

# **SPE Western Regional Meeting 2016**

Anchorage, Alaska, USA  
23-26 May 2016

Volume 1 of 2

ISBN: 978-1-5108-3130-8

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2016) by Society of Petroleum Engineers  
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact Society of Petroleum Engineers  
at the address below.

Society of Petroleum Engineers  
P. O. Box 833836  
Richardson, Texas 75083-3836

Phone: (800) 456-6863  
Fax: (972) 952-9435

[books@spe.org](mailto:books@spe.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# **SPE Western Regional Meeting**

**23-26 May 2016, Anchorage, Alaska, USA**

**VOLUME 1**



## **3-D Reconstruction of Porous Media From a 2-D Section and Comparisons of Transport and Elastic Properties 1**

Naraghi, Morteza Elahi, The University of Texas at Austin  
Spikes, Kyle, The University of Texas at Austin  
Srinivasan, Sanjay, Pennsylvania State University

## **Alaskan Viscous Oil: EOR Opportunity, or Waterflood Sand Control First? 18**

Paskvan, Frank, BP  
Turak, Joe, BP  
Jerauld, Gary, BP  
Gould, Tom, IRT  
Skinner, Robert, IRT  
Garg, Amitabh, PRA

## **Analysis of SEAM Phase I Data and the Related Challenges 45**

Xue, Chenguang, University of Southern California  
Aminzadeh, Fred, University of Southern California

## **An Analytical Approach for Well Production History Matching in a Heavy Oil Reservoir 54**

Tostado, Michelle, University of Southern California  
Popa, Andrei S., Chevron North America Exploration and Production  
Cassidy, Steve, Chevron North America Exploration and Production  
Shepherd, Dave, Chevron North America Exploration and Production

## **Analytical Modeling of Flow in Highly Disordered, Fractured Nano-Porous Reservoirs 69**

Albinali, Ali, Colorado School of Mines  
Ozkan, Erdal, Colorado School of Mines

**Application of Alkali-Surfactant-Polymer ASP Flooding for Improving Viscous Oil Recovery From Alaskan North Slope Reservoir 83**

Ghorpade, T. S., ETECH International  
Patil, S. L., University of Alaska Fairbanks  
Dandekar, A. Y., University of Alaska Fairbanks  
Khataniar, S., University of Alaska Fairbanks

**Application of Dynamic Allocation Factors for Waterflood and EOR Performance Management 95**

McElhaney, Kevin, BP  
Jemison, Jenny, BP  
Jhaveri, Bharat, BP

**Aqueous Phase Relative Permeability from a Unified Thermodynamics-Petrophysics-Geochemistry-Electrolyte Model 107**

Beygi, Mohammad R., The University of Texas at Austin  
Delshad, Mojdeh, The University of Texas at Austin  
Wheeler, Mary F., The University of Texas at Austin  
Pope, Gary A., The University of Texas at Austin

**Avoiding Flowline Plugging: A Deposition Velocity Model and Stability Map 141**

Bbosa, Ben, The University of Tulsa  
DelleCase, Emmanuel, The University of Tulsa  
Volk, Michael, The University of Tulsa  
Ozbayoglu, Evren, The University of Tulsa

**Building and Applying a Physics-Based Production and Associated Gas Lift Model to Better Optimize Prudhoe Bay's West End 157**

Boman, Wade, BP

**Characterization of the Lithological Profile at the Point Arguello Field Using the Hurst Coefficient 176**

Qi, Qianru, University of Southern California  
Rebolledo, Leilani C., University of Southern California  
Ershaghi, Iraj, University of Southern California

**Characterizing Reservoir Connectivity and Forecasting Waterflood Performance Using Data-Driven and Reduced-Physics Models 189**

