



PBS-SEPM NEWSLETTER



August 2016

*"We are like a judge
confronted by a
defendant who
declines to answer,
and we must
determine the truth
from the
circumstantial
evidence."*

— Alfred Wegener

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Midland College
3600 N. Garfield
Carrasco Room

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President's Column

As you enjoy your last few weeks of summer, know that your Board has been hard at work to ensure a smooth transition into the new fiscal year. As many of you know, on June 1, 2016, in order to remain financially solvent, PBS-SEPM became an all-volunteer society and has had to make some major adjustments to carry out our new responsibilities. To do so, we have focused on utilizing various technologies to aid in the transition.

In regard to that transition, I wish to thank our previous President, **John Leone**, for his work on getting our new phone number, mailing address, and e-mail. And I would especially like to thank **Jennifer Larson** and the Midland Energy Library for giving PBS-SEPM a new home by allowing us to rent an office within their spacious facility.

Additionally, the Board and indeed the entire society owes a debt of gratitude to the efforts of **Frank Fullbright**, who has been upgrading our website to add online membership registration via PayPal, the ability to update your member information online, and provide for online luncheon registration. Frank is also adding new e-commerce capabilities for

our various publications, and is in the process of adding other modifications to make the website even more useful to our members and visitors. Please check out our enhanced website at <http://www.pbs-sepm.org>.

For those members in the oil and gas industry, we have seen a roller coaster of crude oil prices in just the past 3 months—a high of \$51.23 on June 8, a low of \$39.51 on August 2, and then climbing oil prices to \$48.54 on August 12. While activity levels in the various resource plays remain high in the Permian Basin relative to the rest of the United States, many have been touched directly or indirectly by a changing industry—acquisitions, bankruptcies, layoffs, and startups. To some these are new experiences, to others these are all too familiar. Whatever cycle or situation you find yourselves in, PBS-SEPM is still here to serve you through its educational and networking opportunities. To that end, please continue to take advantage of our monthly luncheon meetings and plan on participating in the special core workshop led by Dr. **Bob Lindsay** next Spring and the Young Professionals Field Trip next June.

As I close, I would like to especially thank you, our membership, for your continued support of the society, as well as ask for your patience as we work to complete the transition into an all-volunteer society. More than ever before, we need dedicated volunteers and hope that you will join us in laying the solid foundation needed by PBS-SEPM to establish it for the next 62 years. Our contact information is below.

I look forward to seeing each of you at our first luncheon meeting on **Thursday, September 8** (in October we will be back to the usual 3rd Tuesday of the month) now held at the **Carrasco Room** of Midland College. Please register for that luncheon ASAP via e-mail, phone, or our website.

Cory L. Hoffman

PBS-SEPM President
2016-2017

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P.O. Box 6054
Midland, TX 79704

Mark Your Calendars! [PBS-SEPM luncheons at Carrasco Room, Midland College]

SEPTEMBER 2016

• **8: PBS-SEPM Luncheon:** (11:30am-1pm) **Speaker: Allen Donaldson**, Newfield, **Title:** SCOOP and STACK—First Five Years and Beyond

• **13: WTGS Luncheon:** (11:30am-1pm) **Speaker: John A. Brett, III**, Jasper Energy, LLC, **Title:** Theory, Application, Dis-

covery: From OGCS Talk to Drilling to Production!

• **28-29: WTGS Fall Symposium** (Midland Horseshoe)

OCTOBER 2016

• **18: PBS-SEPM Luncheon:** (11:30am-1pm), **Speaker: Dr. Michael D. Lewan**, Lewan GeoConsulting Corp., **Title:** Re-

Evaluation of Thermal Maturity and Stages of Petroleum Generation for Barnett Shale in the Fort Worth Basin, Texas

NOVEMBER 2016

15: PBS-SEPM Luncheon: (11:30am-1pm), **Speaker: Dr. John Lorenz**, **Title:** Natural Fractures in Hydrocarbon Reservoirs—Permian Basin

PBS-SEPM Luncheon Talk – September 8, 2016

W. Allen Donaldson

“SCOOP and STACK: First Five Years and Beyond”

Vice President Exploration, Newfield Exploration Co.

Thursday¹ September 8, 2016 - [Midland College, Carrasco Room](#), 11:30 a.m.

