



Geophysical Society of Pittsburgh



*Proudly Presents Tuesday, December 1st, 2015
At
Cefalo's Restaurant, Carnegie, PA*

Microseismic Drive Reservoir Modeling: a validated workflow Peter Duncan

Abstract: The use of microseismic monitoring of hydraulic fracture reservoir stimulations has increased over the last 15 years. However, less than 10% of fractured wells are monitored and that number does not appear to be increasing. This plateau likely represents a lack of appreciation and acceptance of the value and benefits of microseismic monitoring. Microseismic event location plots, images and videos have proven useful for detecting mechanical problems in the completion, for detecting the reactivation of pre-existing faults and joints and, in very general terms, for mapping out the morphology of the stimulated rock volume (SRV). However, issues related to event location uncertainty, event detectability and the complexity of the geomechanical processes that govern the fracturing of a reservoir have led to inconsistent and sometimes contradictory results. Microseismic derived SRV usually produces overestimates of the actual production rates achieved. Conversely, treatment stages with low microseismic response can be good producers. If the technology is to advance beyond its current state of usefulness, a more rigorous interpretation workflow must be developed; one that is validated through external observations. In this paper we review our progress on developing such a workflow and present validated results in the form of a production forecast based on microseismic data matched to the production history of two wells in West Texas.



Biography: Peter M. Duncan is Founder and Co-Chairman of MicroSeismic, Inc. a Houston based oil field service company specializing in hydraulic fracture stimulation surveillance and evaluation. He holds a Ph.D. in Geophysics from the University of Toronto. His early career as an exploration geophysicist was with Shell Canada and then Digicon Geophysical, first in Calgary then in Houston. In 1992 he was one of 3 founders of 3DX Technologies Inc., a publicly traded independent oil and gas exploration company. Duncan was 2003-04 President of the Society of Exploration Geophysicists (SEG). Duncan was the Fall 2008 SEG/AAPG Distinguished Lecturer speaking on the subject of Passive Seismic at 45 venues around the world. He is an Honorary Member of SEG, the Canadian Society of Exploration Geophysicists (CSEG), the Geophysical Society of Houston (GSH) and the European Association of Geoscientists and Engineers (EAGE). He received the Enterprise Champion Award from the Houston Business Journal in 2010, the World Oil Innovative Thinker Award in 2011, and was the 2013 EY National Energy Entrepreneur of the Year. In 2014 he received the Virgil Kauffman Gold Medal from SEG.

*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



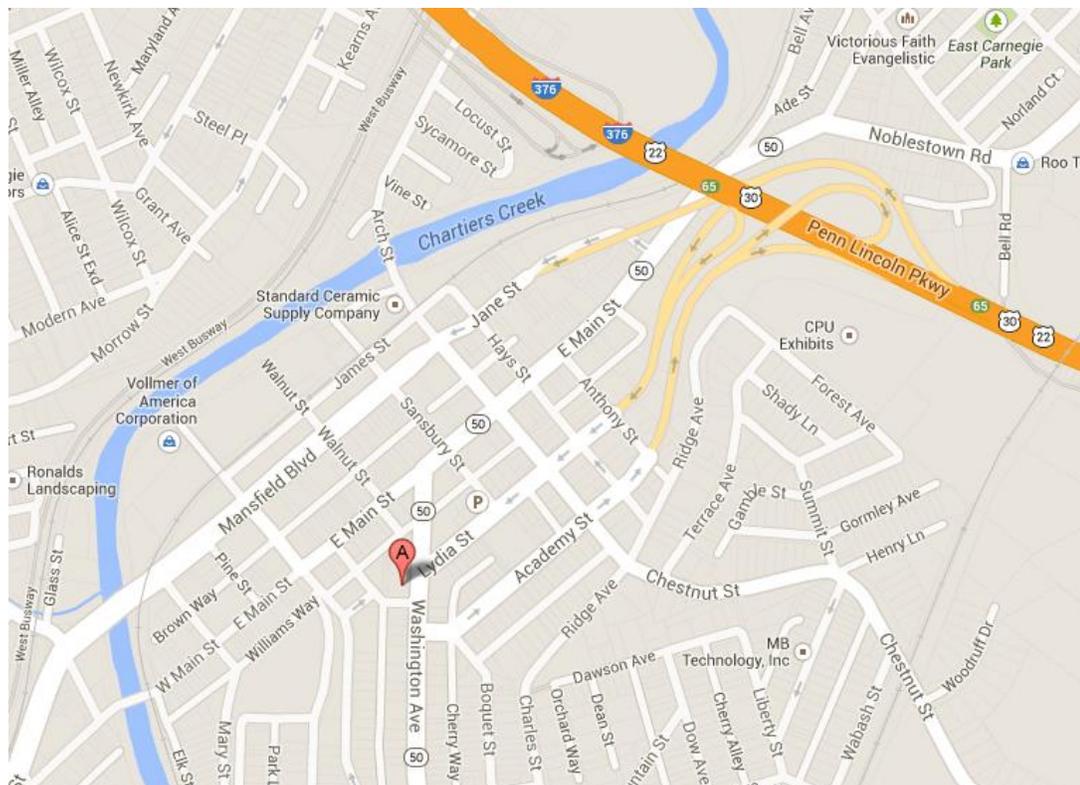
To receive CEU certificate from this lecture please email: mweber@rangeresources.com

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)



We would like to thank our 2015-2016 Corporate Sponsors:

GOLD



SILVER

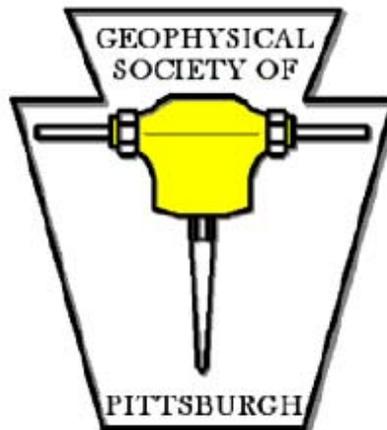


BRONZE



2015-2016 GSP OFFICERS

<i>President:</i>	Scott Gorham	GorhamS@srcx.com	Seneca Resources
<i>Vice President:</i>	Jianli Yang	yangj@srcx.com	Seneca Resources
<i>Treasurer:</i>	Mandy Thomas	metthomas@slb.com	Schlumberger
<i>Secretary:</i>	Matt Weber	mweber@rangeresources.com	Range Resources
<i>Past President:</i>	Robert Burger	rburger@geotrace.com	Geotrace



Your Dues and Sponsorship in Geophysical Society of Pittsburgh go toward:

- *Outstanding Monthly Lecture Series*
- *SEG Distinguished Lecturers*
- *Annual Scholarship Awards*
- *Annual Golf Outing*
- *Short Courses*

Please contact Scott Gorham
(GorhamS@srcx.com) for Sponsorship
Opportunities.
