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ESTIMATION OF OIL AND GAS POTENTIALITY IN THE PART OF SOUTH-EASTERN OF BUKHARA-KHIVA REGION

[1]Khayitov Odiljon G'afurovich
[1]Candidate of Geological and Mineralogical Sciences, Associate Professor, Head of the Department "Mining", 100095, Republic of Uzbekistan, Tashkent, University Street, 2, Tashkent state technical University.

[2]Usmonov Quvonchbek Mannonovich
[2]Assistant, Karshi Engineering and Technology Institute, Republic of Uzbekistan, Karshi,

[3]G'afurov Shuxrat Odiljon o'g'li
[3]Assistant of the Tashkent State Technical University named after Islam Karimov, Tashkent, Uzbekistan,

ABSTRACT
Among oil and gas regions occupies a special place drinko-Khiva, surpassing other by the number of open fields, sustained high performance of exploration, diversity of the model fields and several other characteristics. The South - Eastern component of the region, the Beshkent trough, is one of the most promising areas for oil and gas, where significant amounts of geological exploration are currently concentrated.
KEYWORDS: *Oil, gas, deflection, tectonics, structure, fields, seismic exploration, location of wells, carbonate formation, reef, biogerm, swimming pool.*

INTRODUCTION

Many publications have been devoted to the study of the geological structure of the deflection and the determination of the stratigraphic and facies structure [1; p. 29-50], [2; p. 132], [3; p. 53-61], [4; p. 10-12], [5; p. 13-16], [6; p. 23-26], [7; p. 10-13], [8; p, 8-10], [9; p. 24-27], [10; p. 8-10], [14; p. 2327-2331] etc. As a result of these works, a series of faults associated with salt tectonics and having a North-Western direction were identified near the Shurtan uplift, and a South - Eastern direction was found near the Hissar ridge. Oil and gas potential areas between Shurtan (sq. 40) and Severny Shurtan (sq. 7) - the Faizli structure, as well as between Shurtan (sq. 16,19) and the chatyrtepe parametric well - the Kodir structure associated with zone fragmentation caused by salt tectonics have been discovered. When processing seismic profiles mogt-2D #19811279, 207779011 167820, 19N7816 taking into account the constructed geological profiles (Fig. 5. 4), test schemes, as well as GIS materials, it turned out that the exploration SLE. 41 Shurtan is located not on the Shurtan uplift, but on the Kumchuk syncline and drilled accordingly within the recommended structure of Faizli. According to the recommendation [9; c. 10-13],] a complex interpretation of GIS materials using the INTEF system was performed there (Yu. L. Barsukov, 2004), where in the range 3710-3738; (absolute mark minus 3208-3236m) the uncovered section (XV-HP horizon) is characterized as productive. Isolated by material; GIS reservoirs mainly have a low porosity (5.3-9.7%), which increases (10-11,3%) in the intervals of 3710.0-3710.8 and 3719.0 372-0.0 m, the coefficient of oil and gas content ranges from 49.2 to 71.5%.

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In the exploration SLE. 41 Shurtan 140 mm operational column was not lowered and the test was not carried out. According to the conclusion of GIS interpreters (from 26.11.1983 to 15.01.1984), the uncovered section in the range of 3710-3752 m was mistakenly considered an aquifer. At the same time, the position of the gas-water contact (GVK) on the SLE was taken as the basis. 40 Shurtan (at the absolute level of minus 3062). When preparing the conclusion with the use of ECM, it was not known that SLE. 41 Shurtan, according to our research, is located on a different tectonic block, that is, it has a deeper gas-water contact (absolute from the mark minus 3250 m) than SLE. 40. We are a structure between SLE. 40 Shurtan and 7 SEV. Shurtan, formed due to salt tectonics, is named Faizli (Fig. 5.4). [9; p. 10-13].