Biography



W. Allen Donaldson is currently Vice President of Exploration for Newfield. He previously served as Corporate Exploration Manager. Allen joined Newfield in 2009 as exploration manager for the Mid-Continent Business Unit. Before joining Newfield, he held several leadership positions including resource manager for the Arkoma Asset in Oklahoma for BP America. Allen holds a B.S. in geology and M.S. in oil and gas exploration from West Texas State University. Allen Donald was awarded and recognized as the “Best Geoscientist of the Year” at the fourth annual Texas Top Producers awards banquet in October 2015. This banquet, held at the Houston Petroleum Club, celebrated the 2015 Texas Top Producers Honorees and was hosted by Texas Independent Producers and Royal Owners Association. He is a current member of AAPG, SPWLA, SPE, and Panhandle and Tulsa Geological Societies.

“An education isn’t how much you have committed to memory, or even how much you know. It’s being able to differentiate between what you do know and what you don’t.”

“Chance favors the prepared mind.”

- Louis Pasteur
(1822-95)
French chemist and bacteriologist.

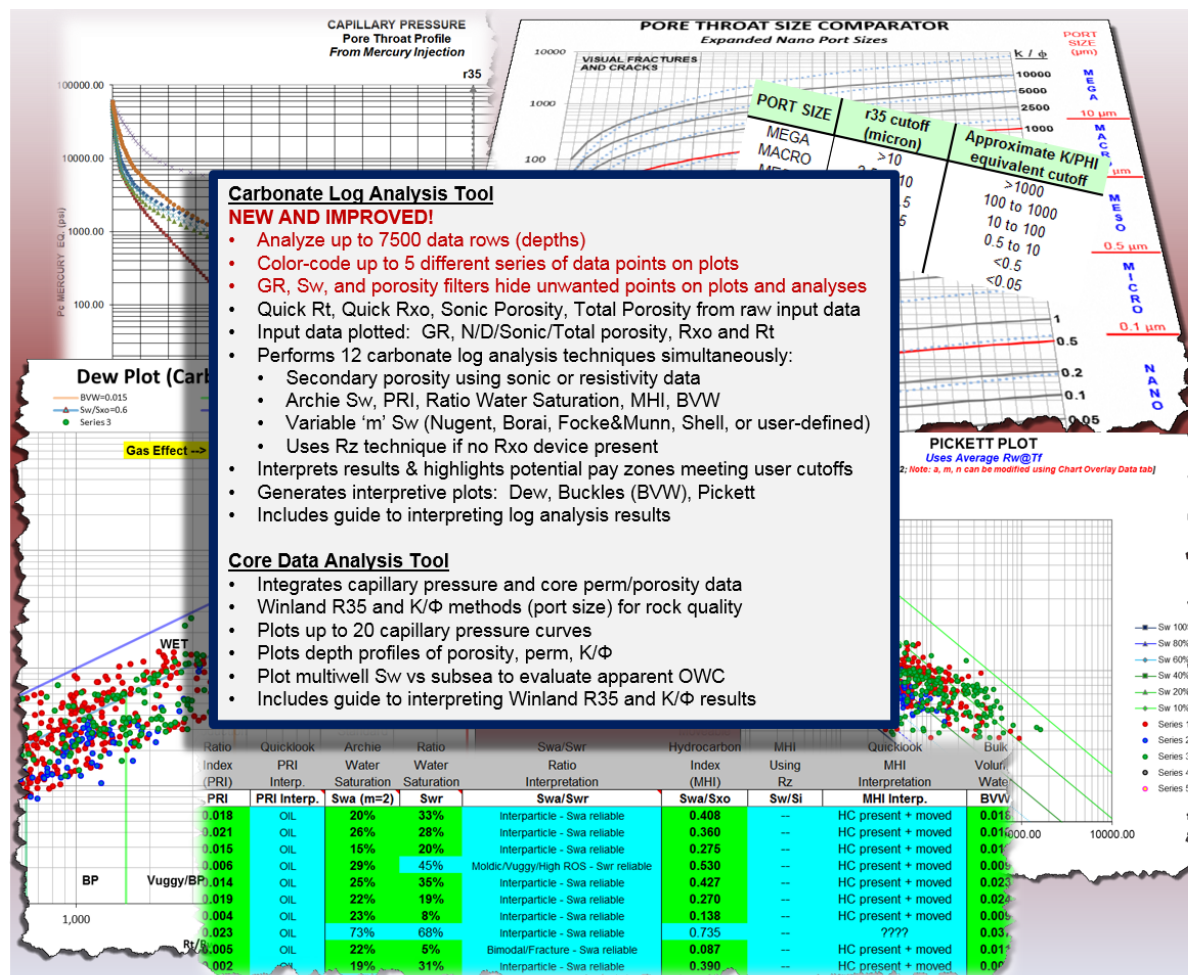
¹ Starting in October (Oct. 18) luncheons will be back on the 3rd Tuesday of each month. Also note the location change!



