

## History of the Borough of Chambersburg Water Department

Mr. J. Gordon Cree was Manager of Utilities of the Borough from 1948 to 1972 as well as historian for the Water Department. The following has been adapted, in large part, from historic information he had gathered over the years.

A source of good water has been the essential to communities throughout civilization. We can surmise that Colonel Benjamin Chambers' fort was built over the Falling Spring to provide a good source of water for those who inhabited the fort as well as for fire protection. Town residents were dependent on wells early on. The town inhabitants evidently maintained public cisterns filled with water for fire protection. It was reported that one of these was located under the sidewalk on the east side of the Market House, now known as Borough Hall.

The Chambersburg Water Company was organized about 1818. They used a waterwheel operated pumping station to pump water from the Falling Spring to a reservoir sited on current Chambersburg Hospital land from which the water flowed through hollowed pine logs joined end to end to serve customers for household uses. It was reported that this undertaking cost \$40,000. History on this company is lacking after 1823, although it was reported that there were approximately thirty-seven charter subscribers. Town Council also contracted for the installation of eight fireplugs at a cost \$100 per year. Evidently, some of the wooden pipes worked very well. It is reported that when the Borough Gas Department was installing a gas service to the Franklin County Courthouse in 1950, workers found a wooden pipe that was still supplying water to the Courthouse.

In 1871, Town Council, citing the inadequacy of the "present water supply," proposed a bond issue for an improved water supply. This issue was placed on a ballot that was approved by a 2 to 1 vote. Thus, the Borough's first utility enterprise was developed. Mr. H. P. M. Birkinbine, an engineer from Philadelphia, was contracted to develop and oversee the construction of the Borough wide new water system. The total cost of the new system was \$53,850.

This system included a 300,000 gallon brick reservoir near the intersection of Reservoir and Franklin Streets. A steam engine powered pumping station along the Conococheague Creek lifted the water to the reservoir. Over six miles of cast iron pipe was installed to transport the water to the reservoir and then distribute it to the North Main Street area as well as the center of the town. From these mains, smaller pipes distributed water to the needs of the populace. The water was being taken from the creek with little regard to the fact that raw sewerage was being piped into the creek about a mile above the pumping station.

On January 2, 1891, the C. B. Gish flour mill at what is now called Siloam was purchased which included the mill dam and the impounding area above it. An additional land purchase gave rise to the possibility of a 2,000,000 gallon reservoir. Initially, it was expected that the mill's wheel would force the water to the new reservoir known as Horst Reservoir. This experiment was less than successful and steam driven pumps were tried. In 1905, a Worthington steam driven pump was successfully installed. The Siloam plant produced about 1,500,000 gallons per day in 1907. However, the Conococheague Creek's water flowed through miles of pastures and fields which made it less than an agreeable source of water. In 2005, Siloam dam was breached and the stream banks restored.

In 1909 the Burgess, Mr. A. W. Zacharias, prompted the locals to work on the "water situation of the Borough". By 1910, Town Council was looking to develop, as the town's main water source, the Conococheague Creek in the valley above Caledonia Park east of town in the South Mountain. This would provide the Borough with "pure water" from a gravity fed water system eliminating the costs of pumping water. To obtain the State Department of Health's approval for the new water location, the Borough agreed to install the first sanitary sewer system and a sewerage treatment plant. The Borough issued a \$150,000 bond issue in 1910 to construct the stream intake facilities, a new 2 million gallon reservoir east of town and to install a fourteen inch pipeline into town terminating at South Sixth Street. (Note: The Treasurer's office is the proud possessor of bond number 25, in the amount of \$500, an

"Improvement Bond of 1910" Series A which carried a 4 ½% interest rate. This note matured in 1915. The current Borough's logo is adapted from a depiction of City Hall found on that bond.)

