Lunch: not provided, bring your own or purchase in the BP cafeteria

#### Parking:

Visitor parking is available at Westlake 4 overflow lot



# **Downtown Luncheon Meeting**

Wednesday, Sept 17, 2014 | Lunch: 11:30 | Talk: 12:00

## Investigating the Influence of Mineralogy and Pore Shape on the Velocity of Carbonate Rocks: Insights from Extant Global Data Sets

## Mark G. Kittridge, HESS Corp.

Using a variety of recent public-domain data sets comprising porosity, velocity (P- and S-wave) and, in most cases, mineralogy and petrographic data, I created an extensive global data set and evaluated the importance of mineralogy and pore type on the elastic properties behavior of carbonate core plugs. Results from this investigation clearly illuminated the potential for overinterpreting elastic properties behavior as a function of pore type(s) when mineralogy is not explicitly included in the analysis. Rock physics analysis using a combination of heuristic and theoretical models illustrated that mineralogy exerted a significant additional variation on velocity at a given porosity. Failure to account for mineralogy exacerbated inferences about the effect of pore type(s) made using a comparison of P-wave velocity to an inappropriate empirical model (Wyllie) that did not account for pore shape(s). In this analysis, extreme variability in carbonate velocity was observed in only portions of two data sets, when mineralogy was explicitly considered and robust models that accounted for inclusion (pore) shape were used. Results from this analysis resulted in a recommended workflow, including a rock physics template and dry-rock modulus diagnostics, for the evaluation of labbased carbonate rock physics data. The workflow was amenable to further integration with well-based data and other core-based petrophysical measurements (e.g., electrical properties).

**Mark G. Kittridge** is a Petroleum Engineer with more than 25 years' experience in Petrophysics, including well operations, integrated reservoir studies, enhanced oil recovery, and rock physics. Mark is currently Geophysics Manager – Physics of Rocks for HESS Corporation. Previously, he was Regional Discipline Lead (Petrophysics) and global Principal Technical Expert (QI Petrophysics) at Shell International EP Inc. Additional roles included Manager – Petrophysics and Rock Physics (ConocoPhillips) and VP Technology (Ikon Science). Mark earned an MSc. in Petroleum Engineering from The University of Texas at Austin (1988) and his BSc. and Professional degrees in Geological Engineering from The Colorado School of Mines (1986). Mark is the co-inventor of one US patent for the characterization of logging tool performance.

## Venue Details Downtown

#### Kinder Morgan

1<sup>st</sup> Floor Conference Rm 1001 Louisiana St Houston, TX 77002

Reservations: Email to <u>David Diaz</u> downtownvp@spwla-houston.org

RSVP by Tue., Sept 16

**Cost**: \$30. Lunch is included. Please use PayPal (click this link to pay)

Students discounted rate \$10 (Link for students)

Parking: closest options: - Travis Garage across milam, in front of Kinder Morgan - Open Air parking between Kinder Morgan and Shell N 2

