NMOGA

EXHIBIT F

Biography

George E. King is a Registered Professional Engineer (Oklahoma PE 10831 and Texas PE 110993)) with 47 years oilfield experience since starting with Amoco Production Research in 1971. His technical background includes basic research on energized fracturing, production and fracturing chemicals, acidizing, asphaltenes, perforating, well integrity, completions, unconventional resources and sand control.
Technical accomplishments include over 85 technical papers, Distinguished Lecturer on foam fracturing for the Society of Petroleum Engineers (SPE) during 1985-86, and Completions Course Lecturer on horizontal wells for the SPE Short Course series in 1999. Industry positions held include Technical Chairman of the 1992 SPE Annual Fall Meeting, past API subcommittee chair on perforating, eleven years adjunct professor at the University of Tulsa (teaching senior level and graduate credit well completions and fracturing courses at night), and numerous SPE committees on forums, paper selection committees and Applied Technology Workshops. Awards include the Amoco Vice President's Award for technology from Amoco in 1997, API service award in 1994, the 2004 SPE Production Operations Award, the 2012 Engineer of the Year award from the Houston Region of the Society of Professional Engineers and SPE Distinguished Member in 2015. He maintains an educational web site with free downloads of petroleum engineering educational materials at www.GEKEngineering.com

Positions Held:

1. Amoco, Tulsa Research Center, June 1, 1971 to January 1, 1999. Responsibilities – internal Amoco lab and consulting service for field completion and production operations. Topics covered every production engineering topic with emphasis on production chemistry, fracture cleanup, perforating, recompletions, well repair, brines, formation damage and sand control. Work scope was worldwide. Developed and taught Amoco courses on acidizing, perforating, coiled tubing, horizontal completions, formation damage and completions. Specific field work included identification of the major formation failure mechanism for Norway's Valhall field,
2. University of Tulsa – Jan 1988 to Dec 1998. Adjunct Professor. Taught senior engineering courses in Frac Stimulation and Well Completions / Workovers at night while working for Amoco.
3. BP-Amoco and BP – January 1, 1999 to January 15, 2008. Responsibilities – Petroleum engineering consulting and new technology advocate. Honored with Distinguished Advisor status in April 2001 (one of five world-wide technical DA positions). Worked with business units on sand control, workovers and interventions, annular pressure control and low pressure gas wells. Developed and taught top rated courses on completions and sand control for the BP-Chevron Training Alliance. Retired after 37 years on January 15, 2008.
4. Rimrock Energy LLC – January 16, 2008 to January 30, 2009. Joined as Sr. VP of Engineering of the start-up company and oversaw fracturing operations that solved several of the major technical hurdles of fracturing in the outer fringes of the Barnett shale without penetrating into water below the shale. Left the company when the focus was changed from active drilling and fracturing to a no-growth plan on production-only operations. Retired January 31st, 2009.

5. Consulting – February 2009 to August 31, 2009. Consulting on completions, stimulation, interventions, shale well fracturing, well operations and workovers in general Petroleum Engineering and energy related innovation. Clients included Apache, OMV (Austria), Santos (Australia), Southwestern Energy, Energy Ventures (Norway), Murphy Oil, Stone Energy, DeepStar Consortium and others.
6. Apache August 31, 2009 to present - Distinguished Engineering Advisor, involved in Technology Transfer, Shale Developments, Fracturing, Production Chemistry and Completions.

Technical Advances

1. Industry Resource - Published the first publically released risk estimates and explanations of environmental impact in hydraulic fracturing activities (SPE 152596). A shortened version of the 80 page paper was reviewed and published in SPE Journal of Petroleum Technology, April 2012.
2. Industry Resource - Published a comprehensive set of risk estimates of barrier failure and integrity failure using reviews of studies of over 650,000 wells. Explained the difference between barrier failure and integrity failure and explored common factors in methane gas migration. SPE 166142 is available through www.onepetro.com . The report is a peer-reviewed publication.
3. Industry Resource - Published a highly documented and referenced history of gas shale fracturing titles "Thirty Years of Gas Shale Fracturing: What Have We Learned?" (SPE 133456). Peer reviewed and published in SPE paper collection on shale in 2011.
4. Basic Production Advancement - Researched and developed some of the earliest industry fluid loss data on fully dynamic equipment for fluid loss prediction in foamed fracturing systems (SPE 6817, SPE 14477). Was active in development of early foam fracs in western US with Amoco and saw solid stimulation gains in low pressure, under-saturated and water sensitive gas wells.
5. Basic Production Advancement – Duplicated failure mechanism for completion failures and helped develop earliest successful completion methods in the Norwegian Valhall field (SPE J. Pet. Tech., Nov 1982, and Masters Thesis at University of Tulsa). The results of the work enabled a one billion dollar investment in Valhall Field, which reached peak rates of 130,000 bopd, using horizontal wells and multiple fracturing with high networking (secondary plane fracture development).
6. Basic Production Advancement – Studied underbalance perforating relationships and found the link between underbalance and formation permeability/flow (J. Pet. Tech., June 1986). This underbalance perforating and cleanup work was the foundation of cleanup calculations and perforation flow optimization and continues to be referenced in articles on the subject.
7. Corrosion Protection – Was instrumental in assisting an inventor to bring an idea to the market to do in-place lining of casing using high performance plastics for injection and disposal wells. Saw this idea through from conception through prototype and on to commercial development.
8. Basic Production Advancement – Examined the correlation between increasing skin and sand control completions and identified sorting and the influence of fines on gravel pack productivity (SPE 39437). Sharing these findings with the

industry has contributed to the move to fines-passing screens, flux research, controlled drawdown application and decreased skins in high productivity wells.