Artun, Emre, Middle East Technical University - Northern Cyprus Campus

**Cointerpretation of Distributed Acoustic and Temperature Sensing for Improved Smart Well Inflow Profiling 216**

Bukhamsin, Ahmed, Stanford University  
Horne, Roland, Stanford University

**A Computational Study of Packoff Using a Combined Drill Bit Stabilizer Particle Tracking Simulation 233**

Uddin, H., Halliburton  
Choudhury, N. R., Halliburton  
Ansari, U., Halliburton

**Conductor-Soil Interaction in Wellhead Motion (WHM) of Platform Wells 250**

Sathuvalli, U. B., Blade Energy Partners  
Suryanarayana, P. V., Blade Energy Partners

**Core to Pore Scale Visual Analysis of Mixing Process in the Presence of Interface Between Heavy-Oil and Solvent 271**

Hassan, Saleh F., University of Alberta  
Babadagli, Tayfun, University of Alberta

**Coupling Low Salinity Water Flooding and Preformed Particle Gel to Enhance Oil Recovery for Fractured Carbonate Reservoirs 288**

Alhuraishawy, Ali K., Missouri University of Science and Technology, Missan Oil Company  
Imqam, Abdulmohsin, Missouri University of Science and Technology  
Wei, Mingzhen, Missouri University of Science and Technology  
Bai, Baojun, Missouri University of Science and Technology

**Customized Drilling & Completion Fluids Designed for Horizontal Wells to Address the Drilling and Production Challenges - Case History 308**

Soliman, Ahmed, Baker Hughes EHO Ltd  
Samir, Ahmed, Baker Hughes EHO Ltd  
Sheer, Shahad, Baker Hughes EHO Ltd

AL-Khaldi, Ali, Kuwait Oil Company  
Boukhamsin, Ali, Kuwait Oil Company

**Data Mining with Shapelets for Predicting Valve Failures in Gas Compressors 322**

Patri, Om P., University of Southern California  
Tehrani, Arash S., University of Southern California  
Prasanna, Viktor K., University of Southern California  
Kannan, Rajgopal, University of Southern California  
Panangadan, Anand, California State University Fullerton  
Reyna, Nabor, Chevron Information Technology Company

**Decline Curve Analysis on the Woodford Shale and Other Major Shale Plays 328**

Bashir, Muhammad Omer, University of Oklahoma

**Design, Optimization and Operation of SAGD Wells Using Dynamic Flow Simulations 355**

Nascimento, C. M., Schlumberger

**Detecting Opal-CT Formation Resulting From Thermal Recovery Methods in Diatomites 380**

Ross, C. M., Stanford University  
Vega, B., Stanford University  
Peng, J., ConocoPhillips  
Ikeda, M., Baker Hughes  
Lagasca, J. R. P., Shell  
Tang, G.-Q., Chevron  
Kovscek, A. R., Stanford University

**Determination of the Stability of Asphaltenes Through Physicochemical Characterization of Asphaltenes 412**

Prakoso, Andreas, Texas A&M University  
Punase, Abhishek, Texas A&M University  
Klock, Kristina, Texas A&M University  
Rogel, Estrella, Chevron Energy and Technology Center  
Ovalles, Cesar, Chevron Energy and Technology Center  
Hacakir, Berna, Texas A&M University

**Development and Application of Probabilistic Fluid Property (PVT) Models for Stochastic Black Oil Reservoir Simulation 432**

Alboudwarej, Hussein, Chevron Energy Technology Company, Richmond, CA  
Sheffield, Jonathan M., Chevron Energy Technology Company, Richmond, CA

**Drilling Engineering and Formation Evaluation: An Integrated Approach to Improve Real Time Drilling Optimization 448**

Webb, Jerry, Weatherford  
Roze, Erwan, Weatherford  
Jarret, Cameron, Weatherford  
Le Roux, Stephane, Weatherford  
Mejia, Camilo, Weatherford

**Dynamic Considerations for Induced Seismicity 476**

Walker, Robert L., University of Southern California  
Aminzadeh, Fred, University of Southern California

