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EDN UMABYE

УДК 532.546.7

## **Determination of relative permeability and capillary pressure by centrifuge experiments**

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**Abstract.** The paper presents the results of experimental study for determination of relative oil and gas permeabilities and capillary pressures by centrifuge experiments on six samples of fine-grained sandstone. The experiment included oil displacement by water in temperature and pressure conditions simulating those in situ. Centrifugation was conducted at six different rotor speeds until stable oil production was achieved. Endpoint saturations were obtained in a separate procedure. Permeabilities at initial and residual oil saturation were determined in core flood apparatus and gas permeameter, respectively. Relative permeability and capillary pressure during water displacement were estimated in CYDAR software.

**Key words:** *relative permeability, capillary pressure, centrifugation, drainage, pressure and temperature conditions*

**For citation:** E.N. Salomatin, A.S. Filipp, R.S. Shulga Opreleniye otnositel'nykh fazovykh pronitsayemostey i krivyykh kapillyarnogo davleniya metodom tsen-trifugirovaniya v termobaricheskikh usloviyakh [Determination of relative permeability and capillary pressure by centrifuge experiments]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 1-15. DOI <https://doi.org/10.25689/NP.2023.1.1-15>. EDN UMABYE (in Russian)

DOI: <https://doi.org/10.25689/NP.2023.1.16-22>

EDN TMHCHV

УДК 622.276.1/4.001.57

## **About simulation of filtration experiment on the CO<sub>2</sub> injection to displacement of oil in a composite core model of terrigenous reservoir**

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**Abstract.** One of the important tools for sound management decision-making in the development of hydrocarbon fields is the modeling of oil and gas extraction processes. By studying development processes on theoretical models, it is possible to avoid significant costs in real-life testing by preliminary analysis of possible complications.

**Key words:** *filtration experiment, CO<sub>2</sub> injection, computer simulation, relative permeability, PVT*

**For citation:** O.S. Sotnikov, I.E. Beloshapka, R.A. Khabibullin O modelirovanii fil'tratsionnogo eksperimenta po zakachke CO<sub>2</sub> dlya vytesneniya nefi v modeli sostavnogo kerna terrigenного kollektora [About simulation of filtration experiment on the CO<sub>2</sub> injection to displacement of oil in a composite core model of terrigenous reservoir]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 16-22. DOI <https://doi.org/10.25689/NP.2023.1.16-22>. EDN TMHCHV (in Russian)

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EDN TCLWBP

УДК 622.276.1/4.001

## **Application of the Monte Carlo Method to Calculate the Values of Technological Indicators of the Designed Well Stock and Evaluate Their Variability**

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**Abstract.** When planning a program of geological and technical measures at oil and gas assets, in conditions where there is an urgent need to improve the accuracy of forecast results for various planning horizons, if it is necessary to simultaneously reduce the labor intensity of the process and time costs, the issue of choosing a calculation tool is relevant.

**Key words:** *risks, geological and hydrodynamic modeling, Monte Carlo modeling, drilling*

**For citation:** V.V. Emelyanov *Primeneniye metoda Monte-Karlo dlya rascheta znacheniy tekhnologicheskikh pokazateley proyektного fonda skvazhin i otsenki ikh variantivnosti* [Application of the Monte Carlo Method to Calculate the Values of Technological Indicators of the Designed Well Stock and Evaluate Their Variability]. *Neftyanaya Provintsiya*, No. 1(33), 2023. pp. 23-31. DOI <https://doi.org/10.25689/NP.2023.1.23-31>. EDN TCLWBP (in Russian)

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EDN TBOEJB

УДК 622.245.422.4

## Improvement of oil-well cement formulations for well casing in magnesium aggressive environment

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**Abstract.** Successful brining the well into production and its durability primarily depend on the quality of annulus cementing operations. The diversity of the chemical composition of formation waters and the high temperatures at which the cement stone hardens does not allow one to unambiguously choose the composition of the cement slurry. Formation waters, which are the most widespread and frequently encountered during well drilling contain magnesium ions, chlorides and sulphate ions in their composition, and are very aggressive towards cement stone. Magnesia salts are among the most dangerous and can lead to the destruction of cement stone based on Portland cement within a few months.

This paper presents the results of experimental studies on the corrosion resistance of stones from a mixture of Portland cement and building caustic magnesite. This magnesite is the basis for magnesia cement, which has proven to be effective in magnesia salts.

