INTRODUCTION

On May 16, 1967, Pennsylvania voters approved a $500 million bond issue, $200 million of which is devoted to the elimination of stream pollution from abandoned coal mines, air pollution from burning coal refuse banks, and alleviation of subsidence from abandoned mining operations. The portion of the program related to mining is administered by the Department of Mines and Mineral Industries under this "Land and Water Conservation and Reclamation Act" (Act No. 443). This report encompasses a study of the Alder Run Watershed, in Clearfield County, a tributary of the West Branch Susquehanna River. The study was wholly financed under Act 443.

Pollution of the West Branch Susquehanna River is intimately associated with pollution of its many tributaries, including Alder Run. This pollution has been documented since 1949 by extensive water sampling. Data prior to that time is extremely scarce; but available information indicates mine drainage has severely affected the West Branch and many of its tributaries for decades.

The principal source of mine drainage pollution in the basin is abandoned deep mines. Since World War II, when surface mining greatly accelerated, there has been a substantial increase in the pollution load to the basin's waterways. This increase, although difficult to document in terms of discharges from surface mines, considerably increased water flow to the abandoned deep mines, thereby increasing pollution outflow from the deep mines.

Alder Run, the subject of this study, was known to be polluted as far back as public records of chemical analyses of the stream are available -- approximately 21 years.

The West Branch maintains a tenuous alkalinity-acidity balance downstream from its confluence with Bald Eagle Creek. This balance can be adversely disrupted by disproportionate flows from the "acid" watersheds due to uneven precipitation or snow melting. When this occurs, aquatic life in the river is affected and fish kills occur.

An encouraging report by the State Health Department indicates the quality of the West Branch has been improving to the extent that aquatic life is now appearing in portions of the river previously biologically barren. The Department's chemical analyses confirm this trend. The improvement is probably due principally to the requirement since 1964 for complete restoration of surface mines, and for neutralization of acid drainage from active deep and surface mines since 1966. Some pre-1964 surface mines which were poorly restored have also been re-affected and therefore required to be completely restored. In this manner, some old pollution sources are being abated.

A mine drainage pollution study conducted by the Federal Water Quality Administration (United States Department of the Interior) for the entire Susquehanna River Basin from 1962 to 1968 indicates at least 810 miles of the West Branch and its tributaries are significantly degraded by mine drainage. It therefore becomes obvious that, although control of active mining is apparently having a favorable impact on the quality of the basin's water resources, this trend would be greatly accelerated by a

concerted effort to reduce the pollution load from abandoned mines. This study is one step toward that goal .

PURPOSE

The purpose of this study was to:

(1) Determine the extent and severity of mine drainage pollution of Alder Run and its tributaries.

