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Geotechnical Properties of Khor Al-Zubair And Khor Abdallah Sediments, NW of The Arabian Gulf

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Abstract

The geotechnical properties of two regions in the northwest of the Arabian Gulf are studied. These regions are located at the eastern tidal flats of Khor Al-Zubair and the entrance of Khor Abdallah respectively. Core samples to a depth of around 1-1.5 m and surface sediments are collected from both regions in the period from 1989-1991. The sediments of the tidal flats of Khor Al-Zubair are very fine soft clay of high plasticity and compressibility. They are susceptible to any potential stresses. The surface sediments of the central zone of second region are seem to have almost similar geotechnical properties. Continuous dredging and dumping of sediments in the neighboring area might be the reasons for that similarity in that region. Whereas, those from Shatt Al-Arab delta and southly away from the channel area of different properties. The high rate of sedimentation is affecting the former, while the latter may be influenced by the presence of shell and shell fragments which may induce open structure and retain water content. On the other hand the core sediment samples show different results of geotechnical properties, as gradual changes in texture to fine grains is occurring from north to south of the navigation channel. The existence of sands decreases gradually southward until vanish at the southern area of Khor Abdallah. The sediment cores become homogeneous and some geotechnical properties show different values than that collected from the north as they increase in the natural water content, plasticity, and compressibility. Hence, three sub regions of Khor Abdallah may be suggested in terms of their geotechnical properties.