

Success Story

Drinking Water Treatment

Free Chlorine Analyzer Evaluation



Award-Winning Utility Validates Halogen MP5 Free Chlorine Analyzer Performance

Newport News Waterworks discovers accuracy, reliability, and significant cost savings during comprehensive testing at Harwood's Mill Water Treatment Plant.

6 Year

PAYBACK

on maintenance
savings alone

"The Halogen outperformed other analyzers we evaluated in every category—stability, pH range tolerance, flow handling, and maintenance requirements. We intend to purchase one to replace the failed CL17 and add another at our wellsite."

— Newport News Waterworks

Operations Team

Harwood's Mill WTP

No Maintenance During 6 MO Of Testing

The Newport News Waterworks decided to evaluate the Halogen MP5 free chlorine analyzer at their award-winning Harwood's Mill Water Treatment Plant. As one of the 100 largest water utilities in the United States, serving over 410,000 customers across Virginia's Hampton Roads Peninsula, Newport News Waterworks maintains rigorous performance standards—earning two Gold Awards from the Virginia Department of Health for exceptional water quality.

"The Halogen outperformed other analyzers in every category—accuracy matched grab samples throughout testing, with readings within 0.2 mg/L of the CL17."

THE CHALLENGE

Newport News Waterworks, one of the 100 largest water utilities in the United States, has been providing high-quality drinking water to Virginia's Hampton Roads Peninsula since 1889. As a two-time Gold Award recipient from the Virginia Department of Health for both its Harwood's Mill and Lee Hall Water Treatment Plants, the utility maintains rigorous performance standards in filtration, clarification, and disinfection.

With a commitment to operational excellence and cost efficiency, the Waterworks team sought to address ongoing challenges with their existing chlorine monitoring equipment at the Harwood's Mill facility. Their incumbent analyzers presented several issues: poor stability due to probe fouling, limited pH operating range near pH 8.0, frequent maintenance requirements, and difficulty handling flow variations. The utility needed a more reliable solution that could maintain accuracy while reducing operational burden. Testing began in March at HMTP Train 1 filter effluent, with the Halogen analyzer installed using a supply tee alongside an existing Hach CL17 for direct comparison. Initial calibration showed excellent correlation between technologies.

When the CL17 failed at six weeks, the Halogen seamlessly transitioned to online monitoring, integrating with the plant's SCADA system. The analyzer validated key performance claims: **accuracy** consistently matching grab samples, **flow tolerance** with clear error alerts when minimums weren't met, and **minimal maintenance**—reduced from weekly to monthly checks with no direct sensor maintenance required.

Compared to other analyzers evaluated, the Halogen excelled where others struggled: some units showed poor stability due to probe fouling, others couldn't handle flow variations or had limited pH operating ranges near pH 8.0, and several required intensive maintenance. The Halogen outperformed in every category.

ACCURATE	LOW MAINTENANCE	COST EFFECTIVE
Results matched grab samples throughout testing—within 0.2 mg/L of CL17 readings	Weekly checks reduced to monthly with no direct sensor maintenance required	Up to \$30,000 annual savings projected with full fleet conversion
Notables: "The analyzer maintained consistent readings unless minimum flow was not met, at which point it generated a clear error. This was expected and acceptable behavior." Almost any flow condition will work.		
<i>"Long term, replacing all free chlorine analyzers with Halogen units could yield annual savings of approximately \$10,000. Full fleet conversion including total chlorine: up to \$30,000."</i>		

Moving Forward

Based on the successful evaluation, Newport News Waterworks has committed to:

- Purchasing a Halogen analyzer to replace the failed CL17
- Adding an additional unit at a wellsite for extended evaluation
- Evaluating fleet-wide replacement of all free chlorine analyzers

The success at Newport News Waterworks—a two-time Gold Award recipient and AMWA Sustainable Water Utility Management Award winner—demonstrates that the Halogen technology delivers consistent results across both drinking water and reclaimed water applications.

Halogen looks forward to helping the team at Newport News Waterworks maintain their commitment to operational excellence, environmental stewardship, and providing high-quality drinking water to over 410,000 customers across the Virginia Peninsula.

About Newport News Waterworks

Newport News Waterworks is a regional water provider serving over 410,000 people across Virginia's Hampton Roads Peninsula including Newport News, Hampton, Poquoson, and York County. Operating two Gold Award-winning treatment plants, they deliver 45-50 million gallons of high-quality drinking water daily.

www.nnva.gov/waterworks

Results based on partner testing data. Performance varies by use, configuration, and other factors. Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. HSI does not control or audit third-party data. You should review this content, consult other sources, and confirm whether referenced data is accurate. Your costs and results may vary.

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About Halogen Systems

Halogen Systems, Inc., based in Reno, Nevada, manufactures advanced amperometric chlorine analyzers and sensors for water quality monitoring. Our solutions help utilities worldwide achieve accurate, reliable disinfection monitoring with reduced maintenance requirements.

www.halogensys.com

