
Senior Hydrogeologist/General Manager

Expertise Numerical Modeling of Groundwater and Surface Water, Contaminant Transport Modeling, Hydrogeophysics, Water Resources

Education Ph.D. (Hydrology), 2013
Colorado School of Mines, Golden, Colorado, USA
M.S. (Hydrology), 2010
Colorado School of Mines, Golden, Colorado, USA
B.S. (Geology and Geological Engineering), 2009
Colorado School of Mines, Golden, Colorado, USA

Registration Registered Professional Engineer, Colorado and Nevada

Professional Affiliations Member: International Mine Water Association, National Groundwater Association, Associate Editor of *Mine Water and the Environment*

Certifications MSHA (Mine Safety and Health Administration)

Professional Experience

2021 – Present	ITASCA Denver, Lakewood, Colorado Senior Hydrogeologist, General Manager (2024 to present)
2016 – 2021	ITASCA Denver, Lakewood, Colorado Senior Project Hydrogeologist
2013 – 2016	ITASCA Denver, Lakewood, Colorado Project Hydrogeologist
2012 – 2013	Colorado School of Mines, Golden, Colorado Graduate Student Professor
2009 – 2012	Colorado School of Mines, Golden, Colorado Teaching and Research Assistant

Project Experience

Hydrogeology and Groundwater Flow Modeling: Worked on mining hydrogeology projects in Nevada, Arizona, Canada, Botswana, the Democratic Republic of the Congo, South Africa, Mongolia, Guyana, Ecuador, Chile, and Peru. These projects have involved mining operations consisting of single or multiple open pits, combinations of underground mining and open pit(s), sub-level caves, and block caves. Conducted over 25 groundwater flow models at the local and regional scales to support pre-feasibility, feasibility, operational, and closure studies for mine sites. Has groundwater flow model experience in Itasca’s groundwater flow modeling code *MINEDW* as well as other commercial codes, such as *MODFLOW*, *MT3D*, and *MODFLOW-SURFACT*. Project experience includes developing conceptual hydrogeologic models, constructing and calibrating groundwater flow models, constructing and calibrating fate and transport models, assessing environmental impacts, managing project

deliverables and budgets, and preparing technical reports. The results of the groundwater models have been used to design dewatering and water-disposal systems; as inputs for slope-stability analyses, water-management studies, and closure studies; and for international, federal, and state permitting studies.

Water-Resource Engineering: Conducted water-resource analyses including the review of surface-water, groundwater, and climate data to characterize the hydrologic condition of local watersheds; estimates of inflow, outflow, and storage changes of local watersheds; as well as the hydraulic parameters of a groundwater system based on field investigations. Provided guidance on the design of groundwater pumping systems to minimize flow into key areas and water-level monitoring systems to track the progress of the pumping systems and mine-water discharge. Provided guidance on the construction materials and schematics of monitoring wells, piezometers, and pumping wells.

Research: Developed groundwater and surface-water models to address the impacts of subsurface hydraulic conductivity heterogeneity on the interaction between groundwater and surface water. Created numerical models to simulate groundwater flow between large fractures and porous media in karst systems and to analyze field hydrogeophysical data. Designed a method to estimate groundwater and surface-water fractions using hydrogeophysics.