



2009-10 - PBS-SEPM

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June 8: WTGS Luncheon, 11:30 am

Speaker: Dr. Carlos Aiken, Dept of Geosciences, Univ of Texas at Dallas. "Virtual Field Trip in 3D stereo to outcrops in Europe, Saudi Arabia and the U.S."

June 10-13: PBS-SEPM Young Professionals and Intern Field Trip,

Leaders: Dr. Robert Trentham, Dr. Emily Stoudt, UTPB; Robert Campbell and Chris Fling.

June 15: PBS-SEPM Luncheon —Annual Meeting, 11:30 am Awards

Speaker: Fred H. Behnken, Ph. D., Staff Geologist, Kinder Morgan Production Company LLP, Midland, "Brushy Canyon Sandstone (Permian, Guadalupian) Reminders of the Basics in an Era of "Whiz-Bang" techniques."

No WTGS Luncheon Meeting in July

September 15-17, 2010
WTGS Fall Symposium,
Midland Center, see
<www.wtgs.org> for
more details.

PBS-SEPM Luncheon meetings resume on September 21 at the Midland Center, 11:30 am

PBS-SEPM NEWSLETTER



June, 2010

President's Column:

Fred H. Behnken

As I write my last official newsletter, I can't help but reflect back on the scores of professionals who volunteer to serve our society, the Permian Basin Section, SEPM, to not only maintain, but improve our level of service to the Permian Basin Professional community one year after another. First and foremost, I owe a deep and heart-felt "Thank you" to our able, dedicated and seemingly tireless, Executive Director, Paula Mitchell. Paula, Thank you!

I have been blessed to serve with an enthusiastic and committed Executive Board. Their suggestions, untiring efforts and follow through have led to planning, guiding and scheduling significant events for the Permian Basin professional community. Thank you to Teri McGuigan, President-Elect, David Thomas, First Vice-President, Robert Nail, Second Vice-President, James Hawkins, Treasurer and Cindy Bowden, Secretary. With timely suggestions from several of you, Andrew Parker brought a host of interesting monthly luncheon speakers worthy of considerable praise. April Wisenbaker and Jessica Pontiff saw to it that the laptop and projector were set up for our speakers and professional audience. Your dedication is much appreciated! The calendar would not have come through without the guidance of Erin Van Evera and able help of Cathie Party. Emily Stoudt charted the course for the Honorary Life Member nomination this year...Still a secret till we get the person here in Midland! Our past—President, Cory Hoffman, ably headed the Nominating Committee. I helped Cory also count the ballots for the elections of the new Executive Board. Our presence in the community and on the World Wide Web has continued to rise thanks to the efforts of our WebMaster, Wendy Savage. Rick Doehne, as chair of Publicity, is always on top of the announcements and major articles about field trips. Bob Trentham is in charge of the Stratigraphic Committee and David Orchard is in charge of the Core Location Project. Gilbert Barragan heads the One-Day-Field-Trip Committee. The Spring Field Trip was an astounding success and the Young Professionals and Intern Field Trip, now very close, June 10-13 are major achievements of our Board and volunteers. All these folks, the companies they work for, plus the you unnamed heroes and heroines (you know who you are!) deserve a heartfelt "Thank you." -FHB

New PBS-SEPM Executive Board (June, 2010—May, 2011)

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Past—President	Fred H. Behnken	fred_behnken@kindermorgan.com	688-2344

"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*

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 and drop us a note—your PBS-SEPM Executive Board would love to hear from you!

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PBS-SEPM Luncheon Talk: Tuesday, June 15, 2010

TITLE: Brushy Canyon Sandstone (Permian, Guadalupian): Reminders of the Basics in an Era of “Whiz-Bang” Techniques and Tools”

ABSTRACT: A single well in the Nash Draw Delaware Field, Eddy County, NM serves as the basis for this report. Selected sidewall cores and 10-foot cuttings samples from the Strata Production, Nash Draw #15 provided the sample basis for thin-section petrography, diagenetic alteration, x-ray powder diffraction (XRD) and scanning electron microscopy (SEM). These integrated analyses provided a unified description of the lower Brushy Canyon Sandstone as a very silty, very fine to fine sand-sized, angular to subrounded, low to moderate sphericity, feldspathic sandstone and feldspathic-lithic sandstone. The XRD analysis of the rotary sidewall cores compares favorably with that derived from the 10-foot washed cuttings samples. The only difference being the expected slightly higher weight percent clay fraction in the cuttings samples. Whole rock XRD normalized mineralogy approximates that verified by rotary sidewall core petrographic and SEM analysis. Evaluation of reservoir mineralogy derived from cuttings samples with intentionally spaced rotary sidewall core samples provides a cost-effective and broader basis for reservoir mineralogy determinations over the well-bore.

