

# **SOME ASPECTS OF GEOPRESSURED RESOURCES IN CALIFORNIA**

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## **ABSTRACT**

This paper presents the results of a continuing study of geopressured resources in California. Three aspects of geopressured resources were examined in this study: the identification of geopressured zones in wells; quantification of the excess pressure from well logs; and the quantity of dissolved methane in California geopressured fluids.

Except for well logs, particularly the electrical resistivity log, no other consistently available database could be found for identifying and quantifying geopressured zones in a well. Shale resistivity versus depth plotting, as used in the Gulf Coast, can be used in California to identify and quantify geopressure. The utility of other well logs in identifying and quantifying geopressure in California needs to be investigated further.

For quantifying geopressure from shale resistivity data, the well known Gulf Coast correlations cannot be used, without major modification, in California. We have tentatively derived a correlation similar to those used in the Gulf Coast region for a linear correlation between the pressure gradient and the ratio of the observed shale resistivity to the resistivity expected from the normal trend defined on the shale resistivity versus depth plot. We believe that a single correlation as above for entire California will prove to be inadequate. Similar correlations should be developed for each sedimentary basin in California and/or for various ranges of overburden pressure,

Dissolved methane content in the geopressured aquifers in California is estimated to range from 10 to 100 standard cubic feet per barrel. The gas content is dependent mainly on the depth of the aquifer; the deeper the aquifer, the higher is the gas content.

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