

Association of Ground Water Agencies - American Ground Water Trust

AGWA – AGWT Annual Conference

“Everything aquifers and groundwater management”

Wednesday, February 15 and Thursday, February 16, 2017

Radisson Hotel Ontario Airport, 2200 East Holt Boulevard, Ontario, California 91761

In cooperation with Groundwater Resources Association and the California Groundwater Coalition



Background

The first AGWA/AGWT joint conference was held in Ontario, CA in 2000. Since then, this annual event has provided an important information exchange and networking opportunity for California’s water agencies, utilities and water districts, and for all water professionals (scientific, engineering, managerial, legal, environmental, regulatory), end-users of water, and local and state elected officials involved with water policy issues. The focus of every program has been on current groundwater management issues in California.

Event Sponsors



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Approved/CA Drinking Water Operator Certification Program – Feb 15-5.75 Hrs/Feb 16-5.25 Hrs

8:15 – 9:15 REGISTRATION (Coffee, pastries and view exhibits)

9:15 – 9:30 **WELCOME, OPENING REMARKS FROM AGWA AND AGWT**
Anthony Zampiello, Chairman, Association of Ground Water Agencies
Andrew Stone, Executive Director, American Ground Water Trust

9:30 -10:00 **Keynote Presentation (1)**
PERSPECTIVES ON CALIFORNIA WATER POLICY
Frances Spivy-Weber, Vice Chair, California State Water Resources Control Board, Sacramento, CA



Frances Spivy-Weber of Redondo Beach was first appointed to the State Water Resources Control Board in 2007, reappointed and elected Vice-Chair of the Board in 2009, and reappointed by Governor Brown in 2013 to a four-year term. Before being appointed to the Board, she served as the Executive Director of the Mono Lake Committee.

From 1983 to 1992, Ms. Weber served as the Director of international programs for the National Audubon Society. She previously was a legislative assistant for the Animal Welfare Institute from 1978 to 1982. Ms. Spivy-Weber is currently serving as Chair of the Water Policy Center Advisory Council with the Public Policy Institute of California; Member, Advisory Board of Synergy; and Member, Advisory Committee on Recycled Water and Direct Augmentation of Surface Waters and Feasibility of Direct Potable Reuse.

She has served on many boards, including the Water Education Foundation, California Council of Land Trusts, and Clean Water Action/Clean Water Fund.

10:00-10:30 **Keynote Presentation (2)**
STORM WATER DISCHARGE REGULATIONS: PROBLEM OR PROMISE FOR SOUTHERN CALIFORNIA GROUNDWATER RECHARGE?
Tracy J. Egoscue, Attorney, Egoscue Law Group, Long Beach, CA



Ms. Egoscue's primary practice areas include Water Quality; Water Rights; Groundwater and Soil Remediation; Permits; Enforcement Matters; Wetland Development and Mitigation; and Environmental Litigation. Prior to forming the Egoscue Law Group Tracy's legal experience included Executive Officer of the State of California Regional Water Quality Control Board - Los Angeles Region and Deputy Attorney General for the California Department of Justice. As Executive Director of the Santa Monica Baykeeper she achieved a \$5 billion Clean Water Act settlement against the City of Los Angeles.

Ms. Egoscue received her J.D. from George Washington University in Washington, D.C. and her B.A. from the University of California at Santa Barbara.

10:30 – 10:50 BREAK

10:50 – 12:20 Session 1

GROUNDWATER RECHARGE AND THE STORMWATER - (MS4) PROGRAM

Moderator:

Anthony Zampiello, Chairman, Association of Ground Water Agencies

This session involves the requirements that the state has imposed on cities to meet the new MS4 requirements. Discussion will include how storm water is conserved, spread and recharged to augment groundwater supply, and will consider the impacts on water quality from recharge operations.

COMPLIANCE WITH MS4 REGULATIONS

Oliver Chi, City Manager, City of Monrovia, Monrovia, CA

STORMWATER: HOW IT IS MANAGED FOR CONSERVATION AND FLOOD PROTECTION

Keith Lilley, PE, Principal Engineer, Los Angeles Dept of Public Works, Water Resources Div, Los Angeles County

SITING AND DESIGN OF LARGE STORMWATER CAPTURE RECHARGE BASINS IN SOUTHERN CALIFORNIA

Trey Driscoll, PG, CHG, Principal Hydrogeologist, DUDEK Engineering, Encinitas, CA

12:20 – 1:30 LUNCH

1:30 – 3:00 Session 2

SOUTHERN CALIFORNIA WATER MANAGEMENT

Moderator:

Lynn Grijalva, PE, Vice President, Hazen and Sawyer, Los Angeles, CA

The management of Southern California's groundwater resources requires creative strategies to ensure that supplies can be sustainable. The Cadiz project to bring water from the Mohave Desert, and WRD's plan for effective use of groundwater recharge, storage and recovery are two current innovations. Overshadowing the issue of water availability for direct use or groundwater recharge is uncertainty about future Colorado River water deliveries.

