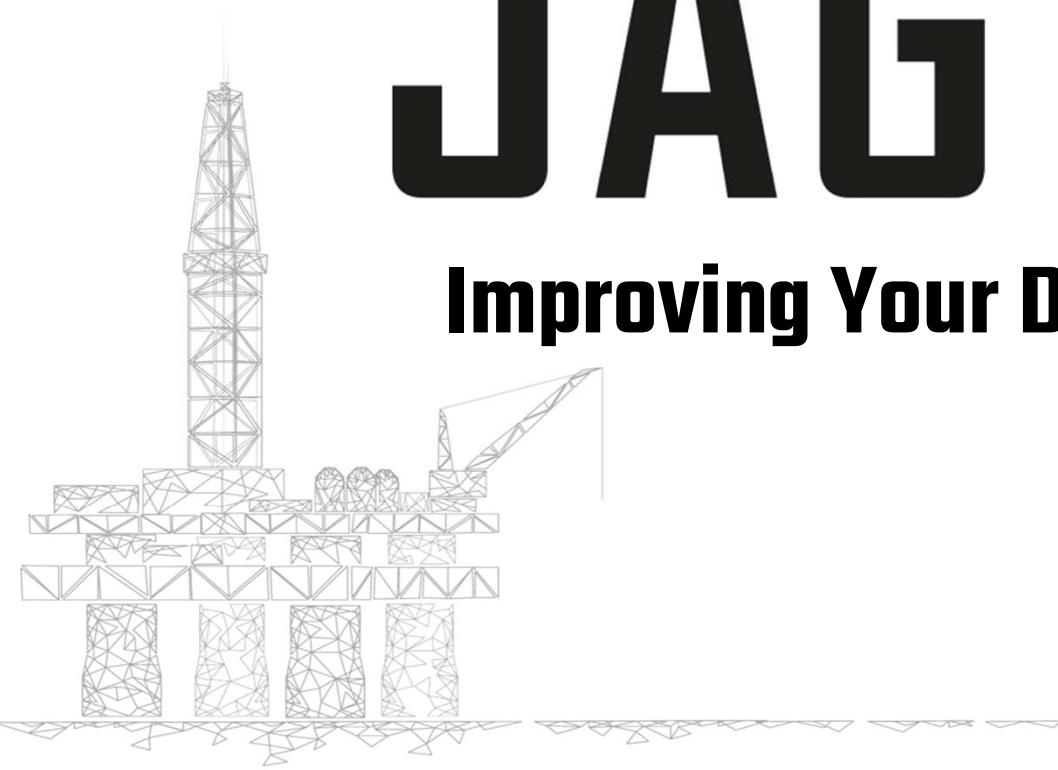# JAGTECH

## Improving Your Drilling Performance

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CHALLENGES TODAY WITH TRADITIONALLY DITCH MAGNETS

- Very low magnetic flux density. Can't overcome MUD hydrodynamic drag forces

- Magnets are often not placed in a defined pattern and/or has to long distance between magnet rods. Reduced magnetic grid.

- Does not cover 100% of flow cross section.(Both block and rod magnets) A lot of metallic particles goes passed and are not captured


