

APPLICATION OF COPLEX GEOCHEMICAL TECHNIQUE FOR OIL AND GAS PROSPECTING

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Important result of these studies litho geochemical survey that constant results were shown in two completely different areas – Ural regional flexure and Kazansko-Kazimskaya flexure.

It was discovered that there is some elements which distribution in the soil depends on presence oil and gas reservoirs. Those form halos marking structures perspective for oil and gas Ni and Co give constant positive anomalies over hydrocarbon filled deposits. Some over forms halos in the soils and also give trustworthy positive correlation with distribution of hydrocarbons i.e. Cr, Sc, Mo, Li, B) – group number one (**active** elements), but distribution of these elements depends on particular features of the oilfield itself. Others are **indifferent** to the presence of oil and gas reservoirs – group number two (i.e. Ti, Nb, Pb, Sn).

Differences in distribution of elements from group one allow break it in to two subsets:

First form halos over the central part of oilfield (B, Cr, Mn, Sr); 2) Second form halos in the periphery - ring anomalies (Mo, Ba, Ni, Co).

Distribution of certain elements on surface is very irregular and depends on vicinity of oil and gas accumulations. This allowed me to split them in to few different groups for following application: Mo, Ba, Ni и Co – can be used to determine borders of oil and gas structures; B, Cr, Mn и Sr – can be used to specify central part of oilfield; Ti, Nb, Pb, Sn - indifferent elements which can be use for math computations to increase signal to noise ratio for working elements.

Direct relationship between pH and Eh changes in surface layers, distribution of certain elements and value of hydrocarbons lends to the deduction that redistribution of certain elements in surface layers are secondary responses generated by leakage of hydrocarbons. This agrees with literature.

References

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