**Introduction.** Canadian geologist T. Binner Heites in 1963 in his article set out his vision of geometric patterns that are the result of geological processes during the formation of sedimentary rocks in space (T. Heites' hypothesis or rule). On the basis of numerous factual examples, he proved the right to exist of his generalized conclusions and formulated the rule of perspective geological correlation, which he named the geological law (Heites, 1963). The interpretation of the relative position of lines or planes will allow to establish the stages of tectonic stability or to identify when there were changes in the tectonic regime. Proponents of this hypothesis in practice began to use the method of perspective correlation. Positive results of this approach on examples have been published at different times in a number of articles (Guberman and Ovchinnikova, 1972; Guberman, 1986; Karpenko, 2002; Miall, 2016; Randle et al., 2018). First of all, the method of perspective geological correlation could be effectively applied in paleotectonic reconstructions using standard well-logging data from several wells in the study area.

**Research Methods.** A review of the main statements of Haites' law was conducted by Sh. A. Guberman (Guberman, 1986) and found that cases of perspective correlation of sediments within individual wells are not accidental, but natural in the distribution of marine sediments for Western Siberia, Central Asia, and the North Caucasus. Sh. A. Guberman notes that in the special literature there are no reports when in sections of sedimentary strata which are not strongly crumpled in folds and are confidently correlated on well-logging data, the Heites' rule is not carried out. The rule states that at two points on the surface of the study area, the ratio of sediment accumulation rates remains stable within the age limits of a stable tectonic regime. Accordingly, it should be expected that the formation of strata after a break in the accumulation of sediments continues, but with a different ratio of velocities at the observation points (Guberman, 1986).
The presence of geophysical curves recorded in several wells is a necessary condition and the material with which the method of perspective geological correlation can be implemented. On one axis of the Cartesian coordinate system the values of depths, which correspond to the boundaries of the intervals of the section of one well with a certain "behavior" of the geophysical parameter, on the second axis - the corresponding boundaries on the log curve of another well. If the graph of deferred points is a straight line that passes exactly through all points, then we can assume that all the considered layers were formed under conditions of a single tectonic regime, that is the law (regularity) of perspective geological correlation is preserved here. The slope of this line is determined by the coefficient of change in the thickness of the layers between the two wells. An abrupt change in the angle of inclination of a line passing through the plotted points or its interruption (displacement) is a consequence of a change in the tectonic regime (Heites, 1963; Guberman, 1986).

**Results.** Different tectonic regimes create, respectively, different conditions for the accumulation of sediment, which are reflected in the characteristics of the mineral and particle size distribution of rocks, their reservoir properties. Thus, the type of tectonic environment of the ocean, its continental border controls the distribution, geometry and nature of clastic facies (Hellem, 1983). Structural and textural features of rocks, as well as the composition and size of their mineral grains are controlled by the flow velocity of sediment transportation, relative fluctuations in sea levels, changes in the configuration of the coastal zone (Hellem, 1983). The observed processes are a consequence of the corresponding tectonic movements of the earth's crust, and their changes are due to changes in tectonic processes. By establishing the intervals of the section, in which the regularities of perspective geological correlation are preserved, it is possible to divide the rock thickness into separate lithological-facies zones or floors. A typical example is the thin-layered clay strata of the Dashava and Kosiv suites of the Outer zone, where almost all gas fields of the Precarpathian Depression are concentrated. At the Rubanivske gas field, which is located in the northwestern part of the Outer zone and the coastline of the ancient Neogene Paleo-Sea, the deposits of the Dashava suite are most fully represented. The rocks of the Upper Dashava backlight here are frequent alternations of clays, argillites, siltstones and sandstones. These lithotypes contain a significant part of the pelitic material, which together with other geological and geophysical features causes a very weak differentiation of the section by geophysical features.
After constructing correlation graphs of dependences between the accumulated subhorizon thicknesses of the 12-Rubanivska well and other wells of the Rubanivske (P) and neighboring Vereshchytske (B) fields, the following was established. According to the rule of perspective correlation, four intervals of

the stable tectonic regime and three borders of change of the tectonic regime in the section of the Upper Dashava was installed (Figure 1). Moreover, the boundaries are clearly fixed on the graphs of dependences for all considered wells. In each zone certain volumes of rocks-reservoirs with their own filtration-capacity characteristics were formed.

