
Strat-Geopressure Fairways—The Fast Track to Prospect Evaluation: Case History from the Gulf of Mexico

Selim Simon Shaker¹ and Walter W. Wornardt²

¹Geopressure Analysis Services (G.A.S), 12114 Gladewick Dr., Houston, Texas 77077

²Micro-Strat Inc., 5755 Bonhomme St., Ste. 406, Houston, Texas 77036

GCAGS Explore & Discover Article #00036*

http://www.gcags.org/exploreanddiscover/2016/00036_shaker_and_wornardt.pdf

Posted September 13, 2016.

* Abstract extracted from a full paper published in the *GCAGS Transactions* (see footnote reference below), which is available as part of the entire 2016 *GCAGS Transactions* volume via the GCAGS Bookstore at the Bureau of Economic Geology (www.beg.utexas.edu) or as an individual document via AAPG Datapages, Inc. (www.datapages.com), and delivered as an oral presentation at the 66th Annual GCAGS Convention and 63rd Annual GCSSEPM Meeting in Corpus Christi, Texas, September 18–20, 2016.

ABSTRACT

The newly introduced strat-geopressure mapping technique can highlight the optimum fairways to further exploring in semi-mature areas. It delineates the spatial favorable potential producing targets at a progressive stratigraphic sequence fashion. It also assesses the bypass and potential reservoirs that have been discarded due to old logging measurements, drilling challenges and resources restrictions. This method is greatly helpful where seismic attributes, especially amplitude variations with offset (AVO), misidentify the pay vs. wet sands. In addition to finding the low risk prospects where economic feasibility is very promising, pore pressure, mud, and casing programs can be easily predicted prior to drilling the prospect.

The non-seismic method of assessing, delineating and mapping the optimal exploration fairway at each stratigraphic unit is introduced in this paper. The concept of incorporating regional maximum flooding surfaces (MFS), at different stratigraphic units, and the top of geopressure (TOG) in a mappable fairways fashion is the foundation of this technique. The 'strat-geopressure fairway' represents the adjoining spatial belt where mapping contours of the stratigraphic top and top of geopressure meet. Integrating the established producing horizons (from the offset wells) to these fairways provides an essential fast track tool for pre-drilling appraisal of a play concept, lead and prospect.

Furthermore, the abundance of geological, geophysical, and engineering data, and infrastructure facilities on the shelf can make these semi-mature areas a high exploration prospective in Louisiana and Texas Offshore areas. A case history from Galveston and High Island offshore Texas is presented as a pilot study.