

# DIFFERENTIAL ENERGY™ in Truck Shovel Overburden



## Project Summary

### REDUCING NOx WHILE MAINTAINING DIGGING RESULTS

Dyno Nobel typically supplies this Western coal market with 50/50 blends. Holes that are wet are de-watered and loaded with this blend and shots can be slept for several days. The benches above the dragline bench are loaded in this manner.

The overburden in truck/shovel operations is typically a very soft super saturated sand/shale material making it sometimes difficult to shoot without the visible presence of NOx in the post blast fumes.

The speed of loading is also important in this large diameter hole, large pattern location.



## Technology Applied

### DIFFERENTIAL ENERGY TECHNOLOGY

As part of a continuous improvement process, DIFFERENTIAL ENERGY has been introduced in the Truck/Shovel areas of the pit for trials.

Multiple areas have been tested utilizing different densities on the top and bottom of the hole. The holes were then loaded with the same amount of explosives, or less, but due to the lower densities the explosives column height has been increased to improve energy distribution in the blast hole.



## Results

### NOx AND BREAKAGE

To date, results have shown the NOx has been visibly eliminated in the truck/shovel benches where this technology has been applied. Digging results have been the same or have improved and visually, many of the TITAN® shots have shown excellent surface disruption.

## Next Steps

### FURTHER TRIALS

Additional trial shots are scheduled for later this year to see if improvement in cast to final and NOx reduction can be achieved.