

Principal Hydrogeologist

Expertise Environmental Hydrologic Impact Assessments, Mining Hydrology, Dewatering, Groundwater Flow and Contaminant Transport Modeling, Glaciology

Education Ph.D. (Geophysics), 1993, University of British Columbia, Canada
B.A. (Geology and Physics, *magna cum laude*), 1988, University of Colorado

Professional Societies American Geophysical Union, National Ground Water Association, Society for Mining Metallurgy and Exploration (SME), International Glaciological Society

Certifications MSHA (Mine Safety and Health Administration)

Professional Experience

2007 – Present *Itasca Denver, Inc., Colorado*
Principal Hydrogeologist

1996 – 2007 *Geomega, Inc., Boulder, Colorado*
Senior and Principal Hydrogeologist

1993 – 1996 *University of Colorado, Institute of Arctic and Alpine Research, Boulder Colorado, Postdoctoral Research Associate*

1990 – 1993 *Snowline Research & Consulting Ltd., Vancouver, British Columbia*
Hydrologic Consultant

1989 – 1993 *University of British Columbia, Department of Geophysics and Astronomy*
Graduate Research and Teaching Assistant

Project Experience

Planned, performed, and directed hydrogeologic, geophysical and glaciological studies for various mining companies, industrial and commercial clients, and governmental agencies in the United States, Canada, Mexico, Ecuador, Russia, Australia, and Antarctica. Experience includes the conceptualization, development, calibration, optimization, predictive usage and documentation of analytical and numerical models, with applications involving regional- and local-scale hydrologic forecasting, chemical fate and transport, density-dependent flow, dewatering-induced land subsidence, and groundwater/surface-water interactions. Project work also has involved numerous non-modeling hydrologic studies, including: mine planning (scoping through feasibility); aquifer testing; safe yield; water balance; monitoring program design/optimization; contaminant source discrimination; subsurface mapping using ground-penetrating radar, borehole logging, and seismic techniques; mine facilities closure; and baseline characterizations for NEPA and CERCLA analyses. Areas of specific expertise are: numerical modeling to predict groundwater inflows to mines and the potential impacts of mining on hydrologic systems; design and interpretation of hydrogeologic data collection programs; hydrogeologic site characterization and conceptualization relative to mining and groundwater contamination; evaluation of remedial measures for site clean ups; and applied glaciology.

Research

Created theoretical and numerical models describing groundwater flow between boreholes and aquifers and incorporating the effects of turbulent flow conditions in a porous medium. Developed (disposable) borehole sensors for monitoring the turbidity and electrical conductivity of subsurface water. Formulated new method for estimating groundwater recharge distribution in alluvial basins.