

RESULTS OF IMPLEMENTATION OF INDUSTRIAL MUD SALT-BEARING DEPOSITS UZBEKISTAN

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When opening the salt-bearing deposits in our country and abroad are often found manifestations or outdoor fountains abnormally highly mineralized brines - brine. In most cases the accumulation of brine are confined to isolated deep in salt cavities. The chemical composition of the brine are different, because its composition corresponds to the composition of the constituent section of the salts.

In the process of deepening the borehole brine, once in the wellbore, dramatically affects the properties of the circulating mud. Climbing the wellbore, brine cools it falls out and settle on the walls of the borehole salt, preferably consisting of sodium chloride - NaCl, exhibit lower solubility. In most cases due to the crystallization is observed, the reduction in diameter of the well, which in turn results in reducing the rate of up flow. As a result, temperature difference increases between slaughter and the mouth, which entails a greater sedimentation until complete blockage of the wellbore. After working through the wellbore to remove the crystallized salt brine, gushing may resume [1].

For drilling of salt deposition raponosnyh proposed many formulations of drilling fluids, but not all have been widely used. A variety of formulations and their use is explained by the originality of drilling areas and the degree of availability of certain chemicals production workers [2].

In recent years, while drilling a borehole in a hazardous area in our Republic and abroad uses a complex well design that provides overlapping of clastic sediments with the casing. After descending a technical column diameter of 245 mm to the roof of salt and its subsequent cementing opening of salt deposits made using heavy mud.

At present, such a construction of wells opened in the squares of salt-bearing deposits Shakarbulak, YangiKaratepa, Pamuk, Alan Kokdumalak and others.

Despite the use of sophisticated design and clay weighted drilling fluids with a density of 2150-2200 kg / m³ wiring problem borehole rapanosnyh areas it remains relevant. When using heavy mud there are other complications associated with the absorption of mud chemo genic deposits. For sure, there is absorption rapoproyavlenie with varying intensity. In such cases, there is a drastic deterioration of technological parameters used by the circulating drilling mud weighted clay.

As a result, there has been intense precipitation weighting - barite borehole inside the drilling tool to form a dense plug barite, which may lead to the drilling tool tacks. Freeze-drilling tool at the opening of salt-raponosnyh deposits were observed in almost all wells, which were used weighted clay muds.

For example, the drilling borehole wells. Number 293 Kokdumalak produced with commonly used in the practice of construction of wells with a weighted clay mud with the following parameters: density - 2100-2110 kg / m³, the relative viscosity - 87 seconds, water loss - 8 cm 3/30 min, pH = 9.0.

The upper range of the salt deposits at depths of 2438 m was catastrophic absorption mud. The drilling tool has been raised in a technical shoestring to 2368 m, and an attempt to restore the circulation of three hours did not produce positive results. After reducing, the density of the mud to 2090 kg / m³ was continued drilling of the wellbore. During drilling, secondary ranging anhydrite, 2775 m depth was found to decrease the density of the drilling fluid with a simultaneous increase in its volume in the receiving vessel. For the weighting, density to 2090 kg / m³ drilling fluid is continuously added the barite. Despite these efforts, the density of the mud coming out gradually decreased, and three hours to figure it out was 1830 kg / m³. This increased fluid loss of drilling fluid and relative viscosity was not fluid; pH of the solution was reduced to 6.5-7.0. When stopping the circulation of the chute observed motion mud with a gradual increase in flow rate of brine to 3 L / sec. The drilling tool has been raised to shoe technology columns for the preparation and processing of mud. The receiving vessel was cooked fresh heavy mud with a density of 2120-2130 kg / m³ in volume of 70 m³.

In the process of pumping heavy mud into the well from the bottom of the mud out process parameters degraded. Amid the way out of the arrangement from the well, there was a sharp decline in the thickness of the boring liquid, and inside of 15 minutes told the truth out with a face salt water. To maintain the technological parameters of drilling, constantly treated with a reagent solution CMC K-4, caustic soda and soda, and add barite-drilling tool in finding an average of anhydrite at a depth of 2774 m. However, there was a separation of the drilling tool "tightening", which led to the grab tool with the loss of drilling fluid circulation. Attempts to release the drilling tool with the help of spacing the rotor and seating have not yielded positive results. Clamp the drilling tool has been eliminated using the jar.

During drilling of a borehole in saline deposits using a weighted mud clay were consumed following chemicals and materials Shursuysk clay - 20 tons; Caustic Soda - 5.3 tons; soda ash - 11.25

tons; CMC - 8.1 tons; FHLS - 2.0 tons; Technical Charge desalt - 20.0 tons; barite-725 tons; reagent K-4 - 22 m3; oil - 10 m3; graphite - 2.0 tons.

After the liberation of the questionnaire, it was decided to use a part of the floor saturated mud, developed by us, to retrieve the collar and the bit from the well, as the clay used heavy mud hardly meet the requirements of the posting of the borehole in a rapoproyavleniya [3].

Before lowering the drilling tool with oburnikom drilling fluid had the following process parameters: density - 2070-2080 kg / m³, the relative viscosity - 120, fluid loss 4.0-5.0 cm³ / 30 min, pH = 6.0. In the process of working with the jar was observed increase in the density of the mud to 2120-2140 kg / m³, other parameters have not changed. After the successful completion of the recovery from the well collar and diamond drill bit, made with mud treatment is not hydrolyzed polyacrylamide, graphite, marble powder (Nurota) and barite. With the study of the well bore and a constant continuous treatment with mud face reached 2,800 m and started the process of deepening wells. Upon reaching the bottom, mud had the following process parameters: density - 2070-2080 kg / m³, the relative viscosity - 90c, fluid loss 3.5-4.0 cm³ / 30 min, pH = 6.0. With the application of the proposed composition of the mud, the process of deepening the well to TD completed without complications and accidents related to the manifestation of high pressure produced water-brine.

Descent casing Ø168 mm successfully completed without difficulty and complications to the bottom of the hole. Produced by cementing casing pure cement mortar using a single-stage method of cementing, which ended happily.

Based on the industrial structure of the test without clay solenasysshennogo heavy mud successfully implemented on deposits Kokdumalak, Sechankul, Pamuk, Darahtli, Garbo Szabo, Namozboy, Girsan et al. In the process of opening-salt-anhydrite deposits in the conditions of existence of highly mineralized formation water-brine.

Through applying the new composition without clay salt-mud deposits of the above managed without complications and failures to carry out the process of opening raponosnyh of salt deposits. As a result, it managed to reduce the time of construction of oil and gas wells in the salt-raponosnyh deposits.

The actual economic effect of the composition without clay salt-heavy mud in three wells was more than 630 million sum.

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