PBS-SEPM Publication

Carbonate Log Analysis Spreadsheet v. 4.0

By: Cory L. Hoffman
Designed for Microsoft Office Excel 2013



INTRODUCTORY PRICE: \$40 (all proceeds go directly to PBS-SEPM)

- Get 2 tools for 1 low price — spreadsheet includes carbonate log analysis AND core data analysis tools
- Flash drive contains current version (Excel 2013; v. 4.0) and previous version (Excel 2010; v. 3.2) of spreadsheet
- Price includes free upgrades within version class (v. 3, v.4, etc.) for each registered user

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Please send registration and payment information: PBS-SEPM, P.O. Box 6054, Midland, TX 79704

For additional information contact: PBS-SEPM office (432) 279-1360 or info@pbs-sepm.org

PBS-SEPM Luncheon Talk – October 18, 2016

Dr. Michael D. Lewan

“Re-Evaluation of Thermal Maturity and Stages of Petroleum Generation for Barnett Shale in the Fort Worth Basin, Texas”

Petroleum Geochemist/Geologist, Lewan GeoConsulting Corp.

Co-Author: M.J. Pawlewicz

Tuesday October 18, 2016 - [Midland College, Carrasco Room](#), 11:30 a.m.

Abstract

The Barnett Shale in the Fort Worth basin represents the type “tight-gas shale” play, and has proven to be a significant energy resource. Although this unconventional gas play may commonly be used as an analog for exploration on a global scale, it is not completely understood with respect to thermal maturity and stages of petroleum formation. Through a collaborative effort with Chesapeake Energy, EOG Resources, Devon Energy, Quicksilver Resources, and the USGS, 104 samples of the Barnett Shale were collected from 102 wells and one outcrop within the Fort Worth Basin. Hydrogen index (HI; mg S₂/g TOC) and temperature at maximum S₂ yield (Tmax; °C) from Rock-Eval analysis and measure reflectance (%Ro) were compared and evaluated in their overall ability to determine extent, stage, and type of petroleum generated within the Barnett Shale. Tmax showed the poorest correlation between HI and measured %Ro, with no similarity to previously prescribed HI versus %Ro relationships. However, a good correlation between HI and measured %Ro was observed that agreed with other data sets and published relationships. Hydrogen indices and their calibration with the atomic H/C ratio of isolated kerogen from selected samples proved to be the most insightful parameter for evaluating thermal maturity and stages of petroleum formation. The resulting HI and %Ro maps show that major gas generation did not occur at %Ro values greater than 1.1 as previously suggested, but rather at %Ro values at or greater than 1.6 with equivalent HI values greater than 37 mg S₂/g TOC. The 1.6 %Ro is typically considered the start of secondary gas generation when oil cracks to gas. This higher %Ro limit is more consistent with other unconventional shale gas plays (e.g., Marcellus shale of the Appalachian basin) and limits the likelihood of shale-gas plays in less thermally mature basins (e.g., New Albany Shale in the Illinois basin).

