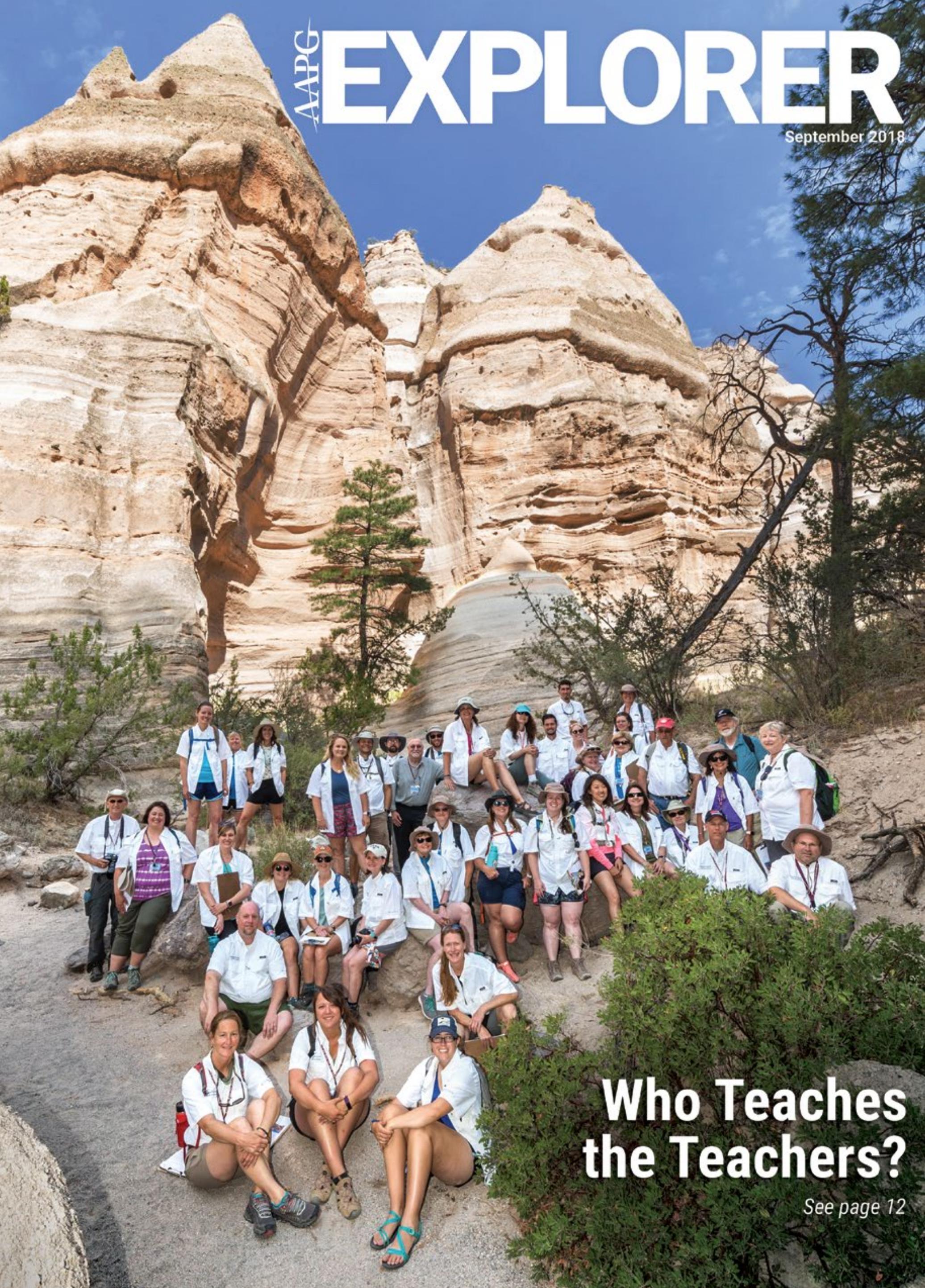


# AAPG EXPLORER

September 2018



**Who Teaches  
the Teachers?**

*See page 12*

# Produced Water Ban Creates Regulatory Conflict in Oklahoma's STACK Play

The balance between local and state regulatory authority is currently at issue in Kingfisher County, Okla., at the heart of the mostly-oil STACK play. In April 2018, the Board of County Commissioners of Kingfisher County revised its pipeline crossing permit to prohibit the use of produced water in temporary lines in the public roadway right of way. Temporary lines, or "lay-flat lines," are high-density polyethylene lines that typically run adjacent to public roadways in active oil and gas areas. They serve the function of transporting water to well sites for drilling and completions, then taking away by-products such as flowback and produced water (usually to disposal or treatment facilities). The revised permit went into effect May 1, and considering the large volumes of produced water and disposal needs in Kingfisher County, it is causing considerable consternation among operators.

Local authorities, such as a board of county commissioners, are considered political subdivisions of the state, and as such they have no inherent powers except those granted to them by the state. Oklahoma statute expressly authorizes a board of county commissioners to "grant to any citizen the right to lay pipes and conduits under the surface of any road or highway under their jurisdiction, subject to such rules, regulations and conditions as shall be prescribed by the board of county commissioners."

In 1982, the Oklahoma attorney general issued an opinion interpreting this statute and found "there is specific

statutory authority for a board of county commissioners to permit a private citizen to place a saltwater disposal pipeline in the right-of-way of a section line road." Though the opinion stated that saltwater disposal lines were covered under the statute, it offered no clarification on the scope of the commissioners' regulatory authority incidental to oil and gas activity.

## State and Local Conflict

In 2015, Oklahoma enacted a law expressly limiting municipal, county or other political subdivision regulatory authority relating to oil and gas operations to "reasonable" rules and regulations (1) concerning road use, traffic, noise and odors; (2) setbacks and fencing requirements for well sites; and (3) for development of oil and gas within floodplains. The law provides that such regulatory authority "may not effectively prohibit or ban any oil and gas operations, including . . . produced water disposal . . . flow and gathering lines or pipeline infrastructure." The law also states that, "all other regulations of oil and gas operations shall be subject to the exclusive jurisdiction of the Oklahoma Corporation Commission." Notably, the Oklahoma Corporation

