December 2014

SPWLA Houston Chapter Newsletter

Luncheon meetings *in January 2015*	
Northside **Mon, Jan 05, 2015** Talisman Energy USA Inc. Suite 1200, 2445 Technology Forest Blvd, The Woodlands, TX 77381	**Mark G. Kittridge,** HESS Corp Investigating the Influence of Mineralogy and Pore Shape on the Velocity of Carbonate Rocks: Insights from Extant Global Data Sets
Westside **Wed, Jan 14, 2015** BP Plaza Westlake 4	**Hani Elshahavi**, Shell Deepwater Exploration and Production in the Gulf of Mexico-Challenges and Opportunities
Downtown **Tue, Jan 20, 2015** Kinder Morgan	**Lu Chi,** Texas A&M University Directional permeability assessment in formations with complex pore geometry using a new NMR-based permeability model

Houston Chapter News

Happy Holidays!

Wishing you a wonderful holiday season!

We'll restart our luncheons in January!

Looking forward to see you next year!

- **SPWLA Houston Technology Show was a success!**

  Check some photos in this newsletter

- **Volunteering opportunity!**

  We are planning our website makeover. Let us know if you're interested to help out!

SPWLA Upcoming Events

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

AAPG/SEG/SPWLA HEDBERG CONFERENCE *"Fundamental Parameters Associated with Successful Hydraulic Fracturing – Means and Methods for a Better Understanding"* [Link] | Austin, Tx, December 7-11, 2014

SPWLA C.A.F.E. Chapter: CAFE Petrophysical Forum. [Link]

February 24-28, 2015

SPWLA 57th Annual Symposium | Reykjavik, Iceland, June 26-30, 2016

President's Corner

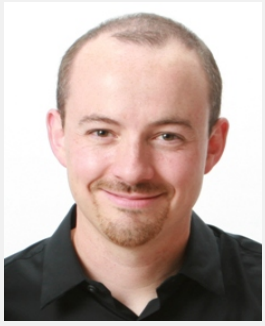
Dear Chapter Members

Well here we are at the end of the calendar year and half way through a successful chapter speaker season. November saw another three speaker luncheons take place. On the Northside, Kimball Skinner (FEI) presented on a pore to core workflow for improving reservoir characterization. On the Westside, Mark Proett (Aramco) delivered a presentation on quantifying LWD and WL pressure test quality and in the Downtown session Shreya Biswas (GeoBiz) discussed bringing seismic ideas to acoustic logging. Thank you to all who attended and to our speakers for volunteering their time to present.

In December we had a pause in our monthly speaker luncheons and instead we held our annual Software and New Technology Show. This year's event was a great success and we had a full room of 16 vendors and our highest ever number of attendees! New this year was the inclusion of short presentations on new technologies and workflows and our presenters were Gary Simpson (Hess), Terri Olson (FEI), Haomin Xu (BHI), Taufik Ait-Ettajer (Repsol), Donald Westacott (HAL) and Ana Peternel (SLB). I would sincerely like to thank our presenters, vendors and all those who attended the show for helping to make it the success that it was. I would also like to thank our volunteer events coordinator (Gerardo Gonzalez) for all his help with setting up and running this event. I look forward to another successful event next year.

After everyone returns from the Christmas break we will resume our speaker sessions in all three locations. We will also be planning our next events – the Spring Topical Symposium and our annual Social Event. Meanwhile I hope you all enjoy your time off and stay safe over the Christmas break and I would like to wish you all a happy New Year. See you next year!

Regards,
Matt Blyth
Houston SPWLA Chapter President



Matt Blyth
Houston Chapter President
president@spwla-houston.org

SPWLA Houston Chapter Officers 2014 – 2015	
President **Matthew Blyth**, Schlumberger president@spwla-houston.org	**Treasurer** **Zhipeng (Z) Liu**, Kinder Morgan CO2 treasurer@spwla-houston.org
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Vice President – Westside **Rohollah Abdollah-Pour**, BP America westvp@spwla-houston.org	**Webmaster** **Chicheng Xu**, BHP Billiton webmaster@spwla-houston.org
Vice President – Downtown **David Diaz**, Schlumberger downtownvp@spwla-houston.org	**Event Coordinator** **Gerardo Gonzalez,**Schlumberger events@spwla-houston.org
Secretary **Lucy Plant**, FEI secretary@spwla-houston.org	**Volunteer** **Call for volunteers – open position**

Useful links

Sign up for the Houston Chapter Mailing List [Link]

Houston Chapter
spwla-houston.org

SPWLA International
spwla.org

Join SPWLA – become a member
http://www.spwla.org/member/join

Houston Chapter LinkedIn page

SPWLA Symposium 2015

Northside Luncheon Meeting

Monday, Jan 05, 2015 | 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.
SPWLA Distinguished Speaker, 2014-15

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 lab-based 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 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 **Robin Slocombe**
northvp@spwla-houston.org

RSVP by Dec 30.

