

JANUS OILFIELD TECHNOLOGY SRL

**MUD BUCKET WITH
RECOVERY SYSTEM** **PATENTED**

**EQUIPMENT FOR COMPLETE CONTROL
OF THE ENVIRONMENT AND SAFETY**

MUD BUCKET WITH RECOVERY SYSTEM

MUD BUCKET CONNECTED TO SUCTION PUMP



MUD BUCKET WITH RECOVERY SYSTEM

Introduction

- One of the major leaks in the mud line is on the rig floor when the drill string full of mud is being raised and must be shortened to replace the bit or other operations that are not hydrostatically balanced.

In this phase the drill string is raised with the mud inside and when the tool joint is unscrewed to separate the pipes the mud is released violently throughout the surrounding area

MUD BUCKET WITH RECOVERY SYSTEM

Introduction

In order to avoid the uncontrolled spread of mud and the risk of injury to persons in the vicinity a shield known as a mud bucket is used. This equipment consists of a shell in two parts which close around the tool joint.

The traditional mud bucket is closed manually around the pipe string tightening the two halves with a chain.

MUD BUCKET JANUS OIL TEC

TRADITIONAL MUD BUCKET



MUD BUCKET WITH RECOVERY SYSTEM

Introduction

- The mud which comes out of the tool joint detached from the lower drill pipe falls due to gravity and the time taken depends on a number of factors.
- The main factor is the head of mud in the separated pipes followed by the mud viscosity which, if high, slows the rate of emptying due to mud sticking to the pipe walls. Other facts include the time necessary to unscrew the top drive from the pipes disconnected and allow air at atmospheric pressure to enter and last but not least, the slowing effect of the mud bucket due to the limited capacity of the outlet pipe.



MUD BUCKET WITH RECOVERY SYSTEM

Aims of the Mud Bucket with Recovery System

- The use of a mud bucket with a closing system that does not require chains which is safer for the operating personnel.
- The use of a suction system at the outlet of the mud bucket for fast recovery of the mud released by the detached pipes.
- A closed pipeline for returning the mud recovered from the mud bucket to the tanks.



MUD BUCKET WITH RECOVERY SYSTEM BENEFITS

- **SAFETY**

The use of a system that substantially reduces the quantity of mud on the rig floor helps to reduce the risk of personnel slipping and of inhaling harmful vapours released into the air by the mud.

Another aspect to consider is the elimination of the need to handle chains as in the traditional mud bucket, with consequent reduction in the risk of accidents in which workers hands are crushed.

- **ENVIRONMENT**

Since the mud returns to the tanks through closed sealed lines less dispersion of mud and better containment of pollution are foreseen with a consequent economic return and better conservation of the quality of the mud.

- **ECONOMIC RETURN**

Negative pressure at the outlet of the mud bucket helps the force of gravity in pushing the mud toward the outlet.

Moreover, a flow of air induced by suction helps to empty the disconnected pipes better and more rapidly.

MUD BUCKET WITH RECOVERY SYSTEM

Basic Technical Details

- The system consists of parts which are positioned and connected to each other on the drill rig by hoses of length that depends on the size of the rig.
- a turbodiesel compressor delivering compressed air at a rate of about 7,600 l/min (270 CFM) at 7 bar (100 PSI)
- a Venturi compressed air suction unit of approximate capacity 13,500 l/min (476 CFM) and vacuum of about -500 half atmosphere (15 Hg)
- a main corrugated tube of diameter mm 100 (4") for connecting the Mud Bucket to the buffer tank

MUD BUCKET WITH RECOVERY SYSTEM

Installation

The basic principle of the design is complete independence from the structures of the drilling rig and it should not interfere with any of the lines or pipes on the drilling rig.

The only part that depends on the rig is a winch cable to hoist the mud bucket and the anchoring of the hose reels.

A suction system is envisaged with a Mud Bucket and a mud buffer tank with a vacuum pump on its top.

The suction system, completely pneumatic and therefore conforming to ATEX regulations, is powered by compressed air at a pressure of 7 bar produced by a turbodiesel compressor located in a safe area.

At the end of every break off of drill pipes, the mud accumulated in the buffer tank is then pushed to the clean part of the drilling rig's mud tank.

MUD BUCKET WITH RECOVERY SYSTEM

Thank You For Watching

Work Safely And Comfortably

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