Commission already has statutorily conferred "exclusive jurisdiction" to regulate the "handling, transportation, storage and disposition of saltwater, mineral brines, waste oil and other deleterious substances produced from or obtained or used in connection with the drilling, development, producing and operating of oil and gas wells," including "the construction and operation of pipelines and associated rights-of-way."

In an opinion issued shortly after the passage of the statute, the Oklahoma attorney general acknowledged that it limits the regulatory power of political subdivisions to the aforementioned three exceptions, and to the extent that any local regulations conflict with statewide oil and gas regulations the local regulations are invalid.

Thus, although earlier interpretations of Oklahoma law suggest that county commissioners have authority to permit and otherwise regulate produced water pipelines within public roadway rights of way, more recent law and existing OCC rules and regulations indicate the OCC has exclusive authority to regulate the transportation and disposal of produced water. Although it appears the 2015 law supplants the commissioners' more

general authority, it remains to be seen how this local versus state regulation conflict will be resolved.

In the meantime, operators in Kingfisher County will be forced to truck produced water to recycling or disposal facilities or otherwise negotiate private produced water pipeline easements with landowners to avoid using the public roadway right of way.

## Produced Water Working Group

What remains clear is that the management of produced water in oil and gas operations is a pressing issue in Oklahoma. In an ongoing effort to better manage water resources related to oil and gas and further address water disposal issues raised by the induced seismicity, Gov. Mary Fallin formed the Produced Water Working Group in 2015 composed of 17 stakeholders, including members of the OCC, Oklahoma Department of Environmental Quality and Oklahoma Oil and Gas Association, to study and recommend appropriate reuse and recycling options for produced water. The group met in 2016 and 2017 and developed a number of produced water management scenarios ranging from de-brining and evaporation to surface discharges. The group evaluated costs and obstacles (including regulatory) associated with those scenarios.

