

Richard W. Gullick, PhD

Founder/Owner, Water Compliance Solutions, LLC
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Seasoned executive, manager, scientist, and educator with over 30 years of experience in the utility, consulting, research, and academic sectors of the drinking water, wastewater, environmental, and pollution prevention fields.

Education

- PhD Environmental Engineering, The University of Michigan
- MSPH Environmental Management and Protection, Univ. of North Carolina at Chapel Hill
- BS Environmental Science, Michigan State University

Licenses

- Grade 4T Drinking Water Supply Facilities Operator, Commonwealth of Massachusetts (#27363)
- Class 4 Treatment Operator License, State of Rhode Island (#F400553T)
- Class 1 Waterworks Operator License, Commonwealth of Virginia (#1955007143)
- T-3 Water Treatment License, State of New Jersey (#657901)

Areas of Experience

- ◆ drinking water supply, treatment, and distribution
- ◆ wastewater treatment and sanitation
- ◆ source water and watershed protection
- ◆ water quality assessment
- ◆ monitoring programs for surface water and groundwater
- ◆ environmental sampling
- ◆ chemical analysis and data interpretation
- ◆ environmental chemistry
- ◆ solid and hazardous waste management
- ◆ pollutant fate and transport in the environment
- ◆ environmental impact assessment
- ◆ environmental site assessment and remediation
- ◆ regulatory compliance
- ◆ permit applications and negotiations with regulatory agencies
- ◆ coordination of stakeholder groups
- ◆ development of educational programs

Employment Accomplishments

Founder/Owner – Water Compliance Solutions, Leominster, MA (2019–present):

- ◆ consultant for primarily small drinking water and wastewater systems, providing regulatory compliance audits, evaluation of water quality and related data, water quality investigations, development of plans for achieving compliance including consideration of treatment process modifications, oversight of compliance-related activities, completing regulatory compliance forms, and communications on behalf of clients with the state regulatory agency.

Water Compliance Specialist – RCAP Solutions, Inc., Gardner, MA (2018–2019):

- For this non-profit organization, provided free technical assistance and training to small drinking water and wastewater systems throughout the northeast U.S.
- Successfully identified low-cost solutions for a variety of regulatory compliance issues.
- Provided operator training on the USEPA’s Surface Water Treatment Rules, Groundwater Rule, Lead and Copper Rule, Disinfectants/Disinfection Byproducts Rule, and other related regulations.

Director of Operations – Rivanna Water & Sewer Authority, Charlottesville, VA (2014–2018):

- Responsible for performance of six departments with over 70 employees, including water treatment, wastewater treatment, engineering and planning, maintenance, laboratory, and water resources functions, including performance, budgets, staffing, and personnel matters. The RWSA annual budget is approximately \$31 million.
- Accountable for five surface water treatment plants, four wastewater treatment plants, the accompanying wholesale water distribution and wastewater collection systems, and the related capital improvement program.
- Quickly earned a reputation as one who is driven to get things done.
- Established appropriately higher performance standards for the staff, and an increased and more consistent sense of accountability.
- Introduced a new model of thinking to the operations teams in terms of reconsidering the means of monitoring, controlling, and optimizing operations, methods of managing and tracking the data, and how the data are interpreted and responded to. This helped uncover numerous operational errors, inefficiencies, and lost opportunities, and led to implementation of efficient and economical solutions.
- Identified problems where no one was looking, and in other situations showed that no problem existed where the consensus was that a problem needed fixing.
- Improved cooperation between the four agencies responsible for drinking water and wastewater services in Charlottesville through open communications, increased mutual accountability, and regular group meetings.

Water Superintendent/Chief of Water Quality – Passaic Valley Water Commission, Totowa, NJ (2011–2014):

- Responsible for all water quality for PVWC, a retail and wholesale utility that provides an average of 83 mgd to approximately 800,000 people in five counties.
- Directed treatment operations for a 75-mgd sand-ballasted clarification, ozonation, and sand/GAC filtration surface water treatment plant, five distribution system chlorine booster or chloramination stations, a purchased-water system, and a groundwater system.
- Successfully managed a diverse and unionized staff, including improving staffing, training, performance, payroll, grievance, and disciplinary procedures.
- Implemented cost-saving measures including reducing chemical purchases through treatment optimization, improving sludge management and reducing disposal costs, and configuring staff assignments more efficiently.

