

Fracturing Impacts and Technologies Conference 2014

**Lubbock, Texas, USA
4-5 September 2014**

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Air and Waste Management Association
One Gateway Center, 3rd Floor
420 Fort Duzuesne Blvd.
Pittsburgh, Pennsylvania 15222-1435

Phone: 800 270 3444
Fax: 412 232 3450

www.awma.org

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TECHNICAL PROGRAM - Thursday, September 4, 2014

8:00 am-5:00 pm

Registration
Ballroom Foyer

8:00-9:15 am

Coffee Available

9:15-9:30 am

Welcome
Rob Duncan, Vice President for Research, Texas Tech University
Sunset A

9:30-9:45 am

Opening Remarks
Texas Tech University System Chancellor Robert Duncan
Sunset A

9:45-10:00 am

Opening Remarks
Texas Tech University President Duane Nellis
Sunset A

10:00-10:30 am

Plenary Session: Federal Update on Unconventional Oil and Gas Production N/A
Ron Curry, Regional Administrator, US EPA Region 6
Sunset A

10:30-11:00 am

Plenary Session: NETL Oil and Gas Research 1
Albert B. Yost II, Senior Management Technical Advisor, Oil and Gas Programs Strategic Center for Natural Gas and Oil, US Department of Energy
Sunset A

11:00 am-11:15 am

Plenary Q & A
Sunset A

11:15 am-12:15 pm

Keynote Address
Hydraulic Fracturing: What, How, Why and Where 19
George E. King, Distinguished Engineering Advisor, Apache Corporation
Sunset A

12:15-1:30 pm

Networking Lunch
Sunset B

A: TECHNOLOGIES

[concurrent with Tracks B and C]

HORIZON A

Chairs: Chau-chyun Chen and Mohamed Soliman, Texas Tech University

1:30-2:00 pm

Engineered Osmosis Technology for Desalination of Exploration and Production Wastewaters: Bench- and Pilot-scale Performance Evaluations 37
Bryan Coday, Colorado School of Mines

2:00-2:30 pm

The Spatial Footprint of the Life Cycle of Natural Gas Fired Electricity..... N/A
Sarah M. Jordaan, Assistant Professor, Energy Politics and Policy Department of Political Science, University of Calgary

2:30-3:00 pm

Innovative Tools to Optimize Fluids Management in the Shale Gas Industry 45
Ken Carlson, Professor of Civil and Environmental Engineering at Colorado State University and Ashwin Dhanasekar, Senior Researcher for the Center for Energy Water Sustainability (CEWS)

B: WATER

[concurrent with Tracks A and C]

HORIZON C

Chairs: Danny Reible and Venki Uddameri, Texas Tech University

1:30-2:00 pm

Brackish Water Resources in West Texas 107
Danny Reible, Donovan Maddox Distinguished Engineering Chair at Texas Tech University and Director of the Unconventional Production Technology and Environmental Consortium

2:00-2:30 pm

Hydraulic Fracturing and Its Implications on Water Resources – Is There Competition Between Food and Energy Security? 120
Venki Uddameri, Professor and Director, Water Resources Center, Department of Civil and Environmental Engineering, Texas Tech University

2:30-3:00 pm

Sources of Water for Hydraulic Fracturing: An Economic Valuation of Freshwater Resources in Hydraulic Fracturing in West Texas 132
Ryan Blake Williams, Associate Professor of Energy, Economics, and Law, Texas Tech University and Michael Giberson, Assistant Professor of Agricultural & Applied Economics, Texas Tech University

C: Hydraulic Fracturing: Stuff Your Mother Never Told You and Your Father Didn't Know: A Guide for Investors and Land Owners

[concurrent with Tracks A and B]

HORIZON B

*Separate Registration is Available For This Session

Chairs: Glenn Cummins and William Keffer, Texas Tech University

1:30-2:00 pm

Overview of Hydraulic Fracturing 156
Marshall Watson, Chair, Department of Petroleum Engineering, Texas Tech University

2:00-2:30 pm

Investing and Land Owner Rights N/A
Terry McInturff, Professor of Practice, Rawls College of Business, Texas Tech University

2:30-3:00 pm

Public Understanding and Opinion on Hydraulic Fracturing 168
Glenn Cummins, Assistant Professor & Associate Dean for Research, Texas Tech University College of Media and Communications

3:00-3:15 pm
Break for All Tracks

FINAL PROGRAM

TECHNICAL PROGRAM - Thursday, September 4, 2014

A: TECHNOLOGIES (CONT.)

