

# SPWLA Houston Chapter Newsletter

Luncheon meetings in April 2015	
<b>Northside</b> <b>Mon, Apr 06, 2015</b> Talisman Energy USA Inc.  Suite 1200, 2445 Technology Forest Blvd, The Woodlands, TX 77381	Alternative Nuclear-based Technologies to Mitigate Risks of Radionuclide Well Logging Sources: Their advantages and challenges <b>Ahmed Badruzzaman</b> , Pacific Consultants and Engineers and University of California, Berkeley
<b>Westside</b> <b>Wed, Apr 8, 2015</b> BP Plaza Westlake 4	Application of an oil movability quick-look using dielectric measurements at four depths of investigation <b>S.T. Grayson</b> and J.L. Hemingway, Schlumberger
<b>Downtown</b> <b>Wed, Apr 15, 2015</b> Kinder Morgan	Automatically Quantifying Wireline and LWD Pressure-Test Quality <b>Mark Proett</b> , Aramco Services Company, Upstream Group

## Houston Chapter News

**Our new website is now live!**

Our website just got a major face lift: Enjoy new functionality and design at

[Spwla-houston.org](http://Spwla-houston.org)



## SPWLA Upcoming Events

**SPWLA 2015 Spring Topical Conference: Pore- scale imaging and digital rocks: Expanding the Petrophysical Toolkit** | Skamania Lodge, Stevenson, WA, May 3-7th 2015 [[Link](#)]

**SPWLA Houston Chapter Topical Conference: Mature Field Petrophysics Maximizing the Value of Existing Assets** | Houston, May 13, 2015

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

**SPWLA UR SIG Meeting** | Spring, TX, August 24, 2-15 [[link](#)]

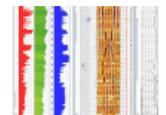
**SPWLA 57th Annual Symposium** | Reykjavik, Iceland, June 26-30, 2016

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NMR Log Processing



## President's Corner

Dear Chapter Members

Hello! The spring speaker sessions are now well under way with three successful speaker meetings this month. On the Northside Shreya Ley (GeoBiz Technology) presented on bringing seismic ideas to acoustic logging, a repeat of their previous talk at the downtown venue. On the Westside Camilo Mejia (Weatherford) delivered a talk on using real-time LWD azimuthal acoustic measurements to optimize unconventional formation evaluation and for the downtown session Dr. Darryl Trcka (Weatherford) presented a talk about the field experience with the Raptor pulsed neutron saturation tool. Once again I would like to thank all of you who attended for your ongoing support of the chapter events and of course a big thank you goes out to our speakers.

As you may have already seen, the call for abstracts for our Spring Topical Symposium has already gone out. The symposium will take place on Wednesday May 13th at the Chevron Auditorium downtown and the title is "Mature Field Petrophysics; Maximizing the Value of Existing Assets" and we are inviting abstract submission on all topics relevant to the symposium scope. The deadline for abstract submission is April 15th and this is coming up fast so I would like to encourage all of you to consider submitting your ideas. This is an "off the record" symposium so no paper is required and no materials will be distributed, so it is an ideal venue for discussing new and unique ideas. If you are interested in submitting an abstract please email me directly.

In addition we are now live with our new website! We are still using the same web address ([www.spwla-houston.org](http://www.spwla-houston.org)). Please visit the new site, look around and send us your comments so that we can improve it further. We would like to thank our new webmaster Amir and his wife Zahra for their help in setting up the new site for us. Finally this is a friendly reminder to please join the SPWLA international organization if you are not already a member. Details can be found at [www.spwla.org](http://www.spwla.org).

If you have any questions or comments about chapter activities then please feel free to contact me directly at [president@spwla-houston.org](mailto:president@spwla-houston.org).

