UNDERGROUND MOVEMENT OF WATER

The types and complexity of mining in the watershed area (Mining History Section) as well as the hydrologic conditions (Hydrology Section) resulting in the formation of large underground mine pools has been given. Rocks above coal seams before mining are usually saturated with water. The mining of coal leaves the overlying rocks fractured permitting the flow of water into the numerous mine gangways and tunnels with the effect of lowering the local water table. Aquifers may also be disturbed creating significant sources of water in the mines. The formation of mine pools originally involved only one particular mine. However, as secondary mining and bootlegging operations continued barrier pillars which separated mines and isolated mine pools were breached. This usually resulted in the inundation of nearby mines creating interconnections for the passage of large volumes of polluted water between mine pools. The two types of barrier pillars used in past mining operations were primary and secondary barrier pillars. The primary barrier pillars separate individual mines while secondary barrier pillars usually separate mine workings within the mines.

The mine pool map of Figure 16, p. 73, a result of these processes, indicates the underground movement of water in the Mahanoy Creek Watershed. As water in these pools rise to the level of the numerous mine openings in the area, discharges form which enter and pollute the nearby streams. Thirty-three mine pools underlie or contribute polluted mine waters to the watershed. These mine opols result in a total of thirty-one discharges in the area (see Figure 16). Elevations of the pools are given in Table 7. In addition

TABLE 7

MINE POOL ELEVATIONS

MINE NO.	NAME OF MINE	ALTITUDE OF MINE WATER POOL (El.)
1	Vulcan – Buck Mountain	1249
2	Primrose	1095
3	Park No. 1 & 2	1250
4	Tunnel Ridge	1121
5	Mahanoy City	1095

TABLE 7 (Continued)

MINE NO.	NAME OF MINE	ALTITUDE OF MINE WATER POOL (El.)
6	North Mahanoy	1095
7	Knickerbocker	1095
8	Boston Run	1121
9	St. Nicholas	1121
10	Maple Hill	1095
11	Shenandoah City	1095
12	Kehley Run	1087
13	Kohinoor	1087
14	West Shenandoah	1087
15	Gilberton	1116
16	Lawrence	1116
17	East Bear Ridge	1116
18	William Penn	1025
19	Weston (Packer Nos. 2, 3, & 4)	1025
20	West Bear Ridge	1116
21	Packer No. 5	961
22	Hammond	1006
23	Raven Run	1254
24	Continental	1028
25	Bast	901
26	Girard	1008
27	Preston No. 3	958
28	Tunnel	879
29	Germantown	901
30	Centralia	1001
31	Potts	986
32	Locust Gap	755
33	North Franklin	866

to these large mine pools, at least two additional small (possibly isolated) mine pools exist. The first is the Lavelle Mine Pool which is the source of the Mowry Discharge (Site 53). This small pool is probably an extension of the Locust Gap Mine Pool and is referred to in this report as part of this larger pool. The Lost Creek Discharge (Site 21), located much higher than the nearby Weston Mine Pool is probably draining a local mine pool which drains into the larger Weston Mine Pool.

The arrows in Figure 16, p. 73, indicate the flow direction of water in the mine pools. Several mine pools such as the Girard or Vulcan-Buck Mountain Mine Pools are isolated from the majority of mine pools. However, water entering the Park No. 1 and 2 Mine Pool travels for great distances through a complicated network of 6 interconnected mine pools before emerging at the Packer Discharges east of Girardville. This system of underground movement of water negates efforts of simply backfilling one small area to eliminate a mine discharge. The increase in area reclaimed often results in higher costs without necessarily producing a significant reduction of flow.

Drainage tunnels also may be constructed to simplify drainage of several mines. The Centralia Tunnel drains two large mine pools, the Continental and Centralia Mine Pools, which are isolated from each other (note difference in mine pool levels). Mine water from areas outside the watershed also drain into the Centralia Mine Pool. Complicated abatement plans for the watershed are two drainage tunnels which drain the Locust Gap Mine Pool underlying the Shamokin Watershed to the north. The two tunnels emerge in the Mahanoy Creek Watershed as the Doutyville Tunnel (Site 56) and Helfenstein Tunnel (Site 54) Discharges.

COMMONWEALTH OF PENNSYLVANIA

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