[concurrent with Tracks B and C]

HORIZON A

3:15-3:45 pm

Shale Gas Plays Screening Criteria, "A New Sweet Spot Identification Scheme" 54

Ahmed Alzahabi, Ph.D. Candidate, Texas Tech University

3:45-4:15 pm

Galactomannan Extracted from Guar Seeds: Chemistry and Thermal Stability 73

Sumedha Liyanage, Ph.D. Candidate, Texas Tech University, N. Abidi and D.L. Auld

4:15-4:45 pm

Controlling the Risk of Unwanted Hydraulic Fracture Propagation Using a Fully Coupled Hydraulic Fracture Simulator 95

Ali Rezaei, Petroleum Engineering Graduate Student, Texas Tech University

B: WATER (CONT.)

[concurrent with Tracks A and C]

HORIZON C

3:15-3:45 pm

Oil and Gas Water Management - Trends in Technology

James Welch, Global Business Development Manager, Water Solutions, Halliburton N/A

3:45-4:15 pm

Data Automated Water System (DAWS) Provides Automated Fresh and Impaired Water 140
Alex Gonzalez, President, Neptune Treatment Services, Nathan Askins, Operations Manager, Data Automated Water System (DAWS) Division, and Bryson Adams, Aqua Transfer & Oilfield Solutions Corp.

4:15-4:45 pm

Water Session Q & A

C: Hydraulic Fracturing: Stuff Your Mother Never Told You and Your Father Didn't Know: A Guide for Investors and Land Owners (CONT.)

[concurrent with Tracks A and B]

HORIZON B

*Separate Registration is Available For This Session

3:15-3:45 pm

The Economic Impact of the Permian Basin's Oil and Gas Industry 187

Bradley T. Ewing, Professor of Operations Management, Rawls College of Business, Texas Tech University, Marshall Watson, Chair, Department of Petroleum Engineering, Texas Tech University

3:45-4:15 pm

The FRACKS of Life 193

William Keffer, Associate Professor, Texas Tech University School of Law

4:15-4:45 pm

Panel Discussion and Q & A with Presenters

4:45-5:45 pm

Networking Reception and Student Poster Presentations
Sunset B

STUDENT POSTER PRESENTATIONS - Thursday, September 4, 2014

4:45-5:45 pm

Sunset B

Poster presentations will be judged by a panel of experts and winners in the undergraduate and graduate categories will receive a certificate and cash award.



Sponsored by the Edward T. Whitacre College of Engineering at Texas Tech University.

UNDERGRADUATE PRESENTATIONS - N/A

Evaluation of the Dockum Formation Aquifer Water Quality for Use in Hydraulic Fracturing Processes Using Principal Component Analysis

Chris Callahan, undergraduate student in Civil and Environmental Engineering, Texas Tech University

Ion Size Based Andrade Expression for Brine Solution Viscosity

Matt Kovalski, undergraduate student in Chemical Engineering, Texas Tech University

Recycled Hydraulic Fracturing Water: An Agricultural Solution

Kathryn McCauley, undergraduate student in Agricultural Communications, Texas Tech University

GRADUATE PRESENTATIONS N/A

Correlations for the Density of Aqueous Electrolytes Solutions

Nguyen Nguyen, Chemical Engineering Graduate Student, Texas Tech University

Controlling the Risk of Unwanted Hydraulic Fracture Propagation Using a Fully Coupled Hydraulic Fracture Simulator

Ali Rezaei, Petroleum Engineering Graduate Student, Texas Tech University

Development of a Comprehensive Thermodynamic Model for Scale Formation of Saline Water in Hydraulic Fracturing Conditions

Soraya Honarparvar, Ph.D. Student, Chemical Engineering, Texas Tech University

Applications of Microseismicity on Hydraulic Fracturing

Wenjing Li, Ph.D. Student, Petroleum Engineering, Texas Tech University

Modeling the Reuse of Produced Water and the Use of Brackish Water for Hydraulic Fracturing

Jorge Ruiz de Viñaspre, Ph.D. Student, Civil and Environmental Engineering, Texas Tech University

TECHNICAL PROGRAM - Friday, September 5, 2014

8:00 am-1:00 pm

Registration
Ballroom Foyer

8:00-9:00 am

Coffee Available

D: ENVIRONMENTAL IMPACTS: AIR

[concurrent with Tracks E and F]

