

MASIH BARI, PHD, PE

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EXPERT WITNESS | WATER RESOURCES, HYDROLOGY AND ENVIRONMENTAL SYSTEMS

Dr. Masih Bari, PE (formerly Akhbari) is a Civil and Environmental Engineer with over 20 years of experience in water resources, hydrology, and environmental compliance. He is a retained expert with experience providing sworn testimony, developing expert reports and rebuttals, and evaluating opposing expert analyses in groundwater and regulatory litigation matters. Dr. Bari combines deep technical expertise with the ability to translate complex modeling and regulatory issues into clear, defensible opinions for legal proceedings.

EXPERT WITNESS DESIGNATION & ENGAGEMENTS

Retained Testifying Expert – Groundwater Litigation

Equus Beds Groundwater Management District #2 vs. City of Wichita (Kansas)

Jan 2019 – Mar 2020

- Retained as expert in groundwater litigation involving aquifer management and regulatory compliance
- Evaluated groundwater simulation models for technical validity, assumptions, and regulatory implications
- Analyzed Aquifer Storage and Recovery (ASR) permit modification in context of model outputs and legal standards
- Authored expert report and rebuttal addressing opposing expert opinions
- Provided sworn testimony before the Kansas Division of Water Resources
- Supported legal counsel in developing technically defensible case strategy

AREAS OF EXPERTISE

Expert Witness & Litigation

- Expert reports and rebuttals
- Evaluation of opposing expert analyses
- Deposition and trial preparation
- Attorney–client privileged technical analysis

Technical Expertise

- Hydrologic and hydraulic modeling
- Groundwater systems and water supply analysis
- Water quality and mixing zone modeling
- Regulatory frameworks (NPDES, SGMA, Title 22)

PROFESSIONAL EXPERIENCE

The Bari Consulting Inc., Founder & Principal, Santa Monica, CA

Jun 2025 – Present

Founded a specialized consulting practice providing technical advisory and expert support in water resources, regulatory compliance, and infrastructure-related evaluations.

- Provide expert witness and technical advisory services in water resources and environmental systems
- Conduct independent technical evaluations of hydrologic and water quality models, including assumptions, inputs, and outputs
- Advise agencies, consultants, and legal teams on regulatory compliance, modeling defensibility, and risk considerations

AtkinsRéalis, Senior Engineer II, Los Angeles, CA

Jul 2022 – Aug 2025

- Served as Project Manager and Deputy Program Manager on water infrastructure and environmental compliance initiatives, with a focus on technical oversight, regulatory alignment, and multidisciplinary coordination.
- Evaluated hydrologic and hydraulic modeling results including flow distribution, velocities, flood extents, water surface elevations to ensure technical consistency and defensibility
- Evaluated engineering assumptions for regulatory defensibility and technical consistency
- Contributed to management of concurrent projects, aligning technical teams, client priorities and delivery schedules
- Supported delivery of design programs exceeding \$100M in construction value
- Coordinated multidisciplinary teams, subconsultants, and client stakeholders
- Delivered technical findings at national industry conferences (CASQA, WEF Tech, StormCon)

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Cordoba Corporation, Hydrology and Hydraulics Engineer, Los Angeles, CA

June 2021 – July 2022

- Supported water infrastructure and stormwater projects focusing on regulatory compliance and technical analysis
- Contributed to proposal development, client engagement, and project delivery
- Provided project management support for major municipal programs including Title 22 Engineering Reports
- Evaluated compliance alternatives for an oil company site closure, aligning technical work with regulatory risk management under attorney-client privilege.

PROJECT ENGINEER II, Larry Walker Associates, Santa Monica, CA

July 2018 – June 2021

- Developed mixing zone and dilution modeling analyses for wastewater discharge compliance and permit renewal
- Supported NPDES permit compliance and reissuance efforts for multiple utilities
- Contributed to development of Groundwater Sustainability Plans under Sustainable Groundwater Management Act
- Prepared Risk and Resiliency Assessment reports in accordance with America's Water Infrastructure Act (AWIA)
- Led technical evaluation of municipal water supply alternatives, including regulatory and feasibility considerations

SENIOR WATER RESOURCES ENGINEER, RTI International, Fort Collins, CO

June 2015 – April 2018

- Led hydrologic modeling and simulation efforts for major water resources projects
- Developed reservoir simulation models and forecasting tools
- Supported proposal development and technical project execution

SELECTED PROJECT EXPERIENCE

Pure Water Los Angeles Program (PWLA) – LASAN (2026–Present)

Regulatory Strategy Lead

- Leading development of regulatory framework spanning Title 22 potable reuse, NPDES permitting, and emerging contaminants (PFAS, CECs)
- Developing regulatory roadmaps, applicability matrices, and risk registers for program implementation
- Advising on compliance strategy, feasibility, and integration with large-scale infrastructure planning