Max

Norm

Min
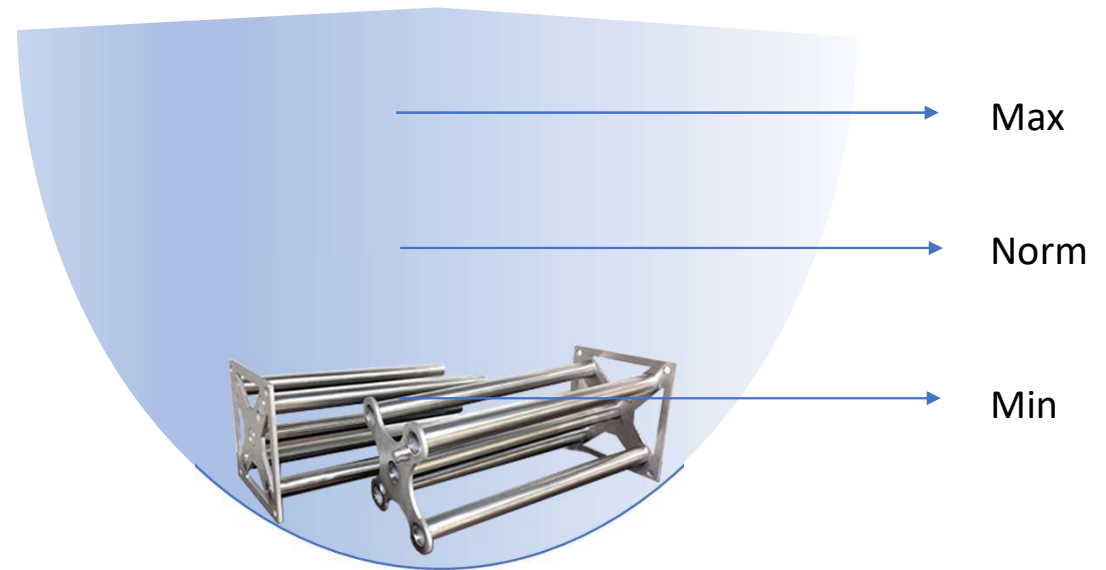
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JAGTECH DUAL MAPS SYSTEM

- Pre Engineered, Custom built to flowline
- Covering 100% of flow section
- Optimal Magnetic Grid
- 12000 Gauss Peek Strenght
- Patented spoilers that breaks up laminar flow and create vortex
- Capture fines down to 0,5 micro
- Integrated Scraper System
- Easy cleaning and handling
- Semi Automatic Cleaning Station for improved HSE Environment
- Proven to be over 5 times more efficient then other flowline magnets.

AutoMAPS is comming. Full Automatic Cleaning. Pilot will be installed at Statfjord B early 2024
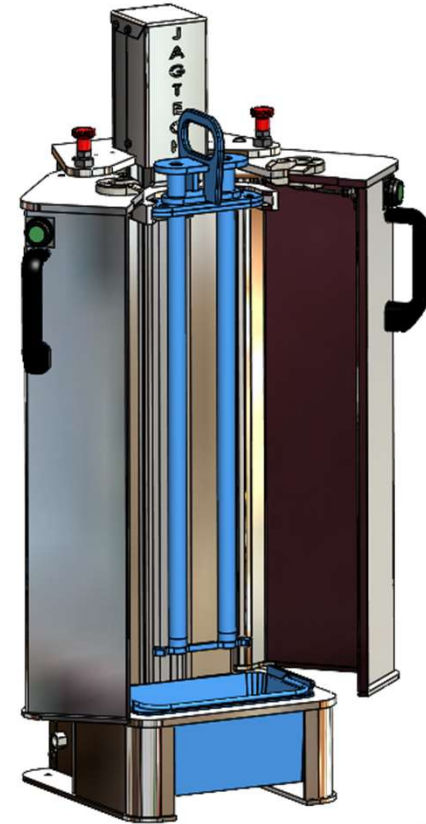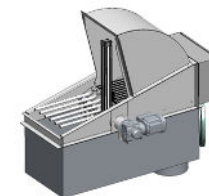
CASE – IVAR AASEN

Customer feedback
- Up to 7 times more efficient than competitor flowline magnet supplier
- Improved data collection
- Reducing error source
- Improved well placement accuracy
- MAPS Improved well cost after installation

SPE-195721-MS

Removal of Magnetic Metallic Contamination – Improved Drilling Fluid Performance

Arild Saasen, University of Stavanger; Jan Egil Pallin and Geir Olav Ånesbug, JAGTECH AS; Alf Magne Lindgren and Gudmund Aaker, Schlumberger Oilfield Services; Mads Rødsjø, AkerBP

