

Identification of the Usage of Some Special Places in the Prehistoric Site of Tapeh Zagheh through Multi-Elemental Chemical Analysis of the Soil Samples

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Abstract : Tapeh Zagheh is an important prehistoric site located in the central plateau of Iran, which has settlement layers of the Neolithic and Chalcolithic periods. For this research, 38 soil samples were collected from different parts of the site, as well as two samples from its outside as witnesses. Then the samples were analyzed by XRF. The purpose of this research was to identify some places with special usage for human activities in Tapeh Zagheh by measuring the amount of some special elements in the soil. The result of XRF analysis shows a significant amount of P and K in samples No.3 (fourth floor) and No.4 (third floor), probably due to certain activities such as food preparation and consumption. Samples No.9 and No.10 can be considered suitable examples of the hearths of the prehistoric period in the central plateau of Iran. The color of these samples was completely darkened due to the presence of ash, charcoal, and burnt materials. According to the XRF results, the soil of these hearths has very high amounts of elements such as P, Ca, Mn, S, K, and significant amounts of Ti, Fe, and Na. In addition, the elemental composition of sample No. 14, which was taken from a home waster, also has very high amounts of P, Mn, Mg, Ti, and Fe and high amounts of K and Ca. Sample No. 11, which is related to soil containing large amounts of waster of the kiln, along with a very strong increase in Cl and Na, the amount of elements such as K, Mg, and S has also increased significantly. It seems that the reason for the increase of elements such as Ti and Fe in some Tapeh Zagheh floors (for example, samples number 1, 2, 3, 4, 5) was the use of materials such as ocher mud or fire ash in the composition of these floors. Sample No. 13, which was taken from an oven located in the FIX trench, has very high amounts of Mn, Ti, and Fe and high amounts of P and Ca. Sample No. 15, which is related to House No. VII (probably related to a pen or a place where animals were kept) has much more phosphate compared to the control samples, which is probably due to the addition of animal excrement and urine to the soil. Sample No. 29 was taken from the north of the industrial area of Zagheh village (place of pottery kilns). The very low amount of index elements in sample No. 29 shows that the industrial activities did not extend to the mentioned point, and therefore, the range of this point can be considered as the boundary between the residential part of the Zagheh village and its industrial part.

Keywords : prehistory, multi-elemental analysis, Tapeh Zagheh, XRF

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