

BLAST VIBRATION DAMAGE TO WATER SUPPLY WELL WATER QUALITY AND QUANTITY

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ABSTRACT

Possible impacts to the water quality and production capacity of ground water supply wells by blasting is a common cause of complaints for blasting contractors, mining companies, and local regulatory authorities. The major complaints of changes in well water quality include; turbidity, discolored water (red, brown, black, yellow and milky water), and nitrate and/or coliform contamination. The major complaints for changes in well water production capacity include: loss of quantity production, air in water and/or water lines, damage to pump, and damage to well screen or borehole.

The review of research and common causes of these problems indicates that most of these complaints are not related to blasting and can be shown to be related to either environmental factors, poor well construction, or wells whose elements required repair or replacement prior to blasting. The paper reviews each of the complaints cited and provides the probable causes of the observed condition and discusses their relation to blasting.