GROUNDWATER BASINS MASTER PLAN (Utilizing groundwater storage and resources more effectively)

Ted Johnson, PG, CHG, Groundwater Mgr, Water Replenishment District of Southern California, Lakewood, CA

UPDATE ON CADIZ WATER PROJECT

Scott Slater, Attorney, President and CEO, Cadiz, Inc., Los Angeles, CA

PLANNING FOR UNCERTAINTY: COLORADO RIVER WATER TRANSFERS TO SOUTHERN CALIFORNIA

Bill Hasencamp, PE, Manager, Colorado River Resources, Metropolitan Water District, Los Angeles, CA

3:00 – 3:20 BREAK

3:20 – 5:00 Session 3

AFTER SGMA: CHALLENGES OF SUSTAINABLY MANAGING GROUNDWATER

Moderator:

Stephen J. Cullen, PhD, PG, Principal Hydrogeologist/Sr. VP, Daniel B. Stephens & Associates, Inc., Santa Barbara, CA

The Sustainable Groundwater Management Act, enacted in January 2015, established compliance milestones for reaching sustainable groundwater management. This session presents experiences and lessons learned in the pursuit of achieving the sustainability goal. The speakers draw from case studies and data derived from specific adjudicated basins where the goal of groundwater sustainability is a critical component of a workable water rights settlement or judgement by examining sustainability indicators that are also identified in SGMA.

LESSONS LEARNED IN DEVELOPING DEFENSIBLE GROUNDWATER BUDGETS AND EVALUATING SUSTAINABILITY INDICATORS

Gregory Schnaar, PhD, Principal Environmental Scientist, Daniel B. Stephens & Associates, Inc., Silver Spring, MD

CHALLENGES AND EXPERIENCES IN SUSTAINABLE GROUNDWATER MANAGEMENT IN THE CHINO BASIN

Peter Kavounas, PE, General Manager, Chino Basin Watermaster, Rancho Cucamonga, CA

GROUNDWATER SUSTAINABILITY, SALINITY, AND NITRATE: THE CENTRAL VALLEY

Joe LeClaire, PhD, Associate, CDM Smith, Irvine, CA

SGMA-ALTERNATIVE ANALYSIS FOR THE CENTRAL BASIN

Brian Partington, PG, CHG, Hydrogeologist, Water Replenishment District of Southern California, Lakewood, CA

5:00 – 6:30 RECEPTION - CASH-BAR (Hors D'Oeuvres)



8:30 – 10:10 Session 4

EFFICIENT/COST EFFECTIVE WELLFIELD MANAGEMENT

Moderator:

Brian Villalobos, PG, CHG, CEG, Principal Geohydrologist, GEOSCIENCE, Claremont, CA

Using the already reduced water supplies in Southern California efficiently and cost effectively is the goal of all those responsible for supplying water to a growing population. This session will look at methods for efficiently managing groundwater basins, future planning to optimize all available water supplies, and the current thought on more efficiently managing wellfields and maximizing well capacities.

EFFECTIVE WELLFIELD OPERATIONS USING KEY WELLS – THE CONCEPT

Johnson Yeh, PhD, PG, CHG, Principal, GEOSCIENCE, Claremont, CA

25 YEARS OF WELLFIELD MANAGEMENT USING KEY WELLS AND ANNUAL GROUNDWATER AUDIT

Warren Back, PE, Engineering Manager - Operations, and Rich Ottolini, Water Operations Manager, Rancho California Water District, Temecula, CA

THINKING INTO THE FUTURE FOR SUSTAINABLE GROUNDWATER BASIN MANAGEMENT

Joe Zoba, General Manager, Yucaipa Valley Water District, Yucaipa, CA

MODERN TECHNOLOGIES IN WELLFIELD MANAGEMENT: PRODUCING THE MOST WATER AT THE LEAST COST

Mark Williams, PhD, PE, Vice President, GEOSCIENCE, Claremont, CA

10:10 10:30 BREAK

10:30 – 12:00 Session 5

CHROME 6 – HOW TO TREAT IT – EMERGING TECHNOLOGIES

Moderator:

Terry Foreman, PG, CHG, Groundwater Consultant, Camarillo, CA

The session will showcase recent technology breakthroughs in the effectiveness and economics of water treatment systems to remove and reduce Chrome 6 and arsenic. With lower treatment costs it may be possible to bring into inventory groundwater sources previously abandoned as too expensive to treat.

