MERUS
Oil & Gas Processing

The Merus Hydrocarbon Treatment

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The MERUS Down-Hole TOOL

Technology to fight scaling, corrosion, fouling, waxing and emulsion in the pump tubing

Introduction and Product Specifications

The Merus Down-Hole Tool consists of a sleeve, protecting the inside silver ring against the harsh environment down in the well. The carrier of the MERUS solution is out of Silver instead of the aluminium alloy used for the standard MERUS Rings due to the limited space in the well. Two locking rings are used to fix the sleeve on the tube.

The standard MERUS Down-Hole Tool for 2 7/8'' tubing has an inner diameter of 75 mm, an outside diameter of 107 mm with a total height of 126 mm. The steel sleeve is manufactured out of the same material as the tubing itself, generally J55.
MERUS Down-Hole Tools for other tubing sizes or kinds of steel are available upon request.

The sleeve itself is not carrying the weight of the tubing nor is it in direct contact with the crude. This makes the installation a risk free, fast and convenient process.

Performance and Evaluation

Extensive tests and field trials revealed that MERUS Down-Hole Tools significantly reduce the accumulation of wax, thereby prolonging the cleaning cycles up to at least 2 to 4 times. Under favourable conditions, they keep the tubing entirely free of wax. Less wax in the tubing reduces the emulsion rate in the crude, the down time and keeps production stable.

The effect of MERUS against corrosion, even caused by SRB, is significant so that drastically reduced corrosion rates are observed after implementing the technology. (In average, it is lowered to 10% of the former rate, usually maintained below 1MPY at all times.)

While monitoring the efficacy of MERUS Down-Hole Tools, it has to be kept in mind that external factors and the conditions in the reservoir might also change the surveyed parameters. These external factors and conditions having an impact on the recorded data may include:

- change in chemical composition of the crude
- high fluctuation in down-hole oil pressure and flow characteristics

In order to ensure an objective observation of the solution, we recommend gathering all the available historical data of the wells. Maintenance cycles. changes in working conditions, down time and corrosion rates provide a very good and fast indication of the performance. Having this data filed and documented it is very easy to see the improvements due to MERUS solution.

Installation

1. Select a clean tidy section OF THE 2 7/8'' pump tubing, outside diameter , ⩽ 74,5mm.

2. Use a 5mm Allen key to install the first locking ring 250mm above the tube thread.

3. Set the procesor on the tube, firmly to the locking ring.

4. Use the second locking ring for positioning and locking the processor.

Notes

Strong electrical fields might affect the charge on the MERUS Down-Hole Tools, and consequently reduce their performance. Avoid electrical welding within 5 meters spherical radius from MERUS Down-Hole Tools. If this cannot be prevented, please remove the MERUS Down-Hole Tools before the welding activity and re-install later again.

The MERUS Down-Hole Tool has only an effect on the crude downstream in flow direction. In order to protect most of the pipe, the tools must be installed as fast as possible down the hole/well.

Lifetime and Warranty

As long as there is no mechanical damage to the sleeve, the performance of MERUS Down-Hole Tools will not be affectedand it can be usedmultiple times, Unfortunate conditions and acts of nature like earthquake, thunderstorm etc. might be responsable for a decay of the performance of MERUS Down-Hole Tools and subdue the given results. (Costumer can judge the performance.)

MERUS offers two free checking and recalibrations within 5 yearsfor each device.

The factory warranty will expire under the following conditions:

- The Down-Hole Tool is disassembled without the manufacturer's permission
- The Down-Hole Tool is mechanically damaged

