

The Control of Dissolved Organic Matter Compositions on the Production of Biogenic Methane in Unconventional Shale Reservoirs



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Dissolved organic matter (DOM) represents the link between in-situ host lithologies and microbial communities in biogenic gas reservoirs. Variations in both the concentrations and molecular characterization of DOM may be an important control on microbial natural gas production in unconventional shale reservoirs. As part of the first stage of this two-year study assessed the variability of DOM, as dissolved organic carbon (DOC) concentrations, in multiple biogenic gas wells. These wells exhibit a range of gas and water production rates throughout the northern producing trend of the Late Devonian Antrim Shale. The second phase will focus on defining how these DOC variations are related to production and host lithologies.

Our preliminary results indicate variation in DOC concentrations within a limited geographical range and within similar producing lithologies.

