

# Product Performance Verified with VOD



## Background

### PRODUCT PERFORMANCE QUESTIONED DUE TO NO<sub>x</sub> GENERATION

A Dyno Nobel customer in Northern Ontario was experiencing some visible NO<sub>x</sub> fumes after blasting in their open pit gold mine.

The customer believed the cause of the NO<sub>x</sub> generation was limited to poor emulsion performance.

## Technology Applied

### VELOCITY OF DETONATION TESTS USED TO DETERMINE PRODUCT PERFORMANCE

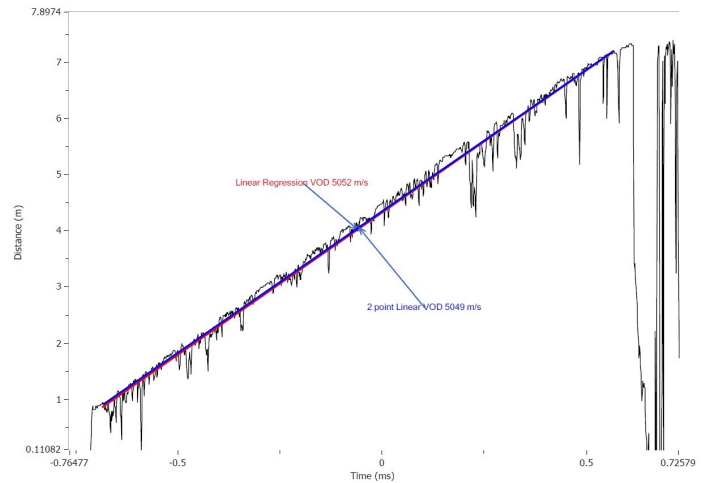
The mine uses DigiShot® Plus Electronic Initiation System and TITAN® Site Mixed Emulsion (SME). The target average density for the blasts is typically 1.1 - 1.2 g/cc.

As part of an investigation into the NO<sub>x</sub> generation Velocity of Detonation (VOD) tests were applied to ongoing blasting to ensure the emulsion was performing correctly.

## Results

### PRODUCT FOUND TO BE PERFORMING AS IT SHOULD

The Velocity of Detonation successfully recorded a total of four blasts. The results can be interpreted from the generated graph in two methods – either the slope between two points, or through linear regression between two points. Comparing both methods adds to the validity of the results.



In this case, the target Velocity of Detonation for TITAN SME at an average density of 1.2 g/cc is 5200 m/s.

The results from the four VOD tests show the product is performing as it should, achieving slightly below 5200 m/s. This can be accounted for with the slightly lower than 1.2 g/cc average density of the blasts.

## Next Steps

### CONTINUED INVESTIGATION NEEDED TO DETERMINE THE CAUSE OF THE NO<sub>x</sub> GENERATION

The group will continue to monitor the performance of the explosives and investigate the NO<sub>x</sub> generation.