

2nd

WATER MANAGEMENT FOR SHALE PLAYS

July 25-27, 2012 | Grand Hyatt Denver | Denver, CO

THE TUTORIAL AGENDA

Thursday, July 26, 2012

8:00 – 9:00 *Registration & Breakfast*

9:00 – 9:10 *Opening Remarks by Tutorial Chair*

9:10 – 9:40 *Keynote Presentation:*

THE FUTURE VISION OF WATER MANAGEMENT FOR SHALE PLAYS

Jim Raney, *Director of Engineering & Technology, ANADARKO*

9:40 – 10:10 *Presentation:*

ADOPTING ENVIRONMENTALLY-FRIENDLY TECHNOLOGIES TO CUT COSTS

There is a call for the energy industry to move towards more environmentally-friendly operations, which have many concerned over possible increased costs associated with new technology. However, with new greener technologies, there are also new opportunities to cut some of the costs long associated with completing a well. In this session, learn about some of these new opportunities. You'll also hear a case study from the Haynesville shale play, which will provide an example of how new greener technologies combined with the correct frac fluid formulation can help both the environment and the profit margin.

Walter A. Dale, *Global Business Development Manager, Water Solutions, HALLIBURTON*

10:10 – 10:40 *Presentation:*

STRATEGIES FOR MINIMIZING THE AMOUNT OF WATER NEEDED ON-SITE FOR FRACKING

- Factors for determining the most feasible source of freshwater for fracking
- What are the challenges associated with water sourcing and how are they most cost-effectively overcome?
- How to evaluate whether the water needs any treatment before use – and if so, how much treatment is needed?
- Various means of recycling and how they can reduce the need for freshwater

John T. Lucey, Jr., PE, *Vice President, Business Development*,
HECKMANN CORPORATION

10:40 – 11:15 *Networking Break*

11:15 – 11:45 **SOURCING ALTERNATIVES TO FRESH WATER FOR FRACKING**

Since freshwater supplies for use in fracking are becoming more expensive and unobtainable, particularly in some parts of the country, many companies are exploring alternatives – such as water from abandoned mines or storm water control basins, municipal treatment plant effluent, power plant cooling water, and other unconventional sources. Learn what industry leaders are doing to reduce freshwater withdrawals.

James L. Gooding, Ph.D., P.G., CMQ/OE, *Specialist, B&V Management Consulting*, BLACK & VEATCH

11:45 – 12:15 *Presentation:*

HOW TO ASSESS, SELECT AND DEVELOP YOUR OPTIMAL WATER MANAGEMENT SYSTEM

- What are the critical factors that must be considered at the outset?
- Factoring corporate objects and constraints on resources into a successful management system
- How can you access and use local water recycling technologies and systems?
- Which technology works best with which water management system?

George Kast, CEO, PRODUCED WATER SOLUTIONS INC.

12:15 – 1:45 *Group Luncheon*

1:45 – 2:15 *Presentation:*

STORING WATER ON-SITE TO IMPROVE EFFICIENCIES AND MINIMIZE COSTS

- Integrating storage considerations into your water logistics
- What storage option fits best? Tanks? Impoundments?
- What are the different considerations that must be taken into account depending on whether the storage is for fresh water or flowback water?
- What are the risks of storage and how can they be addressed?

D. Steven Tipton, P.E., *Completion Engineer*, NEWFIELD EXPLORATION

2:15 – 2:45 *Presentation:*

INNOVATIVE TECHNOLOGIES FOR TREATING SHALE WATER FOR RE-USE

This series of technical presentations will focus on the new technologies, including fracking formulations that are being advanced in the treatment of shale water for re-use.

Ned Godshall, *CEO*, ALTELA, INC.

