Spain, 1992 Data Set 61

Reference: Spain, D.R., 1992, Petrophysical evaluation of a slope fan/basin-floor fan complex: Cherry Canyon Formation, Ward County, Texas: American Association of Petroleum Geologists Bulletin, v. 76, n. 6, p. 805-827.

Author's affiliation: Amoco Production Research

Age: Permian (Guadalupian)

Formation: Cherry Canyon Formation

Location: Rhoda Walker Field, Delaware Basin, Ward County, West Texas, United States

Wells: eight wells in field

Depth range: 5118 - 6938 ft

Depositional environment: "The Cherry Canyon section represents the overall thickening-upward channel-fill lobe complex of an intermediate basin-floor fan complex of a lowstand systems tract. This depositional complex is characterized by broad migrating channel-fill sandstones which grade laterally into distal overbank suspension deposits and thin-bedded lobe-fringe deposits."

Lithology: "sandstones are subarkosic in composition. Detrital framework grains are predominantly 68-75% quartz, 16-25% feldspar, and 5-15% sedimentary rock fragments. Clay minerals, mica, and microcrystalline carbonate are minor components."

Grain Size: "very fine to fine sand; most samples contain between 20 and 50% coarse silt grains. Typical framework grain size ranges from 0.137 to 0.084 mm."

Alteration: "Most sandstones are weakly cemented by carbonate and small amounts of quartz, anhydrite, and authigenic clay. Carbonate cement commonly has both a patchy and a massive distribution; total cementation of major portions of sandstone units is common. ... The distribution (rather than abundance) of authigenic clay minerals is the primary factor affecting permeability. Authigenic clays present include iron-rich grain-coating chlorite, pore-bridging fibrous or hairy illite, and minor expandable smectite and mixed -layer (chlorite/smectite) clays."

Lower and upper sandstones: "Upper sedimentary cycles represent the deposition of more highly erosive channels and are characterized by fining-upward and thinning-upward sequences of stacked sandstones. … The lower sandstones, however, are characterized by thin-bedded, coarsening-upward and thickening-upward sequences in which channel sandstones grade laterally into adjacent overbank siltstones and distal interchannel organic siltstones and shales."

Production: oil

Core measurement conditions: text implies routine core analysis.

Data entry: manual entry from Figure 8 of the referenced paper. Values at 0.1 md (limit of measurement) were omitted.