**The Effect of Clay and Salinity on Asphaltene Stability 493**

Demir, A. Birkan, West Virginia University  
Bilgesu, H. Ilkin, West Virginia University  
Hascakir, Berna, Texas A&M University

**Effect of Dynamic Fracture Conductivity during Production 504**

Jia, Xinli, Halliburton  
Zhang, Feifei, Halliburton  
Filippov, Andrey, Halliburton

**Effect of Temperature Variations on Asphaltene Dynamics in Oil Reservoirs 519**

Darabi, Hamed,  
Abouie, Ali, The University of Texas at Austin  
Sepehrnoori, Kamy, The University of Texas at Austin

**Effective Extraction of High Viscosity and Low API Gravity Hydrocarbon Resources With Solvent-Steam Processes 534**

Hascakir, Berna, Texas A&M University

**The Effects of Faults on Induced Seismicity Potential During Water Disposal and Hydraulic Fracturing 540**

Umholtz, N., FracGeo  
Ouenes, A., FracGeo

**Effects of the Earth Characteristics on Induced Seismicity Potential 547**

Hosseini, S. Mehran, University of Southern California  
Aminzadeh, F., University of Southern California

**Effects of Well Placement Timing and Conductivity Loss on Hydrocarbon Production in Multiple Hydraulically Fractured Horizontal Wells in a Liquids-Rich Shale Play 554**

Siddiqui, Shameem, Halliburton  
Walser, Doug, Halliburton  
Dusterhoft, Ron, Halliburton

**Estimation of Optimal Frac Design Parameters for Asymmetric Hydraulic Fractures as a Result of Interacting Hydraulic and Natural Fractures - Application to the Eagle Ford 570**

Paryani, M., FracGeo  
Poludasu, S., FracGeo  
Sia, D., FracGeo  
Bachir, A., FracGeo  
Ouenes, A., FracGeo

**Evaluation and Prediction of Hydraulic Fractured Well Performance in Montney Formations Using a Data-Driven Approach 586**

Wang, Shuhua, University of Calgary  
Chen, Shengnan, University of Calgary

**Experimental and Simulation Study of Water Shutoff in Fractured Systems Using Microgels 609**

Goudarzi, Ali, The University of Texas at Austin  
Alhuraishawy, Ali, Missouri University of Science and Technology  
Taksaudom, Pongpak, The University of Texas at Austin  
Sepehrnoori, Kamy, The University of Texas at Austin  
Bai, Baojun, Missouri University of Science and Technology  
Imqam, Abdulmohsin, Missouri University of Science and Technology  
Delshad, Mojdeh, The University of Texas at Austin



**Experimental Investigation of Light Oil Recovery from Fractured Shale Reservoirs by Cyclic Water Injection 630**

Yu, Yang, Texas Tech University  
Sheng, James J., Texas Tech University

**Field Testing and Validation of a Mechanical Alternative to Radial Jet Drilling for Improving Recovery in Mature Oil Wells 640**

Balch, Robert S., New Mexico Tech  
Ruan, Tongjun, New Mexico Tech  
Savage, Mark, Viper Drill  
Harvard, Jeff, Harvard Petroleum Co. LLC

**First Installation of Multilateral Drilling Stimulation Technology in Tight Sandstone Formation 661**

Torvund, S., Statoil ASA  
Stene, K., Statoil ASA  
Jensaas, H., Statoil ASA  
Renli, E., Fishbones AS  
Rice, J. K., Fishbones AS  
Jorgensen, T., Fishbones AS

**Flaring Reduction During Well Clean-up and Start-up Operations 669**

Kaipov, Y., Schlumberger  
Theuveny, B., Schlumberger  
Thomas, D. P., Schlumberger  
Cordera, J. F, Schlumberger

**Flow of Gases in Organic Nanocapillary Pores of Shale: A Boundary-Driven Molecular Simulation Study 686**

Kazemi, Mohammad, West Virginia University  
Takbiri-Borujeni, Ali, West Virginia University

**Girouxville East Montney Waterflood 698**

Pyo, David, Long Run Exploration Ltd.  
Pyo, Ken, Long Run Exploration Ltd.  
James, Erin, Long Run Exploration Ltd.  
Alwast, Norbert, IHS Energy Canada Ltd.

