



GRANITE WASH WORKSHOP

November 13, 2014

Sponsored by the Oklahoma Geological Survey



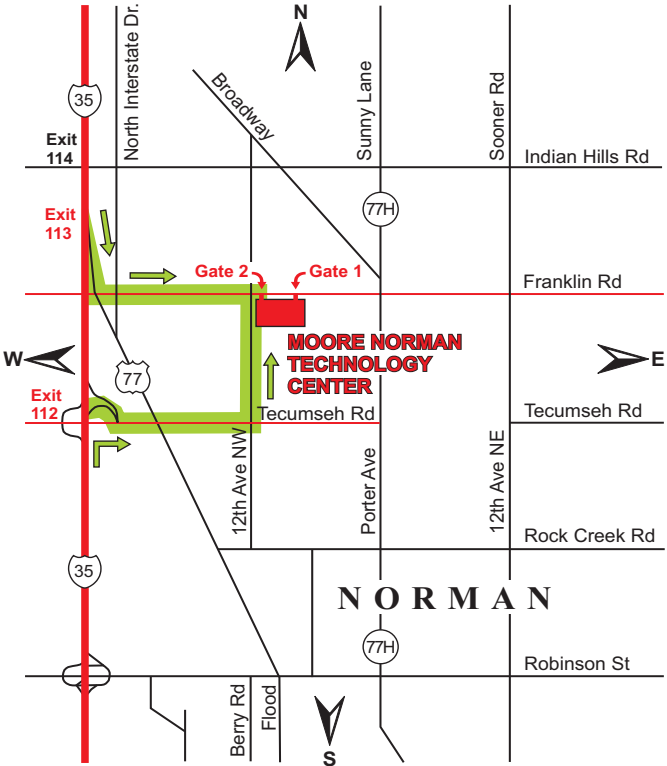
MEWBOURNE
COLLEGE OF EARTH & ENERGY
THE UNIVERSITY OF OKLAHOMA

INFORMATION

Oklahoma Geological Survey (405-325-3031) or (800-330-3996); Fax (405-325-7069); **Michelle Summers** (405-325-7313), mjsummers@ou.edu

TRANSPORTATION

Will Rogers World Airport is 25 minutes from the Moore Norman Technology Center in Norman. Ground transportation (taxis, rental cars, and airport shuttle for hire) is available in the baggage claim area. Parking at the Moore Norman Technology Center is free.



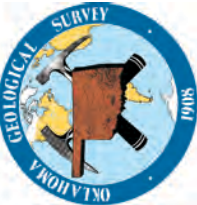
MOORE NORMAN TECHNOLOGY CENTER
Main Campus - (405) 364-5763
4701 12th Avenue NW, Norman, Oklahoma 73069

Southbound I-35 from Oklahoma City, take Exit 113 (left exit onto 77 South) and turn left on Franklin Road at first traffic light. Turn right at **MNTC Gate 2** parking lot entrance (just past stop sign at 12th and Franklin Road).

Northbound I-35 (south of Norman), take Exit 112. Turn left on Tecumseh Road. Go ~1 mile and turn left at 12th Ave NW. Go 1 mile to Franklin Road. Turn right, to **MNTC Gate 2** parking lot entrance (just past stop sign at 12th and Franklin Road).

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100 E. Boyd, Rm. N-131
Norman, Oklahoma 73019-1001
Mewbourne College of Earth and Energy
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The University of Oklahoma



REGISTRATION FORM—Please make checks payable to “University of Oklahoma”

Please complete form, and return with check to: **Oklahoma Geological Survey, 100 E. Boyd, Rm. N-131, Norman, OK 73019**

NAME: (Last) _____ (First) _____ (Initial) _____

AFFILIATION: _____

MAILING ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____ FAX: _____

E-MAIL: _____

Check must accompany this form. Use separate form for each registrant. CEU credit, check here. PDH credit, check here.

[Sorry, we are unable to accept credit cards] *If you have special disability, medical, or dietary needs, please check here.*

Please make checks payable to: **“University of Oklahoma”**
 \$175.00 Workshop Registration

Purpose and Scope of this Meeting

Drilling Granite Wash wells has dramatically increased since 2009. Approximately 2200 horizontals have been drilled targeting the Missourian, Des Moinesian and Atokan Granite Wash Zones in Oklahoma and the Texas Panhandle. Problems of nomenclature make it necessary to communicate the reservoir or zone that one is referencing when talking to other operators. This is best accomplished by referencing a type well. As of now, operators are targeting the more liquids-rich sections of the Granite Wash.

