

Investigation the Polluting Effect of Heavy Elements on Underground Water in Behbahan Plain, South West Zagros

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Abstract : Groundwater as an essential part of natural resources seems to be an important issue in environmental engineering, so preservation and purification of it can have a critical value for any community. This paper investigates the concentration of elements of Pb, Cd, As, Se. For ground water in Behbahan (a city on south west of Iran), to this purpose a group of 30 wells were studied to examine the concentration of the elements of Pb, Cd, As, Se, and also to determine PH, EC, TDS, temperature and the ions of HCO₃²⁻, SO₄²⁻, Cl⁻, Na⁺, Mg²⁺, Ca²⁺, K⁺ for the wells. Results of the analyses show that the concentration of the elements of Pb, As and, Cd in 33,13,56 percent of the wells respectively and Se in all the samples were greater than normal range of WHO. Since there is a low correlation between Pb and major ions of (HCO₃²⁻, SO₄²⁻, Cl⁻, Na⁺, Mg²⁺, Ca²⁺, K⁺) it can be revealed that Pb overconcentration caused by human contamination. Relative great correlation between Se and the ions showed that Se derived from Gypsum and Dolomit. The big correlation between As and major cations and anions, imply that As can originate from dissolution and liquidation of mineral evaporation in the zone. The high rate of Cadmium concentration in urban sewagewater is due to the small industries, workshops and, mills wastewater.

Keywords : heavy elements, underground water, pollution, waste water

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