

PA DEP Small Drinking Water Systems Engineering Services Program (ESP) Case Study

Client Name: Austin Borough Waterworks
Location: Austin Borough, Potter County
Project Name: Direct Filtration Pilot Study



Background:

ABW's primary water supply is a spring source which was classified as groundwater under the direct influence of surface water (GUDI) after Source Water Identification Protocol (SWIP) monitoring. A Source Yield Study was completed to examine the existing sources, identify potential new sources, and provide a system evaluation based on available information. The study concluded that the existing sources cannot meet the current or future water demands, drilling wells in the past has proven to be unsuccessful, and an interconnection with an adjacent community water system was not feasible. The addition of a formerly used spring to the existing spring and well sources can provide sufficient raw water for the community and an appropriately designed filter plant can centrally treat these sources. A Feasibility Study was completed to determine the most viable alternative to treat the combined sources and provide safe drinking water. Construction of a conventional package plant was identified as the most feasible option.



Public Health Challenges:

ABW's secondary water supply is a well that has passed SWIP monitoring. The well water quality is acceptable (low manganese levels), but it has sustained yield problems. The water quantity problems have continued to degrade over the last several years and the PWS has been forced to implement mandatory conservation measures.

Capacity Issues:

Technical – The surface source requires a filtration system to comply with regulations or an alternative ground water source with a higher yield must be developed.

Managerial – ABW could not effectively operate and maintain the system due to the increased regulatory requirements. As a result of source water deficiencies, PADEP has issued 3 notice of violations. PADEP is currently in the process of creating a Consent Order & Agreement to construct a filtration plant to filter the source water.



Financial – The proposed upgrades needed to their existing treatment system to achieve compliance would increase the current customer rate to a point which would be an unacceptable financial burden on the small customer base.

Actions:

It was determined to utilize two spring sources and a well in close proximity to the existing treatment facility for possible future sources of supply which would adequately address the quantity deficiencies. Due to the low turbidities which have been observed from the source yield study and additional jar testing it was decided to consider direct filtration. A Pilot Protocol was developed and approved by PADEP and a short fourteen day Pilot Study was completed in December 2004. The results of the Pilot Study indicate that the Direct Filtration Technology is an appropriate solution for filtration of the source water. A Pilot Study Report was completed and submitted to PADEP and approved in January 2005.

Outcomes:

The approved Pilot Study has lead to the design and permitting of a Packaged Direct Filtration Plant. A Public Water Supply Permit and a Water Allocation Permit for this design were submitted in April 2005. A PENNVEST Application is being completed and a County and Competitive CDBG Application have been submitted to request funding assistance.



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