

Tobyhanna installs leak detection system, receives federal award

U.S. Army

TOBYHANNA ARMY DEPOT, Pa. (Sept. 13, 2012) -- Tobyhanna Army Depot has employed a high-tech solution to an age old problem -- leaky pipes -- which exceeded expectations and earned the installation the 2012 Federal Energy and Water Management Award (Project Category).

Installing the Acoustic Leak Detection System has saved millions of gallons of potable water in the last two years, by using underground sensors, strategically placed within the depot's water distribution system. When used in conjunction with water pressure monitoring, environmental experts here say it has proven to be a formidable system in helping to find and repair leaks.

Last year, Tobyhanna joined six Army Net Zero pilot installations in each of three categories: energy, water and waste. Net Zero seeks to bring the overall consumption of resources on installations down to an effective rate of zero.

As an Army Net Zero water test facility, Tobyhanna is well on its way to meeting a 50 percent water reduction by fiscal year 2020, through aggressive water conservation efforts, water use surveys, water meter installation, water/waste water recycling efforts and rainfall harvesting. Leak detection is one part of a multi-faceted system of monitoring this important utility system.

Environmental Specialist Thomas Wildoner pointed out that through water conservation and leak detection efforts the depot has already exceeded established goals.

"We're sharing lessons-learned, equipment manuals and scope of work for this project with other installations in an effort to help them achieve these same water reductions," he said.

Information on acoustic leak detection was also uploaded to the U.S. Army Corps of Engineers Engineering Knowledge Online Portal according to Wildoner.

"The use of acoustic leak detection sensors is an innovative approach to determining the source of water distribution system leaks," Wildoner said. "Minimizing leaks and losses in a water system is critical to increasing efficiency and conserving water resources."

A few years ago, federal agencies were tasked to improve water efficiency and management through reducing potable water consumption by two percent each year through fiscal year 2020, or 26 percent by the end of fiscal year 2020.

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Tobyhanna accepted the challenge by installing 55 acoustic leak detection sensors on the water distribution system. The total cost of the sensors, remote reading equipment and initial installation was \$88,000, according to Wildoner. He explained that the acoustic sensors are attached magnetically to major valve stems on the installation and read once a month using a wireless device.

The sensors successfully identified eight water leaks during a seven-month period, decreasing water use by over 46,000 gallons per day. It also helped lower the depot's annual water use from 75.8 million gallons in fiscal year 2010, to 58.8 million gallons in fiscal year 2011.

Using specialized microphones and acoustic meters, leak detection surveyors can monitor sounds and isolate leaks in a pipe. Each sensor can detect leaks in pipes in a 500-foot radius.

"Data is collected from each site and then downloaded onto a computer for display and analysis," Wildoner said. "Leak detection and acoustic leak sensors are reliable and cost effective methods to save water. It is through the routine monitoring and maintenance of our system that we ensure continuous improvement and success in meeting our Net Zero goals."

Leak detection is integrated into the monthly operation and maintenance of our water system, he added.

The Army's Net Zero Installation Strategy is designed to ensure the Army of tomorrow has the same access to energy, water, land and natural resources as the Army of today, according to Katherine Hammack, assistant secretary of the Army for installations, energy and environment. She also said Net Zero is a force multiplier guiding the Army to appropriately steward resources, manage costs and provide Soldiers, civilians and families with a sustainable future.

"Striving for Net Zero is operationally necessary, financially prudent and critical to our mission," she said.

Representatives from Net Zero water pilot installations will gather at Tobyhanna, Sept. 18-19, to report on their first year progress and announce future objectives.

Tobyhanna Army Depot is the Defense Department's largest center for the repair, overhaul and fabrication of a wide variety of electronics systems and components, from tactical field radios to the ground terminals for the defense satellite communications network. Tobyhanna's missions support all branches of the Armed Forces.

About 5,400 personnel are employed at Tobyhanna, which is located in the Pocono Mountains of northeastern Pennsylvania. Tobyhanna Army Depot is part of the U.S. Army CECOM. Headquartered at Aberdeen Proving Ground, Md., the command's mission is to research, develop, acquire, field and sustain communications, command, control computer, intelligence, electronic warfare and sensors capabilities for the armed forces.

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