Through the course of these analyses, the group repeatedly raised the issue of regulatory uncertainty around ownership



Tim Sowecke is an energy and environmental attorney at Crowe & Dunlevy, where his practice focuses on water, oil and gas pipeline regulation and litigation. He can be reached at tim.sowecke@crowedunlevy.com or (405) 235-7700. The foregoing should not be understood as, or considered a substitute for, legal advice. For specific inquiries, please contact Sowecke or another licensed attorney.

See [Water](#) page 23 ►



## Lincoln wants you!

**The Fourth Biennial  
Field Conference of the  
AAPG Mid-Continent Section**

**"New insights into Carboniferous Cyclothems"**

**Cornhusker Marriott Hotel, Lincoln, NE  
October 12-14th, 2018**

**Come to Nebraska to catch up on the latest research into Carboniferous cyclothems in the Midcontinent and their petroleum potential. If you care about the Miss. Lime, Oswego, STACK, SCOOP, or other Carboniferous plays, this is for you!**

### Schedule of Events

**Friday, October 12**

- 10:00am-1:00pm Exhibitor and poster setup
- 12:00pm-6:00pm Registration
- 1:00pm-7:00pm Exhibit hall open
- 1:00pm-5:00pm Symposium - Technical and poster sessions
- 5:00pm-7:00pm Welcome Reception

**Saturday, October 13**

- 6:00am-7:00am Breakfast
- 7:00am-5:00pm Field Trip (lunch provided)

The field trip, led by Drs. Christopher Fielding and R.M. "Matt" Joeckel, will see participants traveling through southeastern Nebraska to examine a series of Pennsylvanian exposures, comprising thick fluvial and estuarine sandstones overlain by thin-bedded sandstones-mudrocks that are incised into the limestone-mudrock cycles typical of the latest Pennsylvanian (Virgillian) succession of SE Nebraska. Participants will gain an appreciation for the diagnosis of sedimentary environments in these strata, their stacking patterns, and their capacity to act as reservoirs of natural fluids. The Indian Cave Sandstone is a producing oil reservoir horizon in southern Kansas.

- 6:00pm-10:00pm Dinner (Keynote) and Cocktail Reception

**Sunday, October 14**

- 7:00am-8:00am Breakfast
- 7:00am-12:00pm Exhibit hall open
- 8:00am-12:00pm Core workshop and poster session
- 12:00pm Conference ends

**Proposals for oral or poster presentations, drillcore displays and commercial exhibitors are welcome!**

**Guests are Welcome!**

Guest registration will include the welcome reception on Friday evening and Saturday night dinner featuring a guest speaker.

**REGISTER TODAY!**

<http://aapgmcs.org/field-conferences/2018>

**For more information:**  
Christopher R. Fielding  
cfielding2@unl.edu, 402-472-9801  
R.M. (Matt) Joeckel  
rjoeckel3@unl.edu, 402-472-7520

Hosted by the Nebraska Geological Society



UNL does not discriminate based upon any protected status.

**Art**  
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Science Week's celebration by entering – or helping a young person to enter – one of the program's contests in visual arts, essay writing, video production and photography.

Students, geoscientists and the general public are invited to participate in the photo contest. For the "Inspired by Earth" photo contest, entries must be composed of original, unpublished material, and show how Earth serves as inspiration for art – or simply a view of the natural world that is inspiring.

"Earth and Art," this year's visual arts contest, is open to students in kindergarten through fifth grade. Essays by older students must address the idea of "Finding 'Art' in Earth."

Finally, AGI invites people of all ages to enter the "Earth Expressions" video contest by submitting a brief video that shows viewers how people affect Earth systems or vice versa.

Each contest winner receives a prize of \$300 and a copy of AGI's "The Geoscience Handbook." What's more, each winning entry is celebrated on the Earth Science Week website. For all contests, entries may be submitted up to the Friday of Earth Science Week, Oct. 19, 2018.