Lower Las Vegas Wash Stabilization Program – Southern Nevada Water Authority (2022–2025)

Project Manager / Assistant Program Manager

- Managed scope, budget, and multidisciplinary coordination for large-scale erosion control and water quality program
- Led definition and evaluation of ~24 technical alternatives considering feasibility, constructability, and capital constraints
- Supported program optimization reducing potential construction costs while maintaining core objectives

Wilmington Q Street Local Area Urban Flow Management – Los Angeles Bureau of Engineering (2023–2025)

Deputy Project Manager

- Managed scope, schedule, and coordination for stormwater capture and infiltration project under Safe Clean Water Program
- Reviewed hydrologic/hydraulic analyses supporting NPDES compliance in the Dominguez Channel watershed
- Coordinated with client, subconsultants, and stakeholders on technical deliverables and design integration

Attorney-Client Privileged – PFAS / Site Evaluation, Southern California (2021–2022)

Technical Advisor

- Conducted technical and regulatory evaluation of potential contamination and compliance pathways under privilege
- Reviewed hydrogeologic data, risk considerations, and regulatory frameworks to support legal strategy

MacArthur Lake Stormwater Capture Project – Los Angeles Sanitation & Environment (2021–2022)

Assistant Project Manager

- Supported hydrologic analysis, technical memoranda, and preliminary design documentation
- Performed QA/QC on engineering deliverables and coordinated multidisciplinary teams
- Contributed to regulatory compliance strategy and stormwater capture planning

Mixing Zone & Dilution Studies – EBDA, EBMUD, Delta Diablo, SASM (2019–2021)

Lead Modeler

- Conducted near-field dilution modeling (CORMIX) to support NPDES permit compliance and reissuance
- Evaluated discharge scenarios and interpreted results for Regional Water Board decision-making
- Supported development of effluent limitations and compliance strategies for multiple utilities

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Groundwater Sustainability Plans (GSP) – Multiple Basins, California (2018–2021)

Technical Lead / Analyst

- Performed hydrologic, statistical, and groundwater quality analyses supporting GSP development
- Developed 50-year implementation roadmaps and sustainability criteria
- Supported stakeholder engagement, regulatory alignment, and technical report preparation

EDUCATION

Ph.D., Civil and Environmental Engineering

Colorado State University 2012

Distinguished International Presidential Fellow

M.S., Civil and Environmental Engineering

Amirkabir University of Technology (Tehran Polytechnic) 2005

B.S. in Civil Engineering

Islamic Azad University 2002

PUBLICATIONS & PRESENTATIONS

BOOKS

Karamouz, M., A. Ahmadi, and M. Akhbari, 2020. "Second Edition: Groundwater Hydrology: Engineering, Planning, and Management" CRC Press, Boca Raton, FL.

Karamouz, M., A. Ahmadi, and M. Akhbari, 2011. "Groundwater Hydrology: Engineering, Planning, and Management," CRC Press, Boca Raton, FL.

Karamouz, M., A. Ahmadi, and M. Akhbari, 2011. "Solution Manual - Groundwater Hydrology: Engineering, Planning, & Management," CRC Press, Boca Raton, FL.

Selected Peer Reviewed Publications

Islami, I., Sadoddin, A., Asgharpour Masoule, A., and M. Akhbari 2017, "Modeling socio-ecological structure of stakeholders' participation in managing livestock drinking water using the agent-based approach," Applied Ecology and Environmental Research, DOI: http://dx.doi.org/10.15666/aeer/1503_11731192.

Farhadi, S., Nikoo, M., Rakhshanderoo, G., Akhbari, M., and M.R. Alizadeh 2016, "An Agent-based-Nash Modeling Framework for Sustainable Groundwater Management: A Case Study," Journal of Agricultural Water Management, DOI: 10.1016/j.agwat.2016.08.018

Akhbari, M. and N. S. Grigg 2015, "Managing Water Resources Conflicts: Modelling Behavior in a Decision Tool," Journal of Water Resources Management, Springer, Vol. 29, Issue 14, Page 5201-5216 DOI: 10.1007/s11269-015-1113-9.

Akhbari, M. and N. S. Grigg 2014. "Water Management Tradeoffs between Agriculture and the Environment: A Multiobjective Approach and Application," J. of Irrig. and Drainage Eng., ASCE, Vol. 140, Issue 8, DOI: 10.1061/(ASCE)IR.1943-4774.0000737.

