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Complex lithological and geochemical characteristics of the main material complexes of the pre-Jurassic base of the Uvatsky NGR

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Abstract. As part of the Pre-Jurassic complex of Western Siberia, the attention of oil geologists has long been attracted by rocks that may be unconventional hydrocarbon reservoirs. As a result of complex laboratory studies for the period 2016 - 2022, new, original data were obtained, an overview of which is given in this paper. The rocks are characterized by a detailed description of the core and a description in transparent petrographic sections. The names of individual minerals were clarified as a result of point microprobe of replicas under a scanning electron Keywords: pre-Jurassic material complex, rhyolites, tuffs, volcanic breccias, MOAT, bitumen occurrences, generation potential of s.microscope. Pyrolytic parameters of scattered organic matter(s) of rocks of the Pre-Jurassic complex were obtained. The analysis of the generation capabilities of the S of Paleozoic rocks is carried out.

Key words: *pre-Jurassic material complex, rhyolites, tuffs, volcanic breccias, MOAT, bitumen occurrences, generation potential of s*

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EDN BCDAYV

УДК 550.812:553.98 (575.172)

Scientific and innovative study of the processes of formation of oil and gas in the Ustyurt oil and gas region

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Abstract. The article discusses the tasks of scientific and innovative research into the processes of oil and gas formation in the Ustyurt oil and gas region, as well as an innovative methodology for drilling and searching for oil and gas promising structures in Paleozoic deposits, by identifying and tracing submerged local extension zones that control oil and gas manifestations and hydrocarbon deposits in the Cretaceous, Jurassic and Paleozoic deposits. They are argued by drilling materials, correlation of sections with the allocation of productive horizons of Jurassic deposits. In addition, Neogene-Quaternary, Cretaceous and Paleozoic deposits and their productive horizons have been identified, and structural maps have been compiled on them.

According to the structural maps and productive horizons of the Jurassic deposits, a fault-block structure and a local extension zone were developed along the deposits of the Central part of the Kuanysh-Koskalin swell and adjacent territories. Based on the study of the fault-block structure, the zone of local extension along the deposits of the Central part of the Kuanysh-Koskalinsky shaft and adjacent territories, a geological and geodynamic model was created for all geological systems of this region. The created model gives a visual representation of the geological structure of the region under study. The geological and geodynamic model allows making decisions on further stages of geological exploration (GE) of a given territory.

Key words: *Ustyurt oil and gas region, Kuanysh-Koskalin swell, geological structure, Paleozoic, deep faults, blocks, deposits, geological and geodynamic model, Jurassic deposits, local extension zones, CDP-3D seismic survey*

For citation: M.Kh. Iskandarov, G.S. Abdullaev, A.U. Mirzaev., I.N. Khakimzyanov, Sh.A. Umarov Nauchno-innovacionnoe issledovanie processov obrazovanija nefti i gaza v Ustjurtskom neftegazonosnom regione [Scientific and innovative study of the processes of formation of oil and gas in the Ustyurt oil and gas region]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 23-55. DOI https://doi.org/10.25689/NP.2022.3. 23-55. EDN BCDAYV (in Russian)

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EDN FFYKUR

УДК 622.276.031.011.43 + 622.276.66

A new approach to defining reservoir properties by frac-ports in horizontal wells based on hydraulic fracturing data under high heterogeneity

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Abstract. Transition from directional wells to horizontal is not only an efficiency increase of hard-to-extract reserves development, but also additional uncertainties that were not inherent to directional wells. In particular, the challenge of reserves localization and uncertainty in distribution of reservoir properties in a single-row system development become an even more laborious task. The approach considered in the paper makes it possible to evaluate reservoir properties and distribution of production for each frac port of horizontal wells separately without increasing the cost of the development. The developed approach is an alternative to a long-term well testing and well logging, which involve shutting down wells for the period of testing. To apply the proposed approach, downhole pressure gauge data, fluid flow rate during hydraulic fracturing, PVT properties of the reservoir fluid, reservoir characterization and completion parameters are sufficient. Based on output data, the following correlations are constructed: "permeability - total/instant leakoff" and "reservoir pressure - fracture closure pressure", which are used to estimate reservoir properties, as well as distribution of production for each frac-port separately. The proposed approach is universal and applicable to any horizontal wells with hydraulic fracturing and bottomhole pressure gauge in the assembly.