**Heavy Oil Mobilization by Cold Solvent, Hot Solvent, and Heat - A Comparative Pore Level Evaluation 733**

Bayestehparvin, B., University of Calgary  
Abedi, J., University of Calgary  
Ali, S.M. Farouq, University of Calgary

**Hydrate Problems for Gas Lift Operations for Deepwater and Arctic Wells and Best Practices for Prevention 746**

Liu, Zhijian, Colorado School of Mines  
Zerpa, Luis E., Colorado School of Mines  
Wang, Yan, Colorado School of Mines

**Hydraulic Fracture Modeling and Well Performance Analysis in CTD Wells Completed in Tight Sands 756**

Bagci, S., Baker Hughes - Reservoir Development Services  
Kowan, J., Baker Hughes - Reservoir Development Services  
Way, G.,

**An Improved Approach for Sandstone Reservoir Characterization 772**

Ross-Coss, D., New Mexico Institute of Mining and Technology  
Ampomah, W., New Mexico Institute of Mining and Technology  
Cather, M., New Mexico Institute of Mining and Technology  
Balch, R. S., New Mexico Institute of Mining and Technology  
Mozley, P., New Mexico Institute of Mining and Technology  
Rasmussen, L., New Mexico Institute of Mining and Technology

**Improved Oil Recovery in Asphaltic Reservoirs During Gas Injection 787**

Darabi, Hamed,  
Abouie, Ali, The University of Texas at Austin  
Sepehrnoori, Kamy, The University of Texas at Austin

**Increased Reservoir Contact in Cemented Multistage Completions In the Williston Basin, Using Engineered Diversion Workflow 801**

Rondon, Janz, Schlumberger  
Heaton, Natalia, Schlumberger  
Lutken, Gordon, Schlumberger  
Parker, Jeff, Marathon Oil  
Kothare, Sunny, Marathon Oil  
Porter, Hank, Marathon Oil

Lowe, Stephanie, Schlumberger

**Increasing Performance of Multilateral Wells Using Oil Fingerprinting**  
**836**

Jensen, M. D., ConocoPhillips Alaska Inc.  
Werner, M. R., ConocoPhillips Alaska Inc.  
McCaffrey, M. A., Weatherford Laboratories  
Dahl, J. E. P., Weatherford Laboratories

**Integrating Enhanced Oil Recovery and Carbon Capture and Storage  
Projects: A Case Study at Farnsworth Field, Texas** 846

Balch, Robert, New Mexico Tech  
McPherson, Brian, University of Utah

**An Investigation Into the Cold Heavy Oil Production With Sand Process  
Using Synthetic Cores and Designed Experiments** 860

Narayan, A., University of Alaska Fairbanks  
Awoleke, Obadare O., University of Alaska Fairbanks  
Ahmadi, M., University of Alaska Fairbanks  
Liu, J., University of Alaska Fairbanks

**VOLUME 2**

**The Lexicon of Recompletion: Empirical Justification for Refrac, Reentry,  
or Remediation in the Bakken/Three Forks Play** 883

Gullickson, Geoffrey, Halliburton  
Ruhle, William, Halliburton  
Cook, Peter F., Halliburton

**Life After SAGD – 20 Years Later** 907

Ali, S. M. Farouq, University of Calgary

**Low Viscosity Cement Slurry for Improved Placement in Narrow Annuli**  
**914**

Campbell, Rianne, Schlumberger  
Lauper, Stephen, Schlumberger

**Maximizing Performance of Residue-Free Fracturing Fluids Using Nanomaterials at High Temperatures 930**

Liang, Feng, Aramco Services Company: Aramco Research Center—Houston  
Al-Muntasheri, Ghaithan A., Aramco Services Company: Aramco Research Center—Houston  
Li, Leiming, Aramco Services Company: Aramco Research Center—Houston

