

Preparing the hole for Parallel seismic testing

Borehole requirements:

- Borehole parallel to pile to be tested (+/- 2°).
- Offset from pile 0.5-1.5 m.
- Borehole lined with schedule 40 or similar PVC pipe.
- Inside diameter of pipe at least 2 inch (60mm best).
- Borehole should be at least 2m deeper than estimated borehole.
- Plastic pipe grouted over the whole length with cement slurry injection.
- Plastic pipe sealed at base with strong stopper.
- Removable cap on top of pipe.
- Plastic pipe to be filled with clean water.

To prevent collapse or washouts, bore holes are normally cased with plastic pipe. The space between the outside of the pipe must be backfilled with pea gravel, grout, or drilling mud (?) to ensure that the pipe follows the motions of the adjacent soil exactly. Any voids outside the pipe will allow the pipe to shake in response to vibrations above or below the tool location, and mode conversions between P and S-waves will occur. Bad data is normally caused by bad backfilling in an otherwise properly conducted survey. Put a cap on the bottom of the pipe to keep mud and debris out and to allow pumping the pipe dry if necessary. Avoid connecting pipe segments with anything that projects into the hole (like pop rivets) far enough to interfere with movement of the tool.

Inside diameter of the casing should be >60mm and <80mm. Please contact SGL (0212237983) if you need to use other sizes as it may be possible to reconfigure the down hole probe to use different diameter casing.

The testing normally takes 60 minutes and requires a relatively quiet environment during testing (e.g. no drilling at the time of testing within several hundred meters).