April 11, 2008

Dear Mine Operator, Contractor, Other Interested Parties:

Personnel from MSHA, Coal, District 2 recently conducted three stakeholder meetings in Western, PA to promote the development and implementation of effective ground control plans that ensure safe working conditions for miners. The meetings focused on the safe control and stability of all highwalls, pits and spoil banks through prudent engineering design. As a result of these meetings, numerous questions concerning spoil bank stability and associated hazards were asked. Therefore, this memo is being sent to all surface mines in District 2 to help clarify the issue.

Part 30 Code of Federal Regulations, Section 77.1000 states: Each operator shall establish and follow a ground control plan for the safe control of all highwalls, pits and spoil banks to be developed after June 30, 1971, which shall be consistent with prudent engineering design and will ensure safe working conditions. The mining methods employed by the operator shall be selected to ensure highwall and spoil bank stability.

Spoil is defined as overburden or other waste material removed during mining. For surface mining, District 2 recommends that spoil piles be at the angle of repose or flatter when miners are exposed to the potential hazards associated with a spoil pile. The angle of repose is defined as the maximum slope at which a heap of any loose or fragmented solid material will stand without sliding or come to rest when poured or dumped in a pile or on a slope. (*U.S. Department of the Interior, Bureau of Mines 1968).* This recommendation is based on the fact that a spoil bank inclined at the angle of repose has a Factor of Safety of 1.0 (Marginal Stability). This implies that there is just enough strength to keep the slope stable. Therefore, when a spoil bank is steeper than the angle of repose the Factor of Safety goes below 1.0, which implies long-term instability. A hazard is defined as a measure of danger to the safety and/or health of a miner(s).

If an operator chooses to exceed the angle of repose of their spoil pile, an operator must clearly state in their Ground Control Plan how they will ensure safe working condition for the miners.

An example of this is when an operator chooses to remove the toe of the spoil pile. When choosing this method of mining, the operator's Ground Control Plan shall address the additional safety precautions associated with this hazard. The operator should clearly show the geometry of the pit, spoil pile, and predicted failure area (Factor of Safety below 1.0). Safety precautions shall be site specific and explain the miner's exposure to the related hazard.

In addition, if the operator chooses to develop an engineered spoil pile (ex. compacted, computed stability-analysis) that is steeper than the angle of repose, all supporting analysis (lab analysis, computer model data, construction specifications and verification) must be incorporated in their Ground Control Plan. When constructing an engineered spoil pile, the material must be placed in controlled lifts and compacted to the density required by the technical design of the pile. The lift thickness used at any given site should be based on the characteristics of the material and the method of compaction (ex. vibratory, non-vibratory, number of passes, and P.S.I. of equipment being used).

Sincerely,

William Ponceroff
District Manager--Coal Mine
Safety & Health District 2