9. Global Sand Control Impact – Constructed a 2000+ well database through cooperation and networking across 40 companies and drew out the first proven reliability figures for sand control completions. Made this work available free to the industry (SPE 84262). Impact has enabled better understanding of how and why sand control completions fail and how they can be improved.
10. Prototyped and built a 100+ training module data base in all phases of technical production engineering for training engineers.
11. Focused geology, geochemistry, and rock mechanics and fracturing knowledge to increase surface area contact in Barnett gas shales during fracturing and understand how to limit fracture extension into the bottom water. (SPE 119896).
12. Researched topics of Shale Gas Fracturing including optimizing frac initiation points, studying effect of rate of fluid returns on well performance and increasing complex or network fracturing to improve production (SPE 119896, SPE 133456, SPE 140105). Have collaborated with industry experts and now teach 2-day seminars on shale completions for the SPE.
13. Currently coauthoring an SPE Technical Report on Fracture-Driven Well-to-well communication (Frac Hits). Focusing on recognition, prevention and remediation – SPE 187192.

Education

- BS, Major in Chemistry, Oklahoma State - 1972
- BS in Chemical Engineering, University of Tulsa - 1976
- MS in Petroleum Engineering, University of Tulsa – 1982
- Professional Engineering status – PE 10831 (Oklahoma) by test in 1978 (EIT in 1976; Texas in 2012), kept current by continuing technical and ethics training.

Honors

1. 2015 Distinguished Member Award from Society of Petroleum Engineers.
2. 2012 Engineer of the Year from Greater Houston Region's Texas Society of Professional Engineers.
3. Distinguished Engineering Advisor status with Apache, 2012.
4. SPE Production Operations Award 2004
5. Distinguished Advisor Status with BP, 2001
6. SPE Short Course Lecturer, 1999
7. Silver Beaver Award, Boy Scouts of America, 1998
8. Amoco Vice President's Award for Technology, 1997.
9. Service award from API, 1994.
10. SPE Distinguished Lecturer, 1985/85
11. Eagle Scout Award, July 1963.

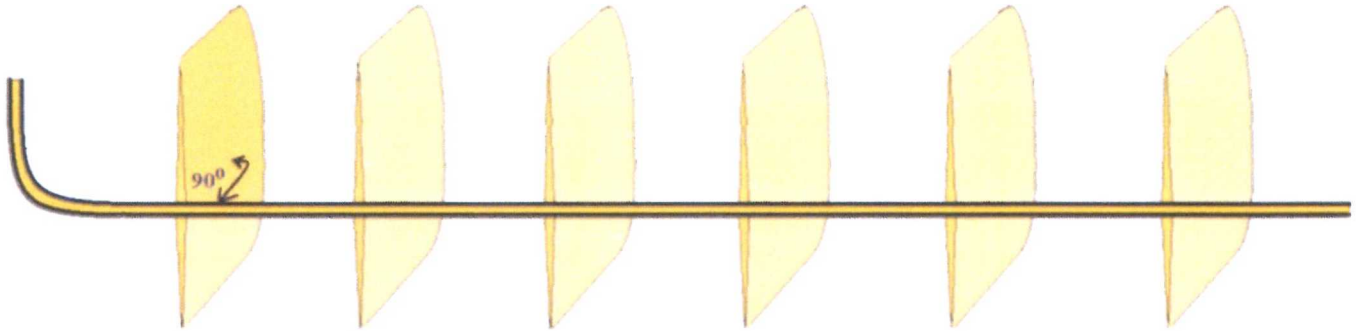
Publications

1. Over 85 technical publications.
2. Self-published a book "An Introduction to the Basics of Well Completions, Stimulations and Workovers". Electronic copy free on request.
3. 3 Patents – Fluid Loss Control and Water Control.

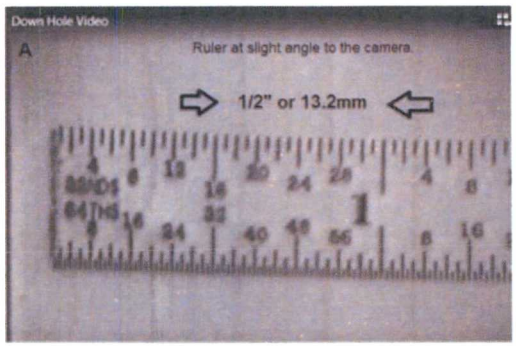
4. Co-wrote chapters in "Modern Fracturing" (edited by Economides and Martin), the SPE Volume IV Petroleum Engineering Handbook (edited by Larry Lake), and the 3rd edition of Reservoir Stimulation (edited by Nolte and Economides). Working on chapters for SPE Monographs in Acidizing, Fracturing, and Unconventional Formations.

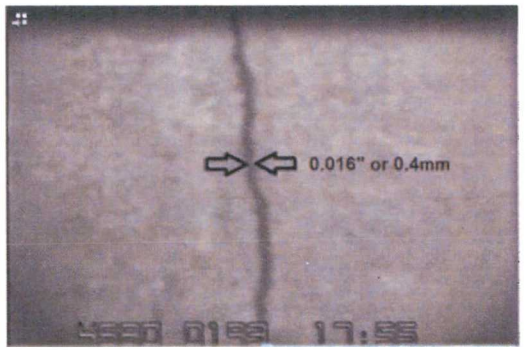
HYDRAULIC FRACTURES – VERTICAL AND NARROW.

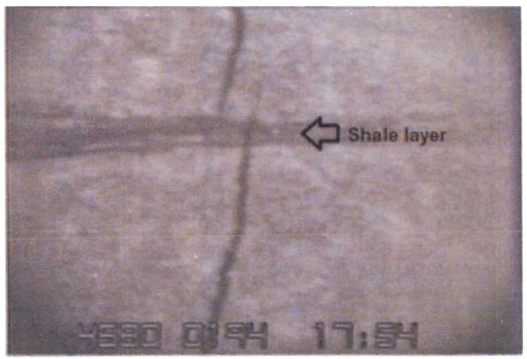
Transverse fractures are used in low permeability reservoirs.



