

Senior Hydrogeologist

Expertise	Hydrogeologic Characterization, Groundwater Flow Modeling, Dewatering and Depressurization, Pit-Slope Pore Pressure, Geochemistry, Water Resources
Education	M.S. (Hydrology), 2012 University of Arizona, Tucson, Arizona, USA B.S. (Earth Science: Geohydrology), 2010 Montana State University, Bozeman, Montana, USA
Registration	Registered Professional Geologist, Arizona (82900) Licensed Professional Geologist, Utah (13224877-2250)
Professional Affiliations	Member: National Groundwater Association; Nevada Water Resources Association; Society for Mining, Metallurgy & Exploration
Certifications	MSHA (Mine Safety and Health Administration) OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) Google Project Management: Professional Certificate
Honors	Schlumberger Bronze Award: New Workflow for Mine Dewatering Technology (2015) Schlumberger Bronze Award: Industry-First Integrated Mine Dewatering Technology (2013) Hydrology and Water Resources Teaching Award, University of Arizona (2012)
Professional Experience	
2025 – Present	ITASCA Denver, Butte, Montana Senior Hydrogeologist
2020 – 2025	FloSolutions USA, Butte, Montana Senior Hydrogeologist
2019 – 2020	WSP USA, Butte, Montana Senior Hydrogeologist
2016 – 2019	WSP USA, Butte, Montana Project Hydrogeologist II

2013 – 2016 Schlumberger Water Services, Denver, Colorado
Project Hydrogeologist I

2012 – 2013 Schlumberger Water Services, Denver, Colorado
Staff Hydrogeologist II

Project Experience

Hydrogeologic Characterization: Led and supported hydrogeologic characterization campaigns for mine developments across the U.S. (Arizona, California, Colorado, Nevada, Utah), Latin America (Brazil, Chile, Peru), and Serbia. Field experience includes detailed lithologic logging, aquifer testing (including packer, step-drawdown, and constant-rate tests), and the design and supervision of nested and multi-level piezometer installations. Projects routinely integrated field findings into 3-D geologic models and conceptual hydrogeologic frameworks, supporting model development, design of dewatering systems, and slope stability evaluations.

Groundwater Flow Modeling: Conducted over 20 groundwater flow models at local and regional scales to support pre-feasibility, feasibility, operational, and closure stages for mine sites. Experience includes construction, calibration, and predictive simulation using *MODFLOW*, *FEFLOW*, *MODFLOW-SURFACT*, and *PEST*. Results have supported dewatering and depressurization design, pit lake evolution, and regulatory review, including EIS and baseline permitting studies.

Dewatering and Depressurization: Designed and evaluated dewatering and depressurization systems for open-pit and underground mines. Applied modeling results and field testing data to define optimal well placements, evaluate directional drilling feasibility, and implement depressurization measures, such as horizontal drains. Conducted multi-year reviews of dewatering effectiveness and adaptive strategies in collaboration with mine planning and operations teams.

Pit-Slope Pore Pressure: Specialized in transient pore pressure modeling to support geotechnical slope stability evaluations. Developed and implemented workflows for iterative coupling of pore pressure results with geotechnical models. Delivered inputs for critical pit slope and highwall stability analyses at large copper and gold operations, including multiple cross-sectional and 3-D simulations tailored to evolving mine plans and changing rock mass conditions.

Geochemistry: Supported groundwater quality assessments, hydrogeochemical conceptual modeling, and long-term predictive evaluations of water-rock interaction and pit lake formation. Reviewed multi-year water quality datasets, guided sampling programs, and identified data gaps to inform conceptual models. Collaborated with geochemists to incorporate reaction pathways and constituent behavior into integrated hydrogeologic assessments.

Water Resources: Supported water supply and monitoring projects across the western U.S. (Colorado, Nevada, Texas), including baseline studies, long-term aquifer testing, and production well siting. Designed and interpreted aquifer tests to estimate site-specific hydraulic parameters and inform wellfield development. Managed groundwater monitoring programs for industrial and institutional clients, including data review, hydrograph analysis, and reporting to meet regulatory and stakeholder requirements. Experience includes wetland protection projects, natural recharge assessments, and development of site-specific recharge estimates using climate and land use data.