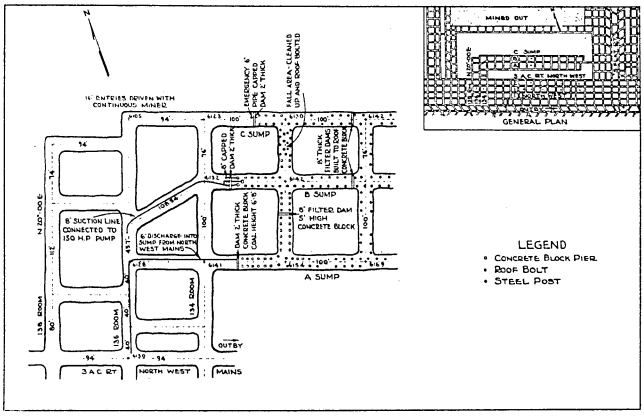
CASE HISTORY NO. 1b-1

ACCEPTABLE UNDERGROUND WATER DRAINAGE



PLAN VIEW SHOWING TYPICAL SUMP ENTRY FOR WATER STORAGE

MINING METHOD: Mechanized underground mining.

LOCATION: Western Pennsylvania, Pittsburgh Seam Coal.

RESULT ACHIEVED: Water is not allowed to accumulate in working areas, thereby keeping the water from prolonged contact with acid-forming material in the mine. Storage sumps and regulated pumping equalize the mine water discharge over a 24-hour period.

DESCRIPTION: Gathering or main sumps are provided in the mine by driving separate sump entries or by digging up the bottom. This practice does not permit water to accumulate in low gob areas where acid-producing surface areas would be exposed to the water. Pipes instead of ditches are provided to conduct the water by gravity to these sumps wherever possible. These large sumps provide detention and prevent surges of mine water from entering a stream. By regulated pumping the discharges are equalized over a 24-hour period.