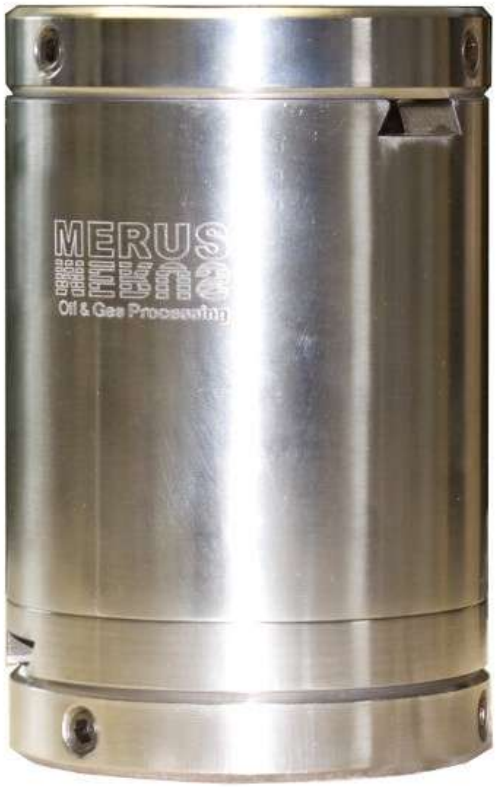
MERUS Down-Hole Tool

In any oil well a series of technical or chemical side effects are leading to problems in production and maintenance. Depending on the composition of the crude, the most common recurring problems are either wax formation or corrosion. Any kind of deposit on the internal surface of a pipe is creating turbulences in the streaming crude. These turbulences are a contributing factor to the build up of emulsion inside the crude on its way through the pipe work lessening the load in the separation plant.

Conventional methods to avoid or come up against these problems are for example: injecting steam, applying chemicals or do regular cleaning by mechanical wiring. All these methods do not only need a lot of energy and logistics, they also implicate immense costs. A scaled pipe does not only decrease daly output, it also has a negative impact on the efficiency of the complete equipment due to shutdown time for cleaning and repairs.

To counter these problems MERUS the German specialist for liquid treatment with its Green and Environment friendly methodology has developed solutions to reduce wax and corrosion problems in all crude lines like never seen before. In wells using a gas lift, the standard MERUS Rings can be installed at the surface directly on the gas line. The gas will carry the effect down the hole, minimizing corroosion, waxing and emulsion build up.

Considering that the majority of today's oil wells do not use a gas lift and the increasing need for sustainable solutions, the MERUS has engineered a special Down-Hole Tool, which can be installed directly on the tubing at nay depth in well itself.

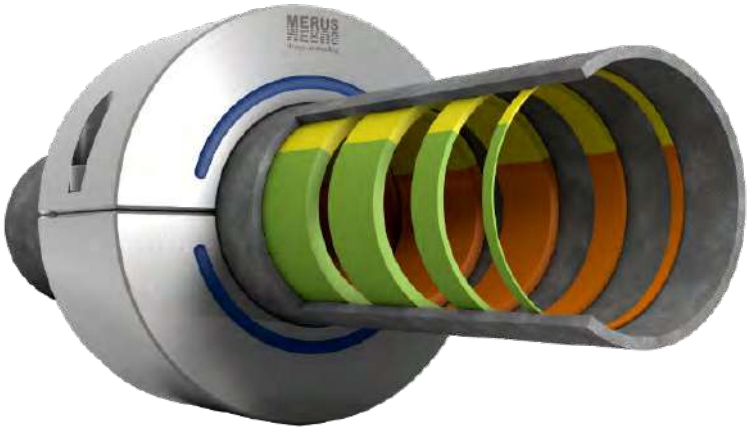


...MERUS is the solution!

The Merus technology, which basically consists of a ring that is installed around lines, gives off molecular overlapping frequencies disturbing hydrocarbons, lime scale, rust, bacteria, algae and barnacles in your fresh or seawater lines and applications. Afterwards, the substances are flushed away, leaving water lines and applications mostly free of harmful build-up and bringing them back to high performance levels.

For hydrocarbon lines and applications where paraffin wax, biofouling and corrosion often cause efficiency drops due to blockage or leakage.
The special thing about Merus is that no chemicals or additional energy are needed. Instead, physics plays a big role.

The Merus ring is made out of two halves of treated alloy. The two halves can easily be installed on the outside of a pipe as a collar. Once the Merus ring is installed, it automatically starts to emit different kinds of oscillations. There is a dedicated oscillation to fight each specific troublesome deposit.



ENVIRONMENTALLY FRIENDLY

REDUCES CO2 EMISSIONS

TIME SAVING

INCREASES LIFESPAN

SAVING OPERATING COSTS

UAE local partner: GREEN MOUNTAINS CLEANING SERVICES ESTABLISHMENT Plot # 30 M-11, Mussafah, P.O. Box 8798 Abu Dhabi, UAE M:
+971 50 - 226 7186 I E: qais@greenmountains.ae I www.merusonline.com , www.merusoilandgas.com