



Module III: Environmental Management Technology and Best Practices

**Nittany Lion Inn, University Park, Pennsylvania
August 30-September 1, 2016**

Tuesday, August 30, 2016

- 7:00 am Breakfast, room tbd
- 7-8:00 am Registration, Lobby
- 8:00 am Welcome to Penn State
Dennis Calvin, Director, Penn State Extension
- 8:10 am Welcome Pennsylvania Department of Environmental Protection
John Ryder, Director, District Oil and Gas Operations
- 8:15 am TOPCORP Welcome, Announcements, and Logistics
Azra Tutuncu, Colorado School of Mines
Hilary Clement Olson, University of Texas at Austin
Jim Ladlee, Penn State University

Session I: Water

- 8:30 am Life Cycle of Water with Shale Energy Development – Dave Yoxheimer, Penn State University
- 10:00 am Networking Break



PennState



THE UNIVERSITY OF
TEXAS
AT AUSTIN



10:30 am Water Scarcity for Hydraulic Fracturing in Semiarid Regions: Eagle Ford Shale Case Study

Bridget Scanlon, University of Texas at Austin

11:30 am Water Use versus Produced related to Oil Production from Conventional Reservoirs: Bakken Case

Study - Bridget Scanlon, University of Texas at Austin

12:30 pm Lunch

Session II: Subsurface

1:30 pm Deep Subsurface Reservoirs – Azra Tutuncu, Colorado School of Mines

2:30 pm Deep Well Injection for Produced Fluids Disposal – Dave Yoxtheimer, Penn State University

3:30 pm Networking Break

Session III: Surface

4:00 pm Soil Management During Oil & Gas Operations – Dave Messersmith, Penn State University

4:45 pm Flowback and Produced Fluids Treatment – Dave Yoxtheimer, Penn State University

5:30 pm Wrap-up and Evaluation



Wednesday, August 31, 2016 - Tentative Tour Outline

Field Experience (Draft)

- Flowback Water Treatment Facility with Discharge Permit
- Training Academy Wellhead, Process Controls, and/or Drilling Simulator
- Spill Prevent and Control Countermeasures: Secondary Containment Welding and Repair Demonstration
- Flowback Water Treatment: Salt Reclamation
- Operator Infrastructure Tour (optional)



Thursday, September 1, 2016

7:00 am Breakfast

Health and Safety

8:00 am Session V: Health, Safety, Security, Environment and Social Responsibility (HSSE-SR) – Linda Battalora, Colorado School of Mines, Regency Room

10:00 am Networking Break

10:30 am Natural Occurring Radioactive Materials (NORM) – Mike Arthur, Penn State University (Pending)

Wellbore Integrity

11:30 am Water Testing and Interpretation – Bryan Swistock, The Pennsylvania State University

12:30 pm Lunch

1:30 pm Wellbore Integrity – Mike Arthur, Penn State University (Pending)

2:30 pm Refreshment Break

2:45 pm Cement Bond Logs – Mike Arthur, Penn State University (Pending)

4:15 pm Potential Sources of Fugitive Methane Emissions

4:45 pm Wrap up and evaluation

5:00 pm Refresher Break

6:30 pm Recognition Dinner