Matt Blyth  
Houston SPWLA Chapter President



Matt Blyth  
Houston Chapter President  
[president@spwla-houston.org](mailto:president@spwla-houston.org)

### Useful links

**Sign up for the Houston Chapter Mailing List**  
[\[Link\]](#)

[Houston Chapter spwla-houston.org](http://www.spwla-houston.org)

[SPWLA International spwla.org](http://www.spwla.org)

[Join SPWLA – become a member](http://www.spwla.org/member/join)  
<http://www.spwla.org/member/join>

[Houston Chapter LinkedIn page](#)

[SPWLA Symposium 2015](#)

### SPWLA Houston Chapter Officers 2014 – 2015

<b>President</b> Matthew Blyth, Schlumberger <a href="mailto:president@spwla-houston.org">president@spwla-houston.org</a>	<b>Secretary</b> Lucy Plant, FEI <a href="mailto:secretary@spwla-houston.org">secretary@spwla-houston.org</a>
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# Northside Luncheon Meeting

Monday, Apr 08, 2015 | Lunch: 11:30 | Talk: 12:00

## Alternative Nuclear-based Technologies to Mitigate Risks of Radionuclide Well Logging Sources: Their advantages and challenges

**Ahmed Badruzzaman**, Pacific Consultants and Engineers and University of California, Berkeley

Radioisotope-based nuclear logging tools are critical for reservoir characterization and related completion and production decisions. But these sources are small, mobile and often used in politically unstable regions of the world. Thus, they and similar sealed sources pose the risk of being utilized in a radiological dispersal device (RDD), despite their lower radioactivity content relative to sources used in other industries and the multiple layers of protective features built-in. This concern was heightened by the tragedy of 9/11, recent stolen/missing source incidents, attempts at malevolent use, and existence of a black-market on sources. Consequently, in addition to decades-long industry effort to develop non-nuclear and nuclear-based alternative logging technologies, governments, international agencies, and national labs are actively assessing measures and technologies to mitigate risks of such sources.

The presentation briefly surveys recent source incidents, associated risks, and approaches being assessed to mitigate these risks: use of alternatives, electronic tagging of sources, and use of enhanced security protocols. It then examines in some detail the state of switchable nuclear source-based alternatives recently reported, namely, 1) D-T neutron generators to replace  $^{241}\text{Am}$ -Be sources in neutron porosity and mineralogy tools, wireline or LWD, and 2) two switchable alternatives to  $^{137}\text{Cs}$ -based density, the most accurate estimator of porosity. The latter are a LINAC X-ray wireline tool successfully tested in the 1980s, but not commercialized, and an interpretation algorithm implemented in an LWD tool to utilize gamma-rays from inelastic interactions of high-energy neutrons from a D-T generator. The latter concept, denoted as inelastic n-gamma density (INGD) or as "sourceless" density by some, was initially developed in the 1990s as a cased-hole density indicator. Results of nuclear alternatives, in general, have not been as accurate as those from radionuclide sources. The talk discusses the underlying physics causes of the inaccuracies, the resulting tool design and petrophysical interpretation complexities, and the ongoing effort to address these, including research on novel generators with the potential to directly replace  $^{241}\text{Am}$ -Be and  $^{137}\text{Cs}$  sources. The talk will conclude by briefly exploring implications for the industry of the mitigation approaches being deliberated and how it can participate in these efforts to help set the direction of nuclear logging for years to come.

**Ahmed Badruzzaman** has spent over 30 years studying downhole nuclear techniques for both characterization and monitoring during his tenure at Chevron Energy Technology, Sandia National Laboratories, and Schlumberger-Doll Research. He developed and taught a graduate course on the subject from 2001-2009 at University of California, Berkeley. In addition, he has studied nuclear power reactors, small

## 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](mailto:Robin.Slocombe@spwla-houston.org)  
[northvp@spwla-houston.org](mailto:northvp@spwla-houston.org)

**RSVP** by noon, Mar 30.

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

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

energy systems for developing societies, and energy/ climate issues. He has been the primary industry discussant on logging source safety challenges and their mitigation. Currently a consultant at Pacific Consultants & Engineers in California, he provides consultation to the US Department of Energy on these topics. He was an official reviewer of the 2008 U.S. National Academy of Science report to Congress, Radiation Source Use and Replacement. During 2011-2012, he was a consultant to the International Atomic Energy Agency on their draft source safety guide, Radiation Protection and Safety in Well Logging, currently under review for international deployment. He has just been selected by the USDOE to be the Technical Lead of their Scoping Study Team on potential alternatives to radionuclide logging tools.