- ◆ Improved treatment system design, source water monitoring protocols, distribution system water quality optimization, standard operating procedures, operator training, record-keeping systems, customer service response, and employee morale.

Director of Water Resources – EE&T Inc., Berlin, NJ (2005–2011):

- ◆ Served as an expert consultant on source water, treatment process, and distribution system issues for a variety of drinking water utilities.
- ◆ Principal Investigator for a \$330,000 AwwaRF research project (#3020) on “Concentrated Animal Feeding Operations (CAFOs): Water Utility Issues and Regulatory Controls.” Investigated the potential and known impacts of CAFO-derived contaminants such as nutrients and pathogens on drinking water supplies, as well as possible control strategies for protecting drinking water sources. Prepared project report and website for education of water professionals (<http://cornwell.engineering/tools/cafo/introduction.html>).
- ◆ Project Manager for studies to evaluate and benchmark the City of Philadelphia’s Source Water Protection Program, review and revise the USEPA guidance document for the Watershed Control Program (WCP) component of the LT2ESWTR, provide assistance in preparation of a WCP plan, and develop recommendations for future *Cryptosporidium* source water monitoring.
- ◆ Project Manager for a multi-phase project to investigate the subject of emerging chemical contaminants and their potential impacts on the Philadelphia Water Department. This included development of an informational workshop, preparation of a five-year plan to address emerging chemical contaminants, and development of a searchable database of over 250 contaminants.
- ◆ Conducted a survey and developed a resource workbook on laboratory capabilities of the Delaware Valley Early Warning System participants and other local stakeholders.
- ◆ Project Manager for a study assessing and providing guidance for improving the City of Cleveland Division of Water’s source water monitoring program

Senior Water Quality Engineer – American Water, Voorhees, NJ (1998–2005):

- ◆ Worked with drinking water operations of all sizes (the utility had 82 surface water treatment facilities and more than 800 groundwater supplies in 22 states).
- ◆ Planned, organized, and conducted source water, treatment, and distribution system research projects that brought cutting edge concepts to the utility subsidiaries of American Water, improving water quality and operations efficiency.
- ◆ Conducted research on “Monitoring Systems for Early Warning of Source Water Contamination.” The study involved delineating the characteristics of early warning monitoring systems and networks, identifying the current state of the science, developing utility guidance for response to contamination events, and preparing a guidance manual.
- ◆ Founded and chaired the Upper Mississippi River Water Suppliers Coalition, drawing together water utilities from five states. As part of that role, catalyzed development of an early warning monitoring network on the river, which involved coordination and support from numerous stakeholders including state and federal regulatory agencies.

- ◆ Served as an expert consultant to assist development of the Delaware Valley Early Warning System, which provides early warning monitoring and notification systems for water utilities on the Schuylkill and Delaware Rivers.
- ◆ Investigated the occurrence of arsenic, chromium, perchlorate, radon, boron, and MTBE (methyl tertiary butyl ether) in drinking water sources of the American Water System.\
- ◆ Prepared Standard Operating Procedures for Surface Water Protection and Wellhead Protection Programs for American Water (the largest privately-owned drinking water supplier in the US).
- ◆ Developed and maintained an educational website with information on MTBE for the water supply industry. Expert witness testimony on MTBE issues and assessment of water supply contamination for the Pennsylvania American Water Company. Member of a USEPA proposal review committee for technology demonstration projects remediating MTBE-contaminated aquifers for drinking water use.
- ◆ Conducted groundbreaking research on distribution system pressure transients and the existence of transient negative pressures that could potentially lead to distribution system contamination, and developed solutions to help reduce or eliminate the causes.
- ◆ Developed national-level cost evaluations for several proposed USEPA regulations, with results being used to positively influence the regulatory development process.

Current Professional Volunteer Activities (as of March 2020):

- ◆ Associate Editor, *AWWA Water Science* (2018-2020)
- ◆ Member, AWWA Distribution System Water Quality Committee (2017-2020)
- ◆ Member, AWWA Standards Committee for Source Water Protection (2002-2020)
- ◆ Member, AWWA Water Resources and Source Water Protection Technical Advisory Workgroup (2005-2020)
- ◆ Member, Water Research Foundation Project Advisory Committee for a project titled “Evaluation of Risk Management Frameworks and Tools and Their Application for Managing Source Water Risks in the United States” (2017-2020)

Select Previous Professional Volunteer Activities (1999–2019):

