

Trenchless Technology Abstract- Call for Presentation

Tackling Water Utility Challenges Using Completely Portable Inspection Systems

The presentation will cover some of the major challenges facing water utility professionals in their day-to-day operations, while outlining viable solutions through the use of underwater inspection equipment, in particular mini-remotely operated vehicles (ROVs) and pipe crawlers. We will draw on real life examples to convey our point and welcome discussion/questions.

It's no secret that in recent years the structural integrity of many water management systems have been reaching the point where they need to be mended or replaced. While strong water management systems are important to ensure safe drinking water, clean waterways and reduce flooding, replacing entire systems can be costly, dangerous and in some cases unnecessary. However, leaving systems unattended can result in dangerous situations such as water contamination and water main bursts. That's why frequent inspections of these systems are highly important.

Most challenges facing water management professionals and their ability to perform regular inspections stem from the issue of accessibility. A lack of accessibility because of the costs associated with frequent inspections, due to the dangers associated with dive inspections, and because of the physical location of access points.

Inspecting pipelines, intakes, filters, clarifiers, basins and other aspects of water management systems can be costly if they involve drainage or divers. While both are viable options to perform inspections, there's a less costly and just as efficient way to ensure the integrity of these systems.

With underwater inspection systems like ROVs and pipe crawlers, operators can monitor water management systems daily. By using the inspection equipment, there's no need to incur the costs of hiring divers, or draining a basin until the need is 100% there. Almost all underwater inspection tools have the ability to record what the ROV or Crawler sees, providing the benefits of documentation of inspection.

Another challenge that water management professionals face is the danger associated with humans diving within the infrastructure. Not only are they costly, in some cases the risk to human health is too high to send a diver into the water. With an ROV or pipe crawler operators can either, identify and assess any potential dangers before sending a diver in, or they can completely eliminate the need to use a diver in the first place. An added benefit is that in situations like potable water tank inspections, after a diver's used to inspect the tank samples and disinfection must be performed every time to ensure the water's still safe for consumption. With the use of an inspection system, operators can determine beforehand if the tool falls under the proper certifications to be allowed to enter the tank without as much follow up work.

Lastly, water management systems located in remote areas or with hard to reach access points can be difficult for water professionals to manage. Sometimes they're too difficult to bring in large equipment or it's not possible to use a system that needs connection to a service truck. Here, the portable inspection systems in particular are the perfect solution for the job. By examining specific examples, we will demonstrate why truly portable systems are one of the best options for water utility companies and municipalities to perform their inspection work.

