

GRC 2012 Schedule of Events

Workshops

FRIDAY & SATURDAY, SEPTEMBER 28 & 29

Drilling

Naples 6 8:00 a.m.- 5:00 p.m.
Cost: \$400 per person

Led by Bill Livesay, Lou Capuano, Jr. and Lou Capuano, III

Objective: The purpose of the Drilling workshop is to discuss and explain the development and implementation of a drilling plan for economic drilling of hydrothermal and Engineered Geothermal System (EGS) wells and to understand the design criteria and its limitations. Of particular interest will be temperature effects on casing and cement; cost estimates and timing; and threaded casing connections.

- 1. Review of Local Geology and Well Records**
Influence on casing points and anticipating trouble
- 2. Well Design Casing Design; Specification of loads; wellheads**
- 3. Drilling Activities**
Bit Selection and performance; Dull bit evaluation; Bit hydraulics; Drilling Fluids; Aerated drilling fluids/under-balanced drilling and Directional drilling
- 4. End of Drilling Interval Activities**
Logging; Running casing or liners; Cementing casing
- 5. Completions**

Key Items:

- ❖ Temperature effects on casing and cement
- ❖ Cost estimates and timing
- ❖ Cost reduction approaches
- ❖ 3 vs. 4 casing strings
- ❖ Threaded casing connections
- ❖ Premium vs. buttress

Reservoir Stimulation

Naples 7 8:00 a.m.-5:00 p.m.
Cost: \$400 per person

Led by Ahmad Ghassemi, Texas A&M University

Objective: The purpose of the Reservoir Stimulation workshop is to provide the attendees a good working knowledge of the theoretical principles and operational aspects of reservoir stimulation. While the workshop will emphasize education, it will incorporate the latest research findings and practical experiences in geothermal and gas shale reservoirs. The workshop instructors are experts from geothermal and petroleum industry, academic institutions and National Labs.

Day 1:

- 1. The Geothermal Resource Base and The Need for Stimulation to Increase Productivity of Marginal Hydrothermal Wells, EGS, etc.**

Speakers: Joel Renner and John Pritchett

- ❖ Geothermal Resources Base
- ❖ Economic Basis of Reservoir Stimulation
- ❖ Discussion/Break

- 2. Fundamentals of Reservoir Stimulation**

Speakers: Ahmad Ghassemi, J.C. Roegiers, Gillian Foulger, Magaly Flores and Derek Elsworth

- ❖ Rock and Fracture mechanics: In-situ Stress; Wellbore Trajectory; Fracture Models, tensile versus shear fracturing; Thermo-porolectric processes
- ❖ Discussion/Break
- ❖ Session A: MEQ Interpretation
- ❖ Session B: Acidizing and Thermal Stimulation; Reactive Flow and Permeability Dynamics
- ❖ Discussion/Break

- 3. Implementation and Modeling aspects of Stimulation**

Speakers: Hugo Morales-Schlumberger, Susan Petty and John McLennan

- ❖ Gas shale stimulation, interpretation, and

stimulated volume; Geothermal Systems-how is it done, differences and similarities with practice in the petroleum sector; Gas shale and geothermal stimulation: where are we?

Day 2:

4. Reservoir Stimulation, Coupled Processes, Induced Seismicity

Speakers: Pete Rose, Sabodh Garg, Gillian Foulger, Bruce Jillian and Thomas Kohl and Ahmad Ghassemi

- ❖ Conceptual models and mechanisms, stimulated volume; MEQ Mechanisms, monitoring, and interpretation; Modeling of reservoir stimulation, permeability enhancements, and induced seismicity

5. Case Studies

Speakers: Kit Bloomfield, Ann Robertson-Tait, John McLennan, Trenton Cladouhos, Julio Garcia and Thomas Kohl

- ❖ Gas shale; Desert Peak; Raft River; Newberry; The Geysers; and Soultz

Workshop Guides, agenda, presentation outlines, technical papers, and other information presented at the workshops will be provided in a binder or handouts for all workshop participants.

To reserve your seat, fill out the workshop portion of the Conference Registration Form at the back of this brochure. The form also provides information about registration for other GRC Meeting Optional Events.

GRC workshop attendees are invited to a hosted lunch on Friday and Saturday from 12pm-1pm, and a workshop reception on Friday hosted from 5:00pm-7pm. Held in the Naples 2-4 rooms.

The workshop presentations will be given by experts from private industry, national laboratories and universities.

Visit the GRC Meeting Page on our website for the full Workshop Agendas.

www.geothermal.org

Field Trips

SATURDAY & SUNDAY, SEPTEMBER 29 & 30

Structural Controls on Geothermal Activity in The Western Great Basin – Part I

(Pre-meeting, 2-days) Cost: \$300 per person

This two-day trip will examine favorable structural settings for geothermal activity in the western Great Basin. Fault zones primarily control the locations of geothermal fields in the Great Basin, but many questions remain as to what types of faults and what segments of faults are most favorable for geothermal activity.

Elucidating the most favorable settings has important implications for developing exploration strategies, particularly for blind or hidden geothermal systems (i.e., those with few or no surface manifestations).

We will introduce participants to some of the most favorable settings, including belts of intersecting, overlapping, and terminating faults.

Day 1:

Geothermal systems in the Hot Springs Mountains, including Bradys, Desert Peak, and Patua. Overnight hotel in Fallon.

Day 2:

Geothermal fields in the Carson Sink region, including Salt Wells and Soda Lake.

We will examine the geometries and kinematics of controlling fault zones, as well as surficial expressions of geothermal activity. Several short, easy to moderate hikes will permit hands-on analysis of these features.

This trip includes one night lodging (double occupancy required) in Fallon, two lunches, one dinner hosted at the Overland Hotel, refreshments, and transportation in field trip vehicles.

Field trip participants need to check-in with the GRC at the Tuscany Ballroom Foyer on Saturday, Sept. 29 beginning at 6:30 a.m., followed by a continental breakfast. The field trip will depart the hotel at 7:30 a.m. and will return to the Peppermill on Sunday, Sept. 30, by 5 p.m.