Figure 1 shows the boundaries of change of the tectonic regime on the histogram of the distribution of flow rates in the intervals of wells. From the results of research in accordance with the Haites' law, we can conclude about the relatively calm tectonic regime and the maximum distance from the shoreline of Rubanivske field during the accumulation of sedimentary material horizons VD-9 - VD-11h. The maximum sandiness and the best reservoir properties of rocks were formed during the formation of horizons VD-11_l - VD-13 as a consequence of the active tectonic regime with probably the maximum approach of the area to the shoreline of the Paleo-sea. At this time, there was some increase in the accumulation of psammitic material, which led, as established by the authors, to the improvement of the reservoir properties of the thin-layered formation (Karpenko, 2002).

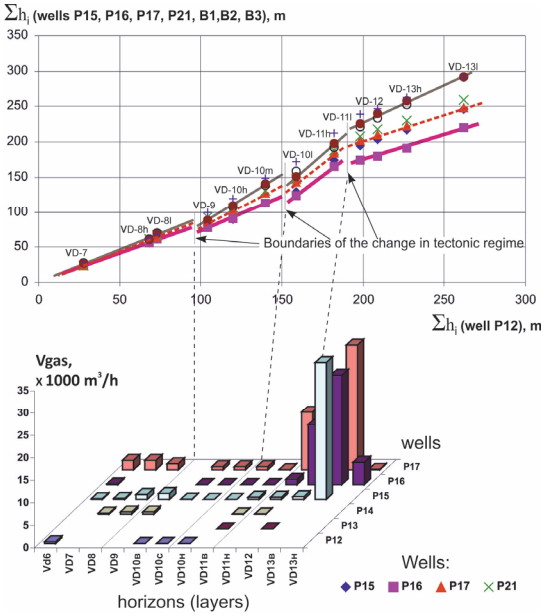


***Figure 1*** *Correlation between the detected stable zones of the tectonic regime with the gas flow rates of the thin-layered formations, the Upper Dashava subsuite. Rubanivske gas field (Karpenko, 2002)*

Quite different geological conditions are inherent in the oil and gas fields of the Dnieper-Donets basin. Layers of reservoir rocks, in contrast to the Dashava suite of Precarpathian, have mainly thicknesses that vary from the first meters to the first tens of meters. Such sections are easier to dissect according to lithological-facial features and to hold well-correlation according to well-logging data (by logging curves) (Karpenko et al., 2019).

In Figure 2, 3 it shows a structural map and section of the Yablunivske oil and gas condensate field within the productive horizons of the Lower Visean and Tournasian. Quite contradictory views of researchers on the conditions of formation of these sediments (Babko et al., 2008; Ohar, 2012; Poletaev, 2011; Karpenko et al., 2020). A separate topic is the facies conditions under which the accumulation of organic matter-enriched sediments of the domanikoid Rudov Beds of the Lower Visean took place (Karpenko et al., 2020). According to various researchers – from open sea conditions to lagoon shallow basins. Analysis of the tectonic regime, setting the boundaries of abrupt change will allow more confidently and reliably correlate and determine the local stratigraphic affiliation of rocks (at the level of single horizons or strata) in the sediments of the Lower Visean and Tournasian. This is especially true mainly to the carbonate stratum of the B-23 - B-25 horizons.

For example, 4 wells of Yablunivske oil and gas condensate field were selected (Figure 2, 3). Well № 10 was chosen as the base well, and wells № 65, 200, 203 are located in different azimuthal directions: to № 65 or № 200, or № 203.