**Your Vital Role**

It's not so hard to venture into a classroom, talk with students, and lead a hands-on geoscience activity. For a start, search the Earth Science Week website's collection of more than 120 learning activities that align with the Next Generation Science Standards. Perhaps most useful, you can search among 24 categories of Earth science topics, from energy and environment to plate tectonics and weathering.

As a petroleum geologist who wants to enhance young people's education, you can get more helpful hints from "Visiting Geoscientists: An Outreach Guide for Geoscience Professionals," a handbook co-produced by AGI and AAPG's Youth Education Activities Committee.

Geoscientists just like you are spending the week visiting schools and leading field trips, especially at the K-12 level. They're providing unique insights based on their training, experience, and firsthand

knowledge of the workplace. The handbook offers strategies, resources, sample activities, and more. Download it at [www.agiweb.org/education/aapg/](http://www.agiweb.org/education/aapg/).

If you're hosting an Earth Science Week 2018 event such as an exhibit, tour, lecture, or open house, the new Earth Science Week Event Registry enables you to promote your event more effectively than ever. Simply provide a few key details at [EarthSciWeek.org/content/register-your-event](http://EarthSciWeek.org/content/register-your-event). Fill out the online form and let the Earth Science Week team, and the world, know about your event. 

*Geoff Camphire is Earth Science Week Program Manager at the American Geosciences Institute. For more information, visit [EarthSciWeek.org](http://EarthSciWeek.org) or email [info@earthsciweek.org](mailto:info@earthsciweek.org).*

**THIRD OFFERING OF THE HIGHLY ACCLAIMED  
PETROLEUM SYSTEMS OF CUBA  
& SE GULF OF MEXICO**



**February 23 – March 2, 2019**

**A scientific field excursion of the outcrop geology and petroleum systems of Western and Central Cuba and evolution of tectonic, structural and depositional systems of Cuba, the SE Gulf of Mexico and Proto-Caribbean**

**Field Trip Leaders: Drs. Manuel Iturralde, Paul Crevello and James Pindell**

**GeoExplorers is a US Nonprofit Corporation approved to offer this trip. To register or for further details: Contact Paul Crevello [excursions@GeoExplorers.org](mailto:excursions@GeoExplorers.org)**

**Seminar conforms to Department of the Treasury OFAC; <https://federalregister.gov/d/2017-24447>**

**Interpretation®** upcoming submission deadlines

**MAY 2019**

► **Interpretable seismic velocity**

**Submission deadline: 1 August 2018**

Special-section editors: Jianxiong Chen, Alfred Liaw, Xianhuai Zhu, Xin Wang, Tao Li, Priyank Jaiswal, Yafei Wu, and Xin Cheng

► **Near-surface impact on seismic exploration**

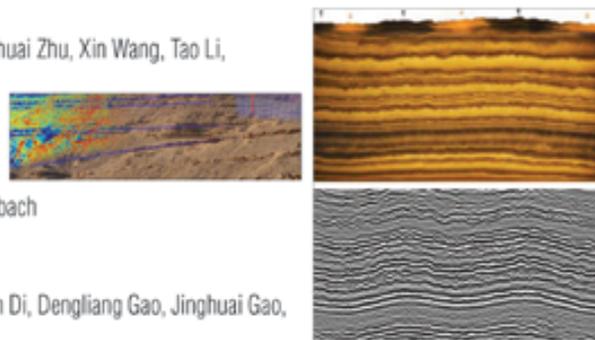
**Submission deadline: 1 August 2018**

Special-section editors: Claudio Strobbia, Daniele Colombo, Rick Miller, Andreas Laake, and Cedric Schmelzbach

► **Seismic geometric attributes**

**Submission deadline: 1 October 2018**

Special-section editors: Xinming Wu, Hongliu Zeng, Haibin Di, Dengliang Gao, Jinghui Gao, Kurt Marfurt, Saleh al Dossary, and Geoffrey Dorn