**Measuring Interwell Communication Using the Capacitance Model in Tight Reservoirs 944**

Mirzayev, Mammad, University of Calgary  
Jensen, Jerry L., University of Calgary

**Measuring Marcellus Shale Petrophysical Properties 973**

Zamirian, M., West Virginia University  
Aminian, K., West Virginia University  
Ameri, S., West Virginia University

**Mechanistic Modeling of Clay Swelling in Hydraulic Fractures Network 984**

Sanaei, Alireza, The University of Texas at Austin  
Shakiba, Mahmood, The University of Texas at Austin  
Varavei, Abdoljalil, The University of Texas at Austin  
Sepehrnoori, Kamy, The University of Texas at Austin

**Modeling the Interaction Between Natural and Hydraulic Fractures Using Three Dimensional Finite Element Analysis 1002**

Nikam, Aditya, University of Alaska Fairbanks  
Awoleke, Obadare O., University of Alaska Fairbanks  
Ahmadi, Mohabbat, University of Alaska Fairbanks

**Models of Thermal EOR in Fractured Reservoirs 1031**

Ziegler, V. M., California Resources Corporation

**Monitoring Production Well Testing Facilities Using Statistical Analysis 1050**

Brady, Jerry L., Brady Technologies of Alaska LLC  
Kelley, Timothy F., Glacier Services Inc.  
Mehdizadeh, Parviz, Production Technology Inc.

Starck, Jennifer, BPX Alaska

**Nanotechnology Improves Wellbore Strengthening and Minimizes Differential Sticking Problems in Highly Depleted Formations 1059**

Al-Haj, Hussain, Kuwait Oil Company  
Al-Ajmi, Abdullah, Kuwait Oil Company  
Gohain, Ashis Kumar, Kuwait Oil Company  
Al-Rushoud, AbdulAziz, Kuwait Oil Company  
Khatib, Faiz Ismail, Kuwait Oil Company  
Soliman, Ahmed Hussein, Baker Hughes  
Al-Mujalhem, Manayer, Baker Hughes  
Fathallah, Mohamed Omar, Baker Hughes  
Ibrahim, Ahmed Samir, Baker Hughes

**A New Analytical Solution for Predicting Oil Rate Vs. Time in Waterflood Using Various Injection Plans 1070**

Chen, Yuting, University of Southern California  
Ershaghi, Iraj, University of Southern California

**A New Approach to Reservoir Characterization Using Deep Learning Neural Networks 1079**

Korjani, M., University of Southern California  
Popa, Andrei, Chevron North America Exploration and Production  
Grijalva, Eli, Chevron North America Exploration and Production  
Cassidy, Steve, Chevron North America Exploration and Production  
Ershaghi, I., University of Southern California

**New Viscoelastic Surfactant with Improved Diversion Characteristics for Carbonate Matrix Acidizing Treatments 1094**

Hanafy, Ahmed, Texas A&M University  
Nasr-El-Din, Hisham A., Texas A&M University  
Rabie, Ahmed, Solvay  
Ndong, Rose, Solvay  
Zhou, Jian, Solvay  
Qu, Qi, Solvay

**A Non-Damaging Friction Reducing Agent for Slick-Water Fracturing**  
**1112**

Ibrahim, Ahmed F., Texas A&M University  
Nasr-El-Din, Hisham A., Texas A&M University  
Rabie, Ahmed, Solvay  
Lin, Genyao, Solvay  
Zhou, Jian, Solvay  
Qu, Qi, Solvay

