

CASE HISTORY

MagTraC MWD RANGING™ RECOVERS FISH AND COMPLETES COMPLEX P&A

APPLICATION

Fish Recovery/P&A

TECHNOLOGY

MagTraC MWD Ranging™ and EM gyroMWD

LOCATION

Canada

CUSTOMER CHALLENGE

In the early stage of planning a sour gas storage program, the customer identified a well that experienced stuck drill pipe during drilling in 1989 and was P&A'd with a fish in 1990. Twenty years later, it was determined that the well may not have satisfactorily isolated a depleted gas interval (planned as the storage zone) from an uphole gas producing interval, and more importantly from the shallower freshwater aquifer. The gas storage plan could not proceed until all critical zones had been isolated, ideally including recovering the fish.

SCIENTIFIC SOLUTION

After drilling down and believing that the top of the fish had been tagged, Scientific Drilling's MagTraC MWD Ranging™ service was used to detect that the top of the fish was 0.3 m from the attempted washover. Several more attempts were made to sidetrack and washover the top of fish. MagTraC was used to determine the location of the fish relative to the failed washover attempts.

It was then decided to stop attempting to washover the top of fish and to intercept the fish at a lower point. MagTraC was then used to enable steering toward the target (fish) and the fish was encountered at a depth of 217 m. Once the fish was successfully intercepted, a series of reaming, milling and fishing operations was executed resulting in the recovery of the fish.

CUSTOMER VALUE

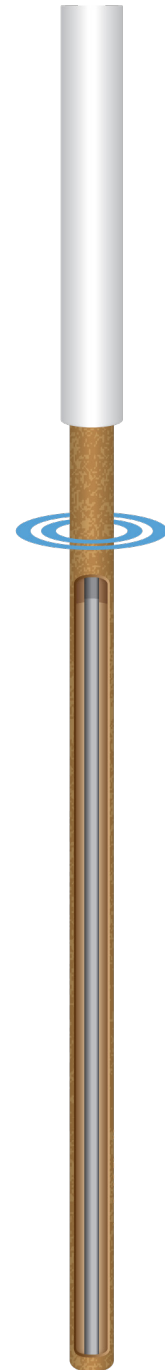
MagTraC MWD Ranging™ service, used in conjunction with Electronic Multi-shot tools and Gyro navigation systems, was used to locate, steer toward/intercept the fish, and ultimately enable the retrieval of the fish. All critical zones were isolated and the well was properly abandoned, enabling the gas storage program to move forward with regulatory approval.

Pulled the 8-5/8" casing; replaced with 13-3/8" to allow larger bit size for washover of the fish.

Drill out, make initial washover attempt (116.5–140 m); MagTraC detects 0.3 m offset

Drill, range, steer to final intercept at 217 m

TD 587 m TVD



24 m from bottom of casing to top of fish (TOF)

TOF at 117 m MD
BOF at 587 m MD

Base of FW at 238 m TVD

Shallow gas zone at 317 m TVD

Planned gas storage approximately 539 m TVD