



Geophysical Society of Pittsburgh



*Proudly Presents Tuesday, January 5th , 2016
At
Cefalo's Restaurant, Carnegie, PA*

Marcellus Shale PSDM Case Study – Improved Structural Imaging and Rock Properties

Dr. Morgan Brown

Abstract: In this presentation, we highlight the performance of PreStack Depth Migration (PSDM) on an ION GeoVentures multiclient survey from northwest Pennsylvania, the GroundhogSCAN 3D. Provided that reflection tomography has produced an accurate interval velocity model, PSDM provides three key “structural imaging” benefits (over conventional time imaging or PSTM) for horizontal drilling applications: 1) structural simplification, 2) improved focusing of faults and steep dips, and 3) correction of lateral mispositioning due to velocity variations. All three benefits materially reduce the risk of dropping out of zone during geosteering. Looking into the future, however, PSDM will also improve the accuracy of any rock property attributes derived from migrated gathers. In this presentation we focus on azimuthal velocity anisotropy (HTI), an indicator of horizontal stress gradient, and show convincing evidence that we have detected a change in regional horizontal stress across the Salina Salt, a known detachment surface during the Appalachian Orogeny. Moreover, we demonstrate that by using PSDM for the attribute analysis, we remove false HTI effects from PSTM gathers that were caused by lateral velocity variation.



Biography: Dr. Morgan Brown holds degrees in applied mathematics (BA, 1997) from Rice University and in geophysics (PhD, 2004) from Stanford University. He worked in geophysical R&D at Hess Oil and 3DGeo, before joining Joe Higginbotham at Wave Imaging Technology. He served as CEO from 2008 to the company's sale in 2013 to GeoCenter. After consulting for two years, he recently joined the NEOS Seismic Imaging Group in Denver as a Subject Matter Expert in Depth Imaging.

*Please RSVP using the PayPal link on the Geophysical Society of Pittsburgh website at: www.thegsp.org
Cost: \$35 Members, \$40 Non-members (\$20 for Students). Meeting Location: 428 Washington Ave, Carnegie, PA 15106
(412) 276-6600. Note the significant detour warning on page 2 of the newsletter.*

December 1st, 2015 Agenda

5:00 pm Social Hour (Beer and Wine) sponsored by



6:00 pm Dinner Buffet

7:00 pm Lecture – Sponsored by



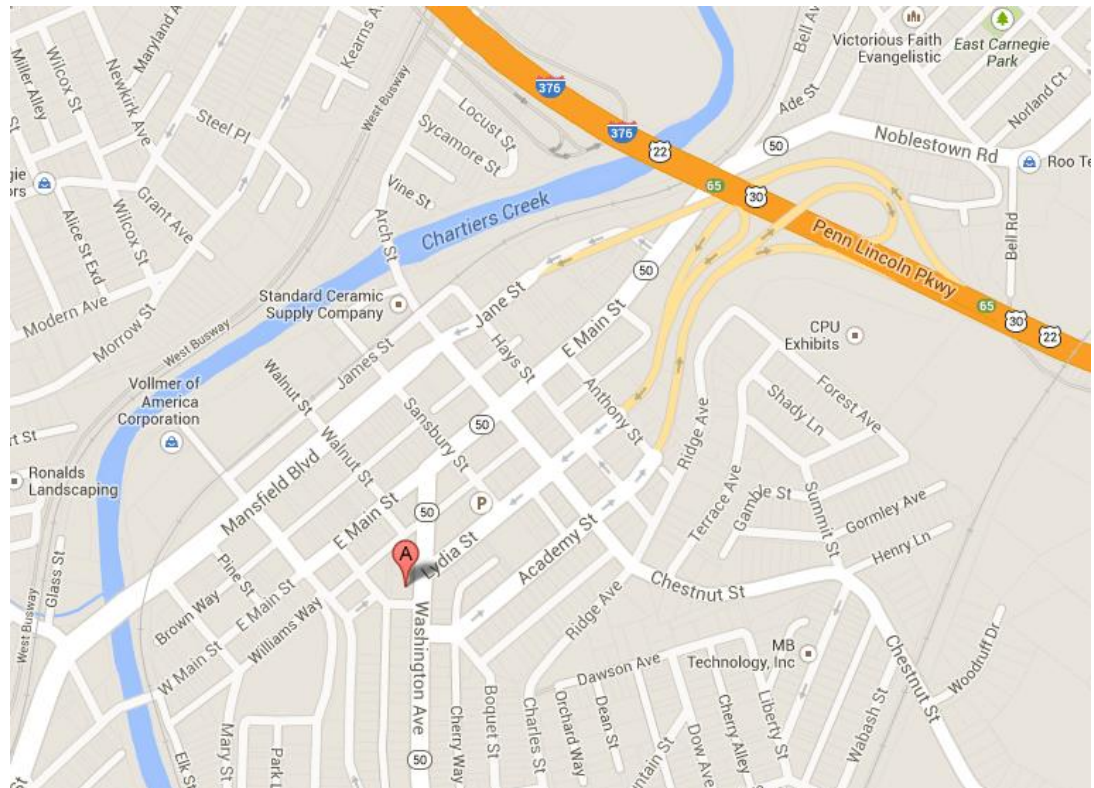
To receive CEU certificate from this lecture please email: mweber@rangeresources.com

This months lecture will be held at :

Cefalo's

Banquet & Event Center
428 Washington Ave.
Carnegie, PA 15106
412.276.6600

Note that the Carnegie Exit (65) on/off ramps of the Parkway West (376) are closed until December 2015. Seek an alternate route (two posted detours are the Green Tree Exit on I376 or the Carnegie Exit on I79)



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