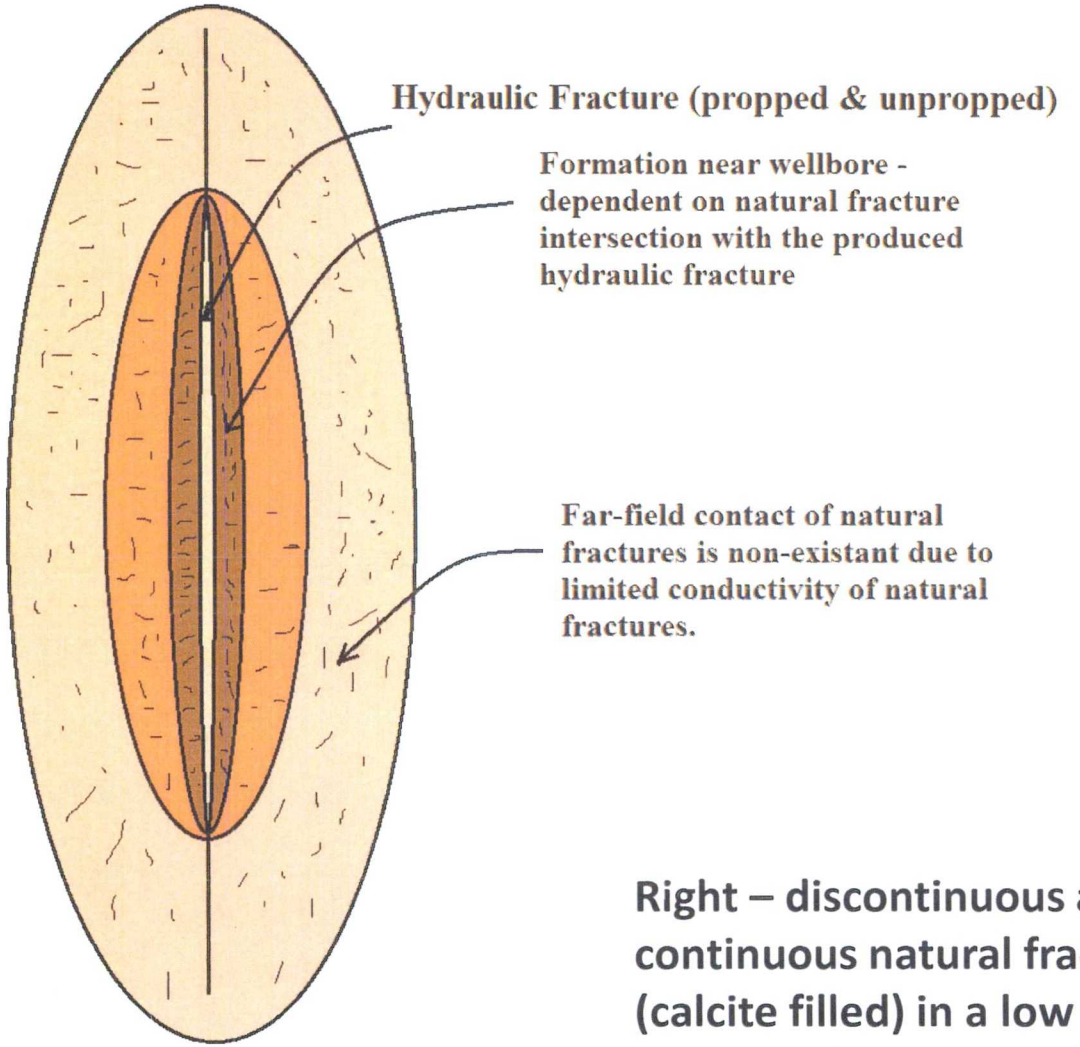
Downhole pictures (4580 ft. depth) from open videos of fractured open hole wellbores in the Permian Basin. Fracture are highly vertical and narrow.