- ◆ Primary developer and author of the AWWA Standard for Source Water Protection (G300-14), and author of the accompanying guidebook (2017)
- ◆ Recipient of the 2005 AWWA Publications Award for the best paper in *Journal AWWA* in 2004 (*Developing Regional Early Warning Systems for U.S. Source Waters*)
- ◆ Member, *Journal AWWA* Editorial Board (2015-2018)
- ◆ Founder and Chair, Upper Mississippi River Water Suppliers Coalition (2001-2004)
- ◆ Chair, AWWA Source Water Protection Committee (2001-2004)
- ◆ Member, AWWA Source Water Protection Committee (1999-2005, 2006-2018)
- ◆ Trustee, AWWA Water Resource Sustainability Division (2006-2012)
- ◆ Member, Water Research Foundation’s Research Advisory Council (2007-2010)
- ◆ Member, *Journal AWWA* Peer Review Editorial Board (2006-2012)
- ◆ Member, AWWA Organic Contaminants Control Committee (1999-2005)

- ◆ Chair, Planning Committee for the Water Research Foundation’s Source Water Protection Research Planning Workshop (2007)
- ◆ Chair, Planning Committee for the AWWA 2003 Source Water Protection Symposium
- ◆ Member, Planning Committees for the AWWA Sustainable Water Sources Conference and Exposition (2008), AWWA Water Quality Technology Conference (2008 and 2009), AWWA Source Water Protection Symposium (2003), and USEPA National Source Water Protection Conference (2003)
- ◆ Member, Virginia Department of Environmental Quality stakeholder advisory committee for renewal of the state-wide general permit for wastewater nutrient discharges (2015-2016)
- ◆ Member, Project Work Group for a USEPA project on “Comprehensive Analysis of Source Water Protection Materials and Identification of a Strategy to Address Gaps” (2004; appointed by the USEPA to represent the drinking water industry and AWWA)
- ◆ Member, Project Advisory Group for a USEPA project on “Source Water Contamination Prevention Measures – Training Module” (2001)
- ◆ Member of numerous Project Advisory Committees for the Water Research Foundation

Select Publications

Source Water Quality and Protection

Gullick, R.W. (2017). *Source Water Protection - Operational Guide to AWWA Standard G300*, Second Edition. American Water Works Association, Denver, CO.

Gullick, R.W. (2014). *Source Water Protection: Perspectives of the Past, Present, and Future. Journal AWWA*, 106(8):164-174.

Sham, C.H., S.C. Long, and R.W. Gullick (2012). *AWWA Standard Supports Utility Efforts to Protect Source Water. Opflow*, 38(3):18-20.

Sklenar, K., C.H. Sham, and R.W. Gullick (2012). *Source Water Protection Vision and Roadmap*. Water Research Foundation, Denver, CO.

Sklenar, K., C.H. Sham, and R.W. Gullick (2012). *Developing a Vision and Roadmap for Source Water Protection for U.S. Drinking Water Utilities*. Water Research Foundation, Denver, CO.

Sham, C.H., R.W. Gullick, S.C. Long, and P. P. Kenel (2010). *Source Water Protection: Operational Guide to AWWA Standard G300*. AWWA, Denver, CO.

Gullick, R.W., R.A. Brown, and D.A. Cornwell (2007). *Source Water Protection for Concentrated Animal Feeding Operations: A Guide for Drinking Water Utilities*. WaterRF, Denver, CO.

Gullick, R.W. and W. Cornwell (2007). “CAFO Information Center” – an educational resource website. EE&T, Inc., Newport News, VA (www.eetinc.com/cafo)

Ernst, C., R. Gullick, and K. Nixon (2004). “Protecting the Source: Conserving Forests to Protect Water.” *Opflow*, Vol.30, No. 5, pp. 1-7, May 2004.

Gullick, R.W. (2003). “Committee Connection: AWWA’s Source Water Protection Committee Outlines How to Maintain the Highest Quality Source Water.” *Journal American Water Works Association*, Vol. 95, No. 11, pp. 36-42, November 2003.

Gullick, R.W., M.W. LeChevallier and T.S. Barhorst (2001). “Occurrence of Perchlorate in Drinking Water Sources.” *Journal American Water Works Association*, Vol. 93, No. 1, pp. 66-77.

Gullick, R.W. and M.W. LeChevallier (2000). “Occurrence of MTBE in Drinking Water Sources.” *Journal American Water Works Association*, Vol. 92, No. 1, pp. 100-113.

