

# MagTrak HD

## Magnetic resonance service

A unique characteristic of magnetic resonance (MR) data is its ability to differentiate bound fluids from moveable fluids. **MagTrak™ HD magnetic resonance (MR) service** from Baker Hughes also provides industry-standard T2 magnetic resonance logging data to accurately characterize the penetrated formations and estimate reserves while drilling under extreme conditions.

MagTrak HD allows up to 2x the normal drilling rate of penetration (ROP) while operating in the harshest environments. With innovative developments in echo-train acquisition and processing, MagTrak HD provides proper petrophysical interpretation without sacrificing drilling performance.

MagTrak HD is designed specifically to tolerate and environmentally correct for effects in the nuclear magnetic resonance (NMR) signal induced by vibrations under the toughest drilling conditions.

MagTrak HD provides significant rig-time savings by eliminating non-productive time (NPT) resulting from relogging operations and previous ROP limitations.

Sufficient tool power for conductive

muds is ensured with an integrated turbine alternator. The higher power capability of MagTrak HD extends the operating window to include highly conductive muds.

For ease of operation, the MagTrak HD service has pre-programmed acquisition modes that cover a wide range of downhole formation and fluid properties. No complex pre-job planning is normally required, but custom applications are available.

The MagTrak HD service delivers the industry's finest vertical resolution. This enables easy integration of the various LWD measurements to better characterize the reservoir. It is especially useful in complex reservoirs, because the MR porosity measurement is lithology independent.

With no need for a radioactive source, sourceless porosity from MagTrak HD reduces your associated HSE risks.

MagTrak HD capabilities include real-time T2 distributions to facilitate decisions while drilling. The data can be used to identify fluid, rock property changes and pick points for **TesTrak™ formation pressure testing** or **FASTrak™ Prism fluid analysis and sampling**, and helps place the wellbore

### Applications

- Salt saturated muds
- High ROP and dynamic drilling
- Sourceless porosity
- Continuous permeability
- Fluid typing
- Reserve and production estimates

### Benefits

- Extended operations in very conductive muds
- Improved drilling efficiency
- Accuracy under dynamic drilling conditions
- Eliminate source handling and reduce HSE risks
- Avoid water-cut zones
- Input for completion design and reserves estimates
- Estimate reservoir producibility

in the sweet spot of the reservoir.

The standard deliverable is a MR log presentation that includes total and partial porosity, moveable and bound fluid fractions, pore space characterization, pore fluid saturations, and permeability estimation.

All raw data, including echo trains, are

stored downhole in memory and used for post-run analytics, such as high ROP enhancements and lateral motion modeling.

A wide range of geoscience-based answers, including high angle and horizontal (HAHz) models, are available for optimal value extraction from the MR measurements.

Contact your representative today or visit [bakerhughes.com](http://bakerhughes.com) to find out how the MagTrak HD magnetic resonance service can help you more accurately place your well and improve recovery while drilling under the most extreme conditions.

### MagTrak HD – Tool and Measurement Specifications

Tool Size	4¾ in. (121 mm)	6.75 in. (172 mm)	8.25 in. (210 mm)
Borehole size	5¾ to 6¾ in. (146 to 172 mm)	8¾ to 9¾ in. (213 to 251 mm)	10¼ in. (260 mm), 10⅝ in. (270 mm), 12¼ in. (311 mm)
Resonance frequency	350 kHz nominal	500 kHz nominal	460 kHz nominal
Maximum temperature	302°F (150°C)		
Maximum pressure	25,000 psi (1,725 bar)	25,000 psi (1,725 bar)	25,000/30,000 psi (1,725/2,068 bar)
Mud resistivity (Rm)	≥ 0.02 ohm-m		
Sensor aperture	2.6 in. (66 mm)	3.0 in. (77 mm)	4.6 in. (116 mm)
Diameter of investigation	9.8 in. (249 mm)	13.2 in. (335 mm)	18 in. (457 mm)
Inter-echo time	0.6 ms	0.4 ms or 0.6 ms	0.6 ms
Power source	Drilling fluid-driven turbine		
Stabilization requirement	0.125 in. (3.2 mm) under gauge		
Number of echoes	2,000	1,000	1,000

