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Sedimentology and Mineralogy of Rocky Island In Khor Al-Zubair, NW Arabian Gulf

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Abstract

The study area represents the rocky island, located to the north of Khor Al-Zubair ports, north west of the Arabian Gulf. 19 sediment samples were collected from Khor Al-Zubair channel by grab sampler, 12 cores of 0.5, 1 and 2 meter in depth were taken from the surrounded area of rocky island. Moreover, 10 rock samples were chosen. Grain-size distribution, mineralogical and petrographic analyses were done. The results indicate that the sediments of Khor Al-Zubair mainly consist of silty clay, the sandy sediments are dominated in the rocky island. The statistical parameters of sediments reflect the complicated hydrodynamic processes controlling the sedimentation. The major constituents of heavy minerals are the opaque minerals, pyroxene, hornblende and epidote. Whereas, the dominant minerals are garnet, zircon and tourmaline. This assemblage of heavy minerals indicates the participation of many sources of sediments; as Mesopotamian sediments, bank erosion, the outcrops of neighboring formation and dust fallout. Petrographic studies show that the rocks are composed of quartz, feldspar, and rock fragments cemented by calcareous clay. The cementing material is micrite of high Mg-calcite. The rocks in the study area are inclined towards the water and disappeared in the surrounded area. The assemblages of heavy minerals in these rocks show a wide variation with depth. These rocks represent beachrocks, formed by the complex hydrodynamic processes and the supplying of sand from the surrounded area.