Case Study

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Non-Revenue Water Reduction



Old Gainesboro Road Utility District, Tennessee, USA

- ✓ Reduction in operating costs
- ✓ Rapid return in product investment
- ✓ Improved network efficiency
- ✓ Leakage and burst reduction
- ✓ Easy to implement
- ✓ Early indication of water main breaks





Project Overview

The Old Gainesboro Road Utility District (OGRUD) of Putnam County, Tennessee, provides water for the 1st, 7th, and 15th Civil Districts of Putnam County and the 1st, 10th, and 12th Civil Districts of Jackson County. The District purchases all water for resale from the City of Cookeville, TN. The District presently has 2,200+ active customers with 2,400+ connections in Putnam and Jackson Counties and 125 miles of water lines. OGRUD's mission is to provide safe, reliable drinking water to their customers at the lowest possible cost and while meeting all federal and state requirements.

The high cost of Non-Revenue Water (NRW) had affected OGRUD by as much as 30.3% in lost water and 13.3% in operating costs. With 2.795 Million Gallon/Yr in apparent losses and 47.717 Million Gallon/Yr in real losses, OGRUD looked forward to the implementation of a strategy to aid in the reduction of these losses.

The strategy OGRUD decided to implement was Pressure Management (PM). Technolog's Regulo and Cello units were incorporated into OGRUD's distribution system in order to monitor and control pressures. The Regulo unit regulates the PRV's pilot valve to maintain a set pressure while the Cello units installed in the distribution system monitor pressures, providing operators feedback to be used in the adjustment of the Regulo unit, allowing for optimization of the PM system. Data following the implementation of the PM scheme reduced the average flow by 24%, decreased the average pressure by 29% and maximum pressure by 40%. The pressure reduction equated to an average savings of approximately 36,000 gallons per day (gpd) over the course of the study (June 2016-June 2017). Based on wholesale purchase price alone, the yearly savings associated with the reduction in NRW is approximately $30,000.

Key Elements

- Reduce NRW losses
- Protect water supply
- Installation of electromagnetic flowmeters, pressure reducing valves and pressure controllers obtain data to help determine leakage and burst location

Key Outcomes

- Reduced NRW and Distribution Input
- 27.6% Reduction in Real Losses
- 22% Water Loss by Volume
- 27.6% Reduction in Cost
- Period ROI Achieved ~ 8 months +/- (229 days)
- Fixed pressure control provided a substantial decrease in water loss
- Cello 4S data loggers deployed at critical points
- Reduction in Pumping, Energy, and Chemical Cost
- Deferral of Capital Investment for Network Replacement
- Lower Burst Frequency
- Network Stabilization
- Reduction in Repair

Technolog Limited,
Ravenstor Road, Wirksworth,
DE4 4FY, United Kingdom

+44(0)1629 823611
technolog@technolog.com
www.technolog.com

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