



# GEOGULF2021

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## Stratigraphic Analysis of the Capps Limestone in the Norton Oil Field in Runnels County, Texas

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### ABSTRACT

The Pennsylvanian Capps Limestone of the Mineral Wells Formation is a mixed carbonate reservoir located in north-central Texas. The majority of the Capps Limestone is found in the subsurface in Brown, Coleman, Runnels, Coke, Nolan, and Taylor counties.

The cored interval from Runnels County was deposited in a mixed marine environment. Here, a stratigraphic and depositional environmental analysis of the Capps Limestone was undertaken in the Norton Oil Field in Runnels County. Data were collected on five cores using thin sections, porosity and permeability measurements, microfossils, and XRF. The collected data will provide a more precise idea about the depositional environment and sequence stratigraphy of the Capps Limestone as well as the provenance and characteristics of interbedded shales in the Capps Limestone. A greater knowledge of the Capps Limestone could provide better insight about the Capps Limestone and similar Pennsylvanian limestones. This information will contribute to the region as a whole and possibly influence future exploration prospects.

In Runnels County, the Capps Limestone is approximately 15 m thick and contains interbedded limestone, sandstone and shale units. The limestone units range from mudstones to grainstones. Some of the cores contain minor amounts of sand in the limestone units and in places, the sandy limestone (mudstone) grades upward into thin bedded sandstone with several shale units interbedded. Shale units present range in thickness between 5 cm and 1 m. The Capps Limestone in the Norton Oil Field in Runnels County appears to have been deposited on a shallow shelf as is indicated by the laminated mudstone and fossiliferous packstone. The sandstone units represent an influx of sand in a prodelta environment. Shale units may represent deeper areas on the shallow shelf. Deposition of the Capps Limestone occurred as part of a transgressive systems track during the Pennsylvanian Period.

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## NOTES

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