SECTION VI

THORN RUN WATERSHED

6.0 THORN RUN WATERSHED

The Thorn Run watershed, located at the north end of the Irwin syncline basin as shown on Plate 37 is a 1.7 square mile subbasin of the Beaver Run Reservoir. The assimilative capacity of the minimal surface runoff generated within the Thorn Run watershed is not sufficient to override the several AMD discharges introduced along the outcrop line. In 1967, the Municipal Authority of Westmoreland County, operator of the Reservoir, constructed a lime neutralization facility to treat the polluted waters within this subbasin. The Authority intends to upgrade this facility in the future.

A review of the Thorn Run watershed by Pullman Swindell in the spring of 1974 revealed that:

1. In light of then-existing knowledge of the subsurface conditions surrounding the Export and Delmont discharges (i.e., prior to Operation Scarlift Project SL 103-5-101.5), the most voluminous single discharge (TR-1) in the Thorn Run watershed and the Delmont discharge were possibly originating from a common body of water. The other discharges, T2 through T7C on Plate 37 were established as point sources recharged mainly via the ground surface.

   Surface runoff that should have been confined to the Thorn Run watershed was being diverted to the mined out coal seam via openings in the ground surface, the most blatant occurrences being sites 1B and 1C. These were contributing to the Export and Delmont discharges.

In the 1974 review by Pullman Swindell the Municipal Authority was advised to delay finalizing any plans for upgrading their facility until (a) the impact of the abatement plan for the Irwin syncline basin on the general quality and quantity of water requiring treatment at the Thorn Run facility could be better assessed and (b) recommend surface restoration projects were implemented which would increase the surface runoff within Thorn Run.

6.1 EXISTING TREATMENT FACILITY

The treatment facility operated by the Municipal Authority is simply a holding pond which provides solids settling, principally the iron, with neutralization using hydrated lime via a mechanical feeder. The combined runoff and acid mine drainage exhibits pH values from 2 to 4. A weir at the middle of the dam crest allows a varying amount of upper, clear but untreated water to overflow. The pH of the combined treated water and untreated overflow ranges from 8 to 12. Precipitation of any sludge that is generated occurs as the water meanders downstream (500 yards) to the Beaver Run Reservoir.

6.2 STATUS OF SITES

As a result of surface mining operations recently begun near sites T2, T3, T5, T6, T7, T7B and VC the scope of the suggested abatement work for these sources may change and thus they are of low priority. Site T4 reclamation work involves excessive costs. Sites for which remedial work which has been designed in house by the Department and let for construction are as follows:

Project Area 1B - This project was designated as operation Scarlift Project SL 103-5-2 and was constructed between June and November of 1976 at a cost of $27,845. A subsided area located in a natural drainage course captured surface runoff which flowed into the Export mine. Additionally, exposed ends of two entries at a topographic low captured surface runoff from approximately 50 acres that should otherwise flow into Thorn Run but was blocked by adjacent coal refuse waste piles. The project encompassed sealing of these mine entries and subsidence area, regrading the entry area and restoring a surface drainage channel.

Project Area 1C - Remedial work consists of sealing a cave-in located along a stream channel with a drainage area of approximately 80 acres. Channel restoration is also included. The location of the sinkhole is estimated to be on the Export side of the Export-Delmont mine barrier pillar. This project was begun in January, 1977 as operation Scarlift Project SL 103-5-1 at a contracted price of $44,972.

The most significant discharge is TR-1, an artesian type outfall flowing from two old mine headings at elevation 1140'±. It has an average flow of approximately 50,000 gallons per day and discharges 400 pounds of acid and 43 pound of iron per day on the average. The only detailed mine maps of this particular area are WPA maps which show a mine boundary of the Irwin Gas and Coal Company mine that separates it from the Delmont mine. It is possible that the pipes provide an outlet for water that accumulates updip of this barrier in this smaller mine which originates as overburden and outcrop area recharge. However it has been stated in Section 3.2.1 that it is considered best to conduct exploratory excavation to ascertain the true source of this discharge. The estimated cost to conduct this exploratory excavation and redirect this discharge into the Delmont mine is $100,000.

6.3 RECOMMENDATIONS

Exploratory excavation beginning at the pipe discharges is recommended to breach a portion of the barrier near the pipes to allow the water to drain into the Delmont mine, which could easily be accommodated via the project recommended for the Delmont discharge. As a result the largest discharge in the Thorn Run watershed would be eliminated. Pending the effects of the stripping operations at the remaining discharges, the Municipal Authority of Westmoreland County should postpone improvement plans.