

# Andrew G. Burns

Southern Nevada Water Authority  
100 City Parkway, Ste. 700  
Las Vegas, NV 89106

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## WATER RESOURCES DIVISION MANAGER

**Team Leadership • Integrated Management of Multi-Disciplinary Teams • Resource Optimization**

### PROFESSIONAL PROFILE

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Water resources management professional with 24 years of experience in the environmental and water-resources fields. Last 13 years working in the position of Division Manager or project manager for SNWA, leading and managing multi-disciplinary project teams in the acquisition and analysis of environmental data, developing conceptual and numerical flow models, assessing water-resources, planning and developing water resources, regulatory compliance, and providing technical and policy-analysis support to legal efforts concerning water-resources acquisition and development. Adept at assessing organizational needs and translating Senior Management initiatives into detailed work plans that achieve project goals and objectives and meet / exceed management expectations. Proven problem-solver committed to achieving and maintaining the highest standards of excellence and developing a world-class team of professionals that is able to proactively respond to changing priorities in a positive and productive manner.

### KEY SKILLS

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- Expert Witness
- Leading and Managing Change
- Problem Solving
- Technical Writing
- Data Analysis
- Groundwater / Surface-Water Flow Modeling
- Project Planning and Management
- Design and Implementation of Data Acquisition Programs
- Aquifer-Test Design and Analysis
- Public Speaking
- Water-Resource Planning
- Well Design and Construction
- QA Program Development
- Regulatory Compliance
- Water-Resource Assessment

### EXPERIENCE AND ACHIEVEMENTS

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#### **SOUTHERN NEVADA WATER AUTHORITY, Las Vegas, Nevada • 1999 to Present**

##### **Water Resources Division Manager (2007 to Present)**

Provide administrative, project management, and technical support for LVVWD and SNWA projects involving the acquisition, development, and beneficial use of water resources in southern and eastern Nevada. Lead a team of 25 administrative and professional staff with educational and training backgrounds in hydrology, engineering, geology, geochemistry, groundwater modeling, economics, mathematics and statistics. Responsible for all technical, financial and scheduling activities of the Division. Responsible for ensuring that all work completed by the Division meets the expectations of the Senior and Executive management teams, achieves project goals and objectives, and complies with regulatory requirements and inter-agency agreements.

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**Major Accomplishments and Responsibilities:**

- Lead multi-disciplinary project teams in the completion of baseline data reports, development of conceptual and numerical models of groundwater flow, and analysis of indirect effects supporting the successful completion of the CLWPC groundwater development project EIS and BO, and the award of the project right-of-way grant.
- Served as technical lead and expert witness (groundwater and surface-water hydrology; hydrogeology) supporting SNWA water-right applications at NSE administrative hearings.
- Serve as SNWA representative on Colorado River Salinity Control Forum (alternate) and work group (member).
- Lead project teams in the evaluation and selection of well sites, preparation of well-construction contracts, oversight of borehole-drilling and well-construction activities, aquifer-test design, and hydraulic testing, resulting the successful completion of 67 wells (40 monitor, 7 test, 6 water-supply, and 14 piezometers).
- Lead project teams in the design and implementation of data-acquisition programs involving the installation of environmental monitoring sites and the collection and reporting of groundwater, surface-water, and meteorological data in accordance with requirements associated with LVVWD and SNWA artificial recharge, groundwater, and surface-water permits in the Las Vegas valley, Clark County, and eastern Nevada (500+ monitoring sites).
- Lead multi-disciplinary teams in the assessment of water resources and the evaluation of hydrologic conditions in support of water-resource planning efforts associated with Northern Resources ranch operations and management of SNWA water supplies.
- Lead project teams supporting LVVWD well operations and maintenance.
- Lead planning efforts in the development of SNWA water-resource plans.

**Senior Hydrologist / Hydrologist II (1999-2007)**

Led project teams and provided technical expertise regarding water-resource assessments, groundwater and surface-water studies, stream-flow routing, groundwater flow models, water-resource management, Colorado River operations, and hydrologic field investigations. Responsible for writing work plans, directing technical studies, technical reporting, budget expenditures and scheduling, and representing SNWA in various interstate/local technical forums, work groups, and meetings.