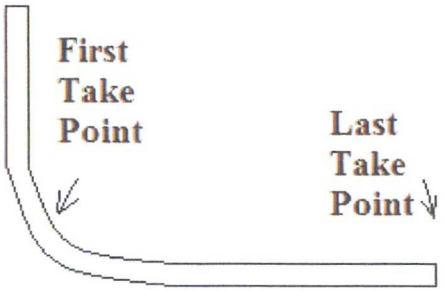


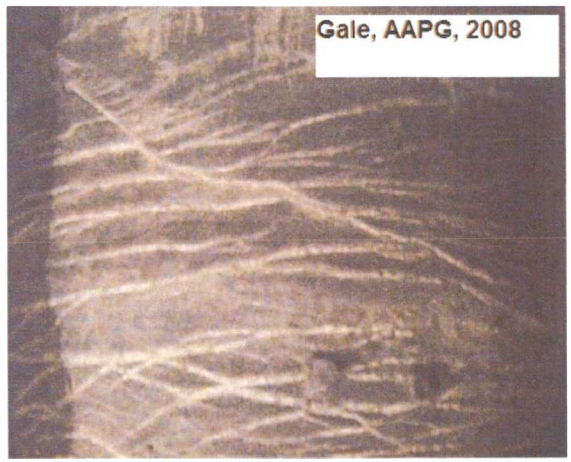




DRAINAGE PATTERNS AROUND FRACTURES

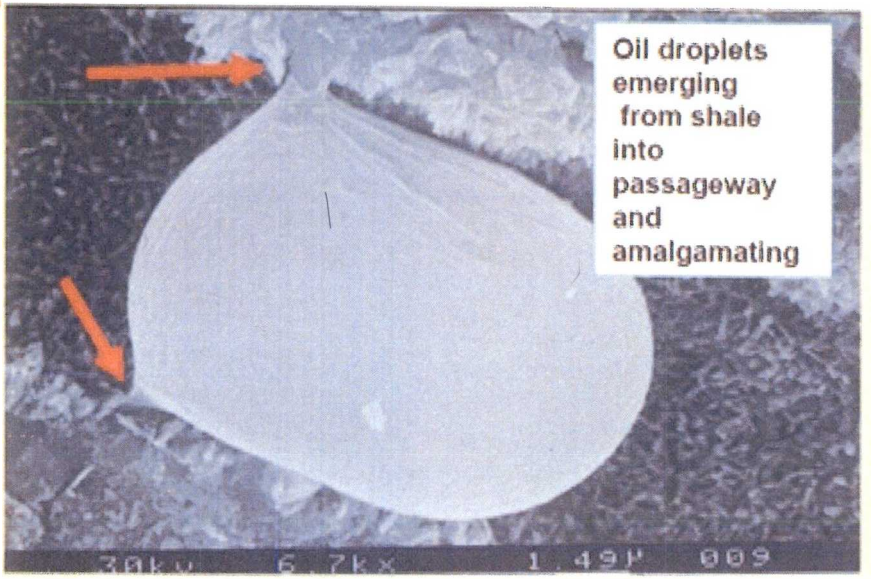


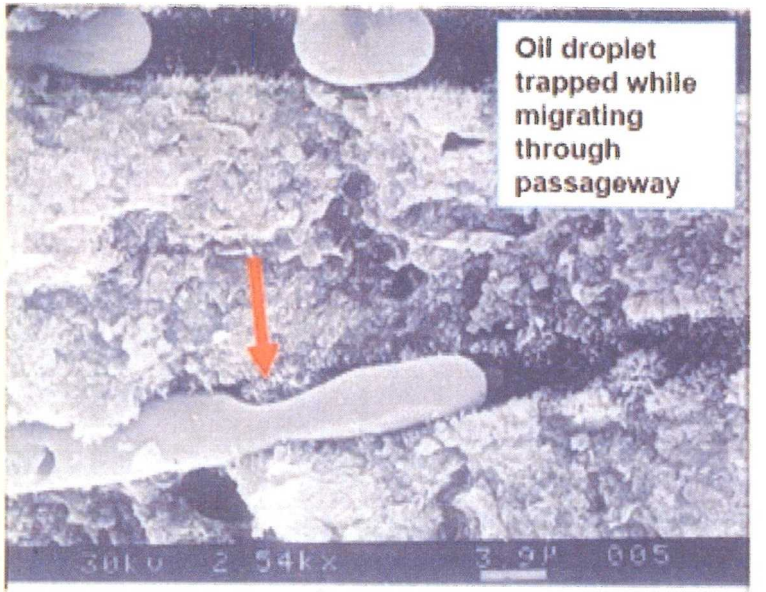


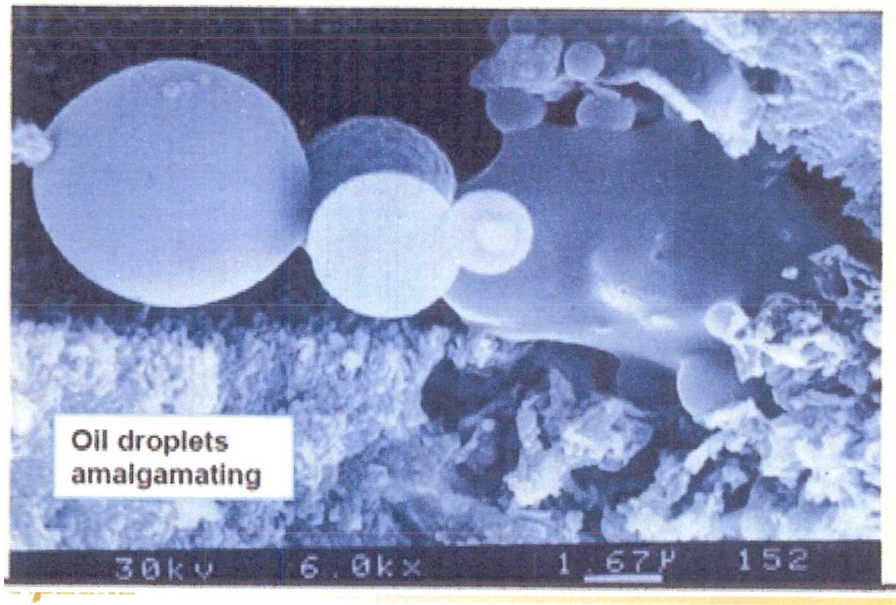


Right – discontinuous and continuous natural fractures (calcite filled) in a low permeability shale core.

HOW DOES OIL MOVE THROUGH SHALE?







O'Brien, N., G.D. Thyne, and R.M. Slatt, 1996, Morphology of hydrocarbon droplets during migration: visual example from the Monterey Formation (Miocene), California, AAPG Bull., v. 80, p. 1710-1718