Key words: *HPF; reservoir properties distribution; heterogeneous formation; development of hard-to-recover reserves; dynamic well test*

For citation: B.S. Shevchenko, A.G. Akimov, R.R. Ziazev Novyj podhod v opredelenii FES po frak-portam gorizontal'nyh skvazhin na osnove dannyh GRP v uslovijah vysokoj neodnorodnosti [A new approach to defining reservoir properties by frac-ports in horizontal wells based on hydraulic fracturing data under high]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 56-67. DOI https://doi.org/10.25689/NP.2022.3.56-67. EDN FFYKUR (in Russian)

DOI: https://doi.org/10.25689/NP.2022.3.68-78

EDN FLAZQR

УДК 622.243.24

Risks and uncertainties of determining the angles of fall of formations during the wiring of horizontal wells

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Abstract. As it is known, the main advantage of horizontal wells, compared with vertical ones, is an increase in flow rate due to the expansion of the drainage area and an increase in the filtration area [4]. A number of uncertainties and risks arise when drilling GS. One of these factors is the uncertainty of the angle of occurrence of the structure. It has a significant impact on the efficiency of horizontal shaft penetration. The paper considers the problem of uncertainty of the angles of incidence when accompanied by horizontal wells. Practical examples of well wiring in such conditions are also described.

Key words: *horizontal well, angle of incidence of formations, risks and uncertainties, geological model*

For citation: Konstantinov K.V., Lapina E.I., Pukharev Riski i neopredelennost' opredeleniya padeniya uglovykh plastov pri provodke gorizontal'nykh kvadrantov [Risks and uncertainties of determining the angles of fall of formations during the wiring of horizontal wells]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 68-78. DOI https://doi.org/10.25689/NP.2022.3.68-78. EDN CHVNEP (in Russian)

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EDN DXSJBV

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Reinterpretation of the minimum horizontal stress profile, considering changes in the pore-stress component of reservoir mechanical stresses

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Abstract. The purpose of the work is to refine the initial construction of the minimum horizontal stress curve, considering the current pore pressure. Pore pressure is found in basic calculation equations, but published sources lack of a method for converting scalar values of pore pressure into a curve to build a geomechanical model as part of the input data of the hydraulic fracturing simulator.

The scientific novelty of the work lies in the construction of a pore pressure curve based on scalar quantities for use as input data for the hydraulic fracturing simulator. For the first time, a combined method was applied, including refinement of the components of the minimum horizontal stress equation using both the Bio constant and the tectonic influence coefficient, and the conversion of pore pressure data into a curve. As a result, we obtained a calculation method that allows us to obtain refined fracture simulator input data based on a standard data set.

Key words: *fracturing, geomechanics, minimum horizontal stress, fracture planning, fracture risks, pore pressure, fracture height prediction, Bio constant, Eaton's equation, fracture model calibration*

For citation: I.G. Fattakhov, A.V. Kochetkov, R.R. Stepanova, F.A. Ikhsanova Pereinterpretacija profilja minimal'nogo gorizontal'nogo naprjazhenija s uchetom izmenenija porouprogoj komponenty mehanicheskih naprjazhenij plasta [Reinterpretation of the minimum horizontal stress profile, considering changes in the pore-stress component of reservoir mechanical stresses]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 79-90. DOI https://doi.org/10.25689/NP.2022.3.79-90. EDN DXSJBV (in Russian)

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EDN FRWOWP

УДК 622.276.6

Experimental study of the influence of pore surface modifier reagents and clay inhibitors-stabilizers on the filtration characteristics of core samples according to the results of filtration

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Abstract. The issues of technology optimization based on detailing the properties of productive deposits are key in achieving high technological efficiency of methods and technologies for influencing productive formations. In this paper, based on filtration experiments on the example of core samples from the Rostashinsky field, the potential for regulating the properties of rocks in the near-wellbore zone is studied when performing technologies for influencing productive formations, taking into account changes in the surface tension of rocks and preventing swelling of the clay material of the rock. Filtration laboratory studies were performed on the VINCI CFS-700 unit for research and development of EOR technologies. The generalized comparative results of the use of various reagents that affect the wettability of the rock and the swelling of the clay material of the rock in order to control the properties of the reservoir make it possible to create initial well conditions for ensuring effective stimulation of production, including the performance of such works as hydraulic fracturing.