The first water from this source arrived in Chambersburg on July 3, 1911, and was of sufficient purity that no chemical treatment was necessary for many years. The hardness of this water was only four parts per million, as contrasted to the sixteen parts per million from the same stream collected at the Siloam Dam. The elevation at the center of Chambersburg was about 360 feet below that of the intake dam which provided water pressure of fifty to eighty pounds per square inch throughout the town. In later years, chlorine was utilized to treat the water against microorganisms, and still later the dental association was successful in an effort to have fluoride compounds added to help protect children's teeth. In the early thirties, a reinforced concrete dam was constructed across the Birch Run creating a storage capacity of 387 million gallons.



In the late 1960's, the Borough acted to enlarge its water storage reserve and to improve other facilities. A new dam, called the Long Pine Run Dam, was constructed upstream from the Birch Run Dam which created a lake with a surface of 150 acres storing 1.78 billion gallons. A new water treatment plant with a daily flow capacity of six million gallons was also constructed. Additionally, at the former Birkinbine open reservoir site, a three million gallon "ground based steel water storage tank" was built. In 1967 and 1969, bond issues were floated for a total of \$8,325,000 to cover the \$7,461,850 cost of these projects, which was the largest utility project by the Borough until construction of the wastewater treatment plant upgrades and the Orchard Park Electric Generation project in 1997 and 2002 respectively.



More recently, several construction projects have been completed by the Water Department to improve the transmission and distribution systems.

- During 2002-2003, approximately 6 miles of 24" transmission mains from US 30 at Garman Drive to Nitterhouse Drive in the Chambers Five Business Park were constructed at a cost of approximately \$4.4 million.
- During 2003, over a mile of 12" distribution mains in the east end and north end of town were completed at a cost of approximately \$1 million.
- In 2005, PennDOT (on behalf of the Borough) constructed a 24" water main on US Route 30 from Brumbaugh Avenue to St. John's Drive at a cost of \$3.2 million (Borough's share of that cost was only 5%).
- Also in 2005, the Borough completed the construction of a 2 million gallon elevated water storage tank on Nitterhouse Drive in the Chambers Five Business Park at a cost of approximately \$2.50 million. With the addition of this tank, total water storage capacity is 9 million gallons.



In 2005, after 70 years of service to the Water Department, the Borough completed the breaching of the Birch Run Dam and the restoration of the reservoir area. With Long Pine Run Reservoir, Birch Run Reservoir's capacity was not necessary for the Borough's water supply. The total cost for the project was over \$1.56 million while estimated repair costs to the aging structure were \$30 million.

Water treatment plant improvements which began in 2010 were completed in 2011. Improvements included upgrades to the electrical, mechanical, control, and safety equipment at a total cost of \$1.85 million.

Long Pine Dam improvements upgraded and repaired control tower equipment, including installation of a new Howell-Bunger release valve, replacement of intake valves, and repair of the concrete outlet pipe. This work was completed in 2012.

Stream bank restoration using gabion baskets was completed in early fall of 2015 along the banks of the Conococheague stream downstream of the intake facility dam. The previous stone walls were in need of replacement due to streambank erosion and undermining since the dam's construction in 1911.

A filter upgrade project began in Fall 2015 and was completed in late Spring 2016 with the primary focus of replacing the rapid-sand conventional filtration filter media that had been in use since original installation in 1970. Improvements were made to the four individual filter cells including lining of the filter walls and floor, replacement of the underdrains and surface wash apparatus, replacement of filter media, and piping for future air scour. Exterior concrete wall structural repair, inclusion of an in-line static mixer, and a new plant water connection also took place as part of the project.

Moving forward, the Borough continues to improve Water Department facilities and equipment. Following is a list of current and planned capital projects for the Water Department.

- The Borough's Safe Yield Study was updated in Fall of 2015. Update of this study is the first step in the process to further evaluate alternative raw water supply and delivery methods from the Borough's watershed to the treatment plant. The study will be completed in 2016.

Currently the Borough Water department provides high quality drinking water and fire protection flow through 31 miles of transmission mains, 94 miles of distribution mains, and 669 fire hydrants. Our customer base includes 1 municipal, 19 industrial, 866 commercial, and 7,543 domestic customers.