TREATMENT TECHNOLOGIES, GRANT FUNDING AVAILABILITY AND OVERVIEW OF WATER DISTRICT TREATMENT IMPLEMENTATION

Jacqueline Rhoades, PE, Associate, Hazen and Sawyer, Palm Desert, CA

REDUCING TREATMENT COSTS FOR CHROME 6 AND OTHER METALS IN GROUNDWATER

Bill Ketchum, President, ATEC Systems Associates, Seattle, WA

MAKING A STRONG CASE FOR A WEAK BASE (Chrome 6 Treatment Results)

Adam Shumway, Project Engineer, Layne Christensen, Mesa, AZ

12:00 – 12:15

Special Guest Presentation

THE MAN WHO THOUGHT HE OWNED WATER

Tershia d'Elgin, Author, San Diego (No pdf provided)

*Tershia d'Elgin is an author and social activist, with a special interest in water policy, soil, and the tension between agriculture and metropolitan claims on water. A San-Diego based writer and water-resources consultant; she also oversees a working farm on the South Platte River in Colorado. Her book **The Man Who Thought He Owned Water**, about water through the lens of that Colorado farm, reveals tightening, well-financed claims on surface and ground water across the West.*



12:15 – 1:30 LUNCH

CLIMATE CHANGE IMPACTS TO GROUNDWATER, ESPECIALLY AS THEY RELATE TO SGMA

Moderator:

Abhishek Singh, PhD, Manager - California Operations/Senior Water Resources Engineer, INTERA Inc., Torrance, CA

Climate change models indicate that hydrologic flow regimes in California are likely to change and drive changes in agricultural practices and land-use, and add pressure on an already stressed groundwater system. SGMA lists climate change as a key component of groundwater sustainability plans (GSP) that must include an accounting and assessment of the total annual volume of groundwater and surface water entering and leaving a basin. The projected water budget is required to evaluate hydrologic uncertainty associated with projections.

The panel will discuss how impacts of climate change on groundwater can be characterized, evaluated, and incorporated into sustainability planning.

BEST MANAGEMENT PRACTICES AND TECHNICAL ASSISTANCE FOR INTEGRATING CLIMATE CHANGE INTO GROUNDWATER SUSTAINABILITY PLANNING

Steven Springhorn, PG, Senior Engineering Geologist, Sustainable Groundwater Management Section, California Department of Water Resources, Sacramento, CA

GROUNDWATER SUSTAINABILITY AND CLIMATE CHANGE - A GSA PERSPECTIVE

Marcus Trotta, Principal Hydrogeologist, Sonoma County Water Agency, Santa Rosa, CA

THE PERFECT STORM: A CHANGING CLIMATE IN A NEW WORLD OF GROUNDWATER REGULATION

Wes Miliband, Attorney, Stoel Rives, LLP, Sacramento, CA

INCORPORATING CLIMATE CHANGE INTO GROUNDWATER MODELS AND PLANS: A PRACTICAL GUIDE

Juliet Christian-Smith, PhD, Senior Climate Scientist, Union of Concerned Scientists, Oakland, CA

MODELS AND DATASETS FOR ASSESSING CLIMATE CHANGE IMPACTS ON GROUNDWATER SUSTAINABILITY

Abhishek Singh, PhD, Manager - California Operations/Senior Water Resources Engineer, INTERA, Torrance, CA

3:30 WRAP-UP AND ADJOURN

Professional Background of Presenters & Moderators (Listed alphabetically)

Warren Back, PE, Engineering Manager, Rancho California Water Dist. Temecula, CA



Warren Back has been a professional engineer for 27 years specializing in water resource planning, facility planning, and asset management. He is a Professional Engineer in California licensed as a Civil Engineer. He is experienced in development of capital improvement programs with emphasis in optimizing operations and maintenance to include managed aquifer recharge and groundwater well production. His current focus is the development and implementation of a comprehensive asset management program for the Rancho California Water District.

Mr. Back has a Master of Science (M.S.), Civil Engineering from South Dakota School of Mines and Technology and has experience in post-graduate civil engineering research at University of California at Irvine.

Oliver Chi, City Manager, City of Monrovia, Monrovia, CA



Oliver has over seventeen years of government experience at both the state and local level. He leads a staff of 300 employees and is responsible for managing a \$90 million annual budget. Prior to his current assignment, he held a variety of management and staff positions with the cities of Barstow, Rosemead, Claremont, and Arcadia, and he also has worked for the California State Legislature.

Oliver has extensive experience in economic development, human resources management, budgeting, and intergovernmental relations. In addition, his background includes research and implementation of performance measurement and benchmarking initiatives, process improvement, teambuilding, strategic planning and organizational development.

In 2004, he was elected president of the Municipal Management Association of Southern California. He has also been a board member for the California City Management Foundation, assisted the Cal-ICMA Preparing the Next Generation initiative, and participated in the Alliance for Innovation. He currently serves as a Board Member on the Institute for Local Government.

Oliver has a bachelor's degree in political science from UC Los Angeles and a Master's degree in Public Administration from the University of Southern California.

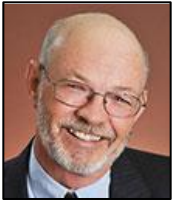
Juliet Christian-Smith, PhD, Senior Climate Scientist, Union of Concerned Scientists, Oakland, CA



Juliet Christian-Smith is a Senior Climate Scientist with the Climate and Energy Program at the Union of Concerned Scientists (UCS), based in UCS's Oakland office. Dr. Christian-Smith is the lead author of the book *A Twenty-First Century U.S. Water Policy* (Oxford Press 2012) and an editor of the journal *Sustainability Science*. She is also a member of the Director's Council for the University of California's Water Security and Sustainability Research Initiative and a Board member of Ag Innovations.

