Iraqi National Journal of Earth Science
www.earth.mosuljournals.com

Industrial Assessment of Mineral Deposits of Zurbatiyah Area, Eastern Iraq

Sattar J. AL-Khafaji [1*], Ajel S. Yaseen AL-Hadadi [2]

[1,2] Department of Geology, College of Science, University of Basrah, Basrah, Iraq.

Article information

Received: 21- Oct -2023

Revised: 27- Mar -2024

Accepted: 18- Apr -2024

Available online: 01- Apr – 2025

Keywords:
Zurbatiyah
Clay deposits
Ibrahim Formation
Cement industry
Clay building bricks

Correspondence:
Name: Sattar J. AL-Khafaji
Email: khafaji52000@gmail.com

ABSTRACT

The study deals with industrial assessment of deposits in Zurbatiyah area of eastern Iraq. The deposits are represented by limestone, marly limestone, gypsum and clay which belong to the Ibrahim, Serikagni, Dhiban, Jerbie, Fat'ha, Injana and Mukdadiya formations. These deposits are characterized by well extensions and thickness. These deposits were assessed for the cement, clay bricks and gypsum board industries; limestone wea fairly pure composed of calcite and trace amounts of quartz and dolomite. The chemical analyses of limestone showed its suitability for use in the OPC industry, it became more suitable when corrected materials containing alumina were added to be in agreement with the requirements of IQS, No. 5, 1984 for the cement industry. Gypsum has 45% SO_3 and 31% CaO, moreover, gypsum is nearly pure with low impurities. It is considered a good raw material for preparation of panel gypsum boards. the flextural strength of prepared gypsum panels is compatible with the requirements of ASTM C473-2016. Clay deposits are composed of kaolinite (30% - 35%) followed by palygorskite (20% - 28%) a minor amount of illite and a mixed layer montmorillonite –chlorite. Clay deposits have significant percentages of SiO_2, Al_2O_3, Na_2O, K_2O and moderate percent of CaO and Fe_2O_3 which qualifies them to be used in making clay building bricks of classes A and B according to the Iraqi standard specification No. 25, 1993 and British standard No 3921, 1985.

DOI: 10.33899/earth.2024.144979.1165,