DMM Safety Alert:

Impoundment/Dam Failures

Many of the mineral mines in Virginia utilize ponds/impoundments as a part of their operations. In October 2007, the embankment of a tailings pond failed at a sand operation that uses many of these ponds to control and retain tailings. The failure most likely occurred due to "piping" through a tension crack in the crest of the embankment. A contractor employee working nearby noticed seepage through the embankment and alerted other personnel in the area. Within five minutes, a hole two feet in diameter had developed in the dam approximately two feet below the crest. This steadily increased in size until the crest collapsed about forty-five minutes later leaving a gully twelve to fifteen feet wide (see photo below). Fortunately, no one was injured and there were no off-site effects or damage.

DMM reminds mine operators that impoundments must be constructed, operated and maintained in accordance with 4VAC25-31-500 of the Mineral Mine Reclamation Regulations of Virginia. Specific requirements for small ponds, as described in 4VAC25-31-500.B, include:

- Ponds must be designed and constructed using current, prudent engineering practices to safely perform the intended function.
- Slopes must not be steeper than two-to-one in predominantly clay soils or three-to-one in predominantly sandy soils.
- Temporary pond structures must be able to safely pass the run-off from a fifty-year storm event.
- Adequate protection must be provided for adjacent property owners and ensure public safety.
- Structures must be inspected and maintained to ensure proper functioning.

❖ All water and silt retaining dams must comply with chapter 18.1 of the Mineral Mine Safety Laws Of Virginia.

Impoundment/dam failures can happen at any time and develop very rapidly!!

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