**Major Accomplishments and Responsibilities:**

- Served as the lead Colorado River modeler.
  - Provided policy-analysis support to Senior and Executive management teams during development of the Interim Surplus Guidelines for river operations in the Lower Colorado River Basin.
  - Served as technical lead (hydrology and water resources) for Colorado River delta studies and tours.
  - Conducted advanced analyses of the Colorado River system to evaluate proposed policy changes related to the development of criteria used to determine water-resource availability and operation of system reservoirs and diversion works.
  - Completed comprehensive reviews and prepared formal comments to documents / reports related to proposed federal / state actions concerning LVVWD/SNWA water resources and the Colorado River (e.g. CA Quantification Settlement Agreement; LCRAS).
  - Prepared regulatory compliance reports and co-authored SNWA water-resource plans.
  - Served as technical lead for scientific aspects of water-resource development projects; performed water-resource investigations and water-related effects analyses.
  - Served as expert and factual witness supporting LVVWD and SNWA water-right applications at NSE administrative hearings.
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- Served as technical lead in the development and documentation of conceptual and numerical groundwater flow models.
  - Performed field investigations requiring various methods of data acquisition, including water-quality sampling, stream gaging, collection of well/spring data, and use of GPS.

**COLORADO RIVER COMMISSION, Las Vegas, Nevada • 1998-1999**

Provided technical expertise related to hydrologic modeling applications, Colorado River operations, water resource management, and water-use accounting. Reviewed and prepared comments to proposed changes to Colorado River operations, permit applications, water-diversion contracts, and federal reports to ascertain impacts to the rights and interests of Nevada. Represented the Colorado River Commission (CRC) and the State of Nevada in interstate/local technical forums, work groups, and meetings. Specific responsibilities included the following:

- Maintained Colorado River water-resources inventory by administering the Las Vegas Wash – Return Flow Credit Methodology.
- Administered CRC general permit for waters of the Las Vegas Wash.
- Conducted advanced hydraulic and hydrologic analyses related to the quantity and quality of water resources in the Colorado River Basin.
- Consulted with representatives of local water agencies to develop management strategies that optimize use of Nevada’s Colorado River water resources.

**IT CORPORATION, Las Vegas, Nevada • 1993-1998**

Provided technical support for project development, data acquisition, data analysis, and reporting in support of a regional groundwater characterization/monitoring program for the Underground Test Area Project of the Department of Energy's Environmental Restoration Division (DOE/ERD).

**Task Manager, BULLION Forced-Gradient Tracer Experiment (1997-1998)**

Responsible for planning, coordinating, scheduling, and staffing field operations; writing, reviewing, and implementing work plans and field instructions.

- Designed monitoring systems, automated data collection, and developed a data management and reporting system.
- Instrumental in the development and implementation of a sample management application to manage and store data and information resulting from the collection and analysis of over 850 water-quality samples over a four-month period.
- Successfully started the experiment on schedule and completed the experiment under budget, while meeting all technical objectives.

**Field Supervisor - Hydrologic Monitoring and Water-Quality Sampling (1995-1997)**

Responsible for planning, coordinating, scheduling, and staffing field operations; writing, reviewing, and implementing work plans and field instructions; documenting field activities and reporting sample results.

- Conducted hydraulic tests to estimate the hydraulic properties of saturated-rock units penetrated by deep (greater than 3,000 feet) boreholes.
  - Thorough knowledge of the design and implementation of monitoring systems to automate hydrologic data collection and storage using dataloggers and various monitoring instrumentation.
  - Experienced in the development, hydraulic testing, and sampling of wells in accordance with
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industry standards and protocols.

**Staff Hydrologist – Data Analysis / Reporting (1993-1998)**

Assisted in the development and documentation of a 3-D conceptual model of the hydrogeology of the Nevada Test Site and vicinity. Compiled data sets for inclusion into a regional groundwater flow and transport model using GIS and 3-D software applications.

