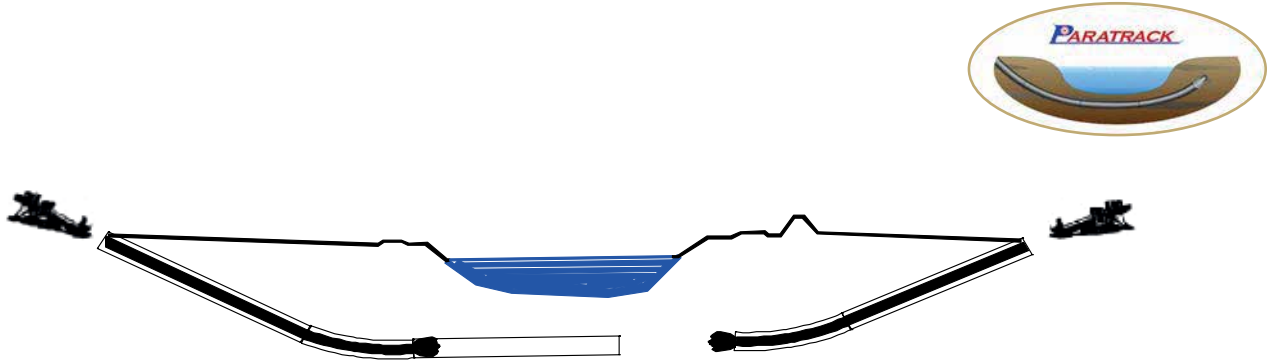


Underground Intersect



In September 2001, Haustadt & Timmermann, a German HDD contractor, used their 300 Ton Mobile Herrinkennect Rig to install a 36" product line, 677 meters in length, 50 meters under the River Maas in southern Holland. Due to the high concentration of gravels on each side, they chose to install a 60" casing through the gravel on each side prior to drilling. The entry side casing was set at 20 meters below entry and 110 meters away from entry. The exit side casing was set 23 meters below exit and 140 meters from exit.

Using the new ParaTrack 2 guidance system, a 10" pilot hole was drilled from entry to a position on the exit tangent and tripped out. A 6" hole was drilled, using a 60 Ton Hutte Rig from the exit side to a planned intersect point at the horizontal section of the crossing. The intersect was made within 5 meters of plan at 425 meters from entry. The original plan was to intersect and follow the 10" entry hole back to the 12" casing, inside the 60" casing at entry. In fact, the 60 Ton rig was unable to push the 3 1/2" drill string all the way out.

The plan changed and after tripping out the 3 1/2" drill string, the original 10" drilling assembly was pushed from the entry point back through the hole to the intersect point at 420 meters. After sidetracking, the 10" hole was drilled using ParaTrack 2 position references, to a point directly above the 6" hole three joints before entering the 12" casing. After drilling into the 6" hole, the string was pushed into the 12" casing and on to the surface at exit. After finishing the connection from entry to exit, normal hole opening operations began.

Both planned intersects on this job highlights the accuracy of ParaTrack guidance and once again proves the feasibility of underground intersect drilling.

Now, ParaTrack Operations gives contractors the confidence, after installing a surface or underground cable All the Way from Entry to Exit, to guide the pilot hole with enough positive control to actually plan for underground intersects.

Call Prime Horizontal for Information about ParaTrack Guidance Services.