The Society of Petroleum Evaluation Engineers
SPEE Denver Chapter announces its July Luncheon Meeting.

(Members and Guests are cordially invited to attend.)

Wednesday, July 10, 2013

Mr. Adam Chin
Technical Advisor, IHS/Fekete and Associates

Will be speaking on:
Capturing Production Forecasting Uncertainty in Fractured Horizontal Wells

LUNCHEON STARTS AT 11:30 A.M.
(A plate lunch will be served.)
PRESENTATION BEGINS AT NOON

The Denver Athletic Club
3rd Floor, The New Petroleum Club Room
1325 Glenarm Place (14th and Glenarm) Denver CO 80204
Parking flat rate $7.00 on space available basis

Cost: $35.00 per Person
(Credit Card, Cash or Check made out to 'SPEE Denver Chapter')

Please RSVP by Noon Monday, July 8, 2013

RSVP Registration Options:

1.) **RSVP by email to Steve Enger, SPEE Treasurer at <u>denspee@yahoo.com</u> to sign up and then pay by cash or check at the door. Please provide a name and company for each reservation. Checks should be made out to 'SPEE Denver Chapter'.**

OR

2.) **RSVP and simultaneously pay by credit card online at**
https://secure.spee.org/civicrm/event/info?reset=1&id=24. If the above link does not work,
alternatively go to www.spee.org then select 'Local Chapters', then 'Denver', then 'Click Here
To Register'.

Abstract:
The process of seeking an optimum model history match for a fractured horizontal well does not result in a
single, unique solution.

Models contain numerous input parameters and there are multiple combinations of these that will result in a
satisfactory match of well performance, leading to different forecasts and EURs. Therefore, deterministic
results, while reasonable, do not reflect the potential range of uncertainty in reservoir and forecast parameters.

The full set of input parameter combinations that yield a satisfactory history match may be very large, and it is
usually impractical to effectively investigate this parameter space manually. Instead, a probabilistic approach
can be used to generate numerous forecasts based on distributions for input parameters that are uncertain. The
inputs for the probabilistic runs are sampled randomly using Monte Carlo simulation.

Using the Ozkan et al. 'Trilinear-Flow' analytical model (SPE 121290) as the engine to generate the stochastic
results, production forecasting uncertainty can be determined, assuming future well performance can be fully
described within the context of this model.

Field examples from the Bakken and the Marcellus will be presented to demonstrate this technique.

Speaker Bio.:
Mr. Adam Chin is a 2011 graduate of the University of Calgary with a B.S. in Chemical Engineering. He is
currently a Technical Advisor for the Risk and Sensitivity module in Harmony at IHS/Fekete and Associates, a
petroleum consulting and software development company. Adam has been actively involved in the
development of risk and sensitivity analysis modules for the past two years. Through his work at Fekete, Adam
has gained significant knowledge and experience in probabilistic modeling of unconventional wells and has
assisted in preparing Chapter 8 (Probabilistic Reserves Evaluation) of the upcoming SPEE Monograph 4. His
presentation will touch on some of the material contained in Monograph 4, specifically assessing uncertainty in
production forecasting using analytical models. He has a passion for travelling and ice hockey.
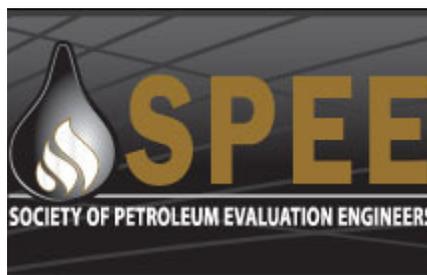
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bringing together specialists in the evaluation of petroleum and natural gas properties. SPEE continues today to
be strongly committed to providing educational and other services to its members and to the oil and gas
industry, and to promoting the profession of petroleum evaluation engineering.

For additional information, please contact:
Fred LeGrand
2013 Vice Chairman / Program Chairman SPEE Denver Chapter
Fred.LeGrand@CenturyX.com
720-398-6702

For event registration issues, please contact:
Mike White
mwhite@ResoluteEnergy.com
303-573-4886 Ext. 1450