Policy Memorandum No. 11 to Mine Operators

DATE: March 8, 1995 (Revised)
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TO: All Mine Operators and Lignite Energy Council

FROM: Commissioners Wefald, Hagen and Reinbold

SUBJECT: Sedimentation Pond Design, Construction, Operation and Maintenance

The purpose of this memorandum is to highlight items that need to be considered during the design, construction, operation and maintenance of sedimentation ponds. Many of the items discussed are requirements of North Dakota Administrative Code (NDAC) Chapter 69-05.2-16, while others are recommendations.

1. All mining personnel are reminded that all surface drainage from the disturbed area must be passed through a sedimentation pond before leaving the permit area. NDAC 69-05.2-16-04(1)(a). Sedimentation ponds and other surface water management structures must be constructed **before** any disturbance of the mining area. NDAC 69-05.2-16-09(1)(a). Also, if the Commission grants an exemption from the requirement to pass runoff through a sedimentation pond as allowed by NDAC 69-05.2-16-04(1)(c) for small watersheds, the best management practices specified in the exemption request and as approved by the Commission must be installed before other disturbances occur in the watershed. Examples of best management practices for the small watersheds may include, but are not limited to, sumps, silt fences, small check dams, and bale dikes.

2. In designing and constructing sedimentation ponds, mining personnel should consider allowing for dead storage capacity between the sediment storage volume and the 10 year, 24 hour storm volume or ground water storage volume. The extra storage capacity should reduce the chance of stirring up sediment during dewatering which could result in a violation of effluent limitations.

3. When constructing rock rip-rapped open channel spillways, the rip-rap should be placed in such a manner as to maintain the design spillway crest elevation. The operator must ensure that the required freeboard is established and the spillway is capable of safely discharging the design storm event required by NDAC 69-05.2-16-09(9).

4. The following discussion outlines normal suitable plant growth material removal procedures for different water management structures. Diversion and road ditches can have bottom widths established in either subsoil or spoil material. When the ditch is to be constructed in subsoil, the topsoil should be removed and stockpiled prior to construction. If the ditch is to be deeper than the depth of subsoil, both the topsoil and subsoil should be separately removed and stockpiled prior to construction.

   Topsoil should be stripped up to the permanent pool elevation (sediment storage volume plus any dead water storage volume) of a pond. In addition, other areas upstream from pond areas where sediment deposition may occur must also be stripped of topsoil material.

5. Since NDAC 69-05.2-16-09(19) requires a vegetative cover to stabilize pond embankments with respect to erosion, the Reclamation Division recommends that approximately six inches of subsoil material be placed on pond embankments as topdressing to bring the fill up to final grade. This material should be placed on the entire top width and downstream slope and on the upstream slope down to the principal spillway elevation or to the emergency spillway elevation if no principal spillway exists. This material should enhance the vegetation establishment success rate.

   If an operator wants to spread topsoil on a pond embankment, a written request must be made by the mining company and approved by the Reclamation Division for each specific pond. Approval will be based on subsoil quality, amount of available topsoil, the ability of the mine to recover topsoil material proposed to be used, the amount of topsoil to be used and the proposed length of time that the pond will be in place. The request must address these items.

6. Mine personnel should consider placing straw bale dikes and small sumps in disturbed areas to minimize sediment accumulations in ponds and drainageways between the pond and disturbed area.

7. Mine personnel should inspect pond outlet areas on a regular basis to ensure adequate stabilization measures are in place to control erosion at the outlet and downstream areas as required by NDAC 69-05.2-16-10.

8. Sedimentation pond markers must be in place at all times that clearly mark the permanent pool elevation for the pond to have sufficient capacity to contain the runoff from the 10 year, 24 hour precipitation event as required by NDAC 69-05.2-13-04(8).

9. Sedimentation ponds should be operated only in the manner for which they were designed. Use of sedimentation ponds (designed to contain only surface water runoff) for the retention of groundwater should be avoided whenever possible. An operator would be in violation if a precipitation event occurs when such a pond is being used to treat groundwater and sufficient storage capacity is **not** available to contain the runoff from a 10 year, 24 hour event.

Bruce Hagen Commissioner	Susan E. Wefald President	Leo M. Reinbold Commissioner

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