II. MATERIAL AND METHODS

1. On the basis of the conducted research, the following features of the joint zone of the Beshkent trough and the South-Western spurs of the Hissar range were established:the Eastern part of the Beshkent trough in the centre of a deep synclinal (Kamchatskaya, Arabiska. Tarocca) HC deposits (of Kumchuk, Congar, North. Guzar, Buzakhur), including complex structures (Tashkent, Muminabad, Faizli, Kodir), regardless of their facies affiliation, were re-formed by the influence of salt tectonics between the Shurtan tectonics in the recent tectonic period (Alpine).

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Fig. 1. Geological profile along the line I-I. 1 - anhydrites; 2-salts; 3-riphogenic limestone; 4-recommended well; 5 - salt tectonic line; 6-tectonic disturbances; 7 - NVK; 8 - GNK; 9-oil and gas content contour (Faizli structure).

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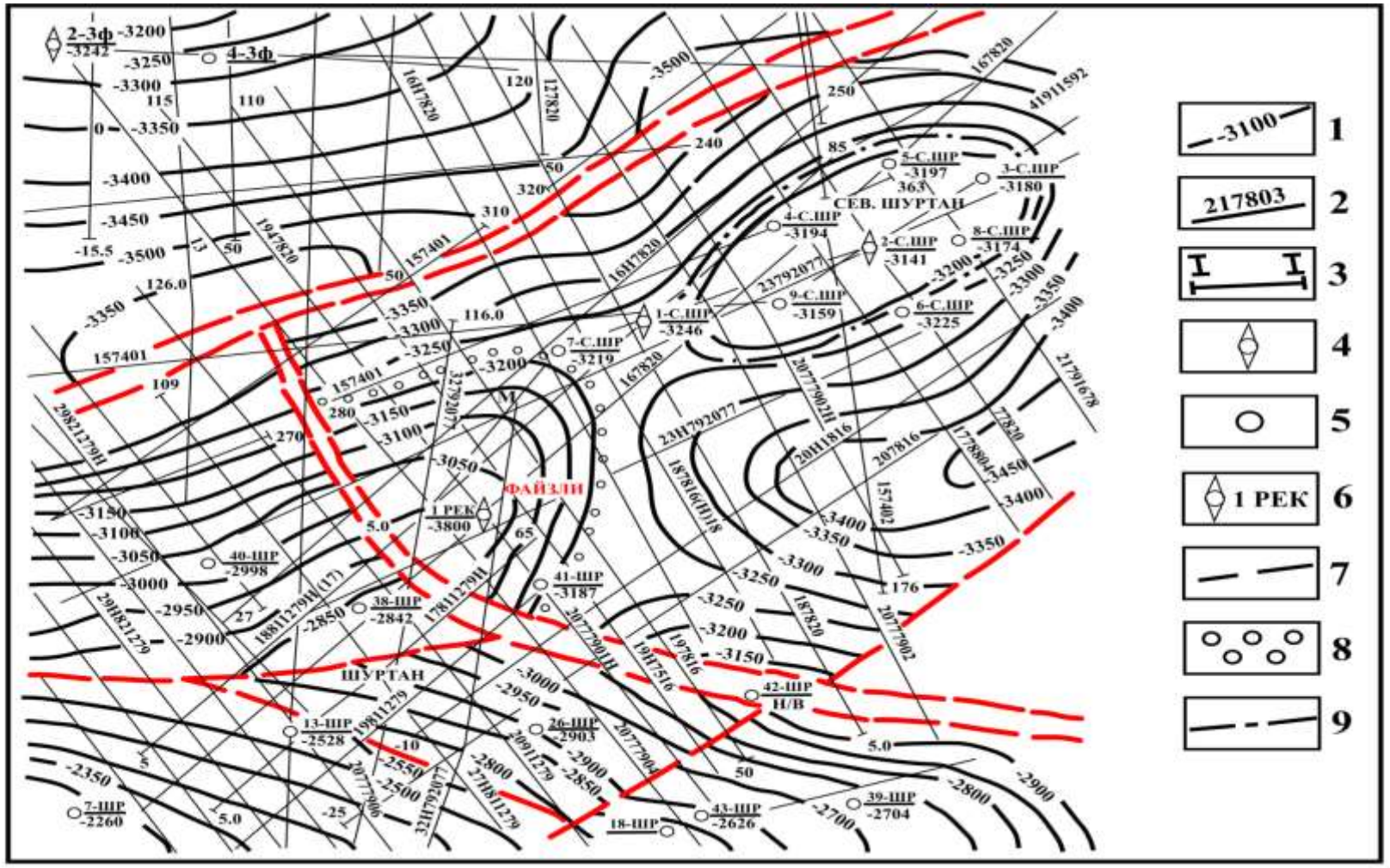

