pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF MINING PROGRAMS

Standard Operating Procedure (SOP)[1] for District Mining Operations
Mining Operations Engineering Design Standards – Sediment Ponds
SOP No. BMP-013
10 January 2022

BACKGROUND

The District Mining staff recognized that there were differences between offices relating to typical designs approved for sedimentation ponds. These differences were the result of a variety of factors: 1. Reliance upon established practices derived from information from many years ago that was not consistently transmitted to new staff; 2. Lack of clarity in existing sources; 3. Specific site factors considered for mining operation areas that require deviation from designs for general earth disturbance sites – notably, the potential for AMD and the mining area remains disturbed over a longer time span.

The references for sedimentation ponds designs used by applicants and permit reviewers include the following:

- Engineering Manual for Mining Operations – TGD #563-0300-101 (1999)
- Erosion and Sedimentation Pollution Control Manual – TGD #363-2134-008 (2012)
- NRCS Conservation Practice Standards for Pennsylvania https://efotg.sc.egov.usda.gov/#/state/PA - Section 4.(“Sediment Basin” Code 350 and “Pond” Code 378)

This SOP outlines three practices related to sediment pond design specific to mining operations that have been agreed upon by the DMOs. These program specific practices are not clearly articulated in the above sources and, therefore, are documented here. This purpose of this SOP is to provide clarity and consistency in approving engineering designs in mining permit applications across the Bureau of District Mining Operations.

PROGRAM SPECIFIC PRACTICES

1. Sediment storage - 2000 ft^3 for surface mining

The Department’s Erosion and Sedimentation manual indicates 1000 ft^3 per disturbed acre as the standard to be used for the sediment storage zone. Plans for surface mining should apply a 2000 ft^3 design because mine sites have disturbed area open for much longer time frames than typical earth disturbance activities. Therefore, the extra volume is justified.

[1] Disclaimer: The process and procedures outlined in this SOP are intended to supplement existing requirements. Nothing in the SOP shall affect regulatory requirements. The process, procedures and interpretations herein are not an adjudication or a regulation. There is no intent on the part of the Department to give the rules in this SOP that weight or deference. This document establishes the framework within which the Department will exercise its administrative discretion in the future. The Department reserves the discretion to deviate from this policy statement if circumstances warrant.

This standard may not apply for underground bituminous permits. Instead, 1000 ft^3 can be used because the amount of disturbance is limited to site development, which maximizes vegetative cover on applicable areas, similar to small industrial development.

2. Dewatering zone - 5000 ft^3 with reference to principal spillway

A dewatering zone of 5000 ft^3 per acre (disturbed + undisturbed) draining to the basin should be used. The principal spillway is designated as the top of dewatering zone. In some previous permit applications, the Department has approved ponds with the top of dewatering zone at the emergency spillway elevation.

Dewatering zone reduction processes generally should not be approved. Exceptions can be made if the applicant can robustly justify the need for a smaller capacity sed basin. No reduction in dewatering zone volume should be permitted in special protection watersheds. The reviewer approving any reductions must consider the effectiveness and feasibility of the reduction practices long-term and include these as permit conditions.

3. Any pond designed for a drainage area over 5 acres requires a principal spillway.

Previously, a 20-acre limit may have been used to require a principal spillway. Considering the conditions on a mine site, 5 acres is the standard to be used by the DMOs in application review. Additionally, sediment traps may also require a principal spillway as necessary.

<u>Changes to existing designs</u>

The practices outlined in this SOP are intended to apply from the date of this SOP. If ponds/basins are existing, no changes should be made in accordance with these recommendations unless there is evidence that demonstrates a failure to meet effluent limits.

If the pond is designed to different specifications, but not yet installed, the DMO should determine if a change is necessary and request that the operator reconfigure the design to meet the new specification as a minor permit revision. This evaluation is best done during the renewal review or if an operational (as opposed to administrative) revision is proposed. Any request to a permittee to change a previously approved design should be supported with facts and should consider the cost and inconvenience to the operator.

<u>Professional judgement</u>

Engineers are encouraged to use their professional judgement when approving permit applications. Information in SOPs or an any technical guidance or references are not regulation and should not be cited as a “rule” but used as the default starting point. Each permit reviewer should consider the overall reasonableness of the plans submitted by the applicant and conduct the review primarily with the goal of meeting the overall regulatory requirements. If there is a sound justification for an alternative plan, the reviewer may approve that plan and include any special requirement for the applicant in special conditions.