**A Novel Testing Facility for Coiled Tubing Fatigue Evaluation Under Deep Drilling Conditions** 1125

Perozo, N., Clausthal University of Technology  
Paz, C. A., Clausthal University of Technology  
Teodoriu, C., University of Oklahoma MPGE  
Holzmann, J., Clausthal University of Technology  
Grijalva, O., Clausthal University of Technology  
Oppelt, J., Clausthal University of Technology

**Operational Improvements Drilling One Million Feet at Nikaitchuq** 1133

Chaudhry, Amjad, Eni Petroleum Co. Inc.  
Sallee, Adam, Schlumberger  
Burton, John, Schlumberger  
Lazzari, Andrea, Eni Petroleum Co. Inc.  
Kuck, Marc, Eni Petroleum Co. Inc.  
Ravagli, Bruno, Eni Petroleum Co. Inc.  
Simeone, Davide, Eni Petroleum Co. Inc.  
Kuwaiti, Aousama, Schlumberger

**Optimization of Associated Gas Sweetening Process in a Steam Injection Project Using Fluid Simulation** 1149

Elias, Ramon, Santa Maria Energy LLC  
Medizade, Mason M., California Polytechnic State University

**Optimization of CO<sub>2</sub>-EOR Process in Partially Depleted Oil Reservoirs**  
**1160**

Ampomah, W., Petroleum Recovery Research Center  
Balch, R. S., Petroleum Recovery Research Center  
Grigg, R. B., Petroleum Recovery Research Center  
Cather, M., Petroleum Recovery Research Center  
Will, R. A., Schlumberger Carbon Services

Lee, S. Y., Schlumberger Carbon Services

**Optimization of Wellbore Strengthening Treatment in Permeable Formations 1177**

Razavi, Omid, The University of Texas at Austin  
Vajargah, Ali Karimi, The University of Texas at Austin  
van Oort, Eric, The University of Texas at Austin  
Aldin, Munir, Metarock Laboratories  
Govindarajan, Sudarshan, Metarock Laboratories

**Optimizing the Utilization of Miscible Injectant at the Greater Prudhoe Bay Fields 1197**

Ning, S. X., BP Exploration Alaska Inc  
Jhaveri, B. S., BP Exploration Alaska Inc  
Fueg, E. M., BP Exploration Alaska Inc  
Stechauner, G., BP Exploration Alaska Inc  
Jemison, J. L., BP Exploration Alaska Inc  
Hoang, T. A., BP Exploration Alaska Inc

**Partial-Equilibrium Simulation of Gas Hydrate Accumulation in the Sedimentary Strata Under the Sea 1209**

Zhang, L., China University of Petroleum  
Li, X., China University of Petroleum  
Zhang, Y., University of Alaska Fairbank  
Xu, Y., China University of Petroleum  
Gong, Z. H., China University of Petroleum  
Jiang, H. N., China University of Petroleum  
Ren, S. R., China University of Petroleum

**Petrophysical Evaluation of Natural Gas Hydrates - North Slope, Alaska 1220**

Hupp, Douglas, Schlumberger  
Burt, Jason, Schlumberger  
Blades, Amanda Joyce, Schlumberger

**Pilot Test and Economic Analysis of a Wellhead Produced Water Purification System Based on Humidification and Dehumidification Using Co-Produced, Solar, and Waste Heat 1232**

Balch, Robert, NMT  
Abdallah, Issah, NMT

Garcia, Leonard, NMT  
Cercone, David, DOE

**The Polarity of Crude Oil Fractions Affects the Asphaltenes Stability 1246**

Punase, Abhishek, Texas A&M University  
Prakoso, Andreas, Texas A&M University  
Hascakir, Berna, Texas A&M University

**Polymer-Enhanced Foam PEF Injection Technique to Enhance the Oil Recovery for the Post Polymer-Flooding Reservoir 1257**