The amount of magnesite in the mixture was 5, 10, 15 and 20 percent respectively in order to find out the optimal concentration of the additive. Rheological parameters were measured for each variant of the slurry. The samples were placed in a 10% MgCl<sub>2</sub> solution in order to simulate a magnesian layer. The depth of penetration of magnesium ions and compressive strength were taken as an indicator for assessing the degree of cement stone damage. The duration of the experiment was 14 months. Every 2 months the samples were removed and tested. The solution was also simultaneously updated with a new one to eliminate the effect of concentration changes.

The kinetics of magnesia corrosion was considered and several zones of damage to the stone are identified. As a result of the research, it was determined that a mixture of building caustic magnesite and portland cement has less aggressiveness to the casing than magnesia cement.

**Key words:** cement stone, magnesia corrosion, well casing, corrosion protection, bischofite, corrosion stability

**For citation:** F.A. Agzamov, A.N. Makhmutov, I.N. Karimov Sovershenstvovaniye retseptur tamponazhnykh rastvorov dlya krepleniya skvazhin pri magnezial'noy agressii [Improvement of oil-well cement formulations for well casing in magnesium aggressive environment]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 32-45. DOI <https://doi.org/10.25689/NP.2023.1.32-45>. EDN TBOEJB (in Russian)

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EDN SPWIJE

УДК 622.276.1/4(571.1)

## **Evaluating efficiency of production enhancement operations implemented in Uvat project field based on historical simulation**

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**Abstract** Making design decisions during oil and gas field development is associated with lack of data on reservoir properties and various processes occurring in the reservoir. During field development, the available data is updated and supplemented, as well as never-before-used technologies can be applied in the field. Under new conditions, the previously made decisions can appear unsuitable and impractical.

The paper is aimed at studying historical forecasting as a method of evaluating efficiency of production enhancement operations implemented as part of field development program. The object of historical forecasting is an area in one of the fields under the Uvat project. Historical simulation has been done to evaluate field development strategy efficiency, optimality of oil production period from injection wells in the infill drilling area, well interference due to infill drilling. Based on the results of simulation it has been concluded that application of historical forecasting method to evaluate the efficiency of implemented activities is a good practice.

**Keywords:** *reservoir simulation, historical forecasting, evaluating efficiency of production enhancement operations, field development strategy, infill drilling, reservoir simulation, forecast*

**For citation:** S.V. Kolesnikov, M.I. Ivlev Otsenka effektivnosti realizovannykh meropriyatiy na primere mestorozhdeniya Uvatskogo proyekta po rezul'tatam retrospektivnykh raschotov [Evaluating efficiency of production enhancement operations implemented in Uvat project field based on historical simulation]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 46-57. DOI <https://doi.org/10.25689/NP.2023.1.46-57>. EDN SPWIJE (in Russian)

DOI: <https://doi.org/10.25689/NP.2023.1.58-71>

EDN SBDUOW

УДК 622.276.6

## Monitoring of the generation the effect of screenout in the wells of Usoltsev oilfield

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**Abstract.** Tricky growth of crack during the hydraulic fracturing process predetermines technological complications in terms of proppant placement. One of the consequences may be the generation the effect of screenout at the end of the crack. In the process of this generation, the injection can be continued for some time with the accompanying early the proppant fallout and the crack propagation stopping. The practice of artificial application of this process is widespread, when the crack growth is specially stopped. By increasing the crack width, the conductivity increases.

**Keywords:** *instantaneous shut-in pressure, the effect of screenout, dimensionless fracture conductivity.*

**For citation:** V.F.Pyzykov, S.K. Sohoshko Otslezhivaniye effekta obrazovaniya povyshennoy upakovki treshchiny v skvazhinakh mestorozhdeniya imeni A. Usol'tseva [Monitoring of the generation the effect of screenout in the wells of the A. Usoltsev oilfield]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 58-71. DOI <https://doi.org/10.25689/NP.2023.1.58-71>. EDN SBDUOW (in Russian)

DOI: <https://doi.org/10.25689/NP.2023.1.72-80>

EDN RTRURW

УДК: 553.98:551(575.1)

## **Geochemical features and lithological-facies conditions of accumulation of the initial substrate in the oil-shale basin of Kyzylkum**

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**Abstract.** In the article under consideration, the task is to reflect the modern scientific level in the field of geological study and lithological-facies features of the oil-shale basin of Kyzylkum. Lithological and facisubstrate of oil shale in the sedimentation basin. The lithological and geochemical features, the mes modeling of the territory of Kyzylkum was performed during the accumulation of the initial material composition and metallicity of oil shales, which can be a strategic raw material for obtaining many valuable consumer goods, are characterized.

