Technical Reclamation Memorandum

TRM #5

Date: December 6, 1982

From: William C. Eddins, Director
Division of Reclamation Services

Kentucky Department for Surface Mining Reclamation and Enforcement

Subject: Alternatives to SEDIMOT II

The Department for Surface Mining Reclamation and Enforcement has received reports that some professionals involved in the design of sediment ponds have the impression that the department requires the use of SEDIMOT II in providing a demonstration that a pond will meet the settleable solids effluent limitation. This is not correct. TRM #2 (Design of New Sediment Ponds Under Permanent Program Regulations) recommends that DEPOSITS or SEDIMOT II be used for the design of sediment ponds and also states that the department will accept other appropriate techniques for designing sediment ponds to meet the settleable solids effluent limitation.

In addition to modeling the performance of a sediment pond to remove suspended and settled solids, SEDIMOT II determines the pond inflow sediment load for watersheds disturbed by mining. DEPOSITS models the performance of a sediment pond but requires the user to separately calculate the inflow sediment load. SEDIMOT II also has the capability to evaluate other types of sediment control facilities in addition to sediment ponds.

Professionals who have access to DEPOSITS but not SEDIMOT II may wish to determine a watershed sediment load using manual or programmable calculator methods and input the calculated sediment load into DEPOSITS to perform the pond water and sediment routing. Professionals who do not have access to either DEPOSITS or SEDIMOT II may perform both the watershed sediment load calculations and pond water and sediment routing using manual or programmable calculator methods. For those professionals who prefer to use manual or programmable calculator procedures, the department recommends that appropriate watershed sediment load and pond performance evaluation methods be selected from Applied Hydrology and Sedimentology for Disturbed Areas by Barfield, Warner, and Haan. Applicants should note, however, as stated in TRM #2, that the department intends to evaluate other design procedures in light of the methods employed in DEPOSITS and SEDIMOT II.

Professionals attempting to access the interactive versions of DEPOSITS and SEDIMOT II which are loaded on the University of Kentucky agricultural data center computer have expressed concern over the relatively slow response time for inputting data. This problem generally results from slow transmission rates (300 baud) from remote entry terminals. This problem can be partially alleviated by transmitting at higher baud rates. Users should check with their remote entry equipment supplier concerning the possibility of transmitting at higher baud rates. The University of Kentucky agricultural data center computer (HP 3000) can accept transmission rates up to 1200 baud for full duplex transmission.

Another solution to the data transmission problem is to use batch input for DEPOSITS and SEDIMOT II rather than interactive input. Interactive input for these programs greatly assists the user by prompting for input data, but this assistance results in relatively inefficient data entry due to the large amount of data transmission between the user and the program. Use of batch input for the DEPOSITS and SEDIMOT II programs which are available on the University of Kentucky agricultural data center computer and the University of Kentucky main IBM computer will reduce the time required for data transmission. However, use of batch input requires that input files be created with the system editor prior to executing the program.

Professionals designing sediment ponds may also want to investigate the use of commercial time-share computer facilities. Several time-share companies have inquired about the possibility of obtaining DEPOSITS and SEDIMOT II from the University of Kentucky Department of Agricultural Engineering for their computer facilities. Users should check with commercial facilities to determine if they have obtained the programs or would be willing to add DEPOSITS and SEDIMOT II to their system.