Fig. 2. Structural map on the roof of the lower intercalation chimeric-titenkova layer: 1 – isohypse on Croke lower intercalation; 2 - seismic profiles; 3- geological profile; 4 - exploration wells; 5 exploration; 6 – recommended search well; 7 –faults; loop count structure Fazli 9 – VNK.

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The rise and South-Western spurs of the Hissar.
2. Structures associated with salt tectonics consist of two or more blocks that may have different GVCs and nvcs, and according to GIS are characterized by different filtration and capacitance properties (density, permeability, fluid saturation).
3. Analysis of seismic time sections and constructed regional geological profiles show that the roofs of the lower Cretaceous and upper j3km*rt anhydrites lie deeper over the structures associated with salt tectonics, while the roof of the lower anhydrites rises. Therefore, on their vaults, the power of the salt layers is reduced, the middle pack of anhydrites and the lower pack of salts are fragmented. On the wings, the power of the salts increases, there are bundles of middle anhydrites and lower salts.
4. To identify complex oil and gas prospective structures within deep synclines (Kumchuk, Karabakh, Tarmok), taking into account the manifestation of salt tectonics in the Eastern part of the Beshkent trough, it is proposed to conduct seismic exploration of the ZD modification in conjunction with the construction of regional paleotectonic profiles.

In order to determine the structure of structures and prevent inefficiency of drilling and testing of unproductive wells (3, 4, 5, b Kumchuk, 2, 3. 4, 5 Garmistan, 3.4 Chunagar, 2, 3, 4 SEV. Guzar), as well as for more accurate determination of the occurrence of discontinuous faults, it is necessary to conduct seismic surveys of the ZD modification in conjunction with gravity survey.

5. To open new oil deposits, it is recommended to determine the location of the search SLE. 1 Faizli at the intersection of the mogt-2D seismic profiles: 20777901N, 167820 at a distance of 2700 m to the southwest of the exploration SQV. 7 SEV. Shurtan and 1300 m Northwest of 41 Shurtan. The design depth of the SLE. 1 Faizli set at the mark of 3800 m with the opening of the roof part of the XVI horizon.
6. Location of the search SLE. 1. determine the code At a distance of 1 km to the Northwest of the parametric SLE. 1 Chatyrtepe and 2, 3 km-to the North-East of 16 Shurtan after searching for detailed seismic surveys using the OGT-2D-ZD method to determine the spread of the tectonic fault.

In connection with the above, there is a need to continue prospecting to identify an oil Deposit in the section of the carbonate formation on the structures of Beshkuduk, Karakir and Kuruksay in combination with detailed seismic surveys by the ZD method and drilling of search SLE. 2 Beshkuduk, 3 Kuruksay, 3 Karakyr, located around the Shurtan rise [9; c. 10-13].

New possible hydrocarbon traps associated with bioherms in the Central part of the Chardzhou stage

In the middle and early upper Jurassic period, paleogeological conditions in the Bukhara-Khiva region were favorable for the development of organogenic structures (reefs, bioherms, biostromes, etc.) [13;pp. 8-10]. To date, the regularities of the distribution of reef bodies and single reefs have been studied in detail, the barrier reef zone has been identified, and the method of searching for them by 2D seismic surveys has been developed. As a result, a number of large and medium-sized hydrocarbon deposits have been discovered, where the reservoirs are reef deposits with high filtration and reservoir properties (Kokdumalak, Urtabulak, Zevardy, Shurtan, etc.).

The biogerm is a massive, exclusively organogenic structure, rising above the adjacent synchronous deposits of a different lithological composition. Morphologically, this is an array or convex lens, peleogeographically-an underwater ledge, Bank, hill in the topography of the sea floor.