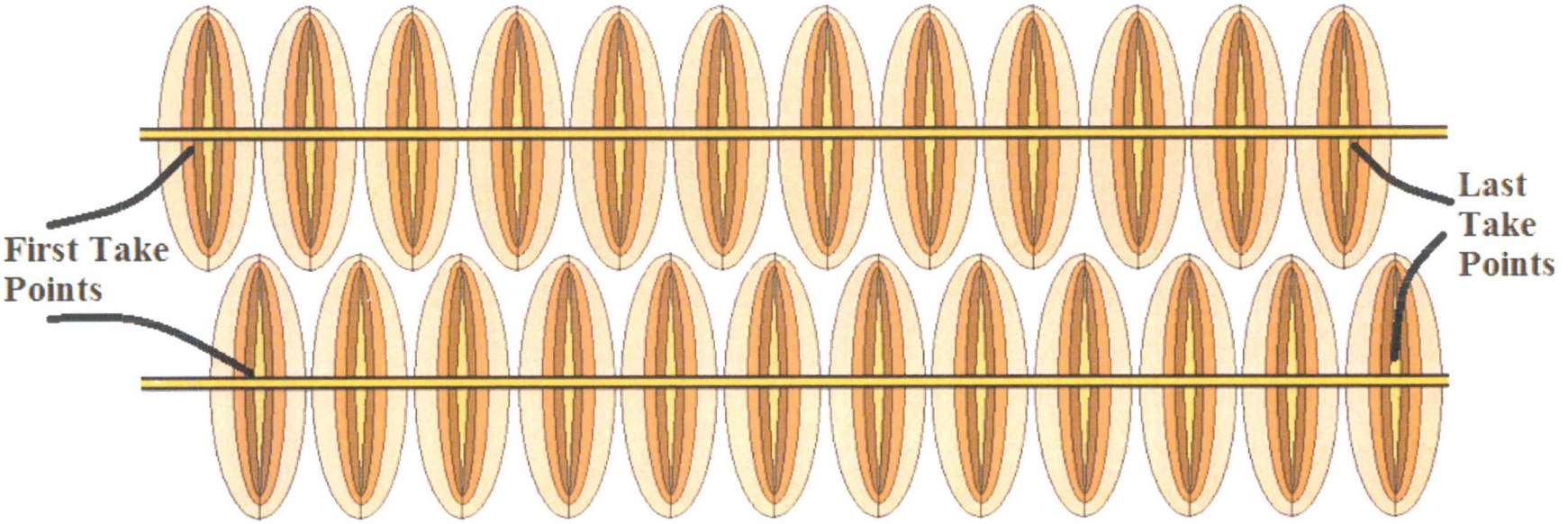
Source: Conoco Phillips Slide

Hydrocarbons must have flow paths – the lower the permeability, the more fracturing is needed.

Roger M. Slatt, Prerna Singh, R. Paul Philp, K.J. Marfurt, and **Y. Abousleiman,** *ConocoPhillips School of Geology and Geophysics, University of Oklahoma,* and **N.R. O'Brien,** *Department of Geology, State University of New York*

RECOGNIZING THE DRAINAGE PATTERN OF A FRAC IS AN ELLIPSE HELPS DESIGN FOR IMPROVED RECOVERY.

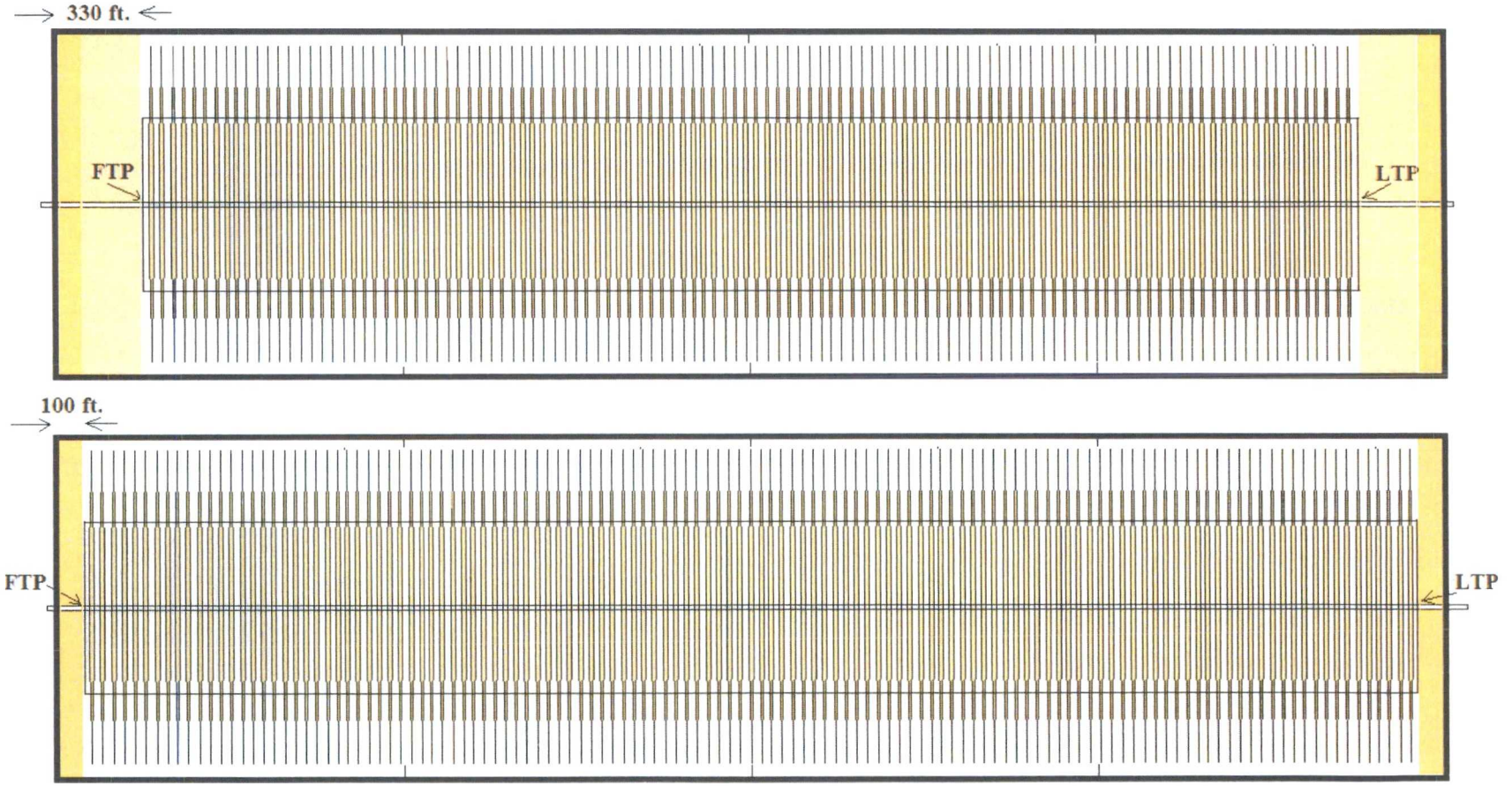
A map view schematic of frac development in offset horizontal wells.



The objective is to minimize undeveloped areas.