Akhbari, M. and N. S. Grigg 2013. "A Framework for an Agent-Based Model to Manage Water Resources Conflicts," Journal of Water Resources Management, Springer, Vol. 27, Issue 11, pp. 4039-4052, DOI: 10.1007/s11269-013-0394-0.

Karamouz, M., M. Akhbari, and A. Moridi, 2011. "Resolving Disputes over Reservoir-River Operation," J. of Irrigation and Drainage Engineering, ASCE, Vol. 137, No. 5, pp. 327-339, DOI: 10.1061/(ASCE)IR.1943-4774.0000292.

Karamouz, M., Kerachian, R., M. Akhbari, and B. Haafez 2009. "Design of river water quality monitoring networks: a case study," J. of Env. Modeling and Assessment, Springers, 14(6), pp. 705-714, DOI: 10.1007/s10666-008-9172-4

Karamouz, M., M. Akhbari, R. Kerachian, and A. Moridi 2006. "A System Dynamics-Based Conflict Resolution Model for River Water Quality Management," Iranian Journal of Environmental Health Science and Engineering, Vol 3, No. 3, pages 147-160.

Selected Reports and White Papers

Akhbari, M., Smith, MLou 2016. "Case Studies Highlighting Challenges and Opportunities for Agricultural Water Conservation in the Colorado River Basin," Colorado Water Institute, Special Report No. 27. Available at: <http://cwi.colostate.edu/publications/SR/27.pdf>

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- Akhbari, M., Grigg, N. S., and R. Waskom 2014. "Background Paper for the Nexus Workshop: U.S. Perspective on the Water-Energy-Food Nexus," The Nexus Dialogue on Water Infrastructure Solutions Meeting, Golden, Colorado, June 23-24, 2014. Available at: <http://www.cwi.colostate.edu/workshops/NEXUS2014/Background.aspx>
- Akhbari, M., Childress, A. Averyt, K., Barton, J., Bellamy, B., Belt, R., Chartrand, L., Cohen, M., Gilroy, K., Grigg, N., Harto, C., Holzfaster, J., Kryc, K., Laituri, M., Lineberger, J., MacDonnell, L., Macknick, J., Marshall, Z., Radtke, J., Spang, E., Tellenhuisen, S., Tidwell, V., Waskom, R. 2014. "Report from the U.S. Nexus Workshop — Water, Energy, and Food: Mutual Security through a Nexus Approach," in U.S. Perspective on the Water-Energy-Food Nexus, Colorado Water Institute, Information Series No. 116. Available at: <http://www.cwi.colostate.edu/workshops/NEXUS2014/Report.aspx>
- Viers, JH, Rheinheimer, D., Akhbari, M., Peek, R., Yarnell, S., Null, S. 2013. "Considering climate change for hydropower relicensing." Public Interest Energy Research (PIER) Program White Paper. Prepared for the California Energy Commission.

Selected Talks and Presentations

- Bari, M., Peternal, K., and C. Barlow 2024, "A Practical Approach to Obtain a Groundwater Discharge Permit in Support of the Lower Las Vegas Wash Stabilization Project," Nevada Water Resources Association (Nwra), Las Vegas, NV.
- Bari, M., Wilkinson, M., and A. Marquez 2024, "Lower Las Vegas Wash Stabilization: An Erosion Control and Flood Mitigation Program for Infrastructure Protection," StormCon, Reno, NV.
- Bari, M. 2023, "Stormwater Capture to Enhance Water Resiliency and Sustainability In Southern California," California Stormwater Quality Association (CASQA) Annual Conference, San Diego, CA.
- Akhbari, M., Smith, MLou and R. Waskom 2015, "Saving Agricultural Water in the Colorado River Basin: Drivers and Challenges," American Water Res. Association (AWRA) Annual Conference on Water Resources.
- Akhbari, M. 2015 (Invited), Systemic Approaches in Planning and Management of Water, Energy, and Food Resources: Employing Agent-Based Modeling as a Supporting Tool, Shiraz University, Shiraz, Iran.
- Akhbari, M., Grigg, N. S., and R. Waskom 2014. "Water-Energy-Food Nexus: Compelling Issues for Geophysical Research," 2014 American Geophysical Union Fall Meeting, San Francisco, California.
- Waskom, R., Grigg, N.S., Akhbari, M. 2014. "Report from the U.S. — Water Energy Food Nexus Workshop," 2014 World Water Week, Stockholm, Sweden.
- Akhbari, M. (2014), "California Bay-Delta Program," The Nexus Dialogue on Water Infrastructure Solutions Meeting, Golden, Colorado, June 23-24, 2014.
- Akhbari, M. and N. S. Grigg 2011. "Conflicts over Water Quality Management in Sacramento-San Joaquin Delta," AGU Hydrology Days, Colorado State University, Fort Collins, Colorado.