Key words: *Filtration experiment, rock mineralogy, clay swelling, inert brine, reservoir wettability control, hydrophilicity and hydrophobicity of rocks, bottomhole zone control, optimization of reservoir stimulation technologies*

For citation: I.I. Mannanov, G.R. Ganiev, D.I. Ganiev Izuchenie vlijanija reagentov modifikatorov porovoj poverhnosti i ingibitorov-stabilizatorov glin na fil'tracionnye harakteristiki obrazcov po rezul'tatam fil'tracionnyh issledovanij [Experimental study of the influence of pore surface modifier reagents and clay inhibitors-stabilizers on the filtration characteristics of core samples according to the results of filtration]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 91-103. DOI https://doi.org/10.25689/NP.2022.3.91-103. EDN FRWOWP (in Russian)

DOI: https://doi.org/10.25689/NP.2022.3.104-118

EDN GAVZWE

УДК 622.276.66

Modeling the mechanical properties of the geological environment to create am optimal hydraulic fracture

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Abstract. Currently, the development of oil and gas fields is often carried out in geological conditions with increased complexity. To increase oil recovery and intensify the flow of oil from oil and gas fields, hydraulic fracturing is most often used. At the same time, in order to obtain the good oil inflow and prevent increased water cut, it is necessary to create a fracture of the required parameters during hydraulic fracturing.

This paper presents the results of hydraulic fracturing modeling using a computer program developed by the authors. In the course of the work, modeling of the dimensions of the fracture was performed for the Vyngapurovskoye field and subsequent verification of the stability of this fracture under the conditions of the rock under consideration using the Griffith theory of strength, as well as modeling the oil inflow from this fracture and calculating the flow rate after the hydraulic fracturing operation.

In result of the studies, it was found that the developed program allows you to evaluate the stability of fractures in the reservoir. In this case, the convergence of the obtained results with the literature data is 98,65%. This confirms the correctness of the developed program and indicates the possibility of using the developed program in practical activities by oil and gas companies.

Key words: *Vyngapurovskoye field, fracture intensity factor, hydraulic fractures, rock stresses, oil inflow modeling, fracture propagation modeling, force criterion of destruction, skin factor, rock pressure, water cut*

For citation: M.A. Yamkin, E.U. Safiullina Modelirovanie mehanicheskih svojstv geologicheskoj sredy dlja sozdanija optimal'noj treshhiny gidrorazryva plasta [Modeling the mechanical properties of the geological environment to create am optimal hydraulic fracture]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 104-118. DOI https://doi.org/10.25689/NP.2022.3.104-118. EDN GAVZWE (in Russian)

DOI: https://doi.org/10.25689/NP.2022.3.119-128

EDN GVPQAZ

УДК 622.276.63

Testing of diverting agents based on solid dispersion systems aimed at leakage reduction, fracture and cavern plugging during matrix acidizing and acid fracturing

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Abstract: Acid treatment is one of the simplest and most common chemical methods for stimulating of production, rejuvenation of productivity of producer wells and injection capacity of wells. Despite the simplicity of the method, it is worth taking seriously the planning and conduct of acid treatments. [1]

In the process of bottomhole treatment and acid fracturing with hydrochloric acid, maximum effect on the rock occurs in the near-wellbore zone. In the remote zone of the formation, the reaction of the acid with the rock is less intense due to the loss of part of its activity. As a result, the effectiveness of hydrochloric acid treatments decreases rapidly with the growth of repeated treatments carried out on one well. Hence, the need for inhibition of the chemical interaction between acid and rock is obvious. For this, in practice, are widely used flow deviation systems. [2]

Flow deviation systems are usually used in acid fracturing operations and bottom-hole formation zone treatment to create a more uniform impact and deepen the penetration of acid.

Diverting agents can be divided into mechanical, solid and liquid (chemical). Mechanical methods are considered to be the most effective and guaranteed methods of directional acidizing. From this point of view, chemical methods are universal and, in fact, the only ones capable of regulating the processes occurring in the bottom - hole formation zone (acid emulsions, acid foam treatments, etc.). Flow deviation technologies with solid particles are based on the injection of limited volumes of organic polymer fibers into injection wells, designed to reduce the permeability of high-permeability layers of the formation, in order to equalize the injectivity of the well along the section of the formation. [1]

This article presents the results of testing diverting agents based on solid fine-dispersed systems of 4 companies, designed to reduce leaks, plugging natural fractures, caverns during bottomhole treatment, acid fracturing for use in the wells of PJSC TATNEFT.

