Topic: Improvement of Sediment Deposited in the Brahmaputra River Using Bentonite.

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Abstract

This study presents an approach of stabilization of the Brahmaputra river soil using Bentonite. The mighty river Brahmaputra has always witnessed a heavy flow which is attributed not only due to its geographical location and climate but also due to the heavy deposits of the sediments on its beds. The increased spread of the deposit not only obstructs the flow of the river forward, but also deflects its flow path in the lateral direction. The result is that flooding and bank erosion are causing extensive damage overall. However, if such sediments are excavated, this will not only prevent the aforementioned outcome, but can also be used as a stable and durable construction material using bentonite as an admixture. Sediment characteristics are investigated in depth using a series of tests and methods like wet sieve analysis, specific gravity, standard proctor test, CBR test to obtain the required standard quality set (primarily permeability) of the material. The soil from Brahmaputra was collected from Hatisila stretch of Guwahati situated on the Chandrapur-Narengi road on the bank of Brahmaputra river bearing latitude 26°21’ North and longitude 91°87’ East in the Kamrup district of Assam. The collected soil sample was found to be non-plastic and fine grained with abundance of silt and very less content of sand and clay.

Keywords: Soil stabilization, bentonite.