Numerous deeper targets that are composed of lean gas in the Lower Des Moinesian and Atokan sections await more development. As gas prices increase, these additional zones will become drilling targets. Each of the zones are correlatable and mappable units. However, this macro-mapping belies the fact that these units are complex. The different Granite Wash units vary rapidly along and across depositional strike. We need to continue to study and develop processes to identify these complexities and how to deal with them to produce the economic results that we strive to achieve.

A review of the geology in this workshop will aid in the understanding of this complex formation. What are the rocks telling us in

regards to mineralogy and permeability? How are the depositional patterns and resulting geometric bodies interpreted by the geologist?

The industry continually learns and improves on the hydraulic fracturing techniques that work for this formation. Seismic and microseismic are invaluable due to the presence of faulting and frac barriers between zones which affect completions and production results.

What are the updates concerning completion practices? How do we monitor the production results in order to determine hydraulic fracturing effectiveness? This workshop will review these questions.

What are the petrophysical complexities of this formation and how do we approach the analysis to predict drilling locations and improve completion methods? This workshop will aid in shedding light on petrophysical analysis.

What is the source of oil and condensate that occurs in the Granite Wash? This workshop will attempt to answer that question.

Presentations will emphasize the geologic, petrographic, geochemical and engineering factors that benefit the production of hydrocarbons from tight Granite Wash zones.

GRANITE WASH WORKSHOP

Moore Norman Technology Center
Thursday, November 13, 2014

REGISTRATION
Moore Norman Technology Center
7:30 a.m.

TECHNICAL PROGRAM
9:00 a.m. – 3:30 p.m.

EXHIBITS
9:00 a.m. – 3:30 p.m.
(during breaks and lunch)

PROGRAM AGENDA

A.M.

9:00 **Welcoming Address**, by Randy Keller, Director, Oklahoma Geological Survey, Mewbourne College of Earth and Energy, University of Oklahoma

9:15 **Stratigraphy and Hydrocarbon Production from Pennsylvanian Age Granite Wash Reservoirs in the Western Anadarko Basin, Oklahoma and Texas**, by John Mitchell, Consulting Geologist

9:45 **Post-Appraisal of the Missourian Hogshooter Hydrocarbon System: Implications for Future Exploitation in the Anadarko Basin**, by Steven Hoaglund, Chesapeake Energy

10:15 *Coffee Break; Exhibits; OGS publications available for purchase*

10:45 **Predicting Initial Production of Granite Wash Horizontal Wells Using Old Well Logs and Cores**, by Jerome Truax, Linn Energy

11:15 **Seismic Integration of the Colony Granite Wash**, by Mike Miller, Chesapeake Energy

11:45 **Possible Sources of Granite Wash Oils Based on Geochemical Data**, by Paul Philp, Conoco Phillips School of Geology & Geophysics, Mewbourne College of Earth & Energy, University of Oklahoma

P.M.

12:15 *Lunch; Exhibits; OGS publications available for purchase*

1:30 **Granite Wash; Where Engineering and Geology Collide; An Unstoppable Force Meets An Immovable Object**, by Bill Grieser & Carla Eichler, Halliburton-Oklahoma City

2:00 **Granite Wash Optimization – Validating Completion and Production Techniques**, by Elspeth Crawford, Linn Energy

2:30 **Hydraulic Fracture Characterization from Microseismic Data in the Granite Wash**, by Jamie Rich, Conoco Phillips School of Geology & Geophysics, Mewbourne College of Earth & Energy, University of Oklahoma

3:00 **Textural and Mineralogical Variation in the Granite Wash**, by Eric Goergen, FEI

3:30 *End of Workshop*

LIMITED NUMBER OF SEATS- PLEASE REGISTER EARLY

CONTINUING EDUCATION CREDITS
8 CEUs or PDHs for workshop

SUGGESTIONS FOR HOUSING
The Montford Inn (405-321-2200)
Embassy Suites-Norman (405-364-8040)
Hilton Garden Inn (405-579-0100)