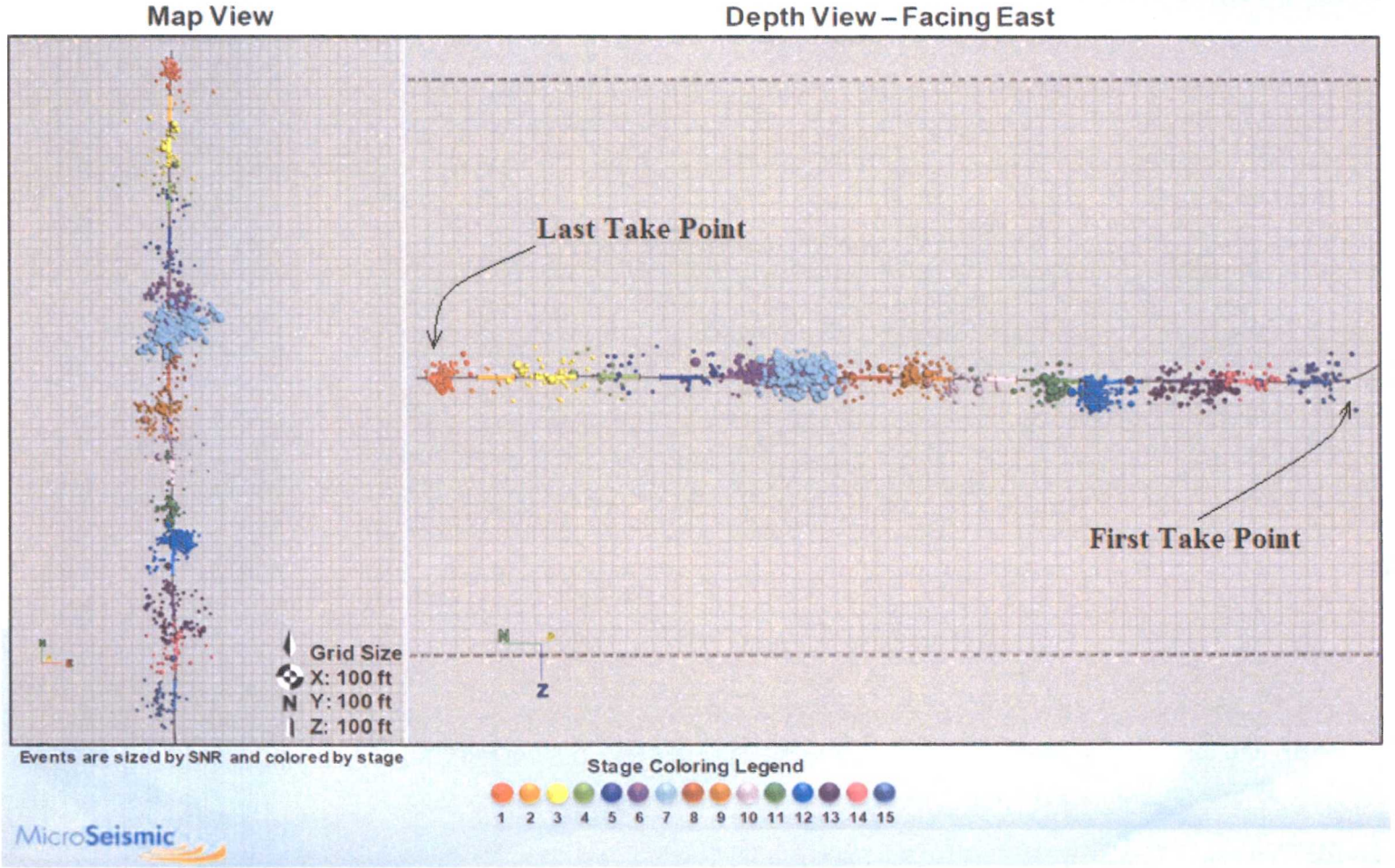
HEEL AND TOE SETBACKS: REDUCING WASTE.

Map View, 4 x 40 acre blocks, Multi-Frac Horizontal Wells,
Reduced Stranded (Unrecoverable) Reserves by 70% with 100 ft. Toe & Heel setback



MICROSEISMIC MAPPING OF FRACTURE SHEAR GROWTH IN HORIZONTAL WELLS

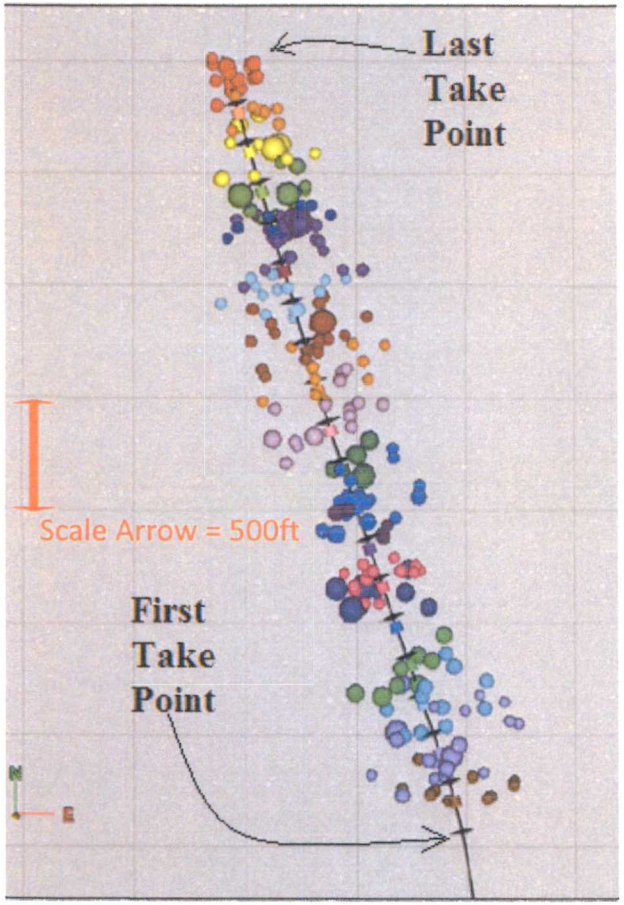
Fire Eagle 2H – San Andres, Lea County NM



