



Houston Chapter Officers
2012 – 2013

President

THAIMAR RAMIREZ
Apache Corporation
president@spwla-houston.org

Vice President – Northside

MITCH PAVLOVIC
Anadarko
northvp@spwla-houston.org

Vice President – Westside

MATTHEW BLYTH
Schlumberger
westvp@spwla-houston.org

Vice President – Downtown

LIBNY LEAL
Hess Corporation
downtownvp@spwla-houston.org

Treasurer

ROB HENGEL
Baker Hughes
treasurer@spwla-houston.org

Secretary

ANKUR GANDHI
Anadarko
secretary@spwla-houston.org

Editor

JACK DOUGLAS
Newfield Exploration
editor@spwla-houston.org

Webmaster

ZHIPENG (Z) LIU
Kinder Morgan CO₂
webmaster@spwla-houston.org

SPWLA – Houston Chapter News

September, 2012

Luncheon Meetings

Northside Mon, Sep 10, 2012 The Greenspoint Club	Reservoir Characterization in the Eagle Ford Shale using Digital Rock Methods by Joel Walls, Ingrain Inc
Westside Wed, Sep 12, 2012 BP Plaza Terrace Room	New Developments in Tri-axial Induction Applications by Ron Hayden, Schlumberger
Downtown Wed, Sep 19, 2012 Hess Tower Conf. Room	Ionic Analyses and Isotopic Measurements of Subsurface Waters, with Reference to the Deepwater GOM by Steve Uchytel, Hess Corporation

Local SPWLA Upcoming Events

Houston SPWLA Software/Hardware Show December 2012

Event Sponsors needed, contact [Rob Hengel](#)

Golf Tournament

Spring 2013

Event Sponsors needed, contact [Rob Hengel](#)

54th Annual SPWLA Symposium

June 22nd to 26th

New Orleans, LA

[Complete Calendar of Events](#)

President's Corner

September, 2012



Dear Chapter Members,

This is the beginning of a new exciting season! I would like to introduce our 2012-2013 Chapter Board Members, who are a mix of veterans and new faces inspired to bring to you a diverse array of technology. Mitch Pavlovic is leading the Northside venue, which will successfully continue with your support at the Greenspoint Club. Libny Leal is the elected VP Downtown, who is already making improvements at his venue by providing you a hot lunch. Matthew Blyth was elected to run the popular Westside venue at the Energy Corridor. Another young addition is Ankur Gandhi in the Secretary office. Rob Hengel will continue with his invaluable duties as Treasurer. Two appointments took place this year: Jack Douglas in the Editor position, who will keep us honest, and Zipheng Liu known as “Z”, who will continue assisting us as the Webmaster for one more year. I have the honor to work with these members who keep on raising the bar for our Chapter!

We already started planning the traditional events that characterize our Houston Chapter. We are trying to sort out the venue and date for the vendor's software exhibit. Likewise, the golf tournament, with much appreciated help from our chapter member pro-golfers, golf is not exactly an expertise for me. We are also thinking about topics for the 2013 Spring Topical Conference. We will continue working to increase our membership, not only that of the Chapter but also the International Society.

I am proud to announce that our Chapter sponsorship keeps on increasing. All the major logging service companies have now joined us. We are currently working with our sponsors on renewals for the upcoming year. There will also be more opportunities to sponsor our chapter at specific events such as the golf tournament. For more information on sponsorship, please contact Rob at treasurer@spwla-houston.org.

The board values your opinion and welcomes your suggestions on technical talks, topical conference themes, events, and/or new ideas. Please, feel free to let us know any suggestions or share your feedback. If you have questions about the chapter, please, visit our website (www.spwla-houston.org) or contact any of the officers. Our secretary, Ankur, will also be glad to address your questions or include you in the e-mail distribution list (secretary@spwla-houston.org).

Thanks to all of you who believe in the Houston Chapter, thanks for your continued support, thanks to our sponsors. We are looking forward to making the 2012-2013 season a good one for you!

Thaimar Ramirez
Houston Chapter President
president@spwla-houston.org

Thank you to our sponsors!!!



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Northside Luncheon Meeting

Date: Monday September 10, 2012

Lunch: 11:30 Talk: 12:00

Reservations: Email [Mitch Pavlovic](mailto:Mitch.Pavlovic@spwla.org)

RSVP before 9:00 A.M., Thurs. Sept. 6.

Walk-ins are welcome; lunch may not be available without advance payment.

