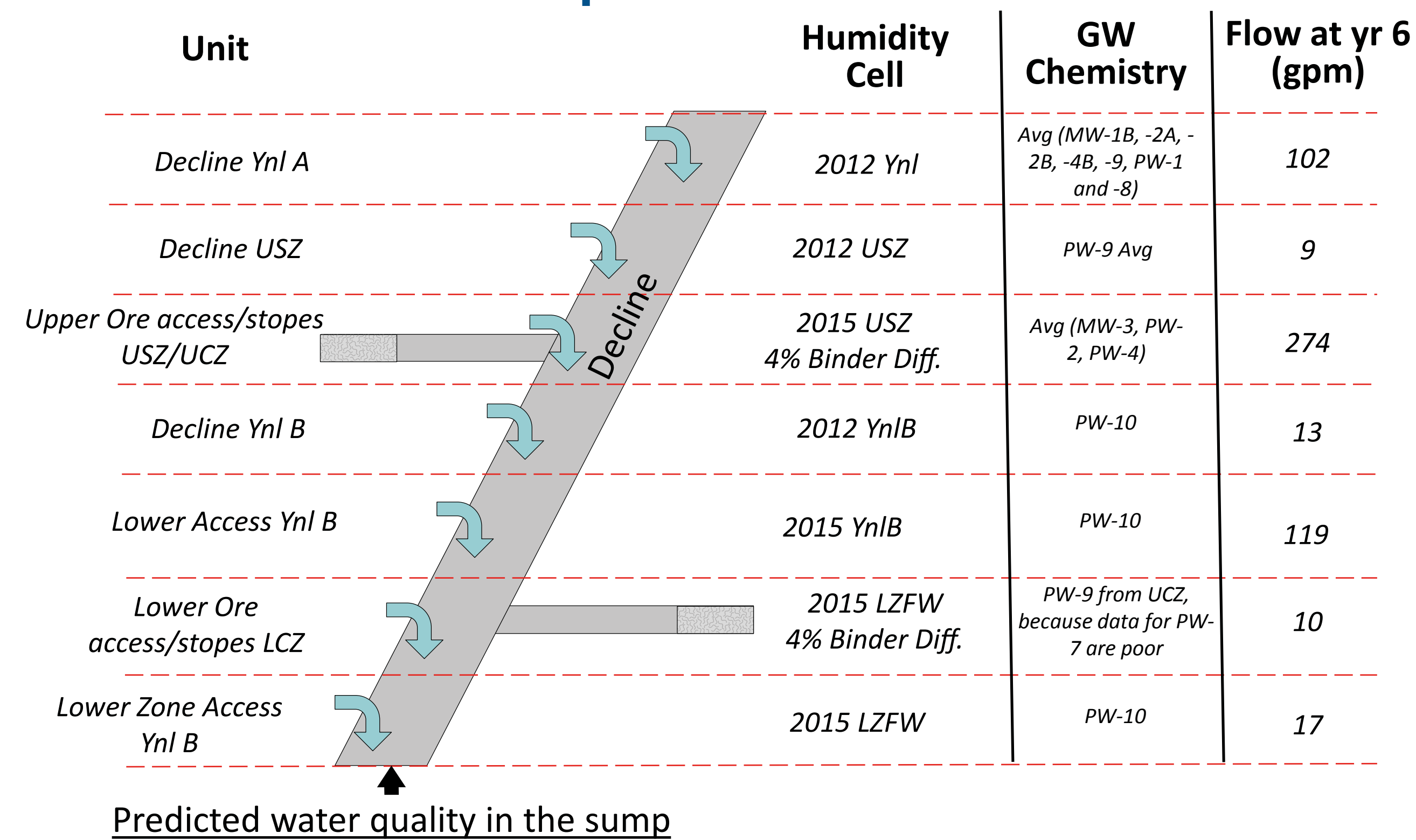