According to the structure, it is customary to distinguish simple and complex bioherms. The first are composed mainly by one organism-a rock-forming agent, the second by several. The shape of geological bodies can be dome-shaped, cone-and table-shaped, mushroom-and Crescent-shaped, ring-shaped, etc. According to the decision of the fourth paleoecologolithological session (Crimea, Moldova, 1966), it is recommended to allocate small (up to 5 m), medium (5-10) and large (more than 10) bioherms.

Bioherms of hydrocarbon deposits discovered in the Bukhara-Khiva region (Kultak, Chiston, Sardob, Podr. Kokdumalak, Aknazar, Novy Alan, Girsan, Beshkent, Kamashi, SEV. Nishan, Zafar, Berdecoder) can be related to the major. However, due to the variety of filtration and reservoir properties of rocks, the largest reserves of HC are found only in The Kultak (90 billion m3 of gas) and SEV fields. Nishan (30), Beshkent (more than 5).

The authors of the works [13;p. 8-10] for the Central part of the Chardzhou step (the territory Kulturskole protrusion adjacent areas dengizkulskoye and Openly-CenterStage elevations in the West and Beshkent trough in the East) was completed seismostratigraphic re-interpretation of more than 800 temporary sections of seismic profiles completed in 1974-2002 gg, with reference to more than 500 deep wells, and structural map on the roof of the XV OL horizon in scale 1:50000. The basis was more than 30 seismogeological sections constructed in different directions of the studied territory. On the structural basis, the contours of the oil and gas content of open fields located within the barrier reef (Urtabulak, Umid,

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SEV. Umid, Markovskaya, Pirnazar, Yangi Darbaza, Marjon, Jebe, Shoda, Pamuk, Yangi Pamuk), as well as confined to single reefs (Kokdumalak, SEV. Urtabulak, Zevardy, Alan, southern Pamuk) and organogenic buildings of the type of biogerm (Podr. Kokdumalak, Chiston, Berdecoder, Kultak, Alan New, Dripping. PWM. Kultak, Aknazar, Shim. Aknazar). The border of the barrier reef frames the area of work from the West and North (P. U. Akhmedov). it is clear from the structural structures that biogermic traps are satellites of deposits associated with reef massifs [13;p. 8-10].

Estimation of oil and gas potential of Paleozoic and Jurassic deposits.

The assessment of the oil and gas potential of the Paleozoic deposits of the Bukhara-Khiva region (BHR) is given in the works of many researchers and from different genetic positions. Three variants of hydrocarbon sources are proposed: own genetic potential of the Paleozoic (Khaimov, 1963; Babadzhanov, 1991; Abdullaev et al., 2009), flow from the Mesozoic to the Paleozoic (Ibragimov A. G.) and inflow from the mantle through deep faults (Kudryavtsev, 1963; Krayushkin, 1984; Dmitrievsky, 1996; Sitdikov, 1998; etc.) [13; pp. 8-10].

Despite different theoretical positions from a practical point of view, all researchers agree on one thing: for the formation of deposits, it is necessary to have oil and gas traps with their collectors and tires.

In 1995, for the first time, the prospects of oil and gas content of Paleozoic deposits for the entire territory of Uzbekistan were evaluated. For the Bukhara-Khiva region, a structural map of the Paleozoic erosion surface on a scale of 1:500000 is given (Fig. 5. 4), compiled by H. U. Uzakov based on the materials of deep wells that uncovered Paleozoic deposits under the cover of Mesozoic-Cenozoic deposits. It identifies more than 40 local uplifts, which were considered as oil and gas potential objects - traps. Judging by the fact that almost all of these uplifts were detected at the sites of development of positive structures in the Mesozoic-Cenozoic cover, between them and the lower reachesthere is a certain genetic or possibly paragenetic relationship between these structures. Apparently, the deformations of the pre-Jurassic dissonance surface and the Mesozoic-Cenozoic deposits occurred at the same time and under the influence of the same tectonic stresses. So, here we are dealing with the so-called parallel folding, when the deposits of the entire section of the plywood layer, including the intermediate structural floor, were crushed into the folds. This leads to an important conclusion for oil and gas exploration that there are traps favorable for oil and gas accumulation in the inner section of the Paleozoic. Local protrusions in the relief of the erosion surface are conformal with anticline folds inside the Paleozoic section. First, of course, you need to rank them and select the priority ones among them. Due to its large size and the possibility of opening the most complete section of the Paleozoic oil and gas-perspective complex of rocks, the following local uplifts are among the priority objects of search and detailed seismic surveys and parametric drilling: Yangikazgan, Deterrence, Moskowskoe, Sutarskoe, Angiozyme, Karaulbazar, Recylcable and Karachay-Tashlinskogo within Bukhara stage and West Bestensee, Kulbachinskii, Akkemskoe, Kandym, Alat, Urtabulak, Devalck-Malinetskii and Shurtan - in Chardzhou steps.