Ahmed holds a Ph. D in Nuclear Engineering and Science from Rensselaer Polytechnic Institute, Troy, NY. He has authored over 40 papers, earned two US patents, received several professional society awards, and was elected a Fellow of the American Nuclear Society in 2004. He is the Chairman of SPWLA Nuclear Logging SIG, a past Distinguished Lecturer of SPE, and a past and current Distinguished Speaker of SPWLA. Ahmed is a past editor of *Petrophysics*, a former chair of SPE Distinguished Lecturer Committee, and a former SPWLA VP of Publication. He is a Visiting Scholar at University California, Berkeley.

## SPWLA Houston Spring Topical Conference

### Mature Field Petrophysics:

### Maximizing the Value of Existing Assets

Wednesday May 13<sup>th</sup>, 2015 | Chevron Auditorium, Downtown Houston

We are inviting abstract submission on relevant topics including (but not limited to) **finding missed pay, production petrophysics, cased hole analysis, well integrity, depletion, management and analysis of legacy data, extending production, cross well modeling and reservoir modeling.**

This will be an **off-the-record** event with no paper required - we encourage sharing new ideas and methodologies that would be of interest to other members.

If you are interested in presenting at this event then please submit your abstract via email address [\[link\]](#).

The **deadline for abstract submission is Wednesday April 15<sup>th</sup>.**

We are looking forward to an exciting conference and we need great speakers and interesting ideas to make this event a success!

*If you have any questions on the event please feel free to contact any of the board members directly.*

# Westside Luncheon Meeting

Wednesday, Apr 08, 2015 | Lunch: 11:30 | Talk: 12:00

## APPLICATION OF AN OIL MOVABILITY QUICKLOOK USING DIELECTRIC MEASUREMENTS AT FOUR DEPTHS OF INVESTIGATION

**S.T. Grayson and J.L. Hemingway, Schlumberger**

Dielectric measurements have been used for many years for analysis of the flushed zone. Dielectric permittivity is used to calculate water-filled porosity for comparison with total porosity from traditional density-neutron logs. In heavy oil and low-permeability reservoirs, this methodology calculates oil saturation without requiring knowledge of water salinity.

New dielectric measurements that enhance this technique are now available from a multifrequency dielectric dispersion tool with various receiver spacings, frequencies, and polarizations. A novel application of this data evaluates variations in oil saturation due to oil movement, in a wellsite quicklook presentation that compares dielectric measurements of water-filled porosity at four depths of investigation up to 4 in. into the reservoir. Comparison of these four water-filled porosities with total porosity yields an oil saturation invasion profile.

A heavy oil sandstone case study illustrates the benefit of the quicklook in observing movability variations due to oil gravity. In diatomite reservoirs, oil movements have been observed in zones affected by steam injection and natural permeability developments. Observed oil movements have been directly correlated to better production in diatomite wells. Because the quicklook provides a wellsite identification of oil flushing, it can be used to optimize the placement of sidewall cores. If cores are shot in zones showing flushing, the core analysis could reflect residual oil saturation rather than the So of the zone.

The oil movability quicklook provided by the multifrequency dielectric dispersion tool provides an added dimension to the evaluation of oil saturation variations in the near-wellbore region. It yields new insight into variations of oil viscosity and permeability in sandstone and diatomite reservoirs. It can improve reserve calculations in these reservoirs with the ability to identify core flushing and read deeper into the formation. It provides a valuable enhancement to the traditional dielectric evaluation workflow.