**Key words:** *oil shales, Paleogene, sediments, mineral, formation, formation, layers, area, deposits*

**For citation:** E. N. Salomatin, A. S. Filippe, R. S. Shulga *Opredeleniye otnositel'nykh fazovykh prinit-sayemostey i krivykh kapillyarnogo davleniya metodom tsen-trifugirovaniya v termobaricheskikh usloviyakh [Geochemical features and lithological-facies conditions of accumulation of the initial substrate in the oil-shale basin of Kyzylkum]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 72-80. DOI <https://doi.org/10.25689/NP.2023.1.72-80>. EDN RTRURW (in Russian)*

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EDN ROLUKW

УДК 622.243.572

## Core recovery improvement due to innovative solutions

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**Abstract.** The paper demonstrates relevance of research performed by top-level scientists and R&D efforts aimed at development of innovative solutions that are successfully used in well drilling. The paper analyzes modified arrangements of core samplers used during well drilling, named "Nedra", "Silurian", "Cambrian". In all core samplers, core is generated by a core-drilling bit with hard-alloy teeth. The paper discusses the results of core recovery operations in South-Western Uzbekistan. It analyzes core recovery with various core samplers and presents the results of core recovery with a new core drilling bit named "6LBK-MSZ".

Based on the analysis of the existing core drilling bits, innovative solutions have been applied in the research. To preserve core and provide maximum core recovery from incompetent rocks, a new six-point scraping-cutting core drilling bit has been developed named "6 LBK 187.3/80 MSZ". To test these new bits and core sampling procedure, prototype models were made in IGIRNIGM Joint-stock company. Pilot testing was carried out in Well No. 1 of Koncha Area in Zarafshansky region. With axial weight on 6LBK drill bit (WOB), core recovery made 60-100%, which can be deemed as a satisfactory result.

The results of the research are presented as characteristic curves. These curves show that increase in axial weight on drilling bits of 6VK-SZ and 6LBK-MSZ types over 2 tons results in core recovery impairment. In case of 2-2.5 tons WOB core recovery made 60-100%, while in case of higher WOB core recovery made 30-40%. Hence, optimum WOB is within 2 tons.

Relationships have been established between core recovery and rotary speed when using 6LBK-MSZ drilling bit. Core recovery appeared to be 75-100% at 35-50 rpm which is good performance.

Relationships have been established between flow rate and core recovery. The cross-plot shows that in case of flowrate increase up to 8 l/s, core recovery with 6LBK-MSZ core-drilling bit grows to 100%, while with 6VK-SZ drilling bit it decreases. In case of core sampling using 6LBK-MSZ core-drilling bit core recovery made 70-100% at pumping rate of 7-10 l/s.

Based on the actual data and the results of pilot testing of 6VK-SZ and 6LBK-MSZ drilling bits, the paper presents findings and recommendations for using 6LBK 187.3/80 MSZ core-drilling bit.

According to the recommendations elaborated by the authors, production of core samplers, core drilling bits and core holders under the Government programs of output product nationalization will enable substituting imported products and saving foreign currency.

Developed innovative solutions will improve the efficiency of oil and gas prospecting during well drilling.

**Keywords:** core, innovative solution, well drilling, core sampler, core drilling bit, Koncha area, sediments, South-Western Uzbekistan, import-substituting products

**For citation:** R.A. Narimov, S.A. Umarov, I.N. Khakimzyanov, A.U. Mirzaev, S.S. Ahmedov, T.F. Rakhmedov Uluchsheniye vynosa kerna s primeneniye novykh innovatsionnykh razrabotok [Core recovery improvement due to innovative solutions]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 81-94. DOI <https://doi.org/10.25689/NP.2023.1.81-94>. EDN ROLUKW (in Russian)



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EDN QKLSYQ

УДК 622.276.66

## **Review of acid hydraulic fracturing, IR spectroscopy techniques and interim research results**

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**Annotation.** Acid hydraulic fracturing (HF) is a complex, energy-intensive and expensive technological process. In the development of carbonate reservoirs, the fracturing technology is one of the most common, which can significantly increase the flow rate of production wells. When carrying out hydraulic fracturing, it is necessary to pay special attention to the formulation of the composition and injection technology as determining the success of the process. In the process of acid interaction both with the mineralogical component of the formation and with fluids (oil, water), asphaltenes can be formed, causing formation clogging, which reduces the efficiency of hydraulic fracturing.

