

Montgomery and Morrison, 1999

Data Set 45

Reference: Montgomery, S.L., and E. Morrison, 1999, South Eubank Field, Haskell County, Kansas: A case of field redevelopment using subsurface mapping and 3-D seismic data: American Association of Petroleum Geologists Bulletin, v. 83, n. 3, p. 393-409.

Authors' affiliations: consultants

Age: Mississippian

Formation: unnamed

Location: South Eubank field, Hugoton embayment, Haskell county, Kansas, United States

Well: Hugoton MLP Black 4-3

Depth range: 5420-5495 feet.

Depositional environment: The data of Figure 9 are from a tidal sand-flat/ estuarine-channel environment.

Lithology: Fine to very fine grained quartz arenites and sublitharenites, with moderately to well sorted and subrounded to rounded grains. Feldspars (mainly potassium feldspar) and lithic fragments commonly are present in trace amounts up to about 5%.

Alteration: "Authigenic minerals include quartz (overgrowths), calcite, siderite, pyrite, illite, kaolinite, and chlorite. ... Cementation is due to quartz overgrowths and, to a lesser extent, calcite, which occurs as patchy pore-filling material. X-ray diffraction indicates that illite is the most common clay species, comprising up to about 5% of the total rock volume and occurring as fibrous grain-coating and pore-lining crystals. ... Intergranular porosity commonly comprises up to 90% or more of the total pore system and commonly is well interconnected. Individual pores are polyhedral in shape and range from 50 to 200 microns in diameter. ... Matrix porosity and permeability are at a maximum in mature quartzarenites of two facies."

Production: oil and gas

Core measurement conditions: not stated.

Data entry: manual entry from Figure 9 of the referenced paper. Data courtesy of Hugoton Energy Corp.