**Steve Grayson** has recently retired after more than 37 years with Schlumberger. He has worked in various positions in Michigan, Appalachia, Canada, Houston, Laredo, the Rockies and California. He last held the position of Unconventional Domain Champion in Ventura, California. He has a BSEE from Rensselaer Polytechnic Institute and started as a logging field engineer in Michigan in 1977. He has authored papers involving logging and interpretation techniques in thin-bedded, heavy-oil, and fractured reservoirs in the Appalachian basin, Texas, and California.

### Venue Details Westside

BP Plaza Westlake 4  
**Room 107**  
501 Westlake Park Blvd  
Houston, TX 77079

#### Reservations:

[Register online Here](#)

**RSVP** by noon, Apr 07

**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 is not required. Please sign in on the attendance sheet in the meeting room.

For questions only: [Email Rohollah Abdollah-Pour](#)

Your feedback matters. provide us with your feedback on why you will not be joining us [\[here\]](#)



# Downtown Luncheon Meeting

Wednesday, April 15 2015 | Lunch: 11:30 | Talk: 12:00

## Automatically Quantifying Wireline and LWD Pressure-Test Quality

**Mark Proett**, Aramco Services Company, Upstream Group

In the literature regarding wireline (WL) and logging-while-drilling (LWD) pressure testing analysis, theoretical transient models are promoted to evaluate the quality of pressure test points, typically by a skilled analyst. However, in practice, other criteria are normally used to judge the test quality. Some are ad hoc, but there is a growing consensus that several convenient, simple, and effective real-time measurements are needed to evaluate the quality of the test points. This presentation demonstrates an automated process that was developed where these real-time measurements are used to determine the validity of the pressure test and a rating assigned based on predetermined standards.

The primary measurements made now include the drawdown mobility (md/cp) and buildup stability (psi/min). Although these measurements can be effective independently, they are also a source of information that can be expanded upon to further analyze the data. For example, how does the pressure stability compare to what is expected considering the drawdown mobility? Noise in the pressure data caused by mud flow is particularly evident in LWD pressure testing and the standard deviation of the pressure data during the buildup is another consideration for test quality. The radius of investigation can be estimated using the drawdown/buildup times with the mobility estimate to quantify the testing effectiveness. Supercharging is a concern for pressure measurements when the pressure measured is influenced by mud filtrate invasion that has elevated the pressure at and near the wellbore. The supercharge potential can be determined by making some simplifying assumptions to further evaluate the data points. These calculations can be made by using basic principles and will guide the analyst monitoring the test to determine the relative quality of the test points. In this way, the best quality test points are used in the analysis of fluid gradients or for integration into the petrophysical analysis.

**Mark Proett** is a Sr. Petroleum Engineering Consultant for Aramco Services Company, Upstream Group in Houston. Mark is best known for his publications advocating the viability of the formation testing-while-drilling (FTWD), introduced in 2002, with the Sperry GeoTap service. He has been awarded 54 US patents and authored over 50 technical papers, most of which deal with sampling and testing analysis methods. He has been an SPWLA Distinguished Speaker and SPE Distinguished Lecturer. In 2008 Mark received the SPWLA Distinguished Technical Achievement Award and in 2013 the SPE Gulf Regional Formation Evaluation Award. Mark has a Bachelor of Science in Mechanical Engineering from the University of Maryland and his Master of Science from Johns Hopkins University

### Venue Details Downtown

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

#### Reservations:

Email to [David Diaz](mailto:David.Diaz@downtownvp@spwla-houston.org)  
[downtownvp@spwla-houston.org](mailto:downtownvp@spwla-houston.org)

**RSVP** by noon, Apr 13

**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



## March Events Photos



Downtown Luncheon, March 18, 2015.  
Darryl Treka (left) and Zhipeng Liu (right)



Northside Luncheon, March 2, 2015  
Shreya Biswas Ley (left) and Robin Slocombe (right)