



Geophysical Society of Pittsburgh



Proudly Presents Tuesday, Oct. 3rd, 2017

At

Cefalo's Restaurant, Carnegie, PA

Seismic-Based Porosity Prediction in the Silurian Niagaran Formation Reefs of Northern Michigan: An Integrated Case Study

Doug Paul

SeisWare Inc.

Abstract: Identifying Lower Silurian Niagaran (Guelph) Formation reefs with 3D seismic in the Michigan Basin has been very challenging from the onset of the use of this technology. Gaining experience in recognizing diagnostic seismic signatures and refining processing flows has led to the ability to define these structures far more reliably. While production can be very prolific, the heterogeneity encountered within individual reefs has led to many poor producers and dry holes due to lack of primary porosity, compartmentalized reservoirs, and/or salt occlusion. The objective of this study was to integrate seismic and geology to better predict porosity distribution. A combination of near angle (0-15o) stacks and high resolution processing was used to create a seismic volume in which various attributes were correlated with well porosities. Coherence, spectral decomposition, wavelet analysis, and Rock Solid Attributes were cross plotted against the well properties. Areas identified as having porosity from each analysis were combined to generate predicted distribution of porosity across the reef. A High Angle Lateral well was subsequently drilled into this predicted porosity to test this hypothesis, with successful results. The same methodology will be further tested on a different reef. Seismic acquisition has been completed and processing is underway. Drilling is anticipated to be completed prior to October, 2014.

Biography: Doug Paul received a Hon B.Sc. in Applied Earth Science from the University of Waterloo, Waterloo, Ontario, Canada. He worked extensively in the early development of EOR processes with the Alberta Oil Sands Technology and Research Authority (AOSTRA) providing geologic insight into complex reservoir simulation models. After working in conventional geological exploration and development, Doug moved into technology side of the business with Landmark Graphics in Calgary and Houston specializing in the integration of geophysics and geology. He then cofounded Photon Systems in Houston before returning to Calgary when Photon merged with CogniSeis. In 1997 Doug started a consulting company providing interpretation and data management services to Sable Offshore Energy, Mobil, Chevron, Shell, ExxonMobil, and Norsk Hydro, primarily focusing on the Canadian east coast offshore. He consulted for SeisWare and joined them full time in 2007 and opened SeisWare's US office in Houston providing geoscience interpretation software to the American oil and gas industry.



Doug has authored and presented papers at SEG, CSEG, CSPG and numerous regional symposiums and forums in addition to coauthoring papers with clients showcasing applied, integrated technologies. He is member of the Society of Exploration Geophysicists (SEG), HGS, and other regional geoscience societies throughout the US and Canada.

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), FREE for displaced employees. Meeting Location: 428 Washington Ave, Carnegie, PA 15106 (412) 276-6600.

Tuesday, October 3rd 2017 Agenda:

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

6:00 pm Dinner Buffet

7:00 pm Lecture sponsored by:

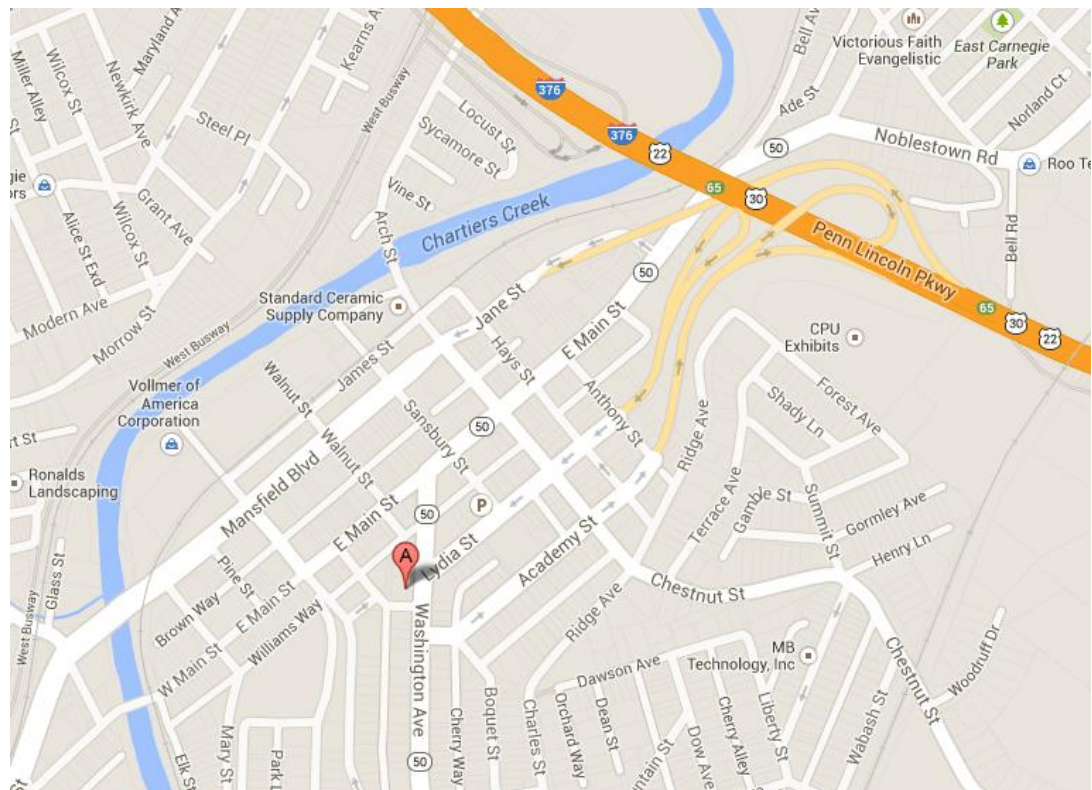


To receive CEU certificate from this lecture please email: emily.mcclain@williams.com

This months lecture will be held at :

[Cefalo's](#)

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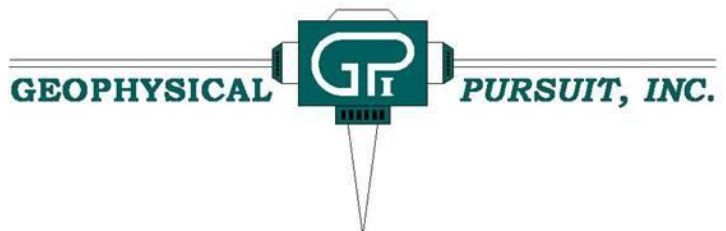
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