

WELL DRILLING AND DRILLING METHODS

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ABSTRACT

This article describes the types of well drilling and general drilling. Ushbu maqola haqida quduqni anglash mumkin.

KEYWORDS: drilling, Zaboy, fluid, liquids, non-ferrous, metals.

INTRODUCTION

Concepts such as "drilling" and "construction of wells" there is. Drilling involves the following complex processes, they result in the formation of a borehole:

1. Crushing of rocks in Zaboy.
2. Remove crushed rock (sludge) from the bottom release
3. Well walls in unstable rocks strengthen Mechanical, electrical, thermal, explosive, and chemical and can be broken down in other ways. Typically, mechanical drilling involves the removal of various rocks shredding tools are used. There are static and dynamic forces rock crusher compresses, compresses, cuts, grinds, breaks, rubs and compacts. The following is the extraction of fragmented rock there are methods:

1. Hydraulic fluid flow of rock particles (water, clay solution, oil) prepared special detergents, polymers, etc.);

2. Pneumatic shredded product compressed air or extracted using gas.

3. Depending on the method of mechanical drilling, drilling or special tools (drill cup, spoon or screw drill, auger, column).

4. Two of the above methods in the combined method or three are used simultaneously or sequentially.

The walls of wells are mostly in unstable rocks with aqueous liquids (clay, polymer solutions) as well as cement and cement-containing materials, synthetic resins and strengthened by others. To strengthen the walls of the well for a long time, mainly casing pipes are used. In addition to steel pipes, stainless steel, cast iron, asbestos-cement, plastic, etc. Pipes made of materials can be used. Wells are fundamentally different from each other in terms of their physical nature can be drilled in different ways. They include mechanical, physical and chemical drilling methods. Mechanical drilling is the most common method, depending on the effect on the fractured rock divided into: rotation, shock and shock-rotation. The most common of these methods is rotary drilling. In which the rotational motion of the rock-breaking device is special mechanism - drill pipes using a spindle or rotor through the column or zaboy engines (hydraulic or electric) transmitted. Therefore, drilling with spindle, rotor and zaboy engine - turbocharger and electric drill can be divided into types. In all of the above drilling methods, the rock at any hardness of the rock drilling in the middle of the well to form a core possible. The first method is called coreless drilling widely used in drilling technical wells. The second method called column drilling and mineral deposits used in search and reconnaissance. Rotary augers and drill bits for drilling shallow wells in soft rocks and types of fluid less drilling using helical drills applied. Impact drilling is used to explore shale deposits, hydro-geological and large-diameter technical wells for various purposes. Used for drilling. The essence of this method is as follows: under the influence of a heavy impact shell doloto periodically using a steel rope is known. Thrown from a height. As a result, the rocks are crushed and decomposes. After each blow, the projectile is a steel rope rotates at a certain angle. Shredded rocks are removed using jellies. The constant force of gravity in the percussion method of drilling all of the rotating rock crusher underneath species are frequently hit. This method of drilling special cutting mechanisms - hydraulic pumps, pneumatic pumps, magnetostrictors and vibrators are used. The vibratory drilling method is very deep in soft rocks used to drill non-existent wells. In practice, the physical methods of breaking down rocks include thermal, thermo mechanical, electro thermal and hydraulic methods are used. Other methods of breaking up rocks have not yet been tested. Conducting geological prospecting, prospecting for non-ferrous and rare metals, exploration of building materials, seismic exploration and engineering geology wells with a depth of 50–100 m are widely used. The purpose

and importance of drilling well diameters, the mass of the samples to be taken and the need for casing pipes. When conducting engineering and geological surveys, the diameter is 26–200 mm, intelligence of chemical raw materials and building materials gold and platinum shale deposits with a diameter of 93–200 mm wells with a diameter of 150–200 mm are drilled for exploration and wells with a diameter of 194–600 mm are drilled for hydrogeological wells. The rocks that lie at shallow depths above the earth are different mechanical properties. So deep various types of drilling for non-drilled wells machines are used. These rigs are unique in their rock-cutting techniques and drilling techniques differs. Impact drilling is used for shallow engineering and geological wells, bound, porous and loose soils, used to drill wells and water-saturated rocks. 168 mm in diameter using a percussion drilling rig wells up to 30 meters deep can be drilled. Percussion drilling rigs can sample shallow wells and drill without core. Will give. Dolotos are used to drill Valun-Galechnik deposits. Dolotos grind the rocks in a mortar, and then is removed using a jelly. The tools for the shallow well drilling rig are shown in Figure 4.3. Mechanical impact of porous and fractured rocks a light percussion drilling rig is used for drilling. A lightweight rig mounted on a single-axle trailer equipped with a friction winch, mast and engine. The driller periodically starts the winch and resulting in a rock-breaking device the drill bit is lifted from the well and thrown into it. The advantage of a friction winch is has a simple construction. At the same time to control and manage the frequency of shocks and the height of the throw of the instrument requires physical activity from workers, which limits labor productivity. Crushed rock upwards in rotary auger drilling the screw conveyor is lifted by a column of augers. With this method, the diameter was 67–490 mm and the depth was 50–80 m Category I-IV soft rocks are drilled. Auger drilling is used for seismic exploration explosive wells, hydrogeological and engineering-geological exploration and exploration of wells, geological surveys and various minerals for research used in making. After twisting into the crushed rock with auger-doloto throws it up. Crushed rocks auger and due to the difference in the rotational speeds of the rocks. Because auger drilling does not require washing fluid, it can be used in anhydrous desert conditions, especially gives effective results. Productivity of auger drilling higher drilling value than other drilling methods and will be lower. The advantage of auger drilling is high mechanical speed (Up to 40–80 m / h), less time spent on assembly and disassembly works and ancillary operations; column auger ability to take samples when used; drilling of large diameter wells; no need for washing liquid. Disadvantages of auger drilling - power consumption; small drilling depth; drilling only soft rocks; complexity of quality geological documentation. In auger drilling, the drill bit is from the auger column and a rock-breaking tool — doloto. Columns are included in the drill string when sampling is required doloto is entered.

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