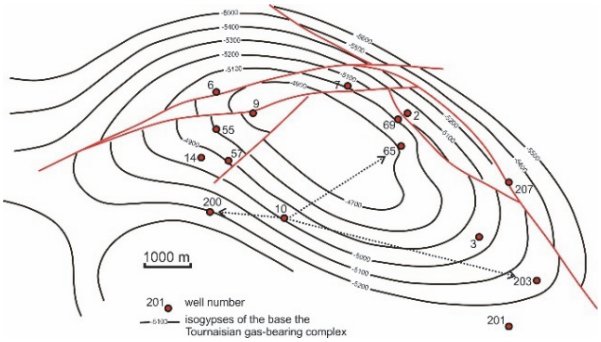


***Figure 2*** *Structural map of the base of the Tournaisian Stage of the Yablunivske oil and gas condensate field with the applied wells № 10, 65, 200, 203*

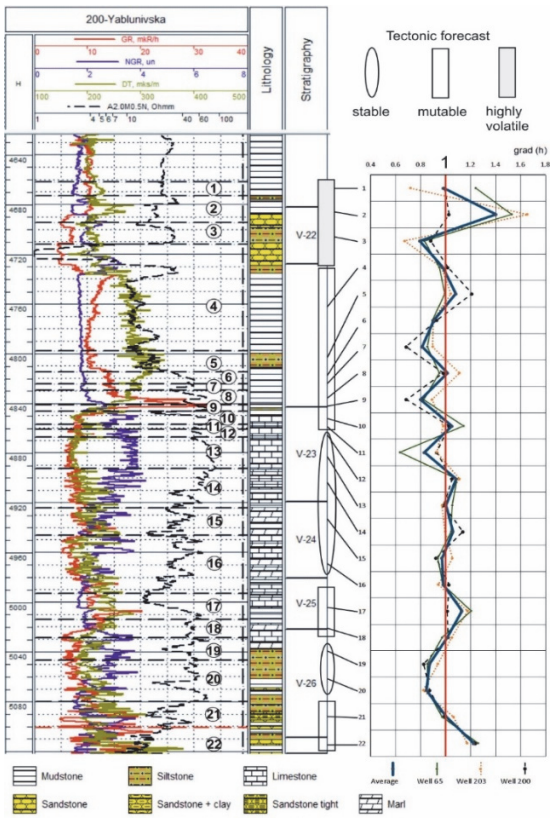


***Figure 3*** *Selection of intervals of the section of the Lower Visean with different types of tectonic regime. Yablunivske oil and gas condensate field*

The selected intervals in the sections of all wells are marked by a sequence of numbers - from 1 to 22. A further procedure for comparing the ratios of accumulated thicknesses in the wells relative to the base № 10 is described above on the example of the Rubanivske field. However, it is possible to improve the procedure for detecting stability intervals, or changes in the tectonic regime. Namely - to compare the gradient of change in the thickness of rocks in each well relative to the base (ratio of the thicknesses of each interval in a particular well and in the base) - Figure 3.

Figure 3 clearly gives an imagine of the correlation performed by the characteristic features on the logging curves of the Lower Visean and Tournaisian.

By the interpretation the behavior of the gradients of changes in the formation thicknesses of the different wells relative to the base № 10, it is possible to identify intervals with different types of tectonic regime (Hellem, 1983; Vertukh, 2007). Figure 3 shows an example of the established intervals of the section, which are conventionally divided into 3 types - stable, mutable (moderately variable) and highly volatile (significantly variable) tectonic regime.

**Conclusions.** According to the Haites' law (rule) of perspective geological correlation with the use of standard electrologging diagrams, it is possible to detect in hydrocarbon deposits intervals of sections (zones) with a stable paleotectonic regime of sediment accumulation and boundaries of paleotectonic regime change. Some zones are characterized by their features of lateral and vertical placement of reservoir layers and distributions of their reservoir properties. As a result, in some spatial areas of deposits during the accumulation of sediments there are favorable conditions for the formation in the post-sedimentation period of reservoirs with high filtration-reservoir properties. Detection of at least one high-flow formation (horizon) in such a zone according to the results of formation tests allows to positively assess the prospects of all horizons of the zone in relation to the presence of reservoirs with commercial reserves of gas or oil.

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