DRAFT
SEQUENCE OF CONSTRUCTION

For Sliplining of Spillway Conduit
Prepared by MDE Dam Safety Division

1. Contact the local SCD and MD Dept. of Environment Dam Safety Division (phone 410-537-3538) at least 5 days prior to construction.

2. A pre-construction meeting shall be held with the contractor, owner's representative, SCD representative and MDE representative. Contractor must submit details on the slipliner material, grout mix, grouting procedure, and filter diaphragm material at least two weeks prior to start of work.

3. Install dewatering measures around riser inlet to divert flow away from pipe spillway during sliplining and grouting procedure and remove trash rack/anti-vortex structure.

4. Seal all leaking joints and holes in CMP spillway with a flexible, watertight grout, taking care to fill any existing voids. Larger voids in the backfill may be pre-filled with cement grout. Allow grout to cure before installing slipliner.

5. Install slipliner from downstream end assuring sections are completely connected at the joints according to manufacturer's recommendations. It is necessary to place spacers along outside face of slipliner at the 10:00 and 2:00 positions to assure the liner remains centered in the pipe during the grouting procedure.

6. Install concrete bulkheads at the upstream and downstream ends of the pipe to seal in grout, ensuring that the slipliner is centered. The slipliner should extend through the downstream bulkhead by approximately half a foot to allow for shrinkage.

7. Grout from the downstream end using a series of 1"-2" diameter PVC delivery pipes. Extend the first delivery pipe approximately two thirds of the length of void between the pipe and liner, the second approximately halfway, and the third approximately 10 ft or less.

8. Use grout meeting the specifications for US Concrete Products specification for U.S. Grout 715 – Void and Cavity Fill Grout. (Note: Grout should be specified as at least 1000psi, and must be sampled in the field and tested in a lab for strength at 7 and 28 days. Flowable fill as mentioned in the SnapTite brochure is not suitable.) Mix the grout in small batches and use a small grout pump to pump into delivery pipes starting with the longest pipe and working down the pipe toward the outlet end assuring all voids are filled. Note: Depending on size and type of slipliner, grout may be injected through pipe fittings through the slipliner in

accordance with manufacturer's recommendations. Grout pipes may remain inside grout.

9. Obtain samples (cylinders) of grout for laboratory strength testing at 7 and 28 days for each 50 to 100 cubic feet of grout placed.

10. Install filter diaphragm around downstream end of pipe using granular materials approved by the engineer.