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

Student discount rate $15
(Students use this link)

Westside Luncheon Meeting

Wednesday, Jan 14, 2015 | Lunch: 11:30 | Talk: 12:00

Deepwater Exploration and Production in the Gulf of Mexico-Challenges and Opportunities

Hani Elshahawi, Shell

Deepwater basins across the globe hold enormous amounts of oil and gas still ripe for the taking, but tapping these resources presents a host of challenges. There has been remarkable progress in deepwater over the last 20 years, but the technical challenges continue to evolve. New deepwater provinces are being established and new players are entering the business. Increased safety and environmental challenges have come along with more complex reservoirs and fluids, more remote and smaller fields, and relentless economic pressure. The world will need 27 million incremental barrels per day by 2020 to cover global demand growth as well as make up for production decline. Approximately 10 million barrels per day will need to come from deepwater. It will be an enormous challenge to deliver on this promise, but ever since the dawn of time, human ingenuity has peaked at times of greatest need. This presentation details how history is about to repeat itself in the deepwater Gulf of Mexico.

Hani Elshahawi is Deepwater Technology Advisor and Capabilities Manager at Shell. Previously, he led FEAST, Shell's Fluid Evaluation and Sampling Technologies center of excellence and before that spent 15 years with Schlumberger in over 10 countries in Africa, Asia, and North America during which he has held various positions in interpretation, consulting, operations, marketing, and technology development. He holds several patents and has authored over 120 technical papers in various areas of petroleum engineering and the geosciences. He was the 2009-2010 president of the SPWLA, distinguished lecturer for the SPE and the SPWLA 2010-2011, and recipient of the SPWLA Distinguished Technical Achievement Award in 2012. His email is Elshahawi@gmail.com.

Venue Details Westside

BP Plaza Westlake 4
501 Westlake Park Blvd
Houston, TX 77079

Reservations:
Register online Here

RSVP by Jan 13

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

Parking:
Visitor parking is available at Westlake 4 overflow lot

Sign In Process:
You can proceed directly from the BP reception to the meeting room.
Signing in at the security in not required.
Please sing in on the attendance sheet in the meeting room.
For questions only: Email Rohollah Abdollah-Pour

Downtown Luncheon Meeting

Tuesday, Jan 20, 2015 | Lunch: 11:30 | Talk: 12:00

DIRECTIONAL PERMEABILITY ASSESSMENT IN FORMATIONS WITH COMPLEX PORE GEOMETRY USING A NEW NMR-BASED PERMEABILITY MODEL

Lu Chi, Texas A&M University

This talk describes a new method for permeability assessment using Nuclear Magnetic Resonance (NMR) measurements. Conventional techniques for permeability assessment from NMR measurements include empirical correlations such as SDR (Schlumberger-Doll-Research) and Coates models. However, carbonate rocks are known for lack of good correlations between pore-body-size and pore-throat-size, which makes it challenging and often unreliable to estimate permeability from NMR T2 (spin-spin relaxation time) distribution in carbonate formations with complex pore structure. It has also been proposed that conventional permeability models can be improved by incorporating an estimated pore connectivity factor. However, none of the previously introduced techniques reflect the anisotropic characteristics of rock permeability.

The main objective of this work is to reliably estimate directional permeability in complex formations based on NMR measurements, by incorporating a directional pore-connectivity factor into a conventional NMR permeability model. We introduce two methods of calculating directional pore-connectivity factor of rock samples: one is calculated from three-dimensional (3D) pore-scale images, the other one combines image analysis and electrical formation factor. A random walk algorithm is used for pore-scale modeling of NMR response in porous media.

