

## ABATEMENT MEASURES & COSTS

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The ultimate pollution discharge points are indicated under "Source Description" in the following table. These are the points where attention should be devoted to abate pollution. Each known source is given, its pollution load, proposed method of abatement, and the estimated cost of abatement.

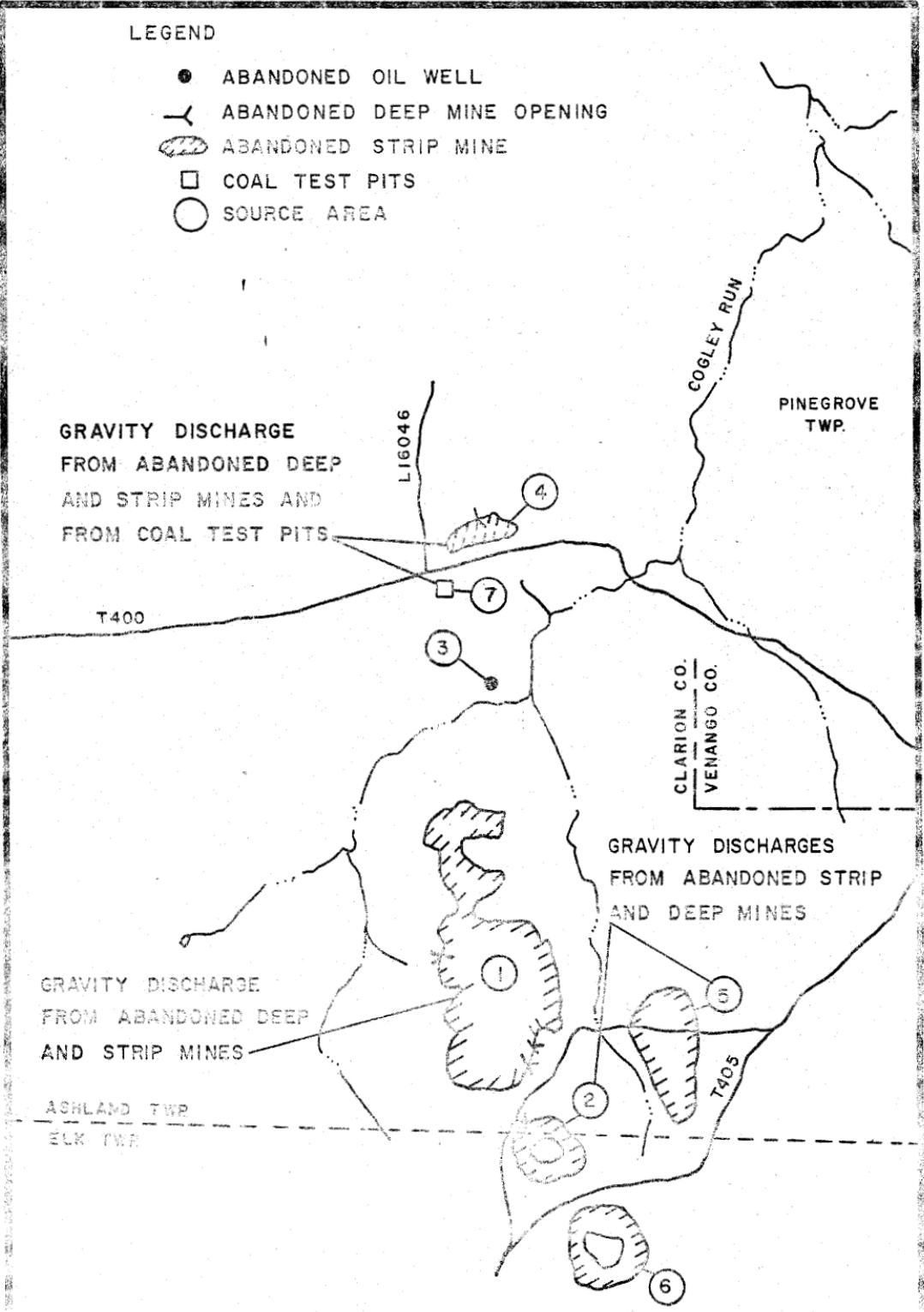
Cost estimates were computed on one judgmental criteria and that was experiences of the Department for similar types of projects and abatement measures.

Practically all of the pollution of Cogley Run is the result of acid mine drainage. This drainage is primarily from abandoned deep and surface mining activity and from an abandoned oil well. A description of the recommended abatement measures is as follows:

1. Sealing abandoned oil well cleaning of the existing well and the construction of a cement plug to seal the well. Hole site restoration is also included in this method.
2. Strip mine restoration - utilizing a minimum of terrace backfilling and rechannelization of water through abandoned strip mines to assure rapid runoff. This method also incorporates soil treatment and planting of all affected acreage.
3. Deep mine sealing - the construction of a barrier within mine entry, sometimes extended into the adjacent strata by means of a grout curtain. The barrier is usually intended to impede the movement of water from the mine so that the ground water level will rise to an elevation sufficient to inundate the pyritic strata associated with the coal seam.
4. Exploratory borings - the drilling of boreholes to determine the exact location and extent of the deep mine openings.
5. Backfilling Coal Test Pits - the treatment and removal of water from the coal test pits, backfilling the pits to encourage run off and revegetating the area.

LEGEND

- ABANDONED OIL WELL
- Y ABANDONED DEEP MINE OPENING
- ▨ ABANDONED STRIP MINE
- COAL TEST PITS
- SOURCE AREA



SOURCE AREA AND DESCRIPTION MAP.  
 COGLEY RUN WATERSHED  
 CLARION AND VENANGO COUNTIES

SCALE: 1" = 2000'

COGLEY RUN WATERSHED

Source Area	Priority No.	Source Description	Recommended Abatement Measures	Cost
Area 3		Discharge of AMD from an abandoned oil well, Acid load = 1,145 lbs/day T. iron load = 365 lbs/day	Sealing abandoned oil well.	\$ 10,000.00
Area 5 Area 2 Area 6		Gravity discharge from abandoned strip mine, Acid load = 3,518 lbs/day T, iron load = 15.16 lbs/day	Strip mine restoration of approximately 48.1 acres.	\$106,000.00
Area 1		Gravity discharge from abandoned strip min Acid load = 1,230 lbs/day T. iron load = 47.25 lbs/day	Strip mine restoration of approximately 47 acres.	\$104,000.00
Area 4 Area 7	4	Gravity discharges from abandoned deep and strip mines and from coal test pits. * Acid load= 833 lbs/day T. Iron load = 0.57 lbs/day	4 _oratory borings to locate deep mine entries.  Construction of two (2) watertight mine seals. Maximum potential head= 80 feet.  Construction of 200 feet ; 30,000.00 of grout curtain.  Dewatering and backfilling of coal test pits. q acre	2 800.00  40,000.00  1,600.00
	6		Strip mine restoration of 6 acres	13,200.00
		*Inferred		