Copyright 2019, Society of Petroleum Engineers   https://doi.org/10.2118/215604-MS
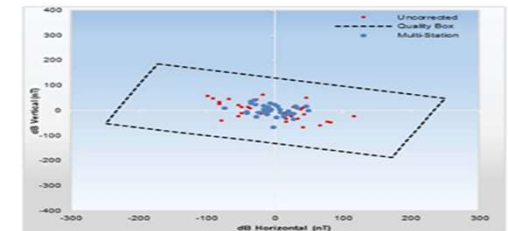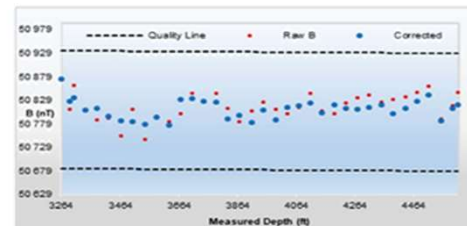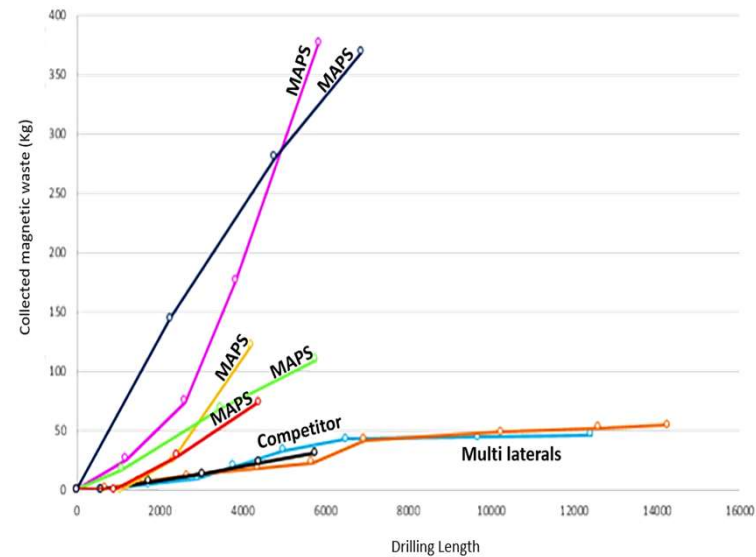
CASE TROLL FIELD DEVELOPMENT

Customer feedback

- \> 10 times more efficient than competitive flowline magnet supplier.

- Average capture each well was around 500 kg

- Before installation of MAPS, client had big problems with metallic particles agglomerate and clogging MWD Turbine

- After installation of **MAPS**, client did not have any MWD motor/turbine issues

- Significantly Reduced full tripping

- Huge Cost saving and reduced emissions
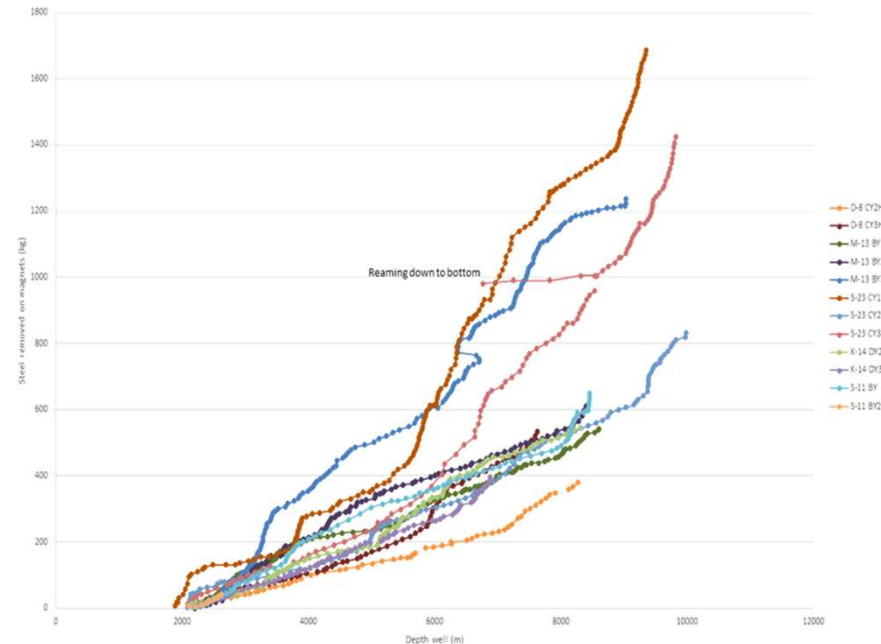
*Baker Huges Successfully drilled horizontal 8 ½" section of **6624m** in <u>one run</u> on Troll Field with an*

*average **ROP of 43.1 m/h**, top 5 highest ROP for a section above 4000m! (Spring 2023)*