The focus of her work is providing California and U.S. policymakers, and the public with robust, timely, accessible, and policy-relevant information on climate science and climate impacts. Dr. Christian-Smith holds a PhD in Environmental Science, Policy, and Management from the University of California, Berkeley and a B.A. in Biology from Smith College.

Stephen Cullen, PhD, PG, Principal Hydrogeologist, Sr. VP, Daniel B. Stephens & Associates, Santa Barbara, CA



Stephen Cullen is responsible for DBS&A's California operations and has with more than 39 years of wide-ranging professional experience. He has led investigations in numerous locations across the United States and has worked in Central and South America, and in Europe. Over the last 27 years of his career, his interest and focus has been on water resource assessments and on soil, surface water, and groundwater contaminant investigations and remediation.

He is the author of more than 75 technical publications on water resources and environmental subsurface modeling, monitoring, and remediation, including the textbook *Handbook of Vadose Zone Characterization and Monitoring*. He has made invited presentations to the United Nations, the U.S. EPA, along with many industry, government, and local stakeholder groups.

Dr. Cullen's experience focuses on watershed studies, watershed monitoring, soil water balances, groundwater balances, and the evaluation of safe yield in adjudicated groundwater basins, and perennial yield in other basins. All of these study areas are essential components in the formulation of credible groundwater sustainability plans.

Trey Driscoll, PG, CHG, Principal Hydrogeologist, DUDEK Engineering, Encinitas, CA



Mr. Driscoll is a Principal Hydrogeologist with over 15 years' experience in the environmental field. Mr. Driscoll specializes in water resource studies, watershed evaluations, groundwater impacts analysis for CEQA/NEPA evaluations, sustainable yield analysis, well locating and drilling, and well design. Mr. Driscoll's project experience includes negotiation of water supply contracts, water rights testimony, preparation of groundwater monitoring and mitigation plans, water quality and hydrology technical reports, design and implementation of water infrastructure projects, grant writing and exploratory groundwater investigations. Mr. Driscoll is currently the president of the San Diego branch of the Groundwater Resources Association of California.

Tershia d'Elgin, Author, San Diego, CA



Tershia d'Elgin is an author and social activist, with a special interest in water policy, soil, and the tension between agriculture and metropolitan claims on water. A San Diego based writer and water-resources consultant; she also oversees a working farm on the South Platte River in Colorado.

Her book *The Man Who Thought He Owned Water*, about water through the lens of that Colorado farm, reveals tightening, well-financed claims on surface and ground water across the West. "The Man Who Thought He Owned Water" is an appeal for urban-rural cooperation over water in our pursuit of resiliency.

Tracy J. Egoscue, Attorney, Egoscue Law Group, Long Beach, CA



Ms. Egoscue's primary practice areas include Water Quality, Water Rights, Groundwater and Soil Remediation, Permits, Enforcement Matters, Wetland Development and Mitigation, and Environmental Litigation. Prior to forming the Egoscue Law Group Tracy's legal experience included Executive Officer of the State of California Regional Water Quality Control Board - Los Angeles Region and Deputy Attorney General for the California Department of Justice. As Executive Director of the Santa Monica Baykeeper she achieved a \$5 billion Clean Water Act settlement against the City of Los Angeles.

Ms. Egoscue received her J.D. from George Washington University in Washington, D.C. and her B.A. from the University of California at Santa Barbara.

Terry Foreman, PG, CHG, Groundwater Consultant, Camarillo, CA



Mr. Foreman is a Professional Geologist and Certified Hydrogeologist in California. He was a former Vice President of CH2M Hill, a global leader in consulting, design, design-build, operations and program management. Mr. Foreman has numerous years of experience in water resources, assisting public and private agencies in dealing with water supply quantity and quality issues throughout the southwestern United States. He is a member of a number of water-related professional organizations. Mr. Foreman attended Santa Barbara City College and he holds Bachelor's and Master's Degrees in Geology from the University of Missouri at Columbia.

Lynn Grijalva, PE, Vice President, Hazen & Sawyer, Los Angeles, CA



Ms. Grijalva possesses nearly three decades of experience managing successful potable water, wastewater, solids handling, reuse, stormwater, groundwater recharge, and streams and wetlands projects throughout California and Nevada. She is also a past president of the Water Environment Federation and a former Board member of the Water Environment Research Foundation. Ms. Grijalva holds graduate and undergraduate degrees in civil engineering from the University of Nevada at Reno. She has presented at national and local conferences on adaptive management, water recycling, graywater, selenium management, low impact development, and nitrogen control.

Bill Hasencamp, PE, Manager, Colorado River Resources, Metropolitan Water District, Los Angeles, CA



Bill Hasencamp is the manager of Colorado River Resources for the Metropolitan Water District of Southern California, where he develops and manages water supply programs to augment Metropolitan's Colorado River supplies. He has been with Metropolitan since 2001, and during that time has negotiated transfer agreements with irrigations districts, exchange agreements with municipal agencies, and funded new water supply projects which have more than doubled Metropolitan's Colorado River water supplies since 2003.

