

CASE HISTORY

MagTraC MWD RANGING™ SAFELY STEERS IN A DENSELY POPULATED AREA

APPLICATION

Collision Avoidance/Fish Bypass

TECHNOLOGY

MagTraC MWD Ranging™ and EM gyroMWD

LOCATION

Offshore UK

CUSTOMER CHALLENGE

A complex well plan called for a well to be drilled in close proximity to a high-angle fish, followed by a close approach crossing (SF < 1.0) to an offset horizontal well. The planned well path was to pass above the fish, continue drilling and then cross beneath the offset horizontal well, and then drill parallel until the end of the collision risks at the shoe.

The angle of approach was 30° toward the fish and 10° toward the offset well. The distance between the fish and offset well was approximately 100 ft. The TVD separation when crossing under the offset well was planned to be at least 25 ft, based on surveyed positions.

SCIENTIFIC SOLUTION

MagTraC began monitoring (MWD survey every 30 ft) for collision avoidance at 9,800 ft MD (Point A: SF < 1.0) while drilling toward the fish. Magnetic interference was initially detected at 9,876 ft MD. MagTraC ranging determined the fish had an inclination of approximately 70° and a potential collision path with the wellbore so MagTraC monitoring and ranging continued while drilling to ensure sufficient separation until safely drilling past, and divergence from, the fish was confirmed.

Anti-collision monitoring continued from 10,160 ft MD (SF < 1.0) during drilling toward the offset horizontal well. No significant interference was detected from the offset well near the crossing point (10,450 ft MD) until end of collision risks at 11,270 ft MD (Point B: 4.5" liner shoe).

CUSTOMER VALUE

MagTraC allowed successful drilling across multiple close approach intervals. On the approach toward the fish, MagTraC collision avoidance monitoring reported the fish nearly 70ft before MWD failed QC criteria for accepted Azimuth surveys (i.e., early detection). MagTraC precisely determined the relative location of the fish, allowing drilling to proceed without any trips or gyro runs, directly resulting in savings to the customer. All MagTraC MWD Ranging™ and monitoring were completed with minimal interruption to the drilling program.