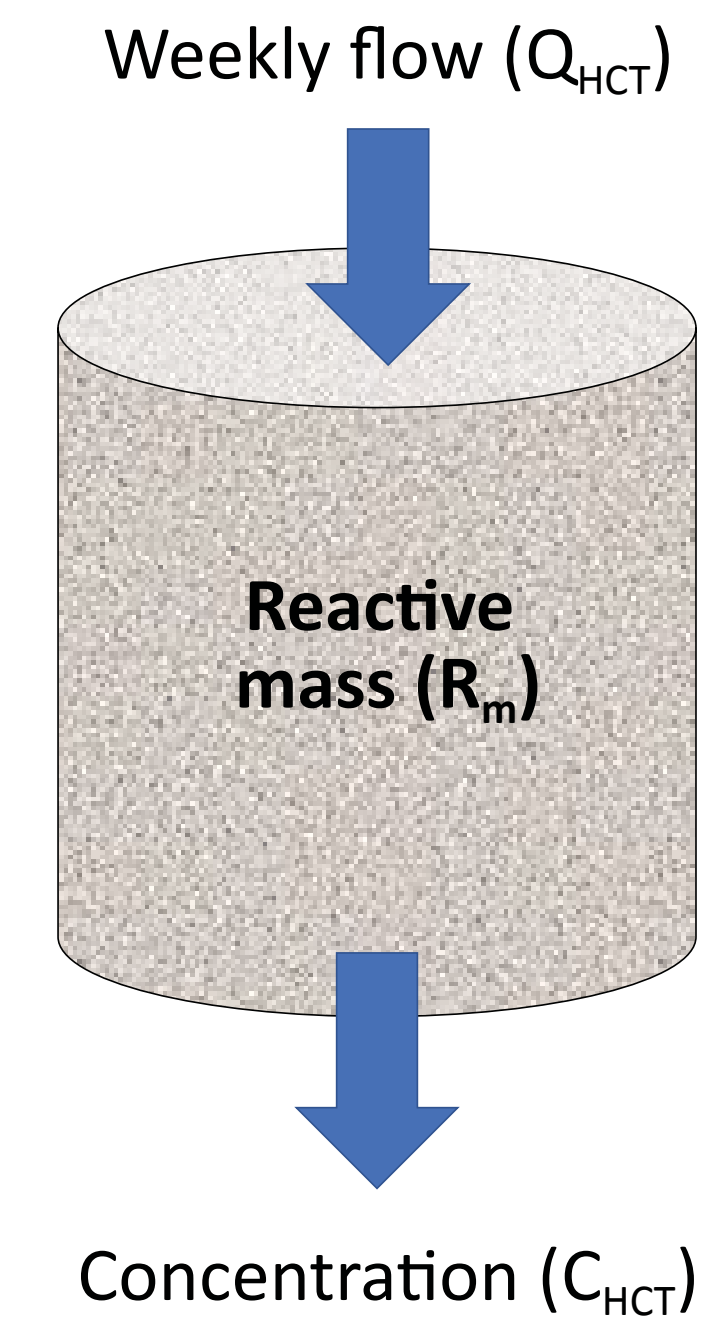