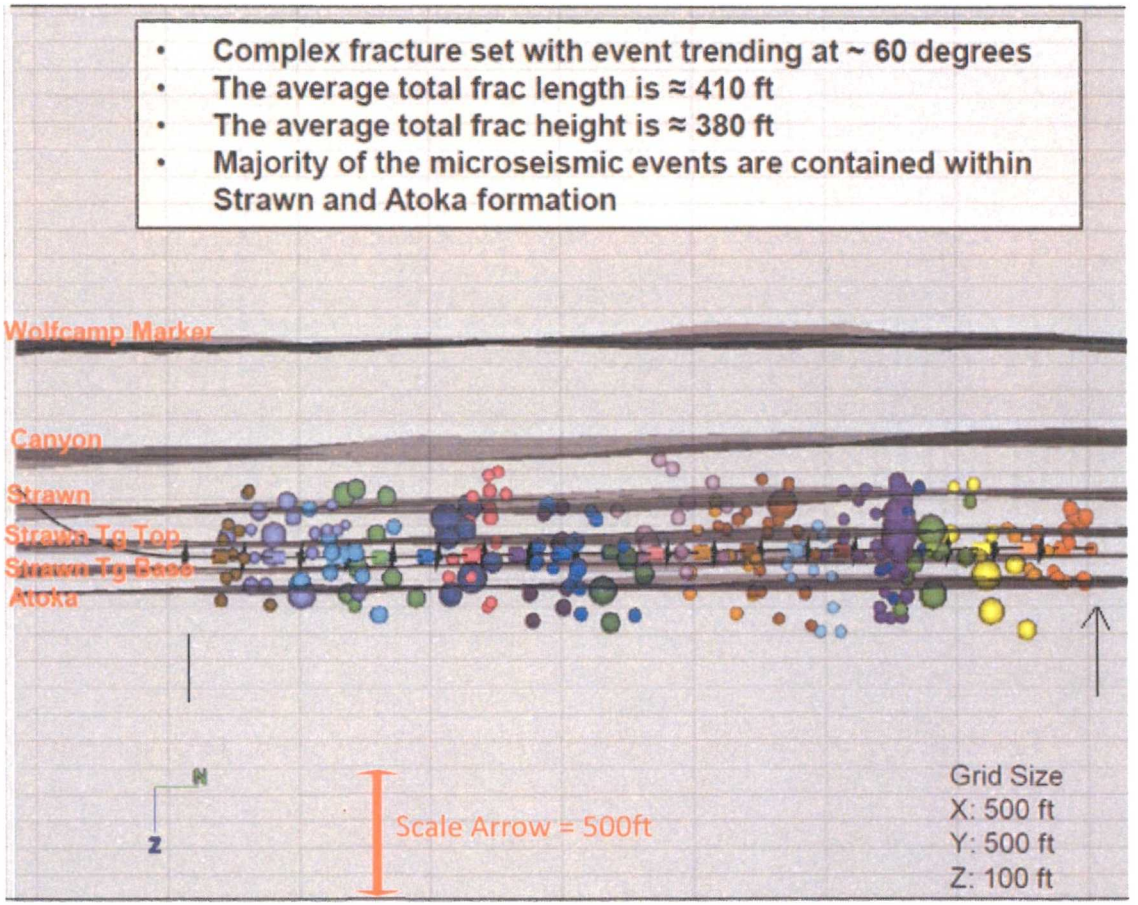
NIGHT TRAIN 10-22 4H
Microseismic Results

