

# **MODIFIED SITE RESPONSE BLASTING:THE ROLE OF ROCK MECHANICS IN PERIMETER CONTROL**

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## **ABSTRACT**

This paper is written in response to a request from the UTRC Committee on Perimeter Control Blasting. That Committee is conducting "follow-on" research on the selection of appropriate blasting designs and products for perimeter control of rock excavations. This paper will deal with the rock mechanics principles which affect the outcome of such blasting, and explain to the reader how to apply techniques which will modify the typical site response one would expect for conventional blasting methods. For convenience of reference, and to emphasize the important concept that the application of this technique is site specific, that is it must be custom-designed for each site, the technique is being called "Modified Site Response Blasting".

The application of this method requires an understanding of the important site-specific geological and physical features of a rock mass which determine its behavior under the dynamic stresses induced by blasting. A case history will be used to explain how it is possible to modify the normal site response to conventional blasting so as to preserve certain sculptured features, such as narrow rock walls, monoliths and square benches. These features are usually considered impractical, of not impossible, to preserve.

(Note: I have received a similar invitation for discussion of this subject from the Society of Mining Engineers of AIME. Some of this same information and comment will be presented at the 113th annual meeting of AIME. Please excuse the duplication.)