

El Paso Water's Upper Valley Water Treatment Plant Meets Regulatory Requirements with the Help of Real-time Online Data

As regulatory requirements and the availability of more accurate diagnostic technologies continue to push the legal threshold limit of contaminants, utilities are turning to high-frequency data to not only identify contaminant threats, but also in diagnosing critical treatment system performance once a solution has been put in place.

One such utility, El Paso Water, which serves the city of El Paso, Texas, is seeing firsthand how real-time, accurate and reliable data is helping its Upper Valley Water Treatment Plant (WTP) manage changes in water quality, treatment processes and ultimately, deliver drinking water that meets the 10 parts per billion (ppb) regulatory requirement for maximum arsenic levels.

Upper Valley WTP removes naturally occurring arsenic found within the 21 groundwater wells that make up the Canutillo well field. The plant treats up to 30 million gallons per day (mgd) of groundwater for blending with up to another 30 mgd of untreated groundwater to produce a finished product with an arsenic concentration of 8 ppb or less.

Upper Valley WTP uses a comprehensive testing scheme composed of online, benchtop and external arsenic analysis to remain compliant, and adequately control and optimize its treatment process and remediation system. The results from the three different testing methods are compared to determine water quality changes and necessary adjustments to the treatment processes.

Upper Valley WTP installed three [MetalGuard™](#) automated, online arsenic analyzers from [Aqua Metrology Systems](#) (AMS). The analyzers provide high-frequency real-time data on arsenic contaminant levels in 30 minutes with sensitivity down to 1 ppb. Two of the analyzers were put in place to monitor the plant's raw and finished water, and the third one is located at the offsite clearwell. The online analyzers take samples every two hours checking arsenic levels in the plant's influent, effluent and at the bottom of the media bed. The plant also pulls daily samples from these three locations and inline analysis is performed on AMS SafeGuard benchtop analyzers, and twice per week, samples are sent to an external lab for analysis.

With online data, as arsenic levels fluctuate, the plant can turn certain wells on to further blend the water. According to Ray D. Shay, Upper Valley WTP Superintendent, "AMS' MetalGuard™ automated, online arsenic analyzers have been an asset to our facility and they have given us a peace of mind that was not possible before when we relied on more traditional analytical methods. Staying on top of water quality changes and its impact on arsenic levels has allowed us to adjust our treatment process in real-time to remain in compliance with EPA arsenic regulations."

MetalGuard™ Online Arsenic Analyzer

Utilities addressing arsenic contamination must measure influent and effluent arsenic levels to adequately control and optimize water treatment and removal processes. [MetalGuard Arsenic](#) is the first fully automated, online multi-stream arsenic analyzer for monitoring drinking water. The analyzer provides real-time, multi-stream reliable and accurate analysis of As(III), As(V) and Total As to ensure compliance with regulatory requirements. The analyzer features a robust and stable design that is capable of maintaining its sensitivity and calibrated status for an unlimited timeframe while operating reliably regardless of sample matrix conditions. The analyzer provides high-frequency real-time data on arsenic contaminant levels in 30 minutes with sensitivity down to 1 ppb.



El Paso Water's Upper Valley Water Treatment Plant installed three automated online arsenic analyzers, which provide high-frequency, real-time data on arsenic contaminant levels in 30 minutes with sensitivity down to 1 ppb.