Conceptual Models

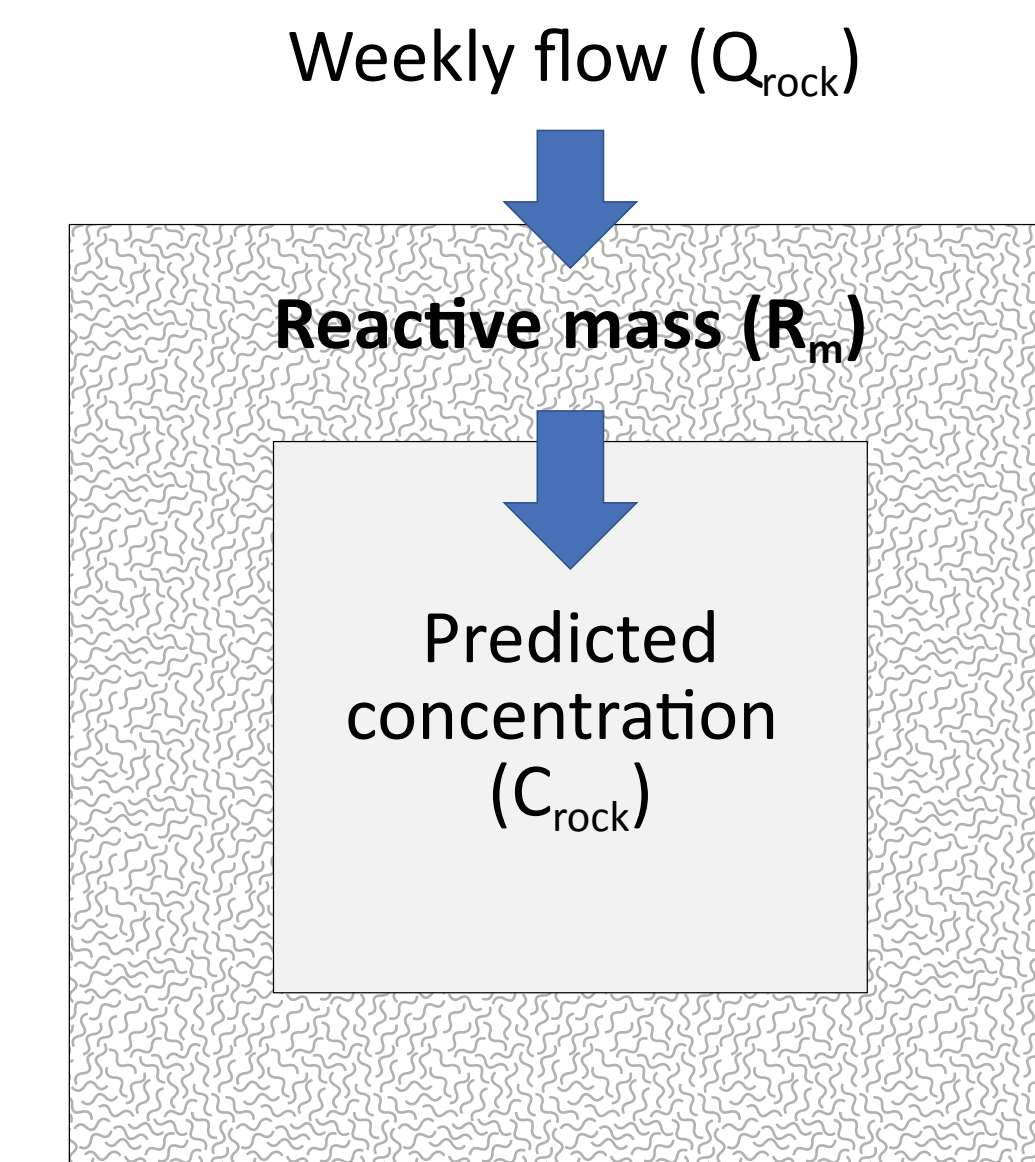
Conceptual Model of the Hydro-stratigraphic Units, with Flow to Mine Sump