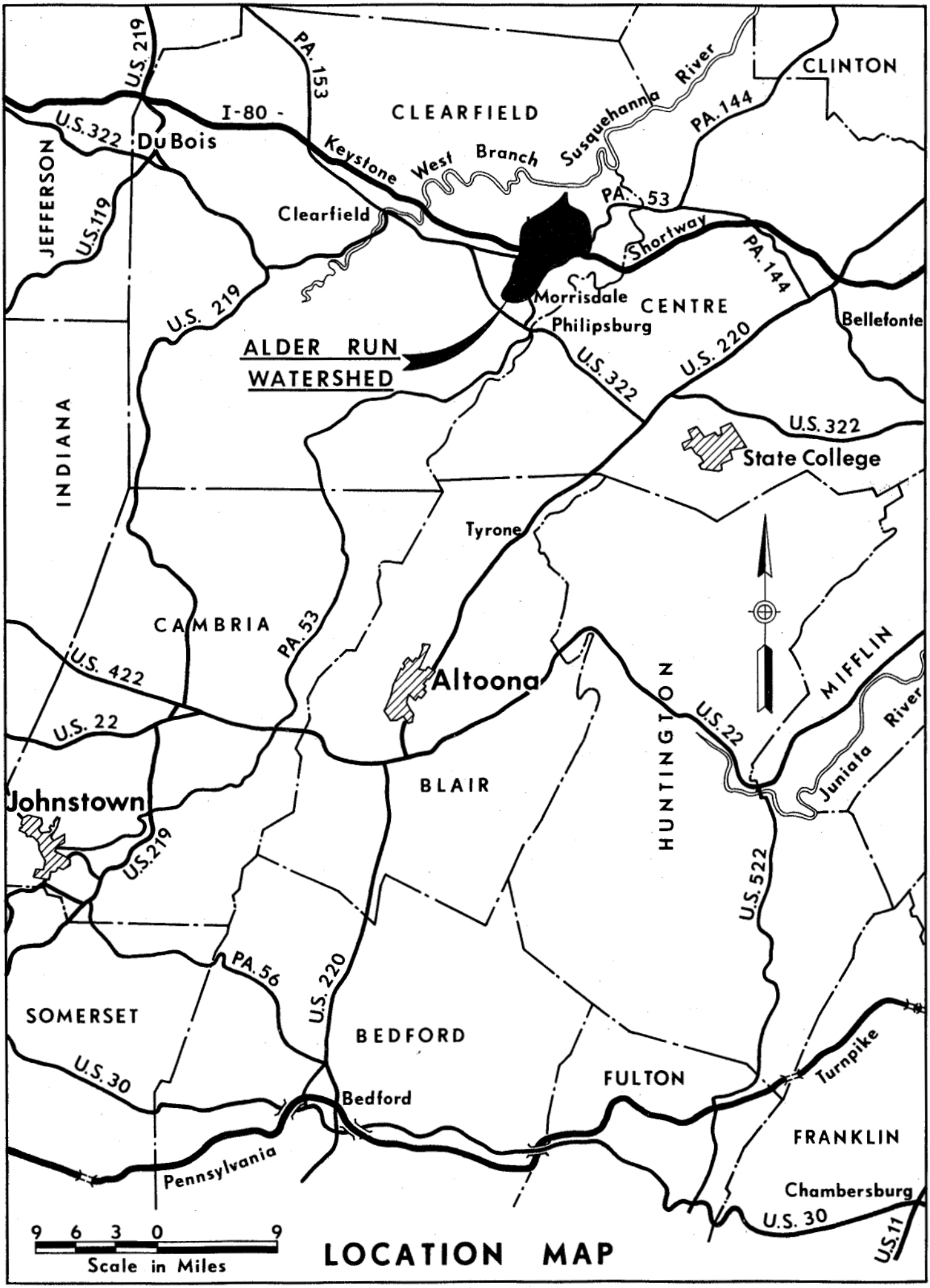
(2) Conduct a pollution source inventory by locating and measuring the specific discharges associated with past and present mining.

(3) Determine the impact of Alder Run on the water quality of the West Branch Susquehanna River.

(4) Develop remedial measures for each significant source of pollution which would reduce or eliminate the pollution.

(5) Set forth the costs of the remedial measures, including a ranking of the measures according to recommended priority.

(6) Develop and recommend an "abatement plan" for the watershed.


U.S. 219
PA. 153
CLEARFIELD
CLINTON
Susquehanna River
PA. 144
I-80
U.S. 322
DuBois
Keystone
West Branch
JEFFERSON
U.S. 119
Clearfield
PA. 53
Shortway
PA. 144
U.S. 219
Morrisdale
CENTRE
Philipsburg
Bellefonte
ALDER RUN
WATERSHED
U.S. 322
U.S. 220
U.S. 322
State College
INDIANA
Tyrone
CAMBRIA
PA. 53
U.S. 422
Altoona
MIFFLIN
U.S. 22
HUNTINGTON
U.S. 22
Juniata River
BLAIR
Johnstown
U.S. 219
U.S. 522
PA. 56
U.S. 220
SOMERSET
BEDFORD
U.S. 30
FULTON
Turnpike
Bedford
FRANKLIN
Pennsylvania
Chambersburg
U.S. 30
U.S. 11
9 6 3 0 9
Scale in Miles
LOCATION MAP