Place: The Greenspoint Club

16925 Northchase Drive, Houston, TX 77060

Reservoir Characterization in the Eagle Ford Shale using Digital Rock Methods

Presenter and co-author: Joel Walls, Ingrain Inc.,

Additional Co-authors:

Brian Driskill, Shell E&P

Steven W. Sinclair, Matador Resources Co.

Juliana DeVito, Ingrain Inc.



Abstract

Viewing a reservoir at the grain and pore scale results in enhanced understanding, by providing information on porosity distribution, organic material volume, and organic material pore textures. This presentation describes the methodology and results of an unconventional reservoir study which identified the distribution of porosity and organic matter, as well as the relationship between porosity and permeability. Sixteen samples from the Cretaceous (Cenomanian/Turonian) Eagle Ford Formation were collected from four conventionally cored wells located in Maverick, Dimmit, LaSalle and Atascosa counties in south Texas, USA. Our dataset comprises both 2D scanning electron microscopy (SEM) images and 3D Focused Ion-Beam Scanning Electron Microscopy (FIB-SEM) volumes.

The data and images analyzed reveal some important facts about the Eagle Ford shale. Some of these observations are;

- Predominant pore type in Eagle Ford is dependent on zone (UEF or LEF) and maturity
- Pendular (bubble) type organic matter (OM) pores are more common in oil window (Wells NW and NE)
- Both pendular and spongy type OM pores are common in gas/condensate window (Wells SW and SE)
- Wells SW and SE (more mature, dry gas and gas/condensate) have smaller average pore sizes and lower permeability than Well NW and NE (less mature, oil window).
- Different porosity-perm trends reflect differences between upper and lower Eagle Ford and differences between oil window and gas window.

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The current assumption is that organic matter is originally solid and that, depending on the initial organic matter composition, it develops porosity with increasing maturity. The pendular porosity probably develops first in the oil window then later, in a second stage of maturation in which gas evolves, the spongy porosity may develop also. Some samples develop only spongy porosity. This may be due to initial organic matter composition or perhaps a more rapid rate of burial and maturation. Some samples have little porosity in the organic matter even though the conditions for maturation existed. This may be due to initial organic matter composition, or the porosity may have been created then lost due to compaction and outward migration of hydrocarbons. Considerable uncertainty remains, especially about how the organic matter composition varies on a microscopic scale, but digital rock physics and SEM imaging provide unique capabilities for unraveling some of shale's mysteries.

Biography

Dr. Joel Walls is a geophysicist and entrepreneur with extensive experience in the research, development, and commercialization of advanced technology products and services for oil and gas exploration and production. Dr. Walls joined Ingrain in 2010 as Director, Unconventional Technology with responsibility for developing and commercializing services focused on shale and other unconventional reservoirs.

Previously he joined Dr. Amos Nur of Stanford University to co-found Petrophysical Services Inc (PSI) in 1982. PSI was acquired by Litton Core Laboratories in 1984. He served as Director of the Dallas Advanced Technology Center for Core Lab until 1990 when he formed the software company PetroSoft Inc., in San Jose, CA. PetroSoft merged with two other software companies to form Rock Solid Images (RSI) in 1998. He served in several executive positions, including VP of Business Development and VP of Technology. RSI was acquired by Offshore Hydrocarbon Mapping (OHM) in 2007. Dr. Walls then served as VP and Shale Venture Leader for Object Reservoir from 2008 to 2010.

Joel was a co-founder and the first president of the Society of Core Analysts, and is also a member of the Society of Exploration Geophysicists (SEG), Society of Petroleum Engineers (SPE), and Society of Petrophysicists & Well Log Analysts (SPWLA). He is the author of many publications in various geophysical and petrophysical journals, and holds two U.S. patents in the field of seismic reservoir characterization. He obtained a BS in Physics from Texas A&M University, Commerce, Texas, and a MS & PhD in Physics from Stanford University.

Westside Luncheon Meeting

Date: Wednesday, Sep 12, 2012
Lunch: 11:30 Talk: 12:00
Reservations: Email [Matthew Blyth](mailto:Matthew.Blyth@spwla.org)
RSVP before 3:00 P.M., Tuesday Sep 11

Place: BP Plaza Terrace Room n the 1st floor, next to cafeteria
501 Westlake Park Boulevard, Houston, TX 77079

New developments in Tri-axial Induction Applications

Presenter: Ron Hayden, Schlumberger
Co-Authors: David Allen, Peter Wu, Tom Barber, Orlando Neto



Abstract

The first multi component induction tool was developed to evaluate deepwater turbidites in the Gulf of Mexico and equipment was deployed in the late 90's. Multi-array triaxial induction tools were subsequently introduced in 2004 and it has become a routine service on deepwater wells in the Gulf and throughout the world. Hardware has been upgraded as the market evolved into deeper water and well depths and thus higher pressures. Inversion software and interpretation techniques also continued to evolve leading to reduced uncertainty and improved reservoir characterization.