Monitoring Systems

Gullick, R.W., L. J. Gaffney, C.S. Crockett, J. Schulte, and A.J. Gavin (2004). Developing Regional Early Warning Systems for US Source Waters. *Journal AWWA*, 96(6):68-82. (This article won the 2005 AWWA Publications Award for best paper published in *Journal AWWA* in 2004.)

Grayman, W.M., R.A. Deininger, R.M. Males, and R.W. Gullick (2004). Source Water Early Warning Systems." Chapter 11 in *Water Supply Systems Security* (Larry W. Mays, editor). McGraw-Hill, New York, NY.

Gullick, R.W., W.M. Grayman, R.A. Deininger, and R.M. Males (2003). Design of Early Warning Monitoring Systems for Source Waters. *Journal AWWA*, 95(11):58-72.

Gullick, R.W. (2001; updated 2003). Monitoring Systems for Early Warning of Source Water Contamination. American Water, Voorhees, NJ.

Drinking Water Treatment

Gullick, R.W. (2003). Preliminary Assessment of Arsenic Treatment Needs for American Water Utility Subsidiaries. American Water Works Service Company Inc., Voorhees, NJ.

Gullick, R.W., W.A. Lovins, III, J.S. Taylor, K. Ajy, M. Abbaszadegan, and M.W. LeChevallier (2000). Integrated Membrane Systems for Treatment of River Water. American Water Works Service Company Inc., Voorhees, NJ.

Gullick, R.W. and V.L. Snoeyink (2000). Assessment and Treatment of Aesthetic Water Quality Issues Associated with Hard Water: St. Joseph, MO and other Midwest Waters. American Water Works Service Company Inc., Voorhees, NJ.

Gullick, R.W. (1983, Master's Thesis). Adsorbability of Mixtures Produced by Ozonation of Phenol. University of North Carolina at Chapel Hill, School of Public Health, Dept. of Environmental Science & Engineering, Chapel Hill, NC.

Drinking Water Distribution Systems

Baribeau, H., L. Boulos, H. Haileselassie, G. Crozes, P. Singer, C. Nichols, S.A. Schlesinger, R.W. Gullick, S.L. Williams, R.L. Williams, L. Foutleroy, S.A. Andrews, and E. Moffat (2006). Formation and Decay of Disinfection By-Products in the Distribution System. Water Research Foundation (WaterRF), Denver, CO.

Gullick, R.W., M.W. LeChevallier, J. Case, D. J. Wood, J. E. Funk, and M.J. Friedman (2005). Application of Pressure Monitoring and Modelling to Detect and Minimize Low Pressure Events in Distribution Systems. *Journal of Water Supply: Research & Technology—AQUA*, 54(2):65-81.

Gullick, R.W., M.W. LeChevallier, R.S. Svindland, and M.J. Friedman (2004). Occurrence of Transient Low and Negative Pressures in Distribution Systems. *Journal AWWA*, 96(11):52-66.

Friedman, M., L. Radder, S. Harrison, D. Howie, M. Britton, G. Boyd, H. Wang, R. Gullick, M. LeChevallier, D. Wood, and J. Funk (2004). Verification and Control of Pressure Transients and Intrusion in Distribution Systems. Water Research Foundation, Denver, CO.

LeChevallier, M.W., R.W. Gullick, M.R. Karim, M. Friedman, and J.E. Funk (2003). The Potential for Health Risks from Intrusion of Contaminants into the Distribution System from Pressure Transients. *Journal of Water and Health*, 1(1):3-14.

Contaminant Fate and Transport

Gullick, R.W. and W. J. Weber, Jr. (2001). Evaluation of Shale and Organoclays as Sorbent Additives for Low-Permeability Soil Containment Barriers. *Environmental Science & Technology*, 35(7):1523-1530.

Gullick, R.W. (1998, Doctoral Dissertation). Effects of Sorbent Addition on the Transport of Inorganic and Organic Chemicals in Soil-Bentonite Cutoff Wall Containment Barriers. The University of Michigan, Dept. of Civil & Environmental Engineering, Ann Arbor, MI.

Gullick, R.W., W.J. Weber, Jr., and D.H. Gray (1996). Organic Contaminant Transport Through Clay Liners and Slurry Walls, in *Organic Pollutants in the Environment* (CMS Workshop Lectures, Volume 8), The Clay Minerals Society, Boulder, CO.