There is only one square on Shurtan square.7 at a depth of 3335-3452 m, the upper part of the middle-upper Carboniferous rocks is uncovered. Near tens of kilometers from Shurtan, the Paleozoic has not been discovered or studied anywhere. A new deep well in this area would make it possible to know the section of the Paleozoic and find out its prospects for oil and gas [13; p.8-10].

III. RESULTS

Many papers have been devoted to the problem of classification of traps of this type [13; p. 8-10] and others. The typification is based on the classification scheme of reservoir shielded oil and gas traps by I. O. Brod and N. A. Eremenko, developed later by A. G. Alexin and A. M. Akramkhodzhaev.

Tectonically shielded traps are formed when lacal structural complications (anticline, hemianticline, monocline, etc.) are combined with discontinuous disturbances. Accumulations of oil and gas are located in both lowered and raised blocks. Studies of the role of discontinuous faults in the formation of oil and gas traps can be divided into several stages; dissection and correlation of lithic-stratigraphic and seismic sections; determination of reservoir properties; study of zones of formation of discontinuous dislocations; analysis of the current structure; formation of a working search hypothesis (creation of trap models); assessment of the possibilities of using seismic exploration in the study of various groups of deposits; identification of promising areas.

IV. DISCUSSIONS

Complex application of various methods is rational in predicting tectonically shielded traps. These include lithological dissection of the section using materials from field Geophysics and detailed study of the core of wells, determining the relationship of reservoir placement and formation features with the type of sedimentation basin and its internal structure, studying the modern structure of horizons, and detailing violations. determining the nature of the interface of fault blocks in order to identify favorable screening conditions, developing possible models of traps and comparing the actual geological situation with them.

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V. CONCLUSIONS

All known deposits within the Beshkent trough are associated only with the Jurassic carbonate formation. Productive traps are represented here by two genetic types. The formation of the first one is caused primarily by tectonic factors (reservoir-vaulted deposits), the second - with riphogenic structures (this is mostly more massive deposits). Traps of the first type are located in the Eastern part of the deflection and are characterized by a wide development of discontinuous dislocations complicating the geological structure, of various scales, as well as increased capacities of the evaporite formation.

In the North-Eastern part of the Beshkent trough, a number of medium-sized gas condensate and oil fields have been discovered: Garmiston, Mezon, Northern Guzar, Kumchuk, Chunagar and Northern Shurtan. Within the study area of the region, deep drilling was carried out on 86 areas (including those under drilling): 31 - the carbonate formation was opened with one well, 14 - with two wells, and the rest - with three or more. 16 oil and gas fields have been discovered, including Mirmiron. Curtsey. Khanabad, meson and Feruza are at the exploration stage [13; p. 8-10].

VI. ACKNOWLEDGEMENTS

There are five trained structures on this territory - Karakuz and oidin. Today, Namazi and Ermac with a total value of prospective resources C3 - 19,454 million here. There are also several promising traps that are of interest in the oil and gas field and have a complex geological structure.

It is methodically incorrect to draw an analogy based on the volume ratio data for known tectonically shielded deposits. It is only possible to predict approximately the expected upper limits of stock concentrations in traps of this type.

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