An offshore operator in Qatar needed to drill float equipment in the aluminum casing of a development well. Previous attempts had resulted in high cost, low ROP, and excessive bit wear. They asked Baker Hughes, a GE company (BHGE), to complete the job.

The BHGE team noted that the operator was spending almost 18 hours to trip in, trip out, and drill the section, with five to nine hours spent on the float equipment alone. The team planned to drill the float and cement in four hours, which would be approximately 50% less time than previous runs. They had also planned to drill the 4,000-ft (1,219 m) section with the same or better ROP as achieved previously.

The BHGE team proposed a 12-¼-in. Kymera™ Mach hybrid drill bit, specifically designed to drill exceptionally hard materials. A BHGE Vanguard™ premium tricone drill bit was used to drillout of the rotating plug.

The Kymera Mach 4 bit drilled the float equipment with an exceptional improvement in ROP of 85% over the offset bits. The drilling time was less than three hours, which was approximately half the time of the previous attempts. The bit remained in the hole to drill the rest of the section in one run and came out of the hole with an excellent dull condition. A clean-out trip was avoided, along with the associated time and costs, which were estimated at $95,000 USD.