Authigenic, grain-coating chlorite with its box-work lattice appearance, fibrous illite, delicate pore-bridging, gossamer-like webs of mixed layered illite/smectite, equant epitaxial microcrystalline quartz all contribute in the reduction of effective porosity, while increasing the microporosity and associated calculated irreducible water. Effective permeability is also diminished by the pore-lining and pore-bridging authigenic cements. Wire line log porosity calculations tended to over estimate effective porosity, while providing pessimistic irreducible water saturations to the microporosity associated with the clays. Coupled with seismic reservoir modeling, the reservoir quality and drainage efficiency of the Nash Draw Brushy Canyon Field was significantly improved by the basic reservoir characterization and mineralogy analysis.

Thin-section petrography, XRD and SEM microscopy analysis do provide timely, cost-effective description of reservoir fabric, mineralogy and pore network and serve as the basis for operationally-focused reservoir description of the lower Brushy Canyon Sandstone. The reservoir characterization using this basic analysis influences invaluable and timely operational drilling, completion and stimulation design, aids in evaluation of drilling and completion costs, while ensuring maximum deliverability to the well bore (the production rate) and the ultimate primary recovery from the completed interval.

Bio Fred H. Behnken, Ph.D., Staff Geologist, Kinder Morgan Production Co., LLP, Midland, TX. Fred received his B.A. in Geology from Augustana College, Rock Island, IL, and his M.S. and Ph.D. in Geology from the University of Wisconsin, Madison. His academic teaching background includes invertebrate and vertebrate paleontology, micropaleontology, stratigraphy, and historical geology spanning seven years as an Assistant Professor at Texas Tech University, Lubbock and Augustana College, Rock Island, IL. His petroleum industry experience includes working as an exploration geologist for Union Oil of California and Mesa Petroleum in Midland, He held various managerial and technical positions with ARCO Exploration Company in Denver, ARCO in Plano, and ARCO Permian Basin, in Midland. Fred apparently couldn't bear to leave Midland a third time. He turned down a transfer from ARCO Permian to the emerging Vastar Resources, Houston and went out on his own as a consultant tear dba FHB Stratigraphic Services in Midland. After nearly 11 years of consulting, he heard the siren call of 25,000 ft of Permian conventional core available at Yates Field. He accepted the position as senior geologist for Yates Field, Pecos County, TX with Kinder Morgan Production Company, LLP and was promoted to staff geologist. His current energies are focused on “greasing the skids” to acquire high resolution 3-D seismic later this year over the entire Yates Field Unit. His personal interests focus on Late Paleozoic and Early Ordovician micropaleontology (i.e., conodonts) and carbonates.

“Science can only ascertain what is, but not what should be, and outside of its domain value judgments of all kinds remain necessary”

Albert Einstein
(1879-1955)

U.S. Physicist,
born in Germany

“Truth in science can be defined as the working hypothesis best suited to open the way to the next better one”

- Konrad (Zacharias)

Lorenz
(1903-1989)

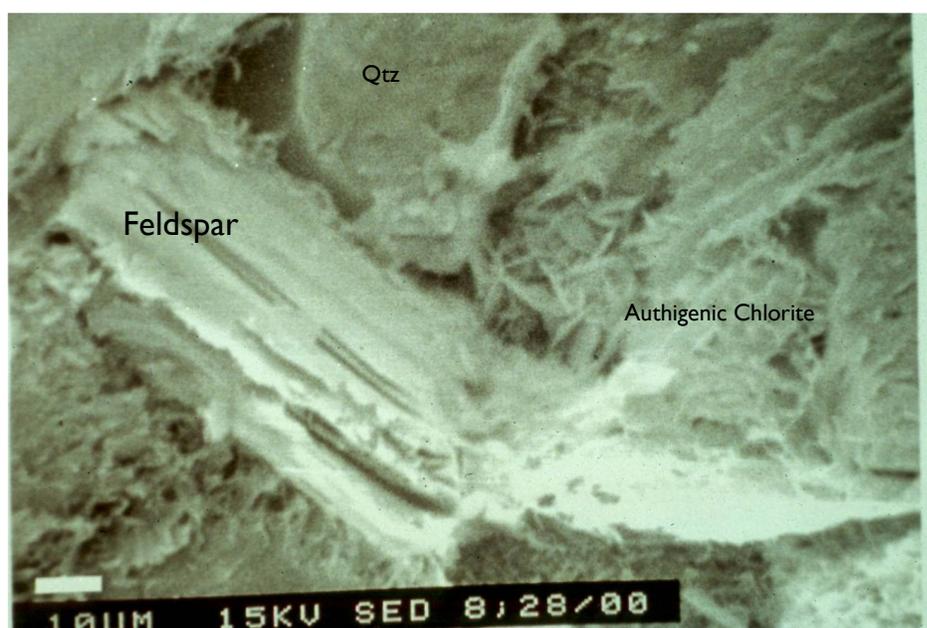
Austrian ethnologist
Nobel Prize for
Medicine in 1973

