
Tioga Bentonite (Middle Devonian) of Indiana

John B. Droste and Charles J. Vitaliano

Department of Geology, Indiana University, Bloomington, Indiana 47401, U.S.A.

Abstract: The petrography of shale partings in carbonate rocks from eleven cores in the Illinois (Jeffersonville Formation) and Michigan Basins (Detroit River Formation) of Indiana indicates the presence of a *K*-bentonite which is interpreted as the Tioga Bentonite, an important stratigraphic marker in the middle Devonian rocks throughout the central and eastern United States. The clay mineral composition of the Tioga Bentonite of Indiana is interstratified illite and smectite, usually with admixed kaolinite. This composition stands in striking contrast to the simple illite suite without kaolinite in the normal terrigenous shale partings in the Devonian rocks of Indiana. Euhedral sanidine, high temperature albite, zircon, apatite, and the angularity of quartz grains found associated only with the interstratified clay mineral suite support the volcanic origin of these clay partings.

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