In 2007, Hasencamp negotiated and worked with other states to develop the Intentionally Created Surplus Program, which allows Metropolitan to store up to 1.5 million acre-feet of conserved water in Lake Mead at no cost. He is one of California's representatives to the Colorado River Salinity Control Forum, which implements projects to reduce the salinity concentration of Colorado River water at Metropolitan's intake.

Prior to joining Metropolitan, Hasencamp was the Operations Planning Manager for Contra Costa Water District (CCWD) in Northern California. Prior to that, he was an environmental programs manager at the Los Angeles Department of Water and Power, where he oversaw the development of environmental restoration programs in the Mono Lake Basin.

Peter Kavounas, PE, General Manager, Chino Basin Watermaster, Rancho Cucamonga, CA



Mr. Kavounas has over 25 years of experience and has worked for the Los Angeles Department of Water and Power as the Eastern Sierra Environmental Issues Manager, and for the City of Glendale's Water and Power Department as the Assistant General Manager-Water Services. Mr. Kavounas was elected to the Castaic Lake Water Agency Board of Directors in 1998 and served for fifteen years holding various positions including the office of Board President.

Mr. Kavounas has a Bachelor of Science degree in Civil Engineering from the University of Minnesota, a Master of Engineering-Structural from UC Berkeley, and a Master of Science-Water Resources from USC. He is also a graduate of Leadership Southern California Class XII, and is a licensed Professional Engineer in the State of California.

As the General Manager Mr. Kavounas oversees all aspects of the organization: meeting obligations to the Judgment and other Court Orders, implementation of the Optimum Basin Management Program, compliance with all regulatory requirements, and business practices.

Bill Ketchum, President, ATEC Systems Associates, Seattle, WA



Bill Ketchum is the President of ATEC Systems Associates. ATEC is a Seattle-based business engaged in the development of efficient, reliable, cost-effective high rate water treatment technologies. With his brother David who handles manufacturing, Bill has been deeply involved in every aspect of ATEC including design, process development, operations, and customer support. His company designed and installed the first high rate iron and manganese removal system using Pyrolusite. Since then, he has built, provided the equipment for, and has in operation nearly 500 systems for the removal of iron, manganese, arsenic, radium, hydrogen sulfide and, most recently, hexavalent chromium. ATEC Systems has long prided itself on delivering the most cost efficient treatment systems. The company has installed systems in Arizona, California, Oregon, Washington, British Columbia, Illinois, Indiana, Michigan, and Wisconsin.

Joe LeClaire, PhD, Associate, CDM Smith, Irvine, CA



Dr. LeClaire has over 31 years of professional experience in water resources and environmental engineering. He has demonstrated success in managing large, multi-disciplinary projects and in working with stakeholder groups with disparate and often conflicting objectives. Dr. LeClaire's experience spans numerous water resources and environmental studies and projects. His technical expertise is in the area of groundwater quality, equilibrium chemistry, and the mobility of trace metals and organics in the unsaturated zone. He has a PhD from the University of California, Riverside.

Keith Lilley, PE, Principal Engineer, LA Department of Public Works, Los Angeles, CA



Mr. Lilley is a Principal Engineer with the Los Angeles County Department of Public Works with over 25 years of experience in water resources engineering. He currently assists in managing the Department's Water Resources Division which oversees operations of 14 major dams and 26 spreading grounds as well as infrastructure enhancement programs to increase stormwater capture for local water supply and to reduce flood risk to downstream communities. His efforts at the department also focus on sediment management and with the numerous regulatory challenges in managing public infrastructure located in watercourses. Mr. Lilley received his B.S in Civil Engineering from Louisiana State University and a Certificate in Engineering Management for Construction from University of California, Los Angeles.

Wes Miliband, Attorney, Stoel Rives, Sacramento, CA



Wes Miliband is a California water rights and water resources lawyer. Wes focuses on securing and protecting water rights and water supplies including assistance with water transfers as well as the infrastructure necessary to treat, store and deliver water. Wes' practice lends itself to related environmental issues involving water quality impacts to surface water and groundwater supplies, regulatory permitting, and environmental compliance with federal and state requirements. Wes provides clients with highly-sophisticated strategic approaches for effectively resolving challenging circumstances and disputes that result in environmental litigation.

Prior to joining Stoel Rives, Wes was a partner at a law firm based in southern California. Wes started his legal career as a Deputy District Attorney in Orange County, where he prosecuted twenty jury trials and several more before the court. As a law student, he clerked for Judge Gerald G. Johnston of the Orange County Superior Court. Prior to law school, Wes was on staff for a Member of Congress. Wes has a J.D. from Chapman University Fowler School of Law, Orange, CA.