Dong, Xiaohu, China University of Petroleum-Beijing and University of Calgary  
Liu, Huiqing, China University of Petroleum-Beijing  
Hou, Jirui, China University of Petroleum-Beijing  
Liu, Guohua, Great Wall Drilling company, CNPC  
Chen, Zhangxin, University of Calgary

**Possible Misinterpretations in Well Test Analysis Due to Unfiltered Tidal Signal 1273**

Gowtham, T, University of Oklahoma  
Rouzbeh, G. Moghanloo, University of Oklahoma  
Vamsi, Krishna B, Oil and Natural Gas Corporation  
Srikanth, P, Oil and Natural Gas Corporation

**Predicting the Effects of Acid Gas on Enhanced Oil Recovery in Hydrocarbon Gas Injection 1290**

Lv, Sanbo, China University of Petroleum  
Liao, Xinwei, China University of Petroleum  
Chen, Hao, China University of Petroleum  
Chen, Zhiming, China University of Petroleum  
Lv, Xianwei, China University of Petroleum  
Zhou, Xiaojin, PetroChina Southwest Oil&GasField Company Engineering Technology Research Institute

**Preliminary Study of Liquid Loading Problems for Gas Hydrate Wells and Selection of Artificial Lift Methods 1302**

Liu, Zhijian, Colorado School of Mines  
Zerpa, Luis E., Colorado School of Mines



**Production Geology as a Tool for Monitoring Water Influx in a Compartmentalized California Monterey Fractured Reservoir** 1317

Zhao, Xiaoxi, University of Southern California  
Ershaghi, Iraj, University of Southern California

**Pseudo Density Log Generation Using Artificial Neural Network** 1328

Long, Wennan, University of Southern California  
Chai, Di, University of Kansas  
Aminzadeh, Fred, University of Southern California

**Quad-Lateral Success Story in a Heavy Oil Reservoir** 1349

Livingston, E., ConocoPhillips Alaska, Inc.  
Lee, D., ConocoPhillips Alaska, Inc.  
Werner, M., ConocoPhillips Alaska, Inc.  
Tejo, B., ConocoPhillips Alaska, Inc.  
Wibisono, K., ConocoPhillips Alaska, Inc.  
Redman, S., ConocoPhillips Alaska, Inc.  
Callis, D., Baker Hughes  
Bostick, C., Baker Hughes

**Quantitative Prediction of Radon Concentration at Wellhead in Shale Gas Development** 1362

Tian, Wei, University of Oklahoma  
Wu, Xingru, University of Oklahoma  
Shen, Tong, University of Oklahoma  
Zhang, Zhenyu, University of Oklahoma  
Kalra, Sumeer, Warwick Energy Group

**Relative Viscosity of Hydraulic Fracturing Fluids Containing Nanoparticles** 1377

Fakoya, M. F., Well Construction Technology Center, The University of Oklahoma  
Shah, S. N., Well Construction Technology Center, The University of Oklahoma

**Revisiting Lisburne, a New Approach to a Mature Fractured Carbonate**  
**1391**

Michie, J. J., BP  
Siks, A., BP  
Sauve, M. A., BP  
Wages, D. B., BP

**[Saving Heavy Oil Reserve Value in a Carbon Constrained Market](#)** 1401

Nelson, Donald G., California Oil & Gas Services  
Sheehy, Philip, ICF International  
O'Donnell, John, GlassPoint Solar  
Heisler, Mark A., GlassPoint Solar

**[Seismic AVO Analysis for Shallow Hazard Assessments in Stratigraphically Complicated Areas in Onshore Alaska Locations](#)** 1421

Zhang, Zijian, Fugro Marine GeoServices, Inc.  
Wardlaw, Stephen, Fugro Marine GeoServices, Inc.  
Haneberg, William C., Fugro Marine GeoServices, Inc.

**[A Simple Method for the Removal of Tidal Effects in Pressure Transient Analysis](#)** 1432

Acuna, Jorge A., Chevron U.S.A. Inc.