To develop a methodology for selecting acid compositions for hydraulic fracturing using IR spectroscopy, the authors of the work considered existing methods for determining the quantitative assessment and degree of precipitation of asphaltenes for selecting the optimal formulation and composition for hydraulic fracturing.

Based on the results of the analysis of the laboratory studies of IR spectroscopy for all the studied samples of oil samples and compositions using acidic compositions, it was found that the distribution of spectral coefficients has a different character, and the influence of the branching coefficient on the content of aromatic hydrocarbons was also established.

**Keywords:** *acid fracturing, infrared spectroscopy, degree of aromaticity, degree of aliphaticity, degree of branching*

**For citation:** A.A. Rybakov, R.R. Zakirov, V.D. Zimin Obzor provedeniya kislotnogo gidravlicheskogo razryva plasta, metodiki IK-spektroskopii i prome-zhutochnyye rezul'taty issledovaniy [Review of acid hydraulic fracturing, IR spectroscopy techniques and interim research results]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 95-108. DOI <https://doi.org/10.25689/NP.2023.1.95-108>. EDN QKLSYQ (in Russian)

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EDN OKEXHF

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## Method for determining the period of working out of injection wells in low-permeable heterogeneous reservoirs

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**Abstract.** The paper presents a method for determining the individual period of working out of injection wells in conditions of low-permeable heterogeneous reservoirs. The method is based on an assessment of the change in the intensity of the reaction (interference) of the design injection well in the production mode from the launch of neighboring production wells.

To implement the method, it is required to calculate two scenarios on a hydrodynamic model and determine the first time derivative of the ratio of the normalized flow rates of each injection well in development. The optimal period of working out will correspond to the step at which the first derivative has the minimum value. At this point, the neighboring wells of the element begin to influence each other (mutual influence begins) and the design injection well must be transferred for injection. The period of working out of injection wells found by the presented method ensures the maximization of accumulated oil production due to timely transfer for injection.

The proposed algorithm requires less labor and computing resources compared to the traditional (multivariate) method due to fewer calculations on the model.

**Key words:** low-permeability reservoir, well interaction, well interference, depletion mode, flooding element, efficiency of reservoir pressure maintenance system, period of working out of injection well, well flow rate dynamics, first derivative in time, accumulated oil production, hydrodynamic model

**For citation:** Y.A. Plitkina, E.I. Mamchistova Method for determining the period of working out of injection wells in low-permeable heterogeneous reservoirs. [Sposob opredeleniya perioda otrabotki nagnetatel'nykh skvazhin v nizkopronitsayemykh neodnorodnykh kollektorakh]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 109-124. DOI <https://doi.org/10.25689/NP.2023.1.109-124>. EDN OKEXHF (in Russian)

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EDN NMRGTU

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**Assessment of possibility of association of several layers  
for their joint operation  
(on the example of the small Southern Fergana fields)**

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**Abstract.** Experience of development of many fields showed that at joint operation comes partial or a blackout from process of development of average and low-permeability objects and, as a result, everything leads to decrease in oil recovery (KIN). Thus, the probability of shutdown of pro-layers of subjects is higher, than hydrodynamic communication between high-permeability and low-permeability layers on the deposit square is lower, than the difference in permeability of layers composing a section is higher, than the section peschanistost, and also effective thickness of low-permeability thin-layer pro-layers is less.

Taking into account given above criterion in this work the assessment of possibility of association of several layers, small on geological stocks, the Southern Fergana field for their joint operation is carried out.

