TerraEx Group - Workshop 1

Volumes and Risks Assessment for Conventional and Unconventional Plays and Prospects

Discipline:	**Geology, Exploration, Cross-Disciplinary**
Venue:	**Texas Training and Conference Center**
Time:	**May 8th 2018, 9 am – 4 pm, breakfast from 8 am on**
Price:	**Regular $230, discounted* $185**
	Included: Training manual, hot lunch buffet, breakfast, beverages
Registration:	**Click here to submit form or contact**
	TerraEx Group at info@terraexgroup.com, + (303) 319 3043

Workshop Description

The workshop discusses the current best practices to transform qualitative geological descriptions of plays and prospects into technically robust quantitative success-case and risked volumetric models. Obtained learnings will help participants to evaluate geological probability of success (PoS) for exploration plays, segments, prospects, wells and portfolios and to assess the range of petroleum volumes in exploration projects. Examples and case studies come from both conventional and unconventional plays, prospects and wells around the world. The workshop is an “awareness” introduction for a 3-day course where participants become skillful in volumes and risks assessment through well-illustrated lectures, numerous hands-on exercises and active class discussions.

Instructor

Dr. Alexei V. Milkov is Full Professor and Director of Potential Gas Agency at Colorado School of Mines and a consultant to oil and gas industry. After receiving PhD from Texas A&M University, Dr. Milkov worked for BP, Sasol and Murphy Oil as geoscientist and senior manager. He explored for conventional and unconventional oil and gas in >30 basins on six continents and participated in the discovery of >4 Billion BOE of petroleum resources. He also worked on several appraisal and production projects. Dr. Milkov has deep expertise in oil and gas geochemistry, petroleum systems modeling, exploration risk analysis, resource assessments and portfolio management. He published ~50 peer-reviewed articles. Dr. Milkov received several industry awards including J.C. “Cam” Sproule Memorial Award from the American Association of Petroleum Geologists (AAPG) for the best contribution to petroleum geology and Pieter Schenck Award from the European Association of Organic Geochemists (EAOG) for a major contribution to organic geochemistry.

*****_TerraEx Group clients; more than two people from the same company; two workshops booked; early bird registration before April 27th 2018_

Learning Outcomes for Workshop

- Play Based Exploration approach and tools (e.g.CRS mapping, Field Size Distribution analys.) to locate sweet spots in conventional/unconventional plays and assess play/basin potential.
- Approaches and tools used to:
    - Calculate deterministic potential (success-case) petroleum resources in conventional prospects and in unconventional plays.
    - Assess and justify the range and probabilistic distribution of input parameters used in probabilistic (Monte Carlo) volumetric calculations.
    - Assess geological risks and PoS for conventional and unconventional explor. prospects.
- Biases and logical fallacies common in exploration assessments and how to correct them.
- Approaches to aggregate segments into a prospect and calculate PoS for prospects and wells.
- Approaches to evaluate drilling results to establish main reason(s) for well failure.

Workshop Content

We start with a brief review of global exploration trends, the concepts of Exploration Triangle and Play Based Exploration, fundamentals of volumetric and risk assessment, main definitions and commonly used assessment tools (software). Then, we discuss statistical parameters, distributions and probabilities, and biases and fallacies in petroleum assessments and tools to reduce them.
After we cover the basics of volumes and risks assessment, we will discuss specific examples of assessments for conventional segments, prospects and wells. Then, we will discuss unconventional oil and gas plays (tight, shale, CBM). We will finish the workshop by studying how to do post-mortem analysis, learn from exploration successes and failures and become better explorers.

- Global trends in petroleum exploration since 1900
- Play Based Exploration
- Common Risk Segment (CRS) maps
- Field size distributions, Creaming curves, Yet-to-Find resources
- Risk versus uncertainty, Deterministic and probabilistic volumes
- Success-case and risked volumes
- Software tools used in the assessment of prospective resources
- Meaning of basic statistical parameters (Mean, Mode, P10 etc.)
- Distributions appropriate to use in petroleum exploration projects
- Main biases and logical fallacies common in petroleum exploration
- Assessment of volumes and geological PoS for a segment
- Assessment of volumes and risks for unconventional plays
- Aggregation of segments into prospect, with risk and volume dependencies
- Aggregation of prospects into portfolio
- Learnings from discovery wells and from dry holes

Exercises:

- Build and evaluate field size distributions and creaming curves, define remaining play/basin potential (real data from the Gulf of Mexico).
- Build porosity distribution for a segment (real data from a play in Wyoming).
- Assess recoverable volumes for small(ish) acreage of unconventional tight oil in the USA (real play in the Powder River basin).