Biography



Michael Lewan is a petroleum geochemist and geologist. After 24 years, he retired from the U.S. Geological Survey (Denver) in 2014, but continues as emeritus with experimental research on the origin of petroleum. He also consults on issues and areas unrelated to his USGS emeritus projects. Recently, he was the recipient of the AAPG 2016 Robert R. Berg Outstanding Research Award and the Rocky Mountain Association of Petroleum Geologist 2014 Outstanding Scientist Award. Prior to joining the USGS, he worked 13 years for Amoco Production Company at their research Center in Tulsa. It was during this time that he along with colleagues pioneered hydrous pyrolysis for simulating natural petroleum generation and expulsion in the laboratory. During this time, he was the recipient of the AAPG 1991 George C. Matson Best Technical Paper Award and AAPG Distinguished Lecturer. Prior to receiving his Ph.D. from the University of Cincinnati, he worked three years with Shell Oil Company in their New Orleans Exploration and Production Company as an offshore exploration geologists. He received an M.S. degree from Michigan Technological University (1972) and a B.S. from Northern Illinois University (1971).

“In rivers, the water that you touch is the last of what has passed and the first of that which comes; so with present time.”

— Leonardo da Vinci
(1452 - 1519)

“You cannot teach a man anything; you can only help him discover it in himself.”

— Galileo Galilei
(1564 - 1642)
Italian physicist, mathematician, engineer, astronomer, and philosopher.

PPDC Special Course Offering!



Natural Fractures in Hydrocarbon Reservoirs

Instructor: Dr. John Lorenz

** November 2 day course **

Petroleum Professional Development Center

Mailing Address: 221 N. Main

Midland, Texas 79701

432-683-2832; Fax: 686-8089

ONLINE REGISTRATION: <http://www.midland.edu/ppdc>



November 16-17, 2016

8:00 am - 5:00 pm

\$750, PBS-SEPM Members¹

Wednesday-Thursday

Midland College PPDC Building

\$850, Non-Members

Entrance: 105 W. Illinois Ave.

1.6 CEU's

Course Description:

This class is designed to provide the industry geologist and engineer with a working knowledge of fracture characteristics and variability as they affect production in hydrocarbon reservoirs. This is a hands-on, applied course in fracture interpretation, description, analysis, and effects. The two-day course starts with an exercise in which students assess samples of different types of fractured rock and core. We return to these samples half way through the course to show students the salient features that most missed earlier but can now recognize. Other exercises include assessing fracture strikes in oriented core, and assessing fracture distributions and intensities from core data. The class includes a self-study module using a teaching collection of 50 examples of natural and induced fractures in core.

Various types of fractures, including regional and structure-related fractures will be discussed, as well as the distributions of fractures in different lithologic and structural settings. The course will expose students to the characteristics of the most common types of fractures, how to measure and assess fracture populations, and their likely effects on reservoirs. Students will learn to distinguish natural from induced fractures in core, how to determine the reliability of a core-orientation survey, and how valuable fracture datasets can be collected from archived, incomplete, un-oriented core. The course includes examples from field and subsurface case studies, *including examples pertinent to Permian Basin resource plays*. Fracture systems are highly variable, thus the course does not teach cookbook techniques but rather teaches the concepts needed to understand fracture systems.

Learning Outcomes:

Geologists who take this class will acquire an appreciation for the variety of characteristics of natural fractures. They will learn how to look for and measure subtle fracture characteristics in core, and to assess the important but complementary differences between cores and image logs. Students will learn how different types of fractures can affect permeability systems in reservoirs, and how to assess the potential for interaction between natural fractures and hydraulic stimulation fractures.

Instructor:

John C. Lorenz, Ph.D. John has a background in, and has published on, sedimentology-stratigraphy, but for the last 31 years has focused on the origins, characteristics, and effects of natural fractures in hydrocarbon reservoirs. He has studied the interactions of fractures and in situ stresses in reservoirs on the North Slope of Alaska to North Africa, and points in between. John received a PhD from Princeton University in 1981, and worked for Sandia National Laboratories in Albuquerque, NM (USA) for 26 years before becoming a consultant. He has been the Elected Editor of the American Association of Petroleum Geologists (2001-2004), and was the 2009-2010 President of AAPG.

Midland College is an Equal Opportunity Employer/Educator. Midland College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award certificates and associate and baccalaureate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Midland College.