**Key words:** *efficiency of development, operational object, joint operation, average and low-permeability layers, familiarizing, the uniform filter, the equipment of simultaneous and separate operation, the permeability, the saved-up oil production, development intensification, oil recovery*

**For citation:** I.N. Khakimzyanov, V.N. Petrov, D.A. Alexandrov, L.R. Bayazitova, O.I. Khakimzyanova, R.F. Davletshin Otsenka vozmozhnosti ob"yedineniya neskol'kikh plastov dlya ikh sovmestnoy ekspluatatsii (na primere melkogo Yuzhno-Ferganskogo mestorozhdeniya) [Assessment of possibility of association of several layers for their joint operation (on the example of the small Southern Fergana fields)]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 125-141. DOI <https://doi.org/10.25689/NP.2023.1.125-141>. EDN NMRGTU (in Russian)

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EDN MSAETE

УДК 622.276.42:661.97

## Carbon capture and utilization: benefits and implications

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**Abstract.** Environmental issues related to green-house-gas (GHG) emissions have grown to global problems. Numerous research works reveal that increase in greenhouse gas levels in the atmosphere contributes to global warming. Carbon dioxide gas (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrogen oxide (N<sub>2</sub>O), and fluorine-containing gases (HFC, PFC, SF<sub>6</sub>) are classified as greenhouse gases, with CO<sub>2</sub> constituting a considerable proportion in the total amount of gases present in the atmosphere (Fig.1).

**Key words:** *carbon dioxide CO<sub>2</sub>, CO<sub>2</sub> capture and storage, environmental impact*

**For citation:** V.V. Vasilev, O.V. Salimov Utilizatsiya SO<sub>2</sub> – plyusy i minusy [Carbon capture and utilization: benefits and implications]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 142-154. DOI <https://doi.org/10.25689/NP.2023.1.142-154>. EDN MSAETE (in Russian)

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EDN LXDEFB

УДК 622.276.34

## **Algorithm of selection of geological and technical measures for the extraction of reserves at the late stage of oil field development**

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**Abstract.** The article presents the results obtained by analyzing the operational and non-operational well stock of the Yuzhno-Romashkinskaya area of the Romashkinskoye oil field in order to identify and localize residual recoverable reserves (RRR) of formations. The objects for the identification and localization of residual recoverable reserves on Yuzhno-Romashkinskaya Square were the layers "b", "g<sub>1</sub>", "g<sub>2</sub>", "d" of the Pashiysky horizon D<sub>1</sub>. The data on the layers were analyzed from the data of the NGT Smart software package. Based on the results of mapping, the most promising zones and areas with residual recoverable reserves were determined. For the selected zones, an algorithm is proposed for the selection of geological and technical measures (GTM) both for wells individually and for localized zones. The development of an algorithm for the selection of geological and technical measures for the recovery of residual recoverable reserves of oil is based on the classification of wells into categories and the allocation of promising zones and areas of localization of oil reserves.

**Key words:** *algorithm, well, category, accumulated oil production by formations, analysis, localization, residual recoverable reserves. geological and technical event, optimization*

**For citation:** R.N. Burkhanov, I.V. Valiullin, A.A. Lutfullin, Yu.L. Egorova, N.A. Chukhnovskaya Algoritm podbora geologo-tekhnicheskikh meropriyatiy po doizvlecheniyu zapasov na pozdney stadii raz-rabotki neftyanogo mestorozhdeniya [Algorithm of selection of geological and technical measures for the extraction of reserves at the late stage of oil field development]. Neftyanaya Provintsiya, No. 1(33), 2023. pp. 155-168. DOI <https://doi.org/10.25689/NP.2023.1.155-168>. EDN LXDEFB (in Russian)

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EDN LDDOWE

УДК 622.387

## Modern estimation methods of cementation quality

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**Abstract.** Due to the complexity of geological and field conditions of well constructions and reduction of their mining opportunities (velocity, drifting) the defining role is played by indicators that characterize the quality of the work carried out. The article considers an overview of the quality of well construction indicators including field-geophysical researches by acoustic method with the use of the ACC8CM device.

Acoustic cement metering equipment is an eight-sectored scanning multi-frequency ACC8CM device which is used for selection of vertical channels in wells between the column and cement stone, cement stone and formation with disclosure of at least 15 degrees in oil and gas wells. The analysis of the dynamic parameters of the target waves makes it possible to reveal the character of the contact and to identify the intervals of poor cementing of the casing string. This device provides registration of acoustic wave fields excited by a monopole emitter.

