Tight Timetable to Clear Area for Primary Crusher

Project Summary

TIGHT TIMETABLE AND CLOSE PROXIMITY TO COMMUNITIES TAKEN INTO CONSIDERATION

Dyno Nobel has been providing shot service to a hard rock quarry in the Eastern United States with six production benches ranging in depth from 35 to 45 feet. The current hole diameter is 6.5" and patterns vary in the pit due to bench height and geology. TITAN® DIFFERENTIAL ENERGY™ and DigiShot® detonators are being used to improve fragmentation and digging, while controlling vibration in this hard rock geology.

The quarry is planning to relocate their primary crusher onto the floor of level seven, which has not been established yet. The plan is to remove all rock on level seven within 200 feet of the proposed crusher location prior to construction. The timetable is tight and the quarry wants to get down 45 feet as quickly as possible. Due to the quarry's location being in fairly close proximity to two residential communities as well as a couple of single residences near the quarry property line, the Dyno Consult representative felt it wise to take it down in two lifts of 23 feet to reduce vibration levels and the risk of flyrock from a totally confined blast.

Technology Applied

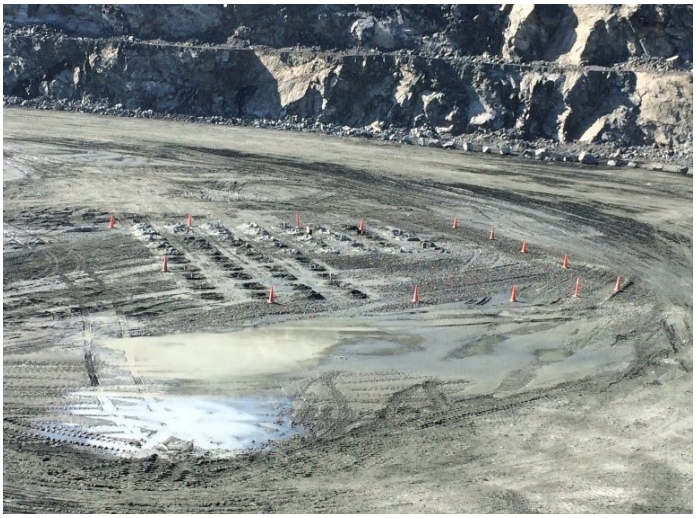
TOOLS AND TECHNOLOGY FOR A SUCCESSFUL BLAST WITH MINIMAL VIBRATION

Using Dyno Nobel's Empirical formulas, the initial sinking blasts were designed using the 6.5" holes on a 9 ft. x 9 ft. pattern at a depth of 23 ft. The blast was loaded with TITAN XL 1000 gassed to a final cup density of 1.0 gm/cc and initiated with DigiShot detonators. Using DigiShot, the DynoConsult representative was able to design the shot properly and minimize the vibration levels.

Results

EASY AND QUICK EXCAVATION

The blast lifted as designed, and fragmentation was excellent, allowing for easy and quick excavation. The



Peak Particle Velocity levels were very low and no complaints resulted.

Next Steps

SECOND SHOT TO COMPLETE 45' BENCH

Now that a few of these blasts have been completed and mucked out, there is now relief for additional blasts to be done on a slightly larger pattern. Once a large enough area is excavated, drilling will begin to take the second 23 ft. cut to achieve the desired 45 ft. bench.

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