HORIZON A

Chair: Kuruvilla John, University of North Texas

9:00-9:30 am

Nuisance Litigation as a Prompt for Technological Innovation N/A

Carlos Romo, Senior Associate, Baker Botts, LLP

9:30-10:00 am

Air Quality Monitoring Network Assessments: Best Practices 201

Paul Roberts, Executive Vice President, Sonoma Technology

10:00-10:30 am

Air Emissions Inventory Studies in the Permian Basin- Work to date and Future needs 212

Mark Jones, Environmental Analyst, New Mexico Environment Department Air Quality Bureau

E: ENVIRONMENTAL IMPACTS

[concurrent with Tracks Sessions D and F]

HORIZON B

Chairs: David Klein and Venki Uddameri, Texas Tech University

9:00-9:30 am

What are the Impacts of Hydraulic Fracturing? A Chemist's Perspective 254

David Klein, Associate Professor, Environmental, Clinical & Analytical Chemistry, Department of Environmental Toxicology, Texas Tech University

9:30-10:00 am

Hydraulic Fracturing: Potential Effects on the Environment 264

Tony Vercellino, Assistant Professor, Youngstown State University

10:00-10:30 am

"Fracable" Reuse and Recycled Water N/A

John H. Williams, Director of Research and Development, Director of Engineering, Terra Services LLC

F: PUBLIC POLICY

[concurrent with Tracks D and E]

HORIZON C

Chairs: Erik Bucy and Melanie Sarge, Texas Tech University

9:00-9:30 am

Public Evaluations of Science-Focused Media Content 307

Erik Bucy, Professor of Strategic Communication, College of Media and Communication, Texas Tech University, Andy J. King, Melanie A. Sarge, Matthew VanDyke and Shawna White

9:30-10:00 am

Environmental and Regulatory Issues Associated with Recycling and Reuse of Produced Water and Other Alternate Water Sources 316

Dan Mueller, Director, Natural Gas Exploration and Production, Environmental Defense Fund

10:00-10:30 am

Multidisciplinary Teams as Mechanisms of Accountability: Neutralizing the Emotions and Politics of Hydraulic Fracturing Research 324

Kay Tindle, Director of Research Development, Office of the Vice President for Research, Texas Tech University, Anna T. Young, Associate Managing Director, National Wind Institute, Texas Tech University

10:30-10:45 am

Break for All Tracks

10:45-11:15 am

An Evaluation of the Correlation Between Shale Gas Development and Ozone Pollution Within the Barnett Shale Region 223

Kuruvilla John, Associate Dean of Research and Graduate Studies, University of North Texas College of Engineering

11:15-11:45 am

Air & Water Litigation: Navigating the Pitfalls of Parallel Challenges to Shale Development 239

Ted Bosquez, Attorney, Morgan, Lewis & Bockius

11:45 am-12:15 pm

Suggested Improvements for Estimating National Greenhouse Gas Emissions for Gas Well Completions and Workovers with Hydraulic Fracturing 245

Karin Ritter, Regulatory and Scientific Affairs Department Manager, American Petroleum Institute and Terri Shires, GHG Services Project Manager, URS Corporation

10:45-11:15 am

Environmental and Health Risks 274

David Klein, Associate Professor, Environmental, Clinical & Analytical Chemistry, Department of Environmental Toxicology, Texas Tech University, Anne C. Epstein, MD, FACP, Board Certified in Sleep Medicine and Internal Medicine

11:15-11:45 am

Impact of Hydraulic Fracturing on Transportation Infrastructure 287

Sanjaya Senadheera, Associate Professor and Interim Director, TechMRT, Texas Tech University College of Civil and Environmental Engineering, Texas Tech University

11:45 am-12:15 pm

Frac Water Treatment and Disinfection N/A

John H. Williams, Director of Research and Development, Director of Engineering, Terra Services LLC

10:45-11:15 am

Public and Industry Input Sought by Regulatory Agencies on the Disclosure of Fracking Fluid Ingredients 330

Michelle P. Cumberland, Associate, Kean Miller LLP

11:15-11:45 am

Foxes, Henhouse and the Texas Habitat Conservation Foundation N/A

Ryan Blake Williams, Associate Professor of Energy, Economics, and Law, Texas Tech University and Michael Giberson, Assistant Professor of Agricultural & Applied Economics, Texas Tech University

11:45 am-12:15 pm

Looking into the "Crystal Ball"- Potential New EPA Hydraulic Fracturing Rules Impacting the Eagle Ford Shale Play 344

Ron Truelove, Director, Oil and Gas Sector Services, Trinity Consultants

12:15-1:00 pm

Networking Lunch
Sunset B