

## CHARACTERIZATION OF ZEOLITIC TUFF FROM NORTHEAST JORDAN USING BOREHOLES DATA

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**ABSTRACT.** Zeolite, the hydrate tectosilicate minerals, composed of various minerals such as phillipsite, chabazite, faujasite and analcime. Zeolites have been used for many applications such as drying and purification. Zeolites are distributed throughout Jordan in volcanoclastic and tuff volcanic centers. Several zeolitic deposits were located in northeast areas, mainly in Al-Aritayn, Tlul Al-Shahba, Jibal Hmelan, Tal Rimah, Tell Hasna and other places. These deposits are associated with the Harrat-Asham volcanic activity. The zeolitic tuff is composed of different assemblages of minerals such as phillipsite, faujasite, chabazite and analcime with high amount of iron oxide as hematite, fresh sideromelane, palagonite and smectite. They can be associated mainly with the black and red scoria. For the purpose of this study many boreholes have been drilled for examination of main characteristics of the zeolitic tuff, with aim to get a better understanding about vertical and lateral distribution of these minerals below the surface. To achieved that, many samples from different boreholes have been investigated using XRF, XRD and thin sections. The results revealed huge reserves that can be approved for future detailed exploration and extraction. The Jordanian zeolites are considered to have many important applications such as: ion-exchange (water softening and purification), and in the separation and removal of gases and solvents, in agriculture, and in animal husbandry.