Brian Partington, PG, CHG, Hydrogeologist, Water Replenishment District, Lakewood, CA



Brian Partington is a hydrogeologist at the Water Replenishment District of Southern California. He is responsible for managing a basin-wide groundwater contamination program and for the past year has been a lead participant in groundwater sustainability discussions with key stakeholders in the Central Subbasin, Southern Los Angeles County, California. He recently co-authored an alternative analysis submitted for a high priority basin as required under the Sustainable Groundwater Management Act (SGMA). Brian has over 20 years of groundwater experience and received a Bachelor of Science degree in Geology from California State University Fullerton. He is also a California Professional Geologist and Certified Hydrogeologist (PG/CHG).

Jacqueline Rhoades, PE, Associate, Hazen and Sawyer, Palm Desert, CA



Ms. Rhoades specializes in drinking water treatment with experience ranging from water quality compliance and planning, treatment process selection, evaluation, and testing, to treatment operations, commissioning, and process optimization. Most recently Ms. Rhoades has focused on the research, planning, design, and construction of chromium 6 treatment processes including ion exchange and reduction coagulation filtration facilities for California utilities. Her chromium 6 clients include Coachella Valley Water District, Santa Ynez Water District, Indio Water Authority, Coachella Water Authority, City of Banning, and Myoma Dunes Water Company. Additionally, she has managed the implementation of chromium 6 treatment facilities for the Indio Water Authority, one of the first utilities to install treatment for compliance with the new Chromium 6 regulation in California. Currently, she is managing a pilot testing program of an RCF process using stannous chloride for the Coachella Water Authority. Ms. Rhoades holds a BS in Chemical Engineering and MS in Environmental Engineering from the University of Arizona.

Gregory Schnaar, PhD, Principal Environmental Scientist, Daniel B. Stephens & Associates, Silver Spring, MD



Dr. Schnaar has a PhD in Soil, Water, and Environmental Science from the University of Arizona. He is a hydrologist with more than 10 years of professional experience. Dr. Schnaar's practice focuses on applying quantitative hydrologic methods to evaluate contaminant transport and conduct water resources assessments. He has managed environmental and water resource investigations in California, Arizona, Maryland, Illinois, Ohio, Pennsylvania, and Washington.

To support clients on a variety of issues, he has reported to and participated in negotiations with the U.S. EPA, the California Department of Toxic Substances Control (DTSC), the Los Angeles Regional Water Quality Control Board, and the Arizona Department of Environmental Quality (ADEQ). He has conducted work to ensure compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), Clean Water Act (CWA), Safe Drinking Water Act (SDWA), and vapor intrusion guidance published by the U.S. EPA and the states of California, Arizona, and Ohio.

Adam Shumway, Project Engineer, Layne, Mesa, AZ



Adam Shumway has served the Water Technologies group for Layne since 2011 as a Project Engineer. His responsibilities include providing technical support in costing and sizing of full scale water treatment equipment as well as pilot systems, technical consultation on brackish water and desalination reverse osmosis systems, iron, manganese and arsenic coagulation filtration processes, as well as adsorptive arsenic removal projects, and air stripping for reduction of dissolved gases, VOC's and THM's. Currently he is involved with design, development and piloting of WBA, SBA and C for Cr (VI) removal applications. Adam has a BSE in Chemical Engineering from Arizona State University.

Abhishek Singh, PhD, Manager-CA Operations/Senior Water Resources Engineer, INTERA Inc., Torrance, CA



Abhishek Singh's professional experience has focused on research and application in the areas of groundwater and surface water modeling, planning and decision analysis, risk and uncertainty analyses, optimization techniques, and temporal/spatial statistics. He has expertise in the development, calibration, and application of hydrologic and data-driven models to support robust water-resources decision-making. He has served as Manager of INTERA's Quantitative Analysis Group and he leads projects and tasks involving the development and application of uncertainty analysis, risk assessment, and statistical modeling techniques. Abhishek has applied his expertise on a variety of water resource, environmental, and waste isolation projects where efforts have included modeling of complex hydrogeologic systems; analysis of time-series data to evaluate trends in non-stationary hydrologic systems, assessing the impacts of climate change on water planning; performance assessment modeling for radioactive and hazardous waste disposal facilities; and optimization of groundwater remediation and monitoring system design. Abhishek has a PhD in Civil and Environmental Engineering from the University of Illinois.

Scott Slater, Attorney, President, Cadiz Inc., Los Angeles, CA



Scott Slater is the company's President and Chief Executive Officer, appointed to the role of President in April 2011 and CEO in February 2013. In addition, Mr. Slater has been a member of the company's Board of Directors since February 2012. Mr. Slater is an accomplished negotiator and litigator and, in addition to his role at Cadiz, is a partner in Brownstein Hyatt Farber Schreck, the nation's leading water practice firm. For 27 years, Mr. Slater's practice has been limited to litigation and the negotiation of agreements related to the acquisition, distribution, and treatment of water. He has served as lead negotiator on a number of important water transactions, including the negotiation of the largest conservation-based water transfer in U.S. history on behalf of the San Diego County Water Authority. Mr. Slater is also the author of California Water Law and Policy, the state's leading treatise on the subject, and has taught water law and policy courses at University of California, Santa Barbara, Pepperdine University, and the University of Western Australia, among others.