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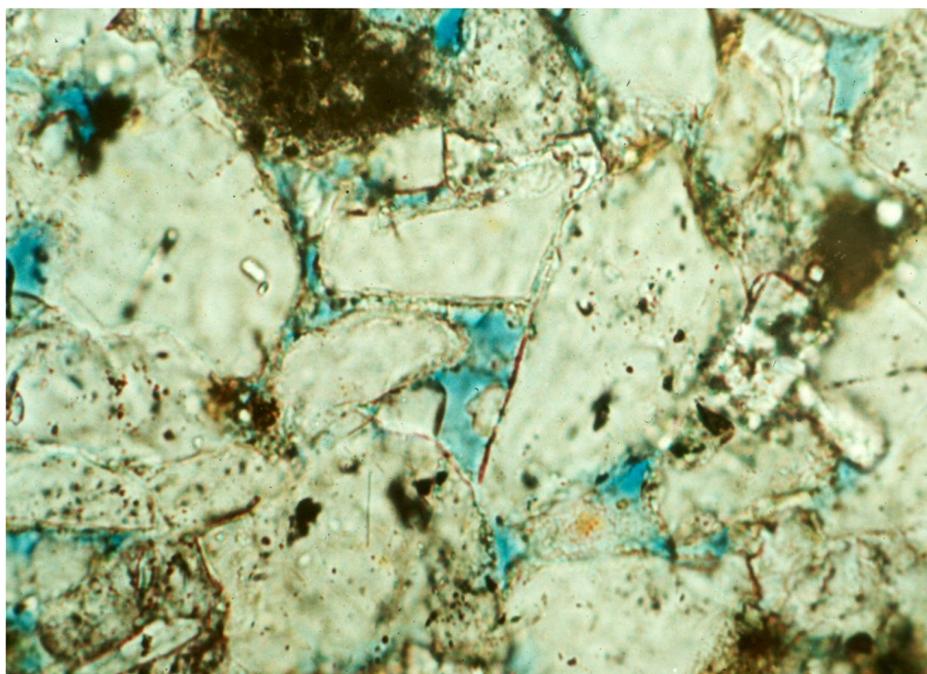
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Two photomicrographs of the same rotary sidewall core sample. The uppermost photo shows a lath-like detrital feldspar with adjacent subrounded quartz framework grains. All framework grains have grain-coating and pore-bridging, diagenetic chlorite. The lower color photo is a thin section slightly lower magnification.



Note the “fuzzy” margins of the grains that are the grain coating clays.



"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)

"In questions of science, the authority of a thousand is not worth the humble reasoning of a single individual."

- Galileo Galilei

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**“Innocence about
Science is the worst
crime today”**

Sir Charles Percy Snow
(1905-1980)
English novelist
and
scientist

**“The strongest
arguments prove nothing
so long as the conclusions
are not verified by
experience.
Experimental science
is the queen of
sciences and the goal
of all speculation”**

Roger Bacon
(1214?- 1294)
English Scientist,

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

Our non-profit society relies 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. Thanks to our Education Committee we are involved in MISD 5th grade geology presentations to interest elementary students in pursuing a career in geosciences. We would like to increase our exposure on 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, discover how to get involved and download a membership form.

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PBS-SEPM Core Repository Location Project

We Need Your Assistance !

Now we need your help. What do you do when you need to find a core? Do you know of any repositories that aren't in the list below ? Do you know what your employer or other operators have done or plan to do with their core? Please contribute any such information to this effort by contacting the committee: David M. Orchard, Chair, david.m.orchard@conocophillips.com, 832-486-2314; Dr. Emily Stoudt, stoudt_e@utpb.edu, 432-552-2244; and Andrew Parker, andrew.parker@whiting.com, 432-686-6784 office.

The following lists of portals and core repository facilities represent our first compilation

PORTALS TO INFORMATION

PTTC has a portal to the holdings of several public repositories. You can sort by repository and display their holdings in map view. <http://inside.mines.edu/Research/PTTC/Core%20Locator/>

AGI has a list of repositories of various geologic data, including cores. It provides contact information and accesses data through a map interface. <http://www.agiweb.org/ngdrs/overview/datadirectory.html>

Tony Troutman's website <http://www.carbonates.us/cores.htm> has a list of storage sites, including several state repositories.

PUBLIC AND COMMERCIAL STORAGE FACILITIES

The **USGS** has a storage facility in Denver that has Permian Basin material. Their collection can be searched online at <http://geology.cr.usgs.gov/crc/>. 303-202-4851.

The **Bureau of Economic Geology (BEG)** holds Permian Basin cores in their Midland, Houston, and Austin facilities. See <http://www.beg.utexas.edu/facilities.php> for information and contacts. Their catalog is called **IGOR** which has a link on above address. IGOR will be replaced soon by a more advanced database.

New Mexico Bureau of Geology and Mineral Resources has Permian Basin cores in Socorro. Request a list of the collection at <http://geoinfo.nmt.edu/libraries/subsurface/home.html>

CEED (Center for Energy and Economic Diversification) at **UT Permian Basin** (<http://ceed.utpb.edu/>) has Texas and New Mexico cores. 432-552-2020.

The **International Sample Library at Midland** has cores and core chips. Their collection is not in a database and must be searched through index cards. 707 Connell St, Midland, TX , 79701. 432-682-2682.