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LOGIC
News

About SCA and geoLOGIC

SCA is a worldwide petroleum industry leader in professional consultancy and advanced training services. From major synergistic field studies to sequence stratigraphy, from property evaluations to prospect reviews, our staff of geologists, geophysicists, and engineers have the expertise and experience to provide you with the very best service and training available. Since 1988, we've helped our clients discover billions of barrels of oil and train for the challenges of the new millennium. We are proud to serve you and hope you enjoy reading geoLOGIC. For more information on SCA, please contact us today.

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SYNERGISTIC TEAMS

The need to get a better economic return from our producing properties and fields is greater than ever. Gas prices are down, rig count is down and some operators are disposing of their U.S.A. properties and investing in other countries.

The buyers of these "cast off" properties anticipate generating as high a return on these properties as the seller hopes to achieve in other countries and apparently is being very, successful of it using synergistic teams. We think, that the same opportunity exists for the seller.

The synergistic team brings together, professionals of all disciplines that pool ideas and compliment each other to find, develop and produce an oil and gas property. With the interactive exchange and flow of ideas, the views and needs of the professionals with the most information on the property are shared and solved quickly. Better results are produced in less time because information flows in many directions at one time and all the professionals are working on the solution at the same time.

APPLIED PETROLEUM ENGINEERING

For The Non-Petroleum Engineer

Subsurface Consultants will conduct it's "Applied Petroleum Engineering for the Non-Petroleum Engineer" course in Dallas on November 14, 1991. This course is designed for the non-petroleum engineer and covers basic petroleum engineering in laymen't terms and focuses on using volumetric and performance techniques to evaluate oil and gas properties. A course manual with explanations, graphs, charts and sample problems are included.

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HORIZONTAL WELL RESULTS

Subsurface Consultants & Associates, Inc. recently generated the graph in the following figure 1 to show the rate of increase from a horizontal well with various lateral lengths for different drainage areas. This graph is for a well in a homogenous isotropic sand with no fractures. To use the curves in Figure 1, the evaluator must determine the drainage area of a representative vertical well for the area of interest. The deliverability improvement for a horizontal well with various lateral lengths is read from the appropriate drainage area curve in Figure 1. Most often reservoirs exhibit different rock characteristics in the vertical and horizontal directions, i.e., are not homogenous and isotropic. The greater the difference in permeability in the vertical and horizontal directions the smaller the increase in deliverability achieved by a horizontal well. The curves in figure 2 can be used to estimate the impact of difference in the vertical and horizontal permeability for the reservoir being evaluated. For example, a 500 foot horizontal lateral in a 20 acre drainage pattern would result in a 4.7 fold increase in deliverability over a vertical well in a homogeneous isotropic sand (Figure 1). If the vertical to horizontal permeability is 0.1, the increase is reduced, but is still about 3.7 (Figure 2).

QUICK LOOK TECHNIQUE

Odd Number of Contours

A basic rule of contouring is that ALL contours on a continuous surface must close or end at the edge of the map. This rule seems so obvious and simple that no one could break this rule of contouring. Figure 3 is a relatively simple structure map with a few faults. Consider the area to the right of the major down-to-the-east fault. Is there a contouring problem? Starting at the 10,300 foot contour, try to go around the small finite fault and return to the 10,300 foot contour. Can it be done? The answer is no. Five contours terminate against the finite fault; therefore, a contour is dangling. In other words, one contour does not close. One contour is missing. All contours must close. There must be an even number of contours around a finite fault such as the one shown in Figure 3. This type error is very common. A quick way to check a map with a small fault which dies in both directions is to count the number of contours intersecting or terminating against the fault. If there is an odd number of contours, the construction is wrong. This may be a minor mapping bust, but if you find several on one map, it may be time to question the accuracy of the map.

ERRATA

To all purchasers of the mapping test
"Applied Subsurface Geological Mapping"

by Tearpock and Bischke.

The three-dimensional equation (4-6) on page 72 in the text for converting measured log thickness to true vertical thickness is in error. We thank Charles R. Berg for bringing this to our attention. The equation shown below is the corrected equation (4-6) and should replace the old equation for all computations. The corrected equation was first presented in 1958 by Setchell (Setchell, J., 1958, A Nomogram for Determining True Stratum Thickness; Shell Trinidad, EP 28884, Abstract in PA Bulletin, No. 127/128, May/June 1958, N.V. DeBataafache Petroleum Maatschappij, The Hague, Production Department, p.8.) and has been used successfully for over 33 years.

We Practice What We Teach

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