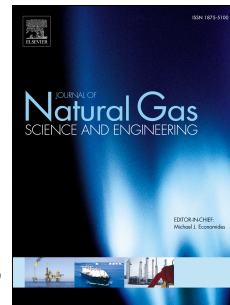


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# Experimental Study of Mud Erosion at the Interface of an Artificial Sand-Mud Alternate Layer

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## Abstract

Methane hydrates exist in the sand-mud alternate layers of Japan's offshore turbidite sediments. For gas production from a methane hydrate reservoir, depressurization has been considered as a promising method. When intergranular methane hydrates are dissociated, the flow of produced gas and water may cause mud erosion of turbidite sediments. The eroded mud may plug the pores near the wellbore. This research presents an experimental study for the evaluation of mud erosion at the interface between the sand and mud layers. Artificial cores consisting of sand and mud layers were made and the mass of fine particles eroded by water flow was measured. We, then, adopted a mud erosion model, which represents a linear relationship between the erosion rate of fine particles and average flow velocity in the pore, and obtained a critical flow velocity and a coefficient of the erosion

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