The scope of the equipment is research by the method of wave acoustic logging of cased wells with a diameter from 125 to 300 mm at the upper values of the ambient temperature of 120°C and hydrostatic pressure of 80 MPa with a well inclination angle of no more than 35°C, at a logging speed of up to 280 m/h.

**Keywords:** *casing string, cement stone, acoustic cement metering, contact, estimation of quality*

**For citation:** R.M. Karimova, S.I. Golub, N.A. Chukhnovskaya *Sovremennyye sposoby otsenki kachestva tsementirovaniya* [Modern estimation methods of cementation quality]. *Neftyanaya Provintsiya*, No. 1(33), 2023. pp. 169-178. DOI <https://doi.org/10.25689/NP.2023.1.169-178>. EDN LDDOWE (in Russian)

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## **Development of special fluids for gas well repair in conditions of abnormally low reservoir pressures**

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**Abstract.** Increasing the efficiency of well workover (WO) at the final stage of the development of oil and gas fields requires continuous improvement of workover technologies in conditions of abnormally low reservoir pressure (ANRP). One of the directions for solving this problem is the substantiation and selection of gas-liquid foam systems as flushing and special fluids for cattle under ANRP conditions.

The article solves the problems of studying the properties of foams and foam-forming liquid (FFL), including woodworking waste, under various thermobaric conditions.

Functional diagrams of instruments for studying foam systems are given.

The author has developed and implemented in the depleted fields of the North of Russia new compositions of POL to obtain stable three-phase foams that do not reduce the porosity and permeability properties (PRP) of the bottomhole formation zone (BFZ).

**Keywords:** *gas well, abnormally low reservoir pressures, well overhaul, special fluids*

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## **Physico-chemical structure of technological polymer-gel liquids for blocking a productive reservoir in conditions of abnormally low reservoir pressures**

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**Abstract.** When carrying out major repairs of wells (CATTLE) with preliminary damping of the well, the main factor affecting the final result of the repair is the choice of jamming fluid and flushing fluid. It has been established that the work on washing the sand-clay plug (PGP) with silencing of the productive formation requires the use of liquids that have the ability to temporarily block the bottom-hole zone of the productive formation (PZP). Foam systems with various fillers that have clogging and crust-forming properties meet these requirements most fully. Of the numerous fillers tested during exploratory studies, only fillers of plant origin make it possible to obtain a foam system that can withstand significant pressure drops on the formation, and is capable of easily removing from the formation at low depressions (0.1 – 0.5 MPa) and maintaining its original permeability. After conducting a large number of laboratory studies, the author developed a new filler based on tree bark. A non-freezing foaming liquid (NPOJ), which has found wide application in the fields of Western Siberia, was chosen as the carrier fluid.

Bench tests on an experimental installation to determine the clogging properties showed that the blocking liquid with the filler developed by the author withstands a 1.5-2 times greater pressure drop than a similar liquid with a filler "Polycell-CF". Based on the results of bench tests, the author proposed the formulation of a new filler and made an experimental batch for conducting OPI. The results of pilot tests at the wells of Noyabrskgazdobycha LLC showed that the use of NDK-LX filler in the foam system to block the productive reservoir during repair and restoration work (RVR) allows:

- reliably isolate the productive horizon from the borehole for the duration of repair work;
- to prevent the penetration of process fluids into the reservoir during repair work;
- to preserve the natural permeability of the PP;
- to reduce the time of well development and the cost of repair work.

**Keywords:** *polymer-gel systems, process fluids, well silencing fluids, synthetic polymers, natural polymers, lignosulfonates, bottom-hole formation zone*

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## **Elimination of absorption of low intensity drilling flushing fluids during the construction of oil wells**

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**Abstract.** The article is devoted to measures to combat losses of low-intensity drilling fluids; describes the theoretical aspects of the absorption of drilling fluids, including: signs and causes of the absorption of drilling fluids, classification of losses of drilling fluids by the degree of intensity, models of fractured formations; models of cavernous and fractured-cavernous beds and classification of beds by possible methods of their isolation; disclosed is a technical solution for eliminating low-intensity absorbances and, as a logical completion of the article material, shows the practical value of the proposed technical solution for eliminating low-intensity absorbances during oil well construction.

**Key words:** *well drilling, absorption of drilling washing liquids, intensity of absorption of drilling washing liquids, technology of elimination of absorption of drilling washing liquids*

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