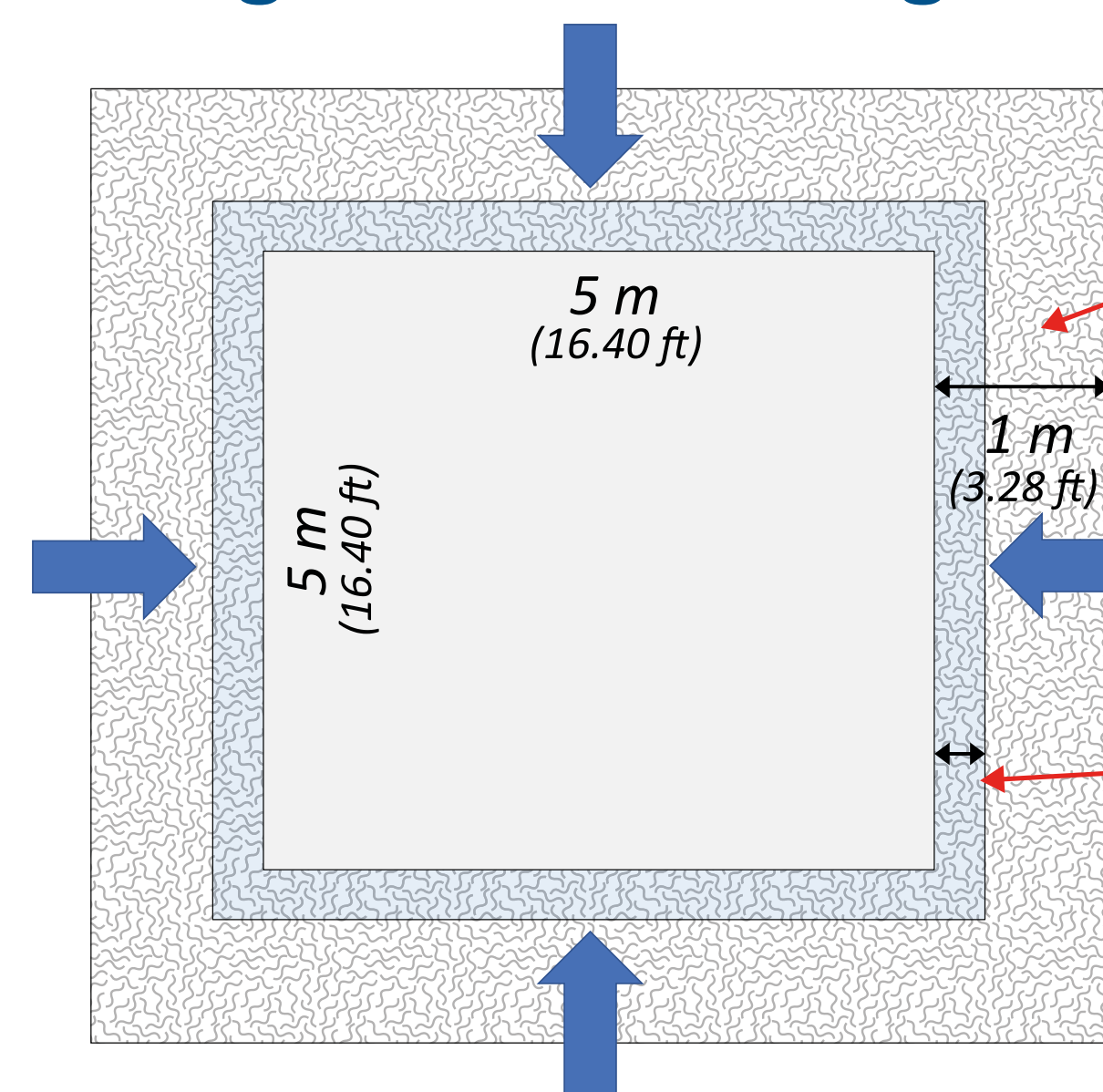
Humidity Cell Test



Wall Rock of Mine



Conceptual Model of Reactive Surface Area in Underground Workings

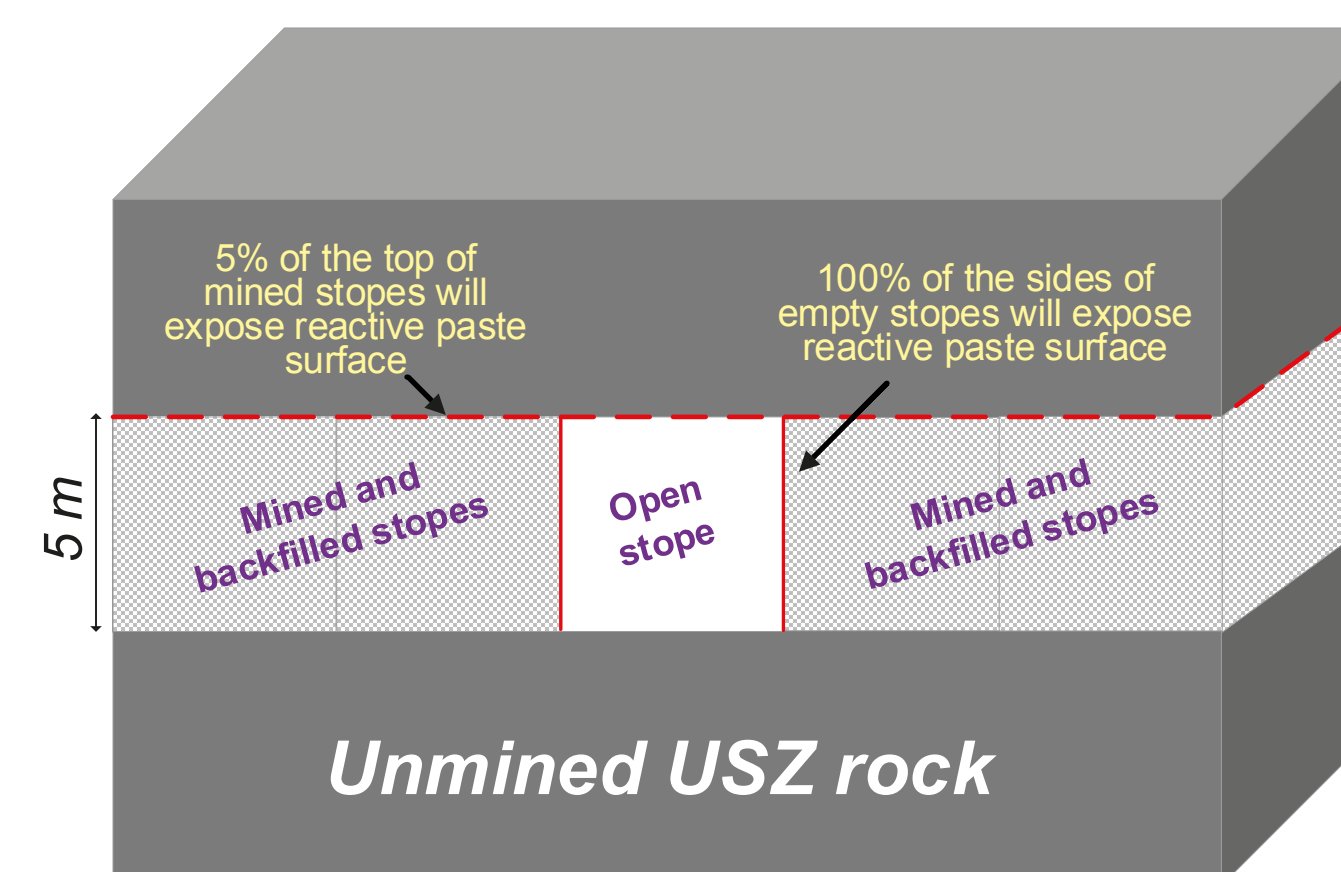


Blast-induced fracture zone
The base case maximum fracture zone is one meter (3.28 feet). Reported values are typically 0.3-1 m (0.98 to 3.28 feet) (Siskind and Fumanti), although typically <0.5 m (<1.64 feet) for low-charge methods (Kelsall et al.).

Oxidized rind (reactive zone)
The rind thickness increases as a function of time and sulfide content (i.e., oxygen consumption). The base case assumes that the rind increases according to sulfide oxidation (sulfate production),
$$2\text{FeS}_2(s) + 7.5\text{O}_2 + 7\text{H}_2\text{O} \leftrightarrow 4\text{SO}_4^{2-} + 2\text{Fe}(\text{OH})_{3(s)} + 8\text{H}^+$$

at a rate of $6 \text{ kg SO}_4^{2-}/\text{m}^2/\text{yr}$.

Revised Base Case



Agency Modified Alternative