Keywords: *fibers, flow deviation systems, bottomhole treatment, acid fracturing, destruction, filtration*

For citation: R.R. Zakirov, R.L.Budkevich, G.R.Iusupova, A.A.Garipova Testirovaniye otkloniteley na osnove tverdykh melkodispersnykh sistem, prednaznachennykh dlya uluchsheniya sostoyaniya ute-chek, zakuporivaniya krupnykh treshchin, zasoreniya pri proverke kislotnykh OPZ, KGRP [Testing of diverting agents based on solid fine-dispersed systems designed to reduce leaks, plugging natural fractures, caverns during acid bottom hole formation zone treatment, acid fracturing]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 119-128. DOI https://doi.org/10.25689/NP.2022.3.119-128. EDN GVPQAZ (in Russian)

DOI: https://doi.org/10.25689/NP.2022.3.129-139

EDN GYZBZC

УДК 622.276.43

Optimization of reservoir pressure maintenance system based on monitoring of actual field data

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Abstract. When limited slots within offshore platforms do not enable drilling of observation wells, seismic monitoring data combined with production logs, reservoir pressure measurements, production performance data for production and injection wells become an integral part of field development analysis. Seismic modeling data are used to construct acoustic signal amplitude maps which are compared with actual production data to allow for estimation of bypassed reserves and observation of the propagation of injection front. The above procedure can also help identify resolution of liberated gas in crude oil due to pressure increase or pressure drops caused by production wells when reservoir pressure maintenance system fails to yield the desired effect. Maintaining the productivity of production wells, already experiencing pressure decline, provides for drilling of injection wells within oil-bearing contour and improvement of the existing reservoir pressure maintenance system.

Key words: *offshore, seismic attribute, seismic survey, increase in acoustic impedance, decrease in acoustic impedance, gas/oil contact (GOC), oil/water contact (OWC), improvement of reservoir pressure maintenance system, production trends, reservoir pressure decline, wedge-shaped reservoir*

For citation: A.S. Romanov, A.A. Baranova, A.T. Zhubanov, D.N. Glumov, A.S. Kuzovleva Optimizacija sistemy PPD na osnove monitoringa fakticheskih dannyh [Optimization of reservoir pressure maintenance system based on monitoring of actual field data]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 129-139. DOI https://doi.org/10.25689/NP.2022.3.129-139. EDN GYZBZC (in Russian)

DOI: https://doi.org/10.25689/NP.2022.3.140-148

EDN HQPCYN

УДК 622.276.031:550.822.3

Analysis of the impact of hydraulic fracturing on changes in the structure of oil reserves

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Abstract. This article was written based on research conducted at the Almetyevsk State Oil Institute [1]. The results of spectrophotometric studies of produced oil are presented in order to assess the change in filtration flows in the hydraulic fracturing area. Taking into account the purity of the experiment, wells were identified for statistical analysis and for sampling. There are 6 production wells in the analyzed area, 7 influencing wells. All of them have successfully passed the test for the "purity of the experiment". Studies were carried out on the variability of spectral coefficients in the visible, near ultraviolet and near infrared regions, which made it possible to assess the structure of oil reserves involved as a result of hydraulic fracturing. The results obtained make it possible to evaluate the applicability of both research methods and development systems with various technologies for influencing the bottomhole zone and the interwell formation volume.

Key words: *coefficient of light absorption, spectrophotometry, hydraulic fracturing, coefficient of variation, data set*

For citation: A.T. Gabdrakhmanov Analiz vlijanija GRP na izmenenie struktury zapasov nefti [The HF impact analysis on changes in the structure of oil reserves]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 140-148. DOI https://doi.org/10.25689/NP.2022.3.140-148. EDN SWYKYR (in Russian)

DOI: https://doi.org/10.25689/NP.2022.3.149-162

EDN KOLKMF

УДК 622.276.652.001

Analytic dependencies used to study temperature profile in high-viscosity reservoirs with underlying contact water zone developed by thermal recovery methods

