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THE DESIGN OF FILTERS FOR THE PROTECTION OF SUBMERSIBLE PUMPS OF VANKOR FEILD.

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Well operation producing oil reservoirs sands is accompanied by a large amount of sand and other impurities. Sand is abrasive and its presence in the wellbore production leads to increased wear of downhole pumps and other equipment. Now a days there is no information on the use of filters at the Vankor field.

As a result of long-term oil without filtration begins problems such as clogging, abrasion, damage equipment. In this connection, it stops well, and are increasingly undergoing renovations, bringing the company incurs losses.

In the Vankor oil production is carried out in such a way that at first goes well in the vertical direction, but in the end comes the end of the horizontal, and the design of the well involves the installation of a filter before the pump in the vertical part.

Using the filter in the vertical portion of the wellbore, set before the pump, with proper filter design, production rate is maintained, as well as most of the grit is removed, and their concentration is reduced, allowing extended maintenance-free operation of the well, as well as lowering the cost of repair work internally.

This filter comprises a housing consisting of two sections, the lower sides sub intermediate sub with transverse channels and longitudinal channels, pipes for the downstream picker chamber. Part of the lower sub bilateral, located below the transverse passages are larger in diameter than its upper part, it is a net on which the helix is wound, covered with a mesh provided with a fishing camera.

Fluid enters and moves downwards along the spiral portion of the liquid passes through the mesh and the mesh retains the sand particles, resulting bandwidth falls mesh, whereby a rotating flow inside the larger mesh particles that drops to the inner surface of the screen. Because of the centrifugal force, kicking sand grains from the surface of the grid, and go in a spiral to the bottom of a fishing camera. Trough transverse ducts fluid enters the first chamber a fishing and because the liquid will change to the opposite direction, and the top longitudinal channels extend, the fluid velocity decreases and the coasting sand settles in a fishing chamber. Further, the fluid moves into the second chamber a fishing smaller in the same way are filtered liquid. Then purified fluid enters the pump.

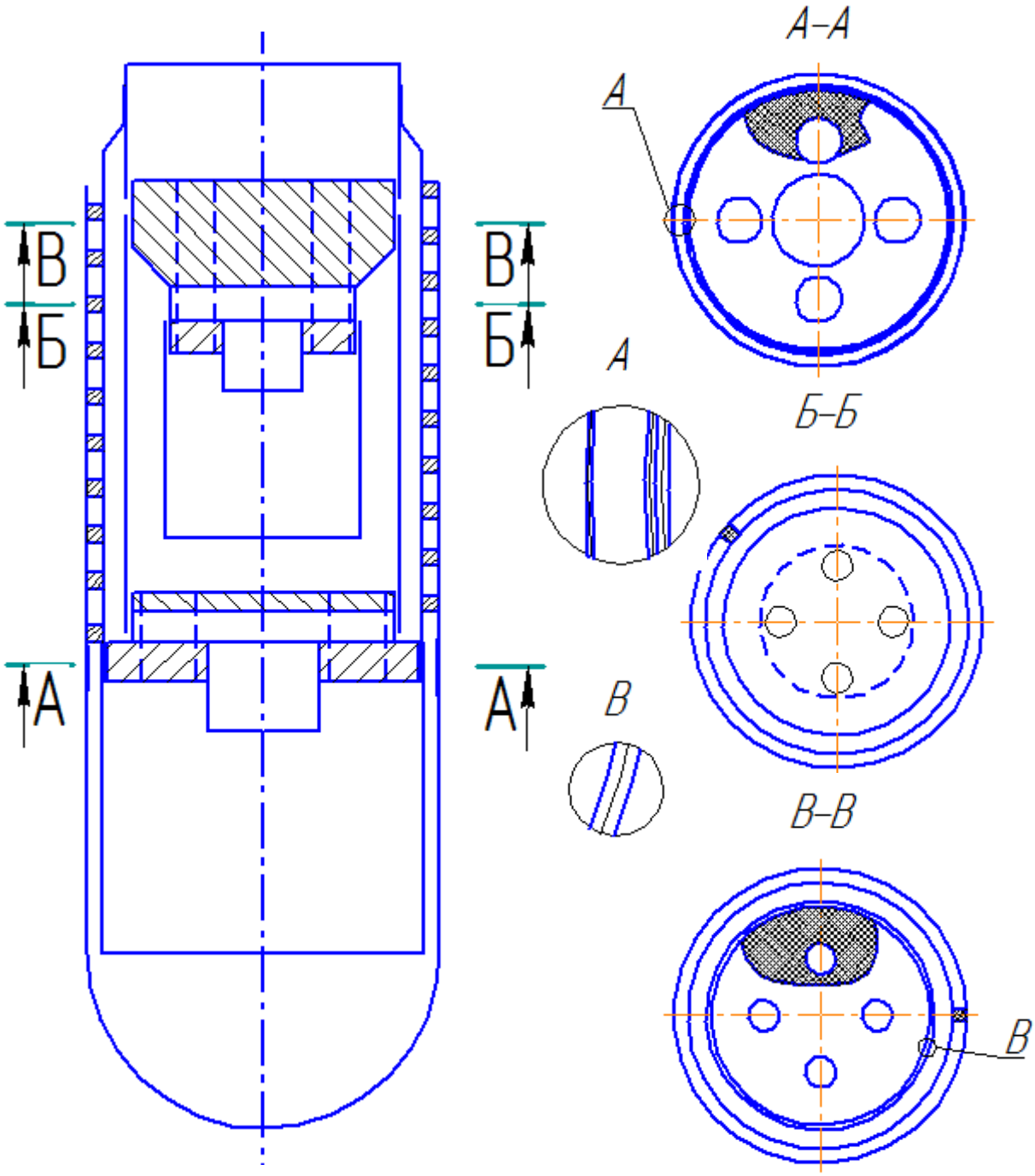
The filter design is made in extremely easy way to use, all cameras are mounted on threaded connections, and so it can be easily disassembled and cleaned.

Benefits of the proposed well screen:

- Maximum cleaning oil from the sand;
- Possibility of producing wells for different flow rates, as well as the diameter;
- Mount the pump facilitates ongoing repairs;
- It includes the methods centrifuge and gravity.

Advantages of the filter:

- Reduction of fuel consumption, electricity, etc., resulting in increased maintenance intervals of the well;
- Production of additional oil volume;
- Simplification of labor production staff (operators of mining, etc.);
- Reduction of funds for the overhaul of wells.



Picture 1. Well filter.

This work is based on a patent №2010125178 / 03. Inventor Kondrashov P.M.