Dufferin
Aggregates

A division of Holcim (Canada) Inc.

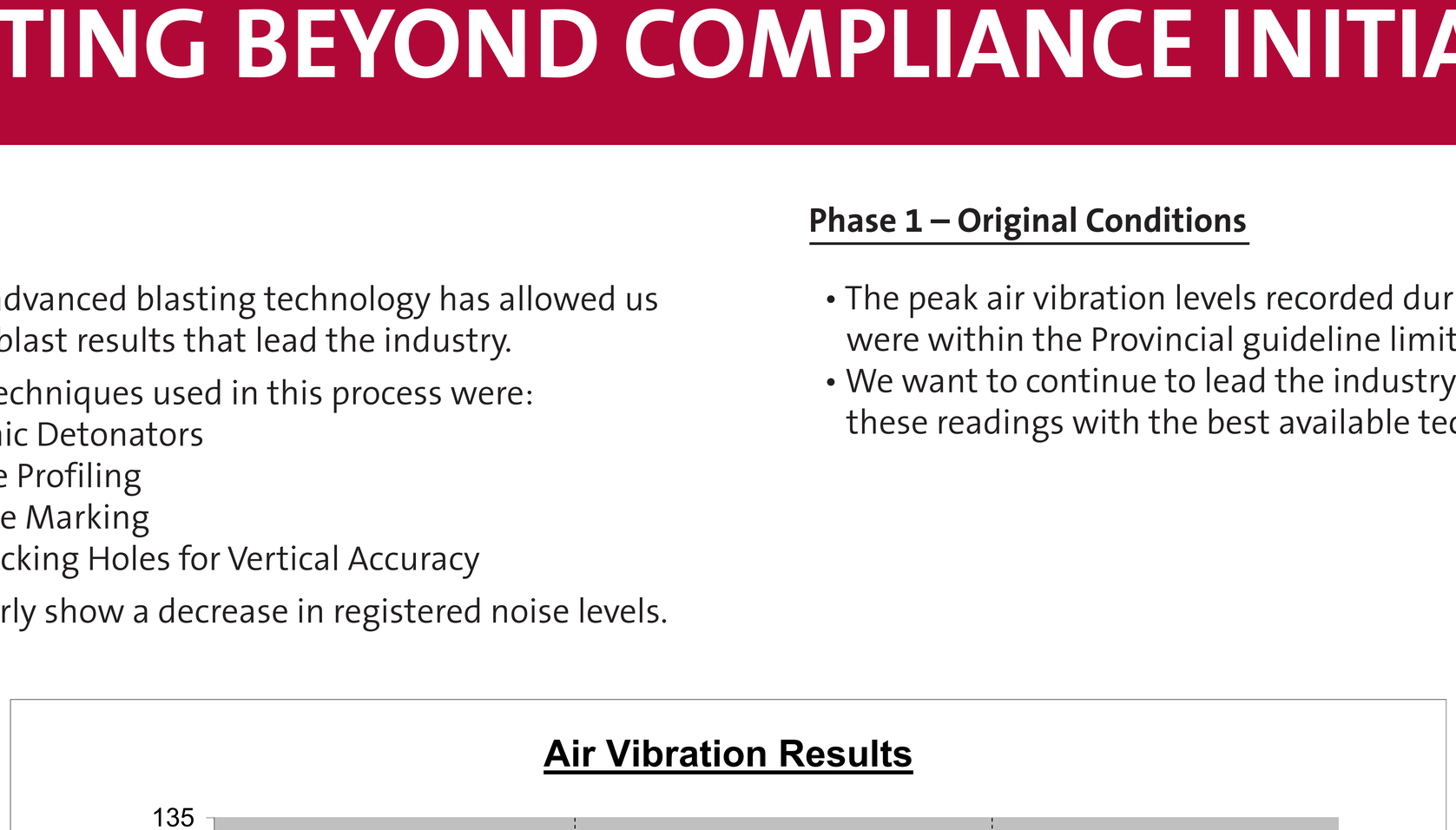
BLASTING BEYOND COMPLIANCE INITIATIVE

Overview

- The use of advanced blasting technology has allowed us to produce blast results that lead the industry.
- Advanced techniques used in this process were:
  - o Electronic Detonators
  - o 3-D Face Profiling
  - o GPS Hole Marking
  - o Bore Tracking Holes for Vertical Accuracy
- Results clearly show a decrease in registered noise levels.

Phase 1 – Original Conditions

- The peak air vibration levels recorded during this period were within the Provincial guideline limit of 128 dBL.
- We want to continue to lead the industry and improve these readings with the best available technology.



Phase 2 – Quick Wins

- As our team prepared for the new technology, small measures were implemented to produce enhanced results.
- The use of ejection plugs and increasing the amount of cover over the explosives contributed to a decrease in the air vibration levels.
- Additional costs were incurred to implement new technology ($0.08/tonne which will result in an additional cost to Dufferin of $148,000 for 2010).

Phase 3 – Implementation Phase

- Implementation of all the advanced blasting techniques allowed the air vibration readings to improve from approximately 116 dB to levels of 113.32 dB, as demonstrated on the graph's Noise Reading Trendline.
- Ground vibration results continue to remain constant through the 3 Phases of this project ranging from 0.8 mm/s to 4.8 mm/s. Recommended Provincial Guideline limits for peak ground vibration level is 12.5 mm/s.

We will continue to utilize new and advanced technologies and produce results that will surpass the Provincial Guideline limits.