Steven Springhorn, PG, Senior Engineering Geologist, California Dept Water Resources, Sacramento, CA



Steven Springhorn is a Senior Engineering Geologist with the California Department of Water Resources' (DWR) Sustainable Groundwater Management Section in Sacramento. Steven has over 10 years of experience working on a variety of legislatively mandated programs and projects for the State, including the Sustainable Groundwater Management Act, Integrated Regional Water Management (IRWM) technical assistance, IRWM grant administration, evaluation of stream depletion impacts, and groundwater substitution transfer and conjunctive use programs. Steven received an M.S. in Geology from California State University (CSU), Sacramento and a B.S. in Geology from CSU, Chico. Steven is a California Professional Geologist.

Frances Spivy-Weber, Vice Chair, CA State Water Resources Control Board, Sacramento, CA



Frances Spivy-Weber of Redondo Beach was first appointed to the State Water Resources Control Board in 2007, reappointed and elected Vice-Chair of the Board in 2009, and reappointed by Governor Brown in 2013 to a four-year term. Before being appointed to the Board, she served as the Executive Director of the Mono Lake Committee.

From 1983 to 1992, Ms. Weber served as the Director of international programs for the National Audubon Society. She previously was a legislative assistant for the Animal Welfare Institute from 1978 to 1982. Ms. Spivy-Weber is currently serving as Chair of the Water Policy Center Advisory Council with the Public Policy Institute of California; Member, Advisory Board of Synergy; and Member, Advisory Committee on Recycled Water and Direct Augmentation of Surface Waters and Feasibility of Direct Potable Reuse. She has served on many boards, including the Water Education Foundation, California Council of Land Trusts, and Clean Water Action/Clean Water Fund.

Andrew Stone, Executive Director, American Ground Water Trust, Concord, NH



Andrew Stone is a hydrogeology graduate from University College, London. He has experience in Africa and America as a university professor, groundwater consultant, & educator. Since 1989 he has worked in the United States as a private-sector consultant, as adjunct professor (teaching groundwater protection policy at Antioch New England University) and as groundwater educator, advocate and outreach specialist for the non-profit American Ground Water Trust.

His work with the AGWT has involved convening over 200 "information-exchange" conferences and workshops related to well design, groundwater management, aquifer storage recovery, water rights, conjunctive use, geothermal technology, water banking, and asset management. He has organized over 70 "Groundwater Institutes" that have trained 2,000 science teachers and educators on water resources issues and the basics of hydrology. He is a recipient of the National Ground Water Association "Oliver Award" for his work in promoting groundwater education

Marcus Trotta, PG, CHG, Principal Hydrogeologist, Sonoma County Water Agency, Santa Rosa, CA



Mr. Trotta is a Principal Hydrogeologist for the Sonoma County Water Agency. The primary focus of his work involves leading feasibility studies for enhanced groundwater recharge projects and managing groundwater monitoring programs and technical studies in support of collaborative groundwater management activities. He is a California Professional Geologist and Certified Hydrogeologist and received his Bachelor of Science degree in Geology with an emphasis in Hydrologic Science from the University of California at Davis.

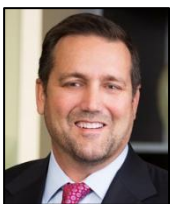
Brian Villalobos, PG, CHG, CEG, Principal Geohydrologist, GEOSCIENCE, Claremont, CA



Brian Villalobos has 25 years of professional experience in environmental geology and hydrogeology throughout Southern California and internationally. His areas of expertise include hydrogeologic investigations, environmental site assessments, environmental hydrogeology and engineering geology.

Brian has been a part of the GEOSCIENCE team for nearly a decade, overseeing projects involving groundwater basin evaluations, groundwater management and resource planning, contaminant geohydrology and artificial recharge. He has also led major studies and projects relating to desalination intake wells for numerous cities and agencies throughout California. Brian is a frequent speaker at conferences, particularly on topics relating to desalination and feedwater supply.

Mark Williams, PhD, PE, Vice President, GEOSCIENCE, Claremont, CA



Dr. Mark Williams oversees the engineering and water quality portions of GEOSCIENCE's projects. Drawing on his more than 20 years of experience at the Metropolitan Water District of Southern California and consulting experience at Williams-McCaron, Inc., Mark provides a range of technical support in projects ranging from engineering design to water quality investigations. He has PhD, Civil Engineering, University of Southern California, and is a California Professional Civil Engineer.

Johnson Yeh, PhD, PG, CHG, Principal, GEOSCIENCE, Claremont, CA



Dr. Johnson Yeh is a principal and lead groundwater modeler at GEOSCIENCE. During his more than 27 year career, he has been involved in the project management of the firm's groundwater modeling efforts, including some of its most high-profile geohydrologic investigations, groundwater basin/water quality studies and artificial recharge projects. Dr. Yeh also possesses a broad knowledge of GIS tools utilized in support of modeling work and oversees GEOSCIENCE's GIS staff members.

