



MagTraC MWD Ranging

Magnetic Interference Problem

Surveying has been problematic in areas where there is physical interference with existing magnetic sources and/or magnetically responsive sources, such as the presence of neighboring well casings. Without a means to verify sources of magnetic interference, survey uncertainty ellipses can prevent the drilling of closely spaced wells. Typically, current MWD tools do not permit greater than 500 nanoTesla (nT) interference operations [equivalent to a seven inch (17.8 cm) casing at 60 feet (18.3 m)].

MagTraC Solution

Scientific Drilling's MagTraC determines the position of nearby magnetic interference using a sophisticated array of proprietary computer algorithms. MagTraC algorithms are used to enhance and augment proven, standard-setting steering systems: Scientific Drilling's E-Field and Mud Pulse MWD systems using high-accuracy GoldenEye or SuperEye magnetic directional probes. The MagTraC system performs the following:

- Graphically monitors single-shot interference
- Acquires a series of MWD shots when interference is detected
- Identifies and evaluates source(s) of interference

MagTraC Alternative

MagTraC is the low-cost alternative in the high-density drilling environment. With the MagTraC system, no additional equipment, wireline services, or specialized tools are needed. Most importantly, there is no need for lost production or having to shut-in target wells because target well access is not required. Workover operations are eliminated. All these advantages translate into significant cost savings.

MagTraC's Powerful Relative Positioning

MagTraC has the ability to acquire MWD shots, compensate for the Earth's magnetic field, and determine the position of the active well relative to the "target well" (existing cased wellbore). This powerful relative positioning capability is used for:

- Steering during magnetic interference
- Parallel drilling and tracking
- Downhole positioning
- Collision-avoidance or intercept
- Wellpath recovery
- Intercept and preliminary target assessments

ADVANTAGES

MagTraC's enhanced magnetic steering solves the magnetic interference problem with the following troubleshooting capabilities:

- Detects target interference
- Assesses range and direction of interference
- Obtains corrected azimuth for continued drilling in the presence of interference
- Assists in the sidetrack/abandon decision

