

POSSIBLE EFFECTS OF MINERALIZATION AND LITHOLOGICAL INTERACTION ON NATURAL WATER

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This paper studies the possible effects of mineralization and water-Lithological interaction on natural water of J. Ed Dair – J. Dumbeir and Mazroub areas, North Kordofan State-Western Sudan. Surface and underground samples were collected from different localities in wet and dry seasons in Ed Dair –Dumbeir area and in dry season only from Mazroub area. Physical and Chemical analysis have been done in different laboratories according to A.P.H.A standard methods. Seasonal variation of physico-chemical properties in j. Ed –Dair area has been illustrated by drawing seasonal variation graphs and by comparing the data with W.H.O Standard. Spatial distribution maps of all elements in Ed Dair area have been drawn. The same tests have been done for Mazroub area. Analytical work in Ed Dair area in wet and dry season show that the constituents which significantly affect health of human being are not within the recommended value limits of the WHO guidelines, but still below the Maximum Values, except for fluorite and Cadmium in some localities which increase from these limits. Water samples from Mazroub area exceed limits of the maximum values of the W.H.O guidelines The suitability of the waters for irrigation purposes has been also studied in the tow studied areas. Assessment of water chemistry was investigated by using different statistical techniques such as X-Y plot, correlation, factor analysis and cluster analysis. Interactions of groundwater with the lithological unit suggested by geochemical modeling.

Keywords: North Kordofan State, mineralization, geochemical modeling