Winkler CO, TX

Map View



Depth View

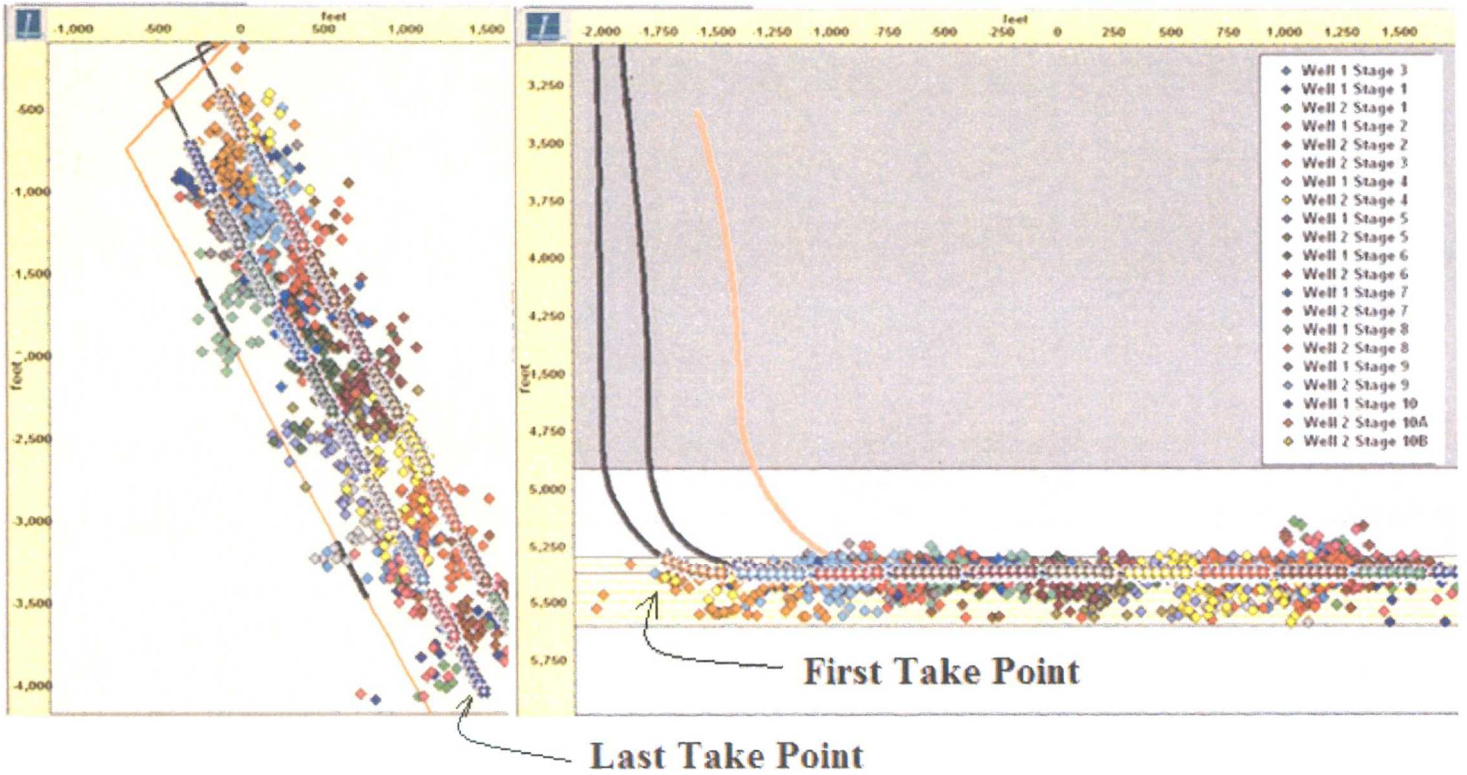


Stage Color Legend 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Events are sized by amplitude and colored by stage

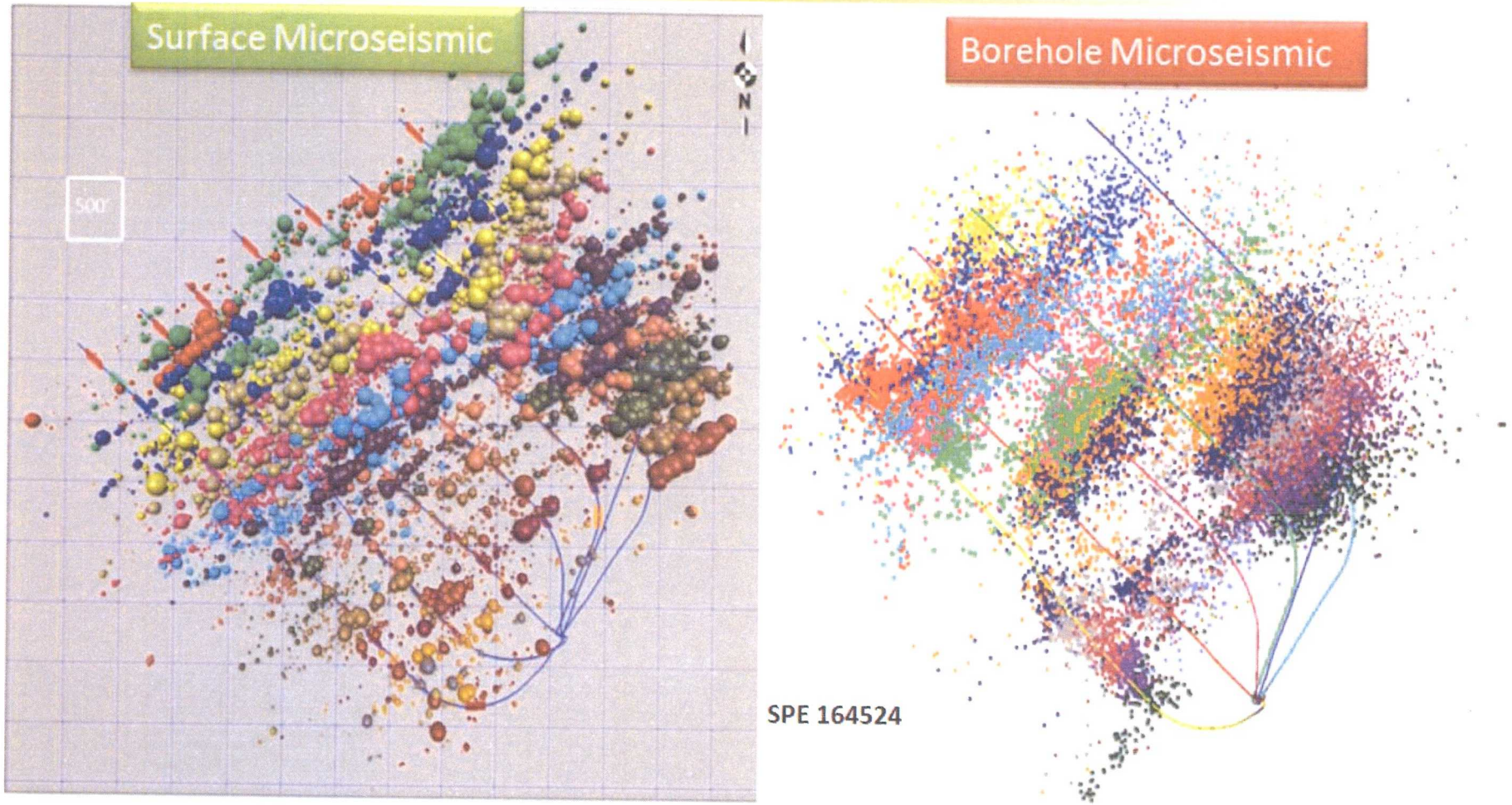
SOME EXAMPLES OF FRACTURE CONTAINMENT WITHIN THE FRAMEWORK OF THE WELLBORE

Barnett Shale - Microseismic monitoring



Microseismic measures shear fracturing – isolated points away from the main cluster are included for completeness, but are recognized as not hydraulically connected to the drainage area. They are normally identified as created by rock-on-rock stress.

MARCELLUS MICROSEISMIC – SURFACE AND DOWNHOLE: NOTE THAT FRACTURE TREND WIDTH IS HIGHLY CONTAINED.



SPE 164524

Microseismic event distribution from a surface survey (left) and borehole survey (right).

Marcellus Shale