Dr. Yeh spearheads the generation and quality control of technical documents and technical presentations to both clients and regulators, including leading training and workshops on the use of models to the USGS and USEPA. He has a PhD, from the University of Southern California.

Anthony Zampello, Executive Officer, Main San Gabriel Basin Watermaster and Raymond Basin Management Board, Azusa, CA



Mr. Zampello oversees groundwater quality and supply management activities as well as administration of the Basin's groundwater adjudication. He directs staff functions associated with basin management as it directly relates to groundwater production, well construction, groundwater treatment and resource planning. He has more than thirty years of water management and resource planning experience in the San Gabriel Valley with local Municipalities and Special Districts.

He holds a Bachelor's Degree in Business Management and is a certified Water Treatment Operator and Water Distribution Operator. He is President of The Association of Ground Water Agencies (AGWA) and serves on the Greater Los Angeles IRWMP as Water Management Area Representative for Groundwater. He is also the Executive Secretary for the San Gabriel Valley Water Association and Central Basin Water Association.

Joe Zoba, General Manager, Yucaipa Valley Water District, Yucaipa, CA



Joseph Zoba has served as the General Manager of the Yucaipa Valley Water District since 1994. In this role, Mr. Zoba oversees a staff of about sixty employees that provide drinking water, recycled water, and sewer services to a population of about 50,000 people.

Over the past two decades, Mr. Zoba led the Yucaipa Valley Water District through the design and construction of a regional drinking water filtration facility; nutrient and mineral removal facilities at the wastewater treatment plant; a regional recycled water system; and a brine disposal pipeline. These fully integrated facilities provide important backbone infrastructure necessary to efficiently manage the water resources available to the Yucaipa Valley.

Mr. Zoba is a graduate of the University of California, Riverside with a Bachelor of Science in Biochemistry and a Masters degree in Business Administration. He also has a Masters degree in Public Administration from California State University, San Bernardino.

AMERICAN GROUND WATER TRUST (Non-profit education organization)
Ground Water Information, Awareness & Education Since 1986..... This is what we do:



- ~ Promote efficient and effective ground water management
- ~ Communicate the environmental and economic value of ground water
 - ~ Showcase ground water science and technology solutions
 - ~ Increase citizen, community and decision-maker awareness
 - ~ Facilitate stakeholder participation in water resource decisions



ASSOCIATION OF GROUND WATER AGENCIES



AGWA, was formed in 1994 by a group of Southern California groundwater basin management agencies to provide a unified voice to coordinate efforts and exchange information to enhance the effective management of groundwater resources. AGWA's purpose is to create a forum for the discussion of groundwater issues for entities responsible for management of groundwater basin resources.

AGWA's primary objectives are to promote:

- ◆ More effective means of enhancing management of groundwater basins
- ◆ The reliability of existing groundwater supplies
- ◆ The increase of basin yields and the protection and enhancement of groundwater quality

CA Groundwater Conference endorsed by:

INTERNATIONAL ASSOCIATION OF HYDROGEOLOGISTS
COMMISSION - GROUNDWATER OUTREACH TO DECISION MAKERS
Background to the Commission:



World-wide, ignorance and misunderstanding of groundwater is a major barrier to effective water resources management. Groundwater professionals need to be advocates for sensible water policy to ensure that water allocation decisions are based on hydrologic reality. The Commission plans to help IAH members and IAH national chapters promote awareness and appreciation of the value of groundwater. IAH "branded" technical information in non-technical format will be developed to assist members target their expertise among policy makers, end-users and resource managers. Science-based knowledge, effectively communicated, can support the dual objectives of sustainably maximizing the use of groundwater for economic, social and environmental benefit while protecting against overdevelopment and contamination.



CALIFORNIA GROUNDWATER COALITION

CGC was formed in 2007 as a joint endeavor of the Association of Ground Water Agencies (AGWA), the Ground Water Resources Association of California (GRA) and the American Ground Water Trust (AGWT). The Coalition's principal mission is to educate policy makers about groundwater; and

promote the benefits of comprehensive groundwater management and use in legislative and other water policy arenas.

The Coalition recognizes:

- ◆ Groundwater development, conjunctive use, and groundwater storage have the capability to provide increased water supply reliability for California
- ◆ Groundwater management and monitoring are essential to the successful development and protection of the state's groundwater resources for current and future generations
- ◆ New infrastructure is needed to obtain statewide benefit from groundwater resources utilization and replenishment potential

GROUNDWATER RESOURCES ASSOCIATION OF CALIFORNIA



GRA is dedicated to resource management that protects and improves groundwater supply and quality through education and technical leadership. Its major objectives are to:

- ◆ Promote professional development of scientists, engineers, and others involved in the assessment, development, quality and management of the state's groundwater resources
- ◆ Help formulate statewide policy on the development, management, and protection of the state's groundwater resources, soil and groundwater remediation, and environmental assessments
- ◆ Disseminate scientific and technical information among GRA members and those who influence policy development concerning groundwater resources