**[A Simplified Transient Model to Predict Liquid Loading in Gas Wells](#)** 1440

Pagan, Erika V., Louisiana State University  
Williams, Wesley, Louisiana State University  
Waltrich, Paulo J., Louisiana State University

**[Simulation of Perforation Cleanup Dynamics and the Effect of the Direction of Gravity](#)** 1457

Craddock, G. G., Halliburton  
Haggerty, Dennis, Halliburton

**[Static and Dynamic Comparison of Equation of State Solid Model and PC-SAFT for Modeling Asphaltene Phase Behavior](#)** 1467

Abouie, Ali, The University of Texas at Austin  
Rezaveisi, Mohsen, The University of Texas at Austin  
Mohebbinia, Saeedeh, The University of Texas at Austin  
Sepehrnoori, Kamy, The University of Texas at Austin

**[Steam-Flood Production Optimization Using an Innovative Steam Quality Sensor](#)** 1489

Kerr, Robert P., Scientific Drilling International  
Medizade, Mason M., California Polytechnic State University

Gleason, Brian D., Scientific Drilling International

**Uncertainty Reduction in Reservoir Geostatistical Description Using Distributed Temperature Sensing (DTS) Systems Data 1499**

Xu, Bohan, University of Tulsa  
Forouzanfar, Fahim, University of Tulsa

**Unlocking Gas From a Methane Hydrate Reservoir – Barrow, Alaska 1522**

Youngmun, N. C., Petrotechnical Resources-Alaska  
Stokes, P. J., Petrotechnical Resources-Alaska  
Walsh, T. P., Petrotechnical Resources-Alaska

**Unlocking the Potential of Monterey Shale Resource: An Analysis of Geological Characteristics, Completion Techniques, and Production Behaviors 1537**

Saini, D., California State University  
Wright, J., California State University  
Mantas, M., California State University  
Mezei, T., California State University  
Gomes, C., California State University  
Shetty, S., California State University  
Sirajuddin, M., University of Southern California

**Uphole Motor Technology 1553**

Oyedokun, Oluwafemi, Texas A&M University  
Samuel, Robello, Landmark Graphics  
Schubert, Jerome, Texas A&M University

**Using Data To Create Foresight And Create Value From Volume 1563**

Snøtun, Håkon, AGR Software

**Vapor Phase Combustion in Accelerating Rate Calorimetry for Air-Injection EOR Processes 1578**

Bhattacharya, S., University of Calgary  
Mallory, D. G., University of Calgary  
Moore, R. G., University of Calgary  
Ursenbach, M. G., University of Calgary  
Mehta, S. A., University of Calgary

**Water Blocking Caused by Fracturing Fluid Leakage in Mixed-Wet Unconventional Tight Reservoirs 1600**

Kong, Bing, University of Calgary  
Chen, Shengnan, University of Calgary

**Wettability Alteration in Reservoirs: How it Applies to Alaskan Oil Production 1614**

Thyne, Geoffrey, ESaI™ LLC

**A Workflow Process Relating Fracture Density Inferred from Conventional Logs to Performance Data in the Complex Monterey Formation 1637**

Daniels, Jeffrey K., University of Southern California  
Ershaghi, Iraj, University of Southern California

**Stochastic 2D Well Path Assessments for Naturally Fractured Carbonate Reservoirs 1655**

Wehunt, D., Chevron Europe, Eurasia & Middle East E&P Co.  
Borovykh, M., Chevron Europe, Eurasia & Middle East E&P Co.  
Narr, W., Chevron Energy Technology Co.

**Stochastic 2D Well Path Assessments for Naturally Fractured Carbonate Reservoirs (Russian) 1691**

Wehunt, D., Chevron Europe, Eurasia & Middle East E&P Co.  
Borovykh, M., Chevron Europe, Eurasia & Middle East E&P Co.  
Narr, W., Chevron Energy Technology Co.