We calibrated the introduced permeability model using carbonate and sandstone rock samples with complex pore geometry and anisotropic permeability. We then successfully tested the new model on test rock samples from carbonate and sandstone formations. We compared the directional permeability estimated from the new NMR-based permeability model against those calculated from Lattice Boltzmann Method (LBM). The comparison between the permeability estimates using our new NMR-based permeability model and those obtained from conventional models (e.g. SDR and Coates models) demonstrated that the new NMR-based directional permeability model significantly improves assessment of permeability. The outcomes of this research can significantly improve permeability assessment in anisotropic formations with complex pore geometry, and can be further extended to organic-rich source rocks.

Lu Chi is a PhD candidate in the Harold Vance Department of Petroleum Engineering at Texas A&M University in College Station. She received her B.Sc. in Physics from Peking University in China and her M.Sc. degree in Materials Science from University of North Carolina at Chapel Hill. Lu is currently a graduate research assistant in the Texas A&M Multi-Scale Formation Evaluation Research Group. Her research interests include application of NMR in reservoir characterization, petrophysics and formation evaluation of complex reservoirs.

Venue Details Downtown

Kinder Morgan
1st Floor Conference Rm
1001 Louisiana St
Houston, TX 77002

Reservations:
Email to **David Diaz**
downtownvp@spwla-houston.org

RSVP by Mon., Jan 19

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

2014 Technology Show
SPWLA Houston Chapter
Report

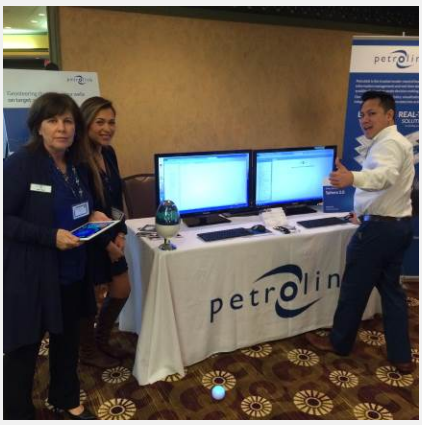
The SPWLA Houston Technology Show this year has been a success. We promptly reached the participants and exhibitors limits we could host and had a great turnout throughout the day.

We appreciate the feedback some of participants have provided after the event. It definitely will be used to improve our events in the future and make it more relevant and interesting to our membership.

Our special thanks and recognition goes to Gerardo Gonzalez who was behind the scenes of the show and ensured it ran smoothly.

Photos from the event are kindly provided by our Tresurer Zhipeng (Z) Liu.

Irina Borovskaya
Editor, SPWLA Houston Chapter



Dear Houston SPWLA Chapter Members,

The following training class will take place in Houston, on January 19-23. The instructor has kindly offered to make a donation from the course proceeds to the SPWLA Foundation in the name of the Houston SPWLA Chapter.

Integrated Petrophysics for Reservoir Characterization

Instructor: **Mark Deakin, PhD (Petrophysics)**

This course will teach you how to evaluate reservoirs and quickly identify flawed results. A carefully interleaved sequence of lectures, PetroDB-Vault demos, micro-practicals, movies and Excel workshops is presented to convey a flexible and very powerful petrophysical method. The Comprehensive Manual and Petrophysical Toolbox include templates for Quick Look Log Analysis and Essential Core-Log Integration.

Continually updated this course remains The Benchmark Petrophysics Course today!

What is PetroDB-Vault?
"PetroDB-Vault" is a fully flexible IP or Geolog evaluation command file linked to a generic petrophysical database, PetroDB. This combination creates a convincing and uniquely powerful formation evaluation tool.

Petrophysical Competency Rank
You may choose to take a confidential, 100-point multiple-choice test to assess your mainstream petrophysical competency.

Testimonials

'Best course attended. Well presented, excellent manual'
'Comprehensive, Well Presented, Relevant, Practical, Entertaining, Technically Strong!'
'A powerful, highly technical and industry relevant course'
'The single most important course I have attended'
'An insightful and excellent presentation'
'Thank you so much Dr Mark!'
'An extremely practical and powerful course'
'Excellent lecturer, enthusiastic and knowledgeable…'
'…has a passion for his subject'
'THE LECTURER IS GREAT! I learnt things I could actually use!'
'…like having a Master Degree in just one week!'
'Mark is very knowledgeable and open to questions and new ideas from

Venue & Details

19-23 January 2015 (Mon through Fri) 8am- 4pm

Omni Hotel, Riverway, W. Loop 610, Houston

Course Details & Registration:

Click for Full Details

Advanced Registration Required
Space is Limited (*max 25*)

For additional information contact:

Dr Mark Deakin
PETROPHYSICS Pty Ltd

Tel: +61 416058 916

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