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Abstract. The paper discusses particulars of technological solutions for high-viscosity reservoirs with the underlying contact water zone developed by thermal recovery methods. Analytical methods were used to calculate temperature distribution in a reservoir once hot water and steam have been injected into the oil zone and the underlying contact water zone. The results of the calculations yielded analytical dependencies to determine the radius of the thermal front that is formed in the oil zone. These dependencies showed that the radius of the thermal front in the oil zone resulting from the injection of hot water into the underlying contact water zone below the WOC is 1.24 times the radius of the thermal front resulting from the hot water injection directly into the oil zone. However, when steam is used as a heat carrier, it makes little difference, as far as the steam chambers' sizes are concerned, whether the steam is injected directly into the oil zone, or into the underlying contact water zone.

Key words: *high-viscosity reservoir, oil zone, underlying water zone, heat carrier, hot water, steam*

For citation: G.V. Aleksandrov, R.Kh. Nizaev, Yu.L. Egorova, M.A. Shavaliev Primenenie analiticheskih metodov dlja issledovanija raspredelenija temperaturnogo polja v plaste pri vnesenii tepla zakachkoj teplonositelja v zalezh' vysokovjazkoj i sverhvjazkoj nefti s nizhelezhashhej kontaktnoj vodonosnoj zonoj [Analytic dependencies used to study temperature profile in high-viscosity reservoirs with underlying contact water zone developed by thermal recovery methods]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 149-162. DOI https://doi.org/10.25689/NP.2022.3.149-162. EDN KOLKMF (in Russian)

DOI: https://doi.org/10.25689/NP.2022.3.163-178

EDN OUZPKI

УДК 620.193.47

Study of the anticorrosion properties of a complex action reagent used as a drilling mud additive

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Abstract. Oilfield equipment corrodes intensively due to contact with highly aggressive process media. The study of the processes of corrosion of the metal surface of oilfield equipment and the development of effective methods of protection are topical scientific and technical problems. One of the common methods of corrosion protection is the use of inhibitors, which reduces the corrosion rate of metals and alloys in contact with aggressive media. The action of a corrosion inhibitor is often associated with a change in the energy state of the metal surface due to its adsorption or the formation of sparingly soluble compounds with metal cations. Also, drilling tools and equipment during well drilling are subjected to intense corrosion, which is associated with the effect of salt ions, atmospheric oxygen dissolved in the drilling fluid, as well as the action of hydrogen sulfide entering the drilling fluid as a result of the influx of sour gas from the rocks being drilled. Reducing the corrosive activity of drilling fluids is one of the effective means of protecting drilling equipment, drilling and rock cutting tools. It has been established that the high anticorrosive activity of surfactants is due to the synergistic effect between the components of the composition. The results of the study showed that the best composition with excellent anti-corrosion properties is the reagent of the «Devon-2L» complex additive with a concentration of 1%.

Keywords: oilfield media, drilling equipment, boring mud, surfactants, corrosion, corrosion inhibitor, polarization curves

For citation: G.L. Gaimaletdinova, D.R. Latypova, O.R. Latypov, R.A. Ismakov, E.R. Minnimukhametova, R.A. Mulyukov Issledovanie antikorrozionnyh svojstv reagenta kompleksnogo dejstvija, primenjaemogo v kachestve prisadki k burovomu rastvoru [Study of the anticorrosion properties of a complex action reagent used as a drilling mud additive]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 163-178. DOI https://doi.org/10.25689/NP.2022.3.163-178. EDN OUZPKI (in Russian)

DOI: https://doi.org/10.25689/NP.2022.3.179-187

EDN SWYKYR

УДК 622.276.346.2

Express method for calculating the flow rate of annular gas

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Abstract. This article is devoted to the method of calculating the annular gas flow rate, taking into account the dependence of the flow rate on the pressure in the annulus. The article describes the assumptions made in the methodology, as well as their impact on the overall calculation error. A confirmation of the reliability of the method was obtained using direct measurement of the flow rate by a gas meter.

Key words: *calculation of annular gas flow rate; reduction of annular gas pressure; annular pressure; consumption of associated petroleum gas from the annular fields of production wells*

For citation: V.N. Kalinnikov Jekspress-metodika raschjota rashoda zatrubnogo neftjanogo gaza [Express method for calculating the flow rate of annular gas]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 179-187. DOI https://doi.org/10.25689/NP.2022.3.179-187. EDN SWYKYR (in Russian)

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EDN UZFNCW

УДК 550.362

Study of thermal and filtration capacity properties of reservoir rocks of ultra-viscous oil deposits

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Abstract.