- Served as technical lead in the design and population of a relational database consisting of a variety of hydrologic data and information from over 2,300 hydrologic sites in support of groundwater flow and transport modeling.
- Compiled, processed, and analyzed data collected during the drilling, development, and hydraulic-testing of clean and contaminated wells to provide a basis for decisions regarding waste management, fluid management, health and safety, and data quality.

**EDUCATION**

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Bachelor of Science in Hydrology and Water Resources (1992)

University of Arizona, Tucson, Arizona

College of Engineering and Mines

**PROFESSIONAL MEMBERSHIP**

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Colorado River Water Users Association

Multi-States Salinity Coalition – Board Member

Nevada Water Resources Association

National Ground Water Association

American Water Works Association

**PUBLICATIONS**

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Drici W., Burns, A. and Watrus J., 2017, Simulation of a Groundwater Production Scenario Related to Southern Nevada Water Authority Groundwater Applications in Spring Valley, Nevada: Presentation to the Office of the Nevada State Engineer: Southern Nevada Water Authority, Las Vegas, Nevada

Rowley, P.D., Dixon, G.L., Watrus, J.M., Burns, A.G., Mankinen, E.A., McKee, E.H., Pari, K.T., Ekren, E.B., Patrick, W.G., 2016, Geology, selected geophysics, and hydrogeology of the White River and parts of the Great Salt Lake Desert regional groundwater flow systems, Utah and Nevada, in Comer, J.B., Inkenbrandt, P.C., Krahulec, K.A., and Pinnell, M.L., editors, Resources and Geology of Utah's West Desert: Utah Geological Association Publication 45, p. 167-200.

Burns, A.G., and Drici, W., 2011, Hydrology and water resources of Spring, Cave, Dry Lake, and Delamar valleys, Nevada and vicinity: Presentation to the Office of the Nevada State Engineer: Southern Nevada Water Authority, Las Vegas, Nevada.

Fenstermaker, L.F., Burns, A.G., and Jasoni, R.L., 2011, Empirically-derived relationship between growing-season average NDVI and annual ET for White River, Spring, and Snake valleys Nevada: Presentation to the Office of the Nevada State Engineer: Desert Research Institute, Las Vegas, Nevada, and Southern Nevada Water Authority, Las Vegas, Nevada.

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Rowley, P.D., Dixon, G.L., Burns, A.G., Pari, K.T., Watrus, J.M., and Ekren, E.B., 2011, Geology and geophysics of Spring, Cave, Dry Lake, and Delamar valleys, White Pine and Lincoln Counties and adjacent areas, Nevada and Utah: The geologic framework of regional groundwater flow systems: Presentation to the Office of the Nevada State Engineer: Southern Nevada Water Authority, Las Vegas, Nevada.

Shanahan, R.D., Collins, C.A., and Burns, A.G., 2011, 2006-2010 Evapotranspiration Data Report: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. HAM-ED-0003, 81 p.

Southern Nevada Water Authority, 2010, Addendum to the groundwater flow model for the Central Carbonate-Rock Province—Clark, Lincoln, and White Pine Counties Groundwater Development Project: Prepared in cooperation with the Bureau of Land Management. Southern Nevada Water Authority, Las Vegas, Nevada, 48 p.

Southern Nevada Water Authority, 2010, Simulation of groundwater development scenarios using the transient numerical model of groundwater flow for the Central Carbonate-Rock Province—Clark, Lincoln, and White Pine Counties Groundwater Development Project: Prepared in cooperation with the Bureau of Land Management. Southern Nevada Water Authority, Las Vegas, Nevada, 96 p.

Rowley, P.D., Dixon, G.L., Burns, A.G., Collins, C.A., 2009, Geology and Hydrogeology of the Snake Valley Area, Western Utah and Eastern Nevada, Utah Geological Association, Publication 38, p. 252-270.

Southern Nevada Water Authority, 2009, Transient numerical model of groundwater flow for the Central Carbonate-Rock Province—Clark, Lincoln, and White Pine Counties Groundwater Development Project. Prepared in cooperation with the Bureau of Land Management: Southern Nevada Water Authority, Las Vegas, Nevada, 394 p. Draft Report.

