

SUMMARY OF RECOMMENDATIONS

Complete recommendations for abatement of acid mine drainage pollution for each individual source is included in Part II of the report. The major contributors of acid mine drainage pollution within the East Branch Clarion River Watershed are old strip-mines. The stripmines are all located on private property which will require agreements with the property owners to implement the recommended abatement procedures. The recommended procedures to reduce the flow of acid mine drainage from these sources of pollution are generally:

1. Remove and bury acidic coal mine waste.
2. Improve drainage in the strip-mined areas, either by terrace or contour grading, or a combination of both.
3. Soil treatment of the areas affected.
4. Revegetation of the areas affected.

Two deep mines in the watershed, the H. C. Quinn Mines (Area 16) in the Yonkers Run Sub-Basin and the Gum Boot Mines (Area 43) in the Gum Boot Run Sub-Basin are significant sources of pollution.

At these two locations double bulkhead grout seals with a grout curtain, extending each side of the mine entry, are recommended.

In the area of the old Bucktail Mines (Area 21) in the Johnson Run Sub-Basin, considerable seepage was found to occur which is believed to be derived from the deep mine workings. To abate this pollution, it is recommended to trench along the contact between the strip-mine highwall and the spoil of Area 11 to the elevation of the mine workings and backfill with impervious material.

Recommendations as contained in this report are aimed at providing permanent abatement. It is estimated the abatement recommendations as presented would result in reducing the average daily acid discharge into the East Branch Clarion River by approximately 83 percent.

Sources of pollution located within the Swamp Creek Sub-Basin are responsible for approximately 49 percent of the total acid pollution of the East Branch Clarion River Watershed. It is estimated this pollution can be reduced some 41 percent by the abatement methods presented. The Department of Mines and Mineral Industries authorized

the development of detailed plans for the recommended abatement methods for these sources. These plans have been presented to the Department and negotiations have been initiated with the land owners to implement abatement from these sources. These have been designated as Quick Start projects.

Quick Start Projects

Area 1	Area 8
Area 2	Area 9
Area 3	Area 11 (part)
Area 4	Area 12
Area 5	Area 14
Area 6	Area 28
Area 7	Area 29

Johnson Run Sub-Basin is the second largest contributor of acid mine drainage pollution in the East Branch Clarion River Watershed. Thirteen individual sources of pollution are located in this sub-basin and it will take several years before pollution can be abated from these sources. Consideration should be given to the erection of a temporary mine drainage treatment plant on Johnson Run. It is possible the old Ketner Dam on Johnson Run could be used as a settling basin for precipitates formed during treatment. To accomplish this a new gate would have to be installed as the present owner, Texas Gulf Sulphur Company, had the gate removed.

Abatement of acid mine drainage from sources within the East Branch Clarion River Watershed would significantly improve the water quality of the East Branch Clarion River and the East Branch Reservoir. It is expected the average daily acid load could be reduced some 4, 000 lbs. by implementation of the recommended abatement measures.

It is recommended that following completion of the abatement procedures herein recommended, a program of stream sampling and testing be conducted for a period of at least one year to verify the degree of abatement realized and to determine if further abatement measures are justified.