

METHODS OF IMPROVING THE MUD PUMP VALVE LIFE

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Rezumat. *Instalațiile de foraj petrolier sunt folosite pentru identificarea rezervelor geologice și pentru crearea sondelor în vederea extracției. Pompele de noroi ale instalațiilor de foraj funcționează la viteze mari ale fluidului de foraj, pentru a îndeplini cerințele forajului. Rezistența la uzura erozivă a supapelor pompelor de noroi, datorată acțiunii fluidului de foraj abraziv, depinde de forma lor constructivă și de viteza de curgere a noroiului. Această lucrare analizează câteva metode de creștere a rezistenței la uzură a supapei pompei de noroi.*

Abstract. *Petroleum drilling rigs are used for identifying geologic reservoirs and for creating wells for extraction. The mud pumps of drilling rigs are operated at high mud rates to make possible the drilling process. The durability of the mud pump valves to erosive wear, due to the action of abrasive drilling fluid containing solid particles, depends on their constructive form and on the mud flow velocity. This paper analyzes a few methods of increasing the wear resistance of mud pump valves.*

Keywords: mud pump, valve, seat, wear.

1. Introduction

Oil and gas drilling rigs are used to drill in different environments to facilitate the extraction of oil and gas from hydrocarbon reservoirs. In rotary drilling, the rig through its mud circulating system uses the drilling fluid to aid the advance of the bit into the earth.

The mud pump of the drilling rig circulates the drilling fluid (mud) at high pressures down the drill string inside the hole and back up the annulus (void between drilling tubular system and earth).

Due to the reciprocating movement of the piston, the drilling fluid starts moving from the mud pump's chamber and from the suction and discharge lines of the pump. To ensure fluid movement in a certain sense, the mud pump is fitted with valves, alternately interrupting the communication between the cylinder and the suction and discharge lines.

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