Evaluation of laminated sand shale sequences was expected to be the principle application and while there are many impressive examples, other applications bring additional value to the data.

This presentation will summarize these applications and highlight some of the developments in interpretation models and techniques. Recent software developments will be described and several examples will be used to show how these improve the quality of interpretation. This includes a new 'zero-d' inversion technique as well as evolution of laminated sand analysis techniques.

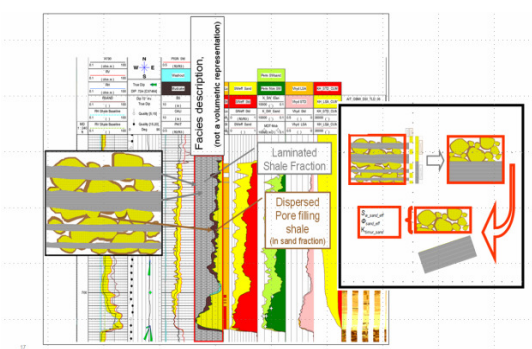


Fig. 1 Laminated Sand Analysis showing low resistivity laminated pay interval in deepwater GOM and illustrating elimination of the effect caused by shale laminations

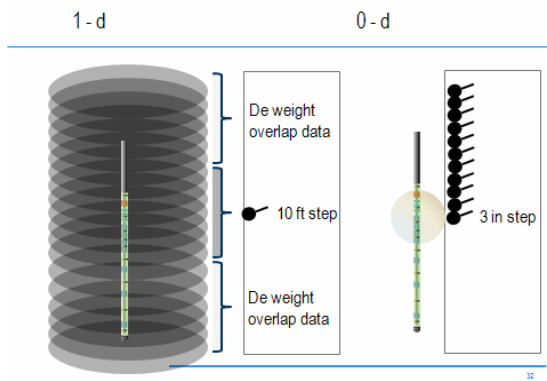


Fig. 2 Zero D dip vs 1 D dip calculation

Graphic illustrates area of investigation for various dip calculations using tri-axial induction, zero-d dip is computed every 3 inches while the one-d inversion utilizes 30 ft of log data for each 10 ft dip calculation step

Downtown Luncheon Meeting

Date: Wednesday, Sept. 19th, 2012
Lunch: 11:30 Talk: 12:00
Reservations: Email [Libny Leal](#)
RSVP before 4:00 P.M., Monday, Sept. 17th
Cost: \$30 (includes lunch*) Please, use PayPal.

Place:

Hess Tower Conference Room 4A (4th Floor)
1501 McKinney Houston, Texas 77010

Ionic Analyses and Isotopic Measurements of Subsurface Waters, with Reference to the Deepwater GOM

by

[Steve Uchytel](#), Hess Corporation

Co-Author: [Steve Franks](#)



Abstract

WHY STUDY WATERS?

Waters, like oils and gases, carry their own fingerprint of origin, including water/rock diagenetic reactions and mixing of diagenetic fluids in the subsurface.

By measuring the ionic composition of waters one can tell the chemical variation and therefore the potential differences between reservoir horizons. This variation can help in our understanding of baffling and potential compartmentalization.

By measuring the isotopic values of Oxygen (O18) and Deuterium (H2) within subsurface waters you can interpret the origin of the water (meteoric/marine/evolved), the impact of diagenesis on the make-up of the waters (for example, smectite dehydration), and the mixing history within a reservoir. These measurements can be used in an evaluation of reservoir communication, behind pipe contamination, fracking out of zone (which can have environmental implications), and changes that take place during water injection to see if injection water has reached a producer. This is not a new science, but is a much underutilized area in the petroleum industry.

Biography

MS – UC-Davis 1979

BS – UW-Superior 1976

1980 – 2000, worked for ARCO and Vastar in GOM, Bering Sea of Alaska, Williston Basin, Powder River Basin, Michigan Basin, California, Oregon, Nevada, and as Director of Joint Ventures in Midland from 1991-1993.

Vastar formed in 1994 and I worked there until BP bought Vastar in 2000. With geophysical partners, discovered Vastar's King Field (MC 764) and Horn Mountain Field (MC 126, 127).

2000-2003 – EOG Resources working Deepwater GOM

2003 – Present – Hess Corporation working West Africa, Williston Basin, Deepwater GOM