



PCPG

Pennsylvania Council Of Professional Geologists
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Annual Meeting Program

Tuesday, March 20, 2017
Red Lion Hotel Harrisburg Hershey
4751 Lindle Road, Harrisburg, PA

8:30 – 9:00 **Board Meeting Arrivals / Refreshments (\$\$ - Registration Required)**

8:00 – 10:00 **RESERVED – Student Poster – Assisted Set-Up**

9:00 – 11:00 **PCPG Board Meeting**

11:00 – 11:30 **Annual Meeting Registration / Arrivals (Dauphin Ballroom – Lower Level)**

11:30 – 12:50 **Annual Meeting Luncheon (Dauphin Ballroom – Lower Level)**

- Opening Welcome (Dan Billman, P.G., PCPG President)
- Board Introductions, Recognition of Past Service
- Current and Planned Activities
- PCPG Scholarship Poster Contest Overview (Richard Wardrop, P.G.)

12:50 – 1:05 **Update: PA Topographic and Geologic Survey**
Stuart Reese

1:10 – 1:50 **Two Plates, One Country: The Geology and Landscape of Iceland**
Jim LaRegina, P.G. (HRG, Inc.)

Iceland, known as the land of fire and ice, home to the singer Bjork, Viking settlement and fermented shark, has of late become a very popular destination for tourists. In 2017, they outnumbered residents almost 7 to 1; in a country of only 300,000. That ratio was in part bolstered by visits from at least two PCPG members and their families. With essentially 24 hours of daylight in the summer, one can see and experience a lot: glaciers, volcanoes, volcanoes under glaciers, lava fields, fjords, tectonic rifts, countless waterfalls, a bridge connecting Europe and North America, a country devoid of trees (mostly), more sheep than residents, reindeer, puffins, puffin pizza and whales. Join Jim LaRegina as he recounts his recent trip to the island nation where he travelled Route 1, aka the Ring Road, around the entire country.

1:55 – 2:45 **Shale Play Water Management in Pennsylvania: Meeting the Need for Brine Disposal Wells**
Dan A. Billman, P.G., C.P.G. (Billman Geologic Consultants, Inc.)
Dale Skoff (TetraTech, Inc.)

Marcellus Shale exploration and production operations in Pennsylvania generate large quantities of flowback and produced water. With continued Marcellus shale development, as well as, Geneseo/Burket Shale and Utica Shale exploration, Pennsylvania is poised to be a major player in shale development for decades to come. Although there is a strong trend toward recycling waters, not all flowback and produced waters can be cost-effectively recycled. Brine disposal wells have an important role to play in managing such waters in a cost-effective and environmentally protective manner. The need for brine disposal wells in Pennsylvania is expected to increase as the industry rebounds from lower commodity prices and Marcellus Shale and other shale plays mature. The authors will provide an overview of the status of currently permitted brine disposal wells in Pennsylvania and adjacent Ohio and West Virginia. A case study on the Bear Lake Properties commercial injection well facility in Warren County, Pennsylvania, will be included.

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2:45 – 3:05 **Break**

3:10 – 3:50 ***Appalachian Natural Gas Liquids Storage Prospects***

Brian J. Dunst, P.G., Chief, Petroleum and Subsurface Geology
PA DCNR | Bureau of Topographic & Geologic Survey

Ethane in the Marcellus and Utica plays is an underutilized resource in the tri-state area of PA-WV and OH. It is either unseparated in the gas stream or shipped out of the region for processing. Government officials from the three states pledged to cooperate and not compete, as petrochemical industry growth in the region will boost the three economies. Infrastructure development is key to attracting companies to process the natural gas liquids locally. Toward this goal, multiple potential storage packages were investigated - mined-rock caverns, salt caverns, depleted gas reservoirs and gas storage fields. Ranking criteria were developed and applied the gas fields to determine the best prospects from over 1500 potential areas. Average depth, favorable trap integrity and presence of stacked packages are key criteria. Stacked opportunities offer the potential for storage in multiple strata in the same geographic area. Three prospects were identified to demonstrate how a storage hub might look.

3:55 – 4:35 ***In Pursuit of New Horizons: Use of Drones for Geologic Investigations***

Martin Helmke, Ph.D., P.G., Director, WCU Groundwater Modeling Center
WCU Department of Earth and Space Sciences

Recent advances in drone technology and image analysis software provide geologists with new and powerful tools for geologic investigations. This presentation will demonstrate how drone-based aerial photographs, spectral images, 3D point cloud models, and geophysics may be used for geologic mapping, hydrogeology, environmental geology, engineering geology, geomorphology, resource exploration, and construction. The process for becoming an FAA-certified commercial drone operator and the requirements for using drones for professional geologic work will be covered in detail.

4:35 ***Announcements, Poster Scholarship Winners, Door Prizes, Annual Meeting Adjournment***

5:00 – 6:30 ***Networking Reception (Dauphin Ballroom)***

**Please remember to sign-out, and pick-up
your certificate of attendance prior to your departure.**