"Baker Hughes: Jagtech Magnets has been a contributing factor for this result"

SPE-215604-MS

Field Experience Using Flow Positioned Ditch Magnet Systems - Contribution to Efficient Drilling Paper presented at the SPE Offshore Europe Conference & Exhibition, Aberdeen, Scotland, UK, September 2023. Paper Number: SPE-215604-MS   https://doi.org/10.2118/195721-MS

SPE-216151-MS

New Technologies and Practices to Enable Remote Operations, Increasing Complex Long Multilateral Horizontal Wells and Enriching Project Sustainability and Efficiency: A Real Case from Northern Europe. Adipec 2023   https://dx.doi.org/10.2118/216151-MS
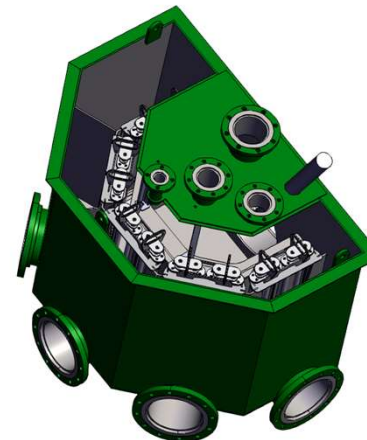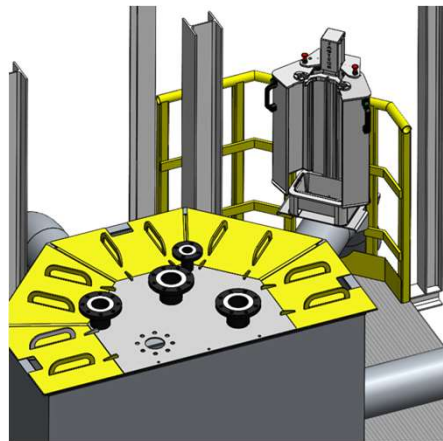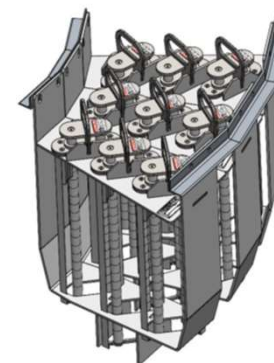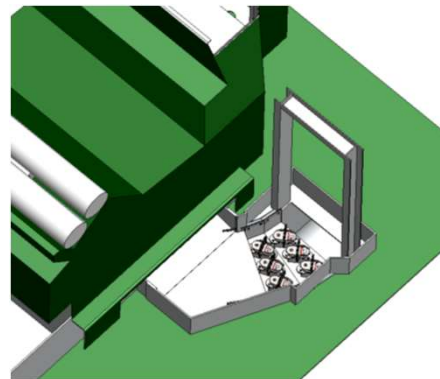
TYPICALLY INSTALATIONS

Deepsea Nordkapp, Aker BP Norway

TO Endurance, Woodside Australia

Peregrino Phase II, Equinor Brazil

Scarabeo 8, AkerBP Norway

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VALUE when moving to a high efficient magnet system

- Improve Directional Drilling Accuracy

- Improve signal/noise Ratio

- Reduce Downhole Tool Failure

- Reduce Wear on HP Pipes, Pistons, Liners

- Improve Your Drilling Performance

- Reduce NPT and Carbon Emissions

Customer feedback: «Metallic contamination in the mud is an error source we dont want there. We know more today that metallic fines in the mud leads to issues. By efficiently remove this error source in our operations we take out a problem than can couse more tripping out that leads to; rig NPT, increase our cost and leaves to more emissions» «The low rental cost for a MAPS system over a 12 month period is coverd after 2 hours non productive time. Cost can easy be placed on the well budget» Source, Meeting Equinor/Jagtech

ASME PAPER Ref: Saasen, A., Poedjono, B., Ånesbug, G.O. and Zachman, N., 2021 "Efficient Removal of Magnetic Contamination from Drilling Fluids: **The Effect on Directional Drilling**" *J. Energy Resources Technology*, **143** (10), paper 103201 https://doi.org/10.1115/1.4049290

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CUSOMER CLIENT AND COMPANY REFERENCES