

Reedy and Pepper, 1996

Data Set 53

Reference: Reedy, G.K., and C.F. Pepper, 1996: Society of Petroleum Engineers Annual Conference, Omega Volume, Paper No. 36506, p. 119-127.

Authors' affiliation: Exxon Company, U.S.A. and Exxon Exploration Company

Reference: Rafalowski, J.W., B.W. Regel, D.L. Jordan, and D.O. Lucidi, 1994, Green Canyon Block 205 lithofacies, seismic facies, and reservoir architecture: Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists Foundation 15th Annual Research Conference on submarine fans and turbidite systems, p. 293-306.

Authors' affiliation: Chevron USA Production Company

Age: Early Pleistocene and Late Pliocene (Nebraskan)

Formation: Neb sands

Location: Green Canyon 205 Unit, Gulf of Mexico, Offshore Louisiana, United States

Wells: Cores from 4 wells penetrations covering seven different pay intervals.

Depth range: approximately 12,500 - 15,000 feet

Depositional Setting: "The N1 sand was deposited as a sand-rich early lowstand fan by a series of low-density turbidity flows. Facies range from massive sand to thin bedded turbidites, and subenvironments include channel, channel margin, levee, interchannel/overbank, or possibly fan fringe. The N3 sand was deposited as a very sand-rich middle to late lowstand fan by a series of high density turbidity flows. It is composed of a massive sand facies within an amalgamated channel complex". (Rafalowski and others, 1994)

Lithology: "Most of the reserves in this field are contained within very finely laminated sand/shale sequences, with individual lamina often less than one inch thick." Two sand lithofacies were recognized (high quality and low quality) and incorporated into a petrophysical model for laminated sands and shales. (Reedy and Pepper, 1996)

Sandstone Classification: "The individual sand units of the N1 sand are subarkosic, moderately to well sorted, and very fine to fine grained. Sandstone from the N3 sands in the 161 #1 ST3 well comprises 30 meters of unconsolidated massive subarkosic sand interrupted by few persistent shale beds. The sand is predominately fine grained but ranges from very fine to medium." (Rafalowski and others, 1994)

Porosity: "The high porosities at these depths are attributed to combined effects of excellent grain sorting, high pore pressures, and minimal cementation." (Reedy and Pepper, 1996)

Grain Size: "The grain size distributions for individual samples are very narrow, with geometric standard deviations typically less than a factor of two. However, the median grain size of separate samples varies from 0.04 to 0.30 mm. While porosity has very little variation, permeability ranges from less than 100 md to over 5,000 md. ... Permeability, while substantially uncorrelated with porosity, is strongly affected by grain size." Figure 7 of Reedy and Pepper shows that permeability increases as (roughly) the square of median grain size.

Alteration: not reported.

Production: oil

Core measurement conditions: conventional core analysis at 2200 psi overburden conditions.

Data entry: manual entry from Figure 6 of Reedy and Pepper, 1996.