**AUGUST 2019**

► **Insights into digital oil field data using artificial intelligence and big data analytics**

**Submission deadline: 1 October 2018**

Special-section editors: Vikram Jayaram, Andrea Cortis, Bill Barna, Atish Roy, Deepak Devegowda, Jacqueline S. Floyd, Pradeepkumar Ashok, Satyam Priyadarshy, Aria Abubakar, Chiranth Hegde, and Emmanuel Schnetzler

► **Geologic and geophysical characterization of ultra-deep reservoirs**

**Submission deadline: 1 October 2018**

Special-section editors: Rui Zhang, Shu Jiang, Yongsheng Ma, Zhiwen Deng, Jiajia Sun, and Xinming Wu

► **Machine learning in seismic data analysis**

**Submission deadline: 1 November 2018**

Special-section editors: Haibin Di, Lei Huang, Mauricio Araya-Polo, Youzuo Lin, Anne Solberg, Tao Zhao, Xinming Wu, Vikram Jayaram, Jun Cao, Satinder Chopra, Erwan Gloaguen, Saleh Al-Dossary, Ghassan AlRegib, and Hongliu Zeng

► **Brazil**

**Submission deadline: 1 November 2018**

Special-section editors: Vsevolod Egorov, Marcilio Matos, Roberto Fainstein, Ricardo A. Rosa Fernandes, Wences Gouveia, Paulo Johann, Luiz Loures, Webster Mohriak, João Paulo P. Nunes, and Jonathan Stewart

► **Near-field exploration and development: Concepts, methodologies, challenges, and case studies**

**Submission deadline: 1 November 2018**

Special-section editors: Huyen Bui, Vivian (Lee) Cathey, Phil Christian, Wenceslau Gouveia, Michael Putnam, Conor Ryan, Mark Smith, Steven Tobias, and Rune Wold

► **Petrophysical analysis for shale reservoir evaluation: Methods, progress, and case studies**

**Submission deadline: 1 December 2018**

Special-section editors: Guochang Wang, Shu Jiang, Timothy R. Carr, and Matthew Boyce

► **Working with 2D seismic data**

**Submission deadline: 1 December 2018**

Special-section editors: Don Herron, Brian Horn, Rachel Newrick, Cian O'Reilly, and Tim Smith

**NOVEMBER 2019**

► **Geohazards and their impact on drilling and development: Risks, challenges, assessment, and real-time practices.**

**Submission deadline: 20 January 2019**

Special-section editors: Huyen Bui, Daniel Bean, Bill Berger, Eric Cauquil, Andy Hawthorn, Brett Judy, Andreas Laake, William Sager, Craig Scherschel, Niall Slowey, Fabian Vera, and Steve Wardlaw

► **Atlantic Margin of Canada**

**Submission deadline: 1 February 2019**

Special-section editors: Ian Atkinson, David E. Brown, John Cody, William Dickson, Vsevolod Egorov, Michael Enachescu, Roy Fitzsimmons, John Hogg, and Jonathan Redfern

\*E-mail [interpretation@seg.org](mailto:interpretation@seg.org) to inquire about submitting manuscripts past the submission deadline. Some sections may have increased flexibility regarding submission and review dates.

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**Water**  
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of produced water and obtaining rights of way for larger water transfer systems and urged agencies to promulgate rules related to produced water. Aside from failed proposed legislation in 2017 (the Oil and Gas Produced Water Recycling and Reuse Act), which mostly related to ownership and compensation related to produced water, Oklahoma has yet to develop statewide regulations for the management of produced water other than the OCC's current disposal well and pollution abatement regulations.

Some might argue that the OCC's current pollution abatement regulations sufficiently cover the environmental and public health risks associated with transporting produced water. However, in the absence of statewide regulations for the management and disposition of produced water, including use of public roadway rights of way, concerns such as those raised in Kingfisher County will continue and local authorities may attempt to intervene under questionable legal authority. 

**SCHEDULED TOPICS**

Visit <http://library.seg.org/page/interpretation-special-sections> for more details about these sections.

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