

PARAGENESIS OF CHEMICAL ELEMENTS AT DEPOSITS OF HYDROCARBONS

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More 60 chemical elements were discovered in the oils of oil fields (N.K.Nadirov et al., 1984), concentrations are determined for the following 45 elements: Li, Be, Na, Mg, Al, Si, Cl, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Ge, As, Se, Br, Rb, Sr, Mo, Ag, Sn, Sb, I, Cs, Ba, La, Eu, W, Os, Ir, Pt, Au, Hg, Pb, Ra, Th, U. 31 elements were discovered in the condensates of gascondensate fields: Na, Cl, K, Sc, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Br, Rb, Sb, I, Cs, Ba, La, Ce, Sm, Eu, Yb, Lu, W, Au, Hg, Th, U. 29 components were discovered in the condensation waters of gas and gascondensate fields: Li, B, Na, Mg, Al, Si, Cl, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Br, Sr, Cd, I, Ba, Pb, Pt, Bi, NH_4^+ , HCO_3^- , SO_4^{2-} . Paragenesis of elements and hydrocarbons is stipulated by their joint presence in an organic matter, when such organic matter is transforming the fluids with dissolved elements are separated from it. Apparently, metals winning and origin of ore deposits is possible from migratory hydrocarbons under certain conditions. In the deposits of hydrocarbons the elements must be considered as non-traditional useful minerals and their resources must be valued at the stage of counting of hydrocarbons reserves. More 180×10^6 t elements are kept in the oil fields of the world with potential reserves of oil $903,1 \times 10^9$ t, at average concentration of all elements in the oils 206,9 mg/kg. $11,2 \times 10^6$ t elements are concentrated in gascondensate fields of the world with potential reserves of condensate 261×10^9 t, at average content of elements in gas phase of condensates and condensation water 39,2 and 329,8 mg/kg. The elements come to the surface with recoverable hydrocarbons and water without additional power expenditures and their volumes may be considerable.