¹ Not a PBS-SEPM Member? Join PBS-SEPM (\$20) and capture this discount! Online Membership: <http://www.pbs-sepm.org>

PBS-SEPM Publications



PBS-SEPM Symposia And Core Workshops on 3 DVDs



This is your opportunity to have the entire **PBS-SEPM** publication library (1955 – 2007) at your finger tips. There is a fully searchable Table of Contents—find a topic or author just by typing in the word(s). All publications are in Adobe PDF with all major articles being bookmarked, and all the figures are linked in the text for quick reference. Those areas that are off limits to geologists like the Glass Mountains or Sierra Diablos have been written up in these publications. Numerous out-of-print publications and figures and/or plates not published in the original guidebooks are now available in this library.

This includes all publications, even the special publications and coveted core workshops. Can you imagine the hidden treasures you might find? Here is your chance to uncover them in this special three (3) DVD set. *Buy one or all.*

DVD I - Symposiums & Guidebooks (1955-1989)

Member- **\$75.00** plus 8.25% tax and \$5.00 shipping and handling

Non-Member- **\$100.00** plus 8.25% tax and \$5.00 shipping and handling

DVD II - Symposiums & Guidebooks (1990-2007)

Member- **\$75.00** plus 8.25% tax and \$5.00 shipping and handling

Non-Member- **\$100.00** plus 8.25% tax and \$5.00 shipping and handling

DVD III - Core Workshops (82, 83, 85, 98) & Special Publications (A, 88-28, 96-39, 84)

Member- **\$75.00** plus 8.25% tax and \$5.00 shipping and handling

Non-Member- **\$100.00** plus 8.25% tax and \$5.00 shipping and handling

Entire Set of three DVDs

Member Price **\$200.00** plus 8.25% tax and \$5.00 shipping and handling

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For additional information **contact: PBS-SEPM office** (432) 279-1360 or info@pbs-sepm.org.

PBS-SEPM Executive Board (2016-2017)

President:	Cory L. Hoffman, Ph.D.	choffman@sm-energy.com
President-Elect:	James Hawkins	geo_hawk@att.net
First Vice President:	Norman E. Frances	nfrances@mcclureoil.com
Second Vice President:	Curtis Helms Jr.	chelms@midland.edu
Treasurer:	Brice Otto	botto@sm-energy.com
Secretary:	Bryce Swinford	bswinford@concho.com
Previous President:	John Leone	jleone@arcoperating.com
Board Advisor:	TBD	

Do you have an idea for an interesting luncheon talk? Have a core workshop you'd like to present? Have some suggestions on how PBS-SEPM can better serve the geologic community? Just click on the e-mail above & drop us a note, your PBS-SEPM Executive Board wants to hear from you!

"Science is facts; just as houses are made of stone, so is science made of facts; but a pile of stones is not a house, and a collection of facts is not necessarily science."

- Jules Henri Poincaré
(1854-1912)
French mathematician

Corporate Sponsorships (2016-2017)

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*"No one is use-
less in this
world who light-
ens the burden
of it for some-
one else"*

- Benjamin Franklin



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We're on the Web!
www.pbs-sepm.org

"..In reply, I can only plead that a discovery which seems to contradict the general tenor of previous investigations is naturally received with much hesitation."

*[Charles Lyell](#),
British Lawyer, Geologist,
(1797 - 1875)*

PBS-SEPM is the Permian Basin Section of SEPM—the Society for Sedimentary Geology. However, you do not need to be a SEPM member or a geologist to join PBS-SEPM.

Our non-profit society relies entirely upon the efforts of dedicated volunteers to serve the geological community—primarily through educational events. These events include monthly luncheon talks, core workshops, annual field trips, and special geological publications. Additionally, we are involved on the college campuses—reaching out to future earth scientists through scholarships, discounted memberships, and offering full-time geology students the ability to participate in professional-grade field trips at little to no cost.

If you would like to join PBS-SEPM, you may visit our website (www.pbs-sepm.org) to learn more about us, download a membership form, and learn how to get involved.

Individual Sponsors of PBS-SEPM (2016-2017)

Individual sponsors are advertised on the PBS-SEPM website and each Newsletter. Cost is \$85/year. If you are interested in a sponsorship opportunity, please call PBS-SEPM for more details at (432) 279-1360 or e-mail info@pbs-sepm.org.

Your Business Card Could be here!

Your card will be in every newsletter for one year from August to May, on the PBS-SEPM Website, and on the PowerPoint shown prior to every luncheon.

"Volunteering is an excellent way to provide meaning in your life and help give back to your local community."

Peter Muggeridge