Topicality of the research: Thermal properties of rocks: specific heat capacity, thermal conductivity and thermal conductivity coefficients determine the nature of natural and artificial temperature fields in the subsurface. These parameters should be taken into account in thermal influence on the reservoir and solving thermodynamic issues related to prediction of fluid temperature at the mouth of producing wells, evaluation of reservoir filtration parameters, thermal treatment of productive horizons, etc.

Research objective: to determine the dependence of the coefficient of thermal conductivity, specific heat capacity, thermal conductivity of reservoirs of extra-viscous oil (EVO) deposits of Urmyshlinskoye field of Tatneft PJSC on the temperature and filtration-volume properties.

The object of the research: reservoirs of UHF deposits - fine-grained, uniformly bituminous sandstones.

Research methods: commercially available laboratory instruments were used to solve the task. Temperature conductivity was studied with the LFA 467 instrument based on the laser flash method according to international standards ASTM E-1461, DIM EN 821 and DIN 30905. It uses an infrared detector to measure the temperature increase on the back side of the sample as a function of time. A DSC 204 HP differential scanning calorimeter was used to determine the specific heat capacity. This instrument measures heat fluxes from the temperature difference at two points on the measuring system at the same point in time. Determinations can be made both in isothermal conditions and in dynamic mode with a programmable change in the temperature of the shell (heater) (calorimeters of this type are called "scanning").

Research results. The thermal diffusivity, specific heat capacity, and thermal conductivity were determined, and the dependence of thermal properties of rocks on temperature and filtration-capacitative properties was revealed.

Key words: *Core; thermal conductivity; specific heat; thermal conductivity; temperature; laser flash; scanning calorimeter; infrared detector; ultra-viscous oil; rock*

For citation: R.H. Sadreeva, A.A. Zalyatdinov, E.A. Burlutsky, A.A. Lipaev, E.F.Gadelshina Issledovanie teplovyh i fil'tracionno-emkostnyh svojstv porod-kollektorov zalezhej sverhvjazkoj nefti [Study of thermal and filtration capacity properties of reservoir rocks of ultra-viscous oil deposits]. Neftyanaya Provintsiya, No. 3(31), 2022. pp. 188-203. DOI https://doi.org/10.25689/NP.2022.3.188-203. EDN UZFNCW (in Russian)

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Outstanding contribution of M.M. Ivanova in the development of the theory and practice of the effective development of oil fields (to the 100th anniversary of the birth)

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Abstract. The article, dedicated to the 100th anniversary of the birth of an outstanding scientist and practitioner, considers her role in the development of the Romashkinskoye field, in the formation of the Central Commission for Development, in creating the foundations for the effective development of oil fields.

Key words: *outstanding scientist, laureate of the Lenin prize, anniversary, Romashkinskoye oil field, flooding, Central commission for development, dynamics of oil and liquid production, achievements, merits.*

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About the role of associate professor of Kazan University R.K. Khabibullov in the development and implementation of electrical exploration methods in Tatarstan

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Abstract. Numerous and successful geophysical studies carried out using electrical exploration methods in the recent past on the territory of not only the Republic of Tatarstan, but also the entire former Soviet Union, were implemented, along with other specialists, by numerous students and pupils of Associate Professor of Kazan University Rafik Kasimovich Habibullov. A brilliant graduate of KSU in 1955, R.K. Khabibulov has devoted his entire working life to training highly qualified geophysicists specializing in electrical exploration, as well as scientific research in this field. New modifications of induction methods – dipole induction profiling with primary field compensation (DIP–KPP) and the method of electromagnetic gradients (EMG), as well as the work of R.K. Khabibullov in the field of environmental geophysics in Tatarstan, have become widely known among specialists. For many years of pedagogical activity at the Department of Geophysics of Kazan University, more than 1000 graduates have attended various special courses taught by R.K. Khabibullov, thus gaining fundamental and applied knowledge in the field of electrical exploration.

Keywords: *induction methods of electrical exploration, pedagogical activity, environmental geophysics*

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