

One Shot Cementing System: Efficient Cementing Method for Open-Ended Holes

The Problem:

Our client needed to drill and case a deep highly deviated dewatering hole into an existing mine as the collapse zone of the mine is expanding into the area of the existing dewatering bores. In order to reach the optimum subsurface location for dewatering the well while remaining outside the collapse region, the well will have to be deviated from some distance away. The plan involved drilling the hole at an angle of 76deg from the surface into the existing underground gallery. A key challenge in casing the hole was cementing it in place, with no mud in place, the large volume of cement required to fill the 1,580-meter annulus posed a significant risk to the gallery.



Region: Australia

Customer: Silver City Drilling

Well Type: Dewatering

Conventional cementing methods were not feasible, as the hole lacked a bottom to contain the slurry. To ensure a successful cement job, it was essential to isolate the annulus from the gallery prior to cementing. This required installing a casing packer capable of withstanding the differential pressure generated by the cement slurry at a true vertical depth of 1,161 meters.

Our Solutions:

To overcome the challenges of cementing an open-ended, inclined ventilation hole, IPI Packers proposed the One Shot Cementing System. This innovative solution allowed the client to install and inflate a casing packer prior to cementing, effectively isolating the annulus from the underground gallery. The system also featured integral ports that enabled cement to be pumped into the annulus above the packer.

A key advantage of the One Shot system is its ability to inflate the packer and perform cementing in a single run. The packer setting tool doubles as the cementing conduit, streamlining operations and reducing operational risk.

The Results:

The One Shot Cementing System was successfully installed at a setting depth of 1,570.80 meters. The packer was inflated, and a preliminary volume of 20 barrels of cement was pumped to verify seal integrity. No leakage was detected into the gallery during the test, confirming that the annulus was effectively isolated. Following this, the remaining cement was pumped to complete the job.

The packer successfully held the differential pressure throughout the setting process, resulting in a secure and effective cement job.