2:45 – 3:15

Presentation:

ON-SITE FRAC WATER ANALYSIS FOR REAL TIME TREATMENT STRATEGIES

- Methods for analysis of critical water parameters
- Impact of various elements in the Frac process
- Understanding and correcting for interferences in differ water matrixes
- Customizing analytical tools and methods to meet the needs of different shale plays

Thom Voll, *Global Business Unit Director, Laboratory Systems*, HACH COMPANY

3:15 – 3:45

Networking Break

3:45 – 4:15

Presentation:

MANAGING WATER FOR RE-USE: CRITICAL CONSIDERATIONS

- What are the optimal, most cost-effective methods of treating and utilizing produced and flowback water?
- What are the pros and cons of the most widely used treatment methods (filtration, osmosis, chemical treatment, etc.)?
- What chemicals and contaminants must be removed before re-use to ensure they don't cause problems when the water is used for fracking?
- Where are the limits on how much water re-use is possible? What are the limitations of current recycling techniques?
- Just how much does the water need to be cleaned before it can be re-used? How many times can it be re-used and still be effective?
- What are the risks to equipment? What are the risks of the release of gas from the shale becoming blocked?

William Shaw, *Sr. Process Engineer*, VEOLIA WATER SOLUTIONS & TECHNOLOGIES

4:15 – 4:45

Case Study:

THE USE OF CRYSTALLIZATION FOR PRODUCED WATER IN THE BAKKEN

Joseph Tinto, *Commercial Developer*, GE WATER & PROCESS TECHNOLOGIES

- 4:45 – 5:15 *Presentation:*
MOBILE WATER TREATMENT SYSTEMS FOR PROCESSING FRACK WATER
- What are the pros and cons of using mobile water treatment systems?
 - What to consider when co-locating advanced treatment technologies with gas production infrastructure
 - When do the economics of using such systems make sense?
- Nathan Zaugg**, *Principal Engineer*, MWH GLOBAL

5:15 *Day One of the Tutorial Adjourns*

Friday, July 27, 2012

8:00 – 9:00 *Networking Breakfast*

9:00 – 9:30 *Case Study:*
WATER MANAGEMENT FOR UNCONVENTIONAL GAS

Dean Ritts, PE, CEM, *Senior Environmental Engineer*,
WORLEYPARSONS

9:30 – 10:00 *Case Study:*
**FLOWBACK AND PRODUCED WATER TREATMENT:
FLEXIBILITY AND OPTIONS WITH MOBILE AND
STATIONARY FACILITIES**

Aquatech provides multiple mobile, modular, and stationary offerings for the treatment of Shale Gas flowback and produced waters. A comparison of each is provided to showcase when and how they are best utilized in a water management program.

Devesh Mittal, *Vice President Industrial Solutions*, AQUATECH
INTERNATIONAL CORPORATION

10:00 – 10:30 *Case Study:*
**WATER INFRASTRUCTURE VERSUS MOBILE OPTIONS FOR
TREATING AND DISPOSING FRACKING AND PRODUCED
WATER**

Johan Themaat, *Vice President, Investor Relations and Business
Development*, HIGH SIERRA ENERGY, LP

10:30 – 11:00 *Networking Break*

11:00 – 11:30 *Presentation:*

DISPOSAL WELLS: AN ASSESSMENT OF AVAILABLE WELLS AND FACILITIES

- An assessment of existing disposal wells and their limitations
- What are some of the common hurdles to acquiring a disposal well permit – and how are they being overcome?
- Comparison of use of disposal wells vs. alternative methods of disposal: What's working and what's not?

Dale E. Skoff, PG, CHMM, *Manager Oil and Gas Hydrogeologic Services, Appalachian Shale Plays, TETRA TECH*

11:30 – 12:00 *Presentation:*

MAXIMIZING EFFICIENCIES WHEN MOVING WATER

- What strategies are most effective in terms of minimizing the amount of water that must be moved?
- How can you address the key legal and regulatory issues that come into play when moving large volumes of water?
- What alternatives should be considered to reduce transportation costs?
- What are the overall safety risks and how are they best addressed?
- What is key onsite to minimize risks to safety and spill hazards?

David Alleman, *Senior Consultant, ALL CONSULTING*

12:00 – 12:30 *Presentation:*

DEVELOPING THE INFRASTRUCTURE TO TRANSPORT AND STORE WATER FOR FRACKING

- Pipeline vs. trucking: factors to consider when doing the cost/benefit analysis
- What are the considerations when assessing whether to install permanent or temporary pipeline for transporting water?

Drew Poeckes, PE, *Director of Engineering, WEST DAKOTA WATER LLC*

12:30 *The Tutorial Adjourns*