Background

UNEVEN AREA WITH VARYING ELEVATIONS LEADS TO TOE ISSUES

Dyno Nobel is providing trial blasts to a Limestone Quarry in Southern Ontario. The quarry is currently expanding into a new area and is stripping back the earth and blasting the first bench level.

The new area is very uneven with varying elevations over the area of a blast pattern. There have been some occurrences of toe issues and DynoConsult was asked to investigate and come up with some solutions.

Technology Applied

GPS USED TO DETERMINE DRILLING DEPTH

To ensure proper drilling depths of each hole, a high accuracy (10cm) GPS was used. A measuring tape was also used to determine the actual drill depth.

During the pattern layout, the GPS was used to provide accurate drilling depths for each hole of the pattern. The GPS is also used to check the bench and floor elevations, as well as discover any toe issues.

Results

DRILL ACCURACY FOUND TO BE OFF

Upon measuring the depth of each hole prior to loading the shot, it was discovered that the drill accuracy was off. This resulted in many holes short of the subdrill, with some not even to the target floor elevation.

Next Steps

USE OF TOOLS WITH FUTURE TOE ISSUES

Any future toe issues will be investigated and the drill depths will be checked prior to the day of loading in order to achieve correct depths with redrills.

In addition, the GPS will continue to be used during pattern layout and to make sure the bench elevation is on target.