# Influential Factors on Rock Density of Typical Shale Gas Reservoirs

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## Abstract

In this study, relationships of the mineral composition, porosity, permeability, and TOC of favorable strata in the Western Canada sedimentary basin and southern China mature gas shale were studied. Density of shale/mudstone were calculated by mineral percent content. The correlation among mineral composition, porosity, and density were specifically analyzed, reaching the factors that affected the rock density. The results show that (1) shale gas reservoir rocks that have an advantage of organic-pores appears lower in density than other types of pores with similar porosity; (2) density of rocks with the same type of pores decrease with the increase of porosity; (3) whereas in the comparison of having various types of pores, density of rocks with an advantage of organic-pores decreases faster than other types of pores when porosity decreases; (4) porosity in unit volume of organic matter is larger than that in clay minerals. These conclusions may provide a method to estimate and judge the characteristics of pores in target strata roughly and fast.