Southern Nevada Water Authority, 2009, Conceptual model of groundwater flow for the Central Carbonate-Rock Province—Clark, Lincoln, and White Pine Counties Groundwater Development Project: Southern Nevada Water Authority, Las Vegas, Nevada, 416 p.

Southern Nevada Water Authority, 2008, Baseline characterization report for Clark, Lincoln, and White Pine Counties Groundwater Development Project: Southern Nevada Water Authority, Las Vegas, Nevada, 1146 p.

Burns, A.G., Watrus, J.M., Dixon, G.L., 2007, Water-Resources Assessment and Hydrogeologic Report for Cave, Dry Lake, and Delamar Valleys, Presentation to the Office of the Nevada State Engineer, Las Vegas, NV.

Dixon, G.L., Rowley, P.D., Burns, A.G., Watrus, J.M., and Ekren, E.B., 2007, Geology of White Pine and Lincoln Counties and Adjacent Areas, Nevada and Utah— The Geologic Framework of Regional Groundwater Flow Systems: Doc. No. HAM-ED-0001 Southern Nevada Water Authority, Las Vegas, Nevada.

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Southern Nevada Water Authority, 2007, Part A - Regional-Scale Evaluation of Natural Recharge, Discharge, and Interbasin Flow for the White River Flow System in —Water-Resources Assessment and Hydrogeologic Report for Cave, Dry Lake, and Delamar Valleys - Presentation to the Office of the Nevada State Engineer.

Southern Nevada Water Authority, 2006, Water Resources Assessment for Spring Valley, Presentation to the Office of the Nevada State Engineer, Las Vegas, NV;

Southern Nevada Water Authority, 2005, Hydrogeologic Report in Support of Southern Nevada Water Authority's Proposed Groundwater Development Project in Three Lakes Valley South, Clark County, Nevada

Smith, D. L., Johnson J., Burns, A.G., 2004, Climate and Barometric Pressure Influences on Pederson Spring Discharge and the Carbonate Aquifer near the Muddy Springs, Southern Nevada: Journal of the Nevada Water Resources Association, Fall 2004, volume 1, number 1, p. 76-103.

Southern Nevada Water Resource Plan, 1999, 2002, and 2004 (co-author),

Las Vegas Valley Water District, 2001, Water Resources and Ground-Water Modeling in the White River and Meadow Valley Flow System, Clark, Lincoln, Nye and White Pine Counties, Nevada: Las Vegas Valley Water District.

IT Corporation. 1998a. Report and Analysis of the BULLION Forced-Gradient Experiment, ITLV/13052-042, DOE/NV-13-52. Las Vegas, NV.

IT Corporation. 1997. Bullion Forced-Gradient Experiment Implementation Plan, Part 1 of 2, ITLV/10972-195, DOE/NV-13-52. Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office. 1997. Regional Groundwater Flow and Tritium Transport Modeling and Risk Assessment of the Underground Test Area, Nevada Test Site, Nevada, DOE/NV--477. Las Vegas, NV.

IT Corporation. 1996a. Groundwater Recharge and Discharge Data Documentation Package (Phase I Data Analysis Documentation, Volume III). Prepared for the U.S. Department of Energy, Nevada Operations Office. Las Vegas, NV.

IT Corporation. 1996b. Hydrologic Parameter Data Documentation Package (Phase 1 Data Analysis Documentation, Volume IV). Prepared for the U.S. Department of Energy, Nevada Operations Office, Las Vegas, NV.

IT Corporation. 1996c. Potentiometric Data Documentation Package (Phase 1 Data Analysis Documentation, Volume II). Prepared for the U.S. Department of Energy, Nevada Operations Office. Las Vegas, NV.

IT Corporation. 1996d. Regional Geologic Model Data Documentation Package (Phase 1 Data Analysis Documentation, Volume I). Prepared for the U.S. Department of Energy, Nevada Operations Office. Las Vegas, NV.