Martin Brown

ITASCA

Hydrogeology Manager, Principal Consultant

Expertise

Civil Engineer with 20 years' experience in water and environmental management of mining projects and operations in several countries. Has led development and operational areas of mining companies in hydrogeology, water resources, environmental, fluid transportation, tailings storage facilities and mine dewatering. As a consultant, has been responsible for the development of conceptual and numerical hydrogeology models used in dewatering of open pits, water resources availability studies and environmental impact assessments of mining operations. Has gained relevant experience in strategic decision-making in water management from his participation in the Water Resources Commission of the Chilean Mining Council.

Education

Diploma of Mining Applied Business Management, 2010
The Adolfo Ibañez University

PgDip. Water & Environmental Management, 2007
University of Bristol

Civil Engineer, Specialization Hydraulics & Environmental, 2004
Universidad de Chile

Professional Affiliations

Int. Association of Hydrogeologists (IAH) Registration number: 140299
Int. Mine Water Association (IMWA). Registration number: 1862

Professional Experience

2022 – Present	*Itasca Australia, Perth, Australia* *Hydrogeology Manager / Principal Consultant*
2017 – 2022	*Itasca Chile, Santiago, Chile* *Hydrogeology Manager / Principal Consultant*
2015 – 2017	*Doña Inés Collahuasi Mining Company, Chile* *Water, Tailings and Concentrate Manager*
2013 – 2015	*Doña Inés Collahuasi Mining Company, Chile* *Water Resources Manager*
2010 – 2013	*El Tesoro Mining Company, AMSA, Chile* *Environment & Water Superintendent*
2008 – 2010	*El Tesoro Mining Company, AMSA, Chile* *Head of Water Resources*
2005 – 2006	*Ifarle Engineering Consultants, Chile* *Projects Engineer*
2004 – 2005	*Conic - BF Civil Engineering Consultants, Chile* *Projects Engineer*
2004	*Aguas Andinas S.A., Chile* *Practicing Engineer*

Project Experience

Mining Hydrogeology: Has led the development of conceptual and numerical hydrogeological models used on depressurization and dewatering of open pits and underground mines, definition of water resources availability for mining operations, environmental impact statements (EIS), and to evaluate seepage from TSFs. Designed monitoring infrastructure, such as open bores and VWP, to generate data for operational decision-making and support for EIS. Operational experience gained in El Tesoro (Antofagasta Minerals) and Collahuasi mining companies and, as a consultant advising various companies in Chile, Peru, Bolivia, Brazil, DR Congo, Canada, Russia, Australia, among others.

Groundwater modelling: Developed the hydrogeological conceptual model and the numerical model of the Valleys of Chicureo and Chamicero (Chile). The calibrated model and predictive simulations were used to define the Groundwater Management Plan for that catchment managed by Aguas Andinas sanitary company (Santiago, Chile). Projects developed using various groundwater software such as MINEDW, MODFLOW (Visual & GWV), FEFLOW and SEEP/W.

Water Management & Planning: Responsible for Water Management Plans at El Tesoro and Collahuasi mining companies, through updating water strategy and conceptual and numerical models with available monitoring data. Has designed a series of Early Warning Monitoring Plans to enable environmental permits for water extraction. Has performed audits of water management systems for several mining operations. Experience in strategic decision making of water resources in mining by participating in the Water Resources Commission of the Chilean Mining Council between 2011 and 2014.

Instrumentation for groundwater monitoring & hydraulic tests for hydrogeology characterization of fractured and low permeability media: Design of surface and groundwater monitoring infrastructure. Design and supervision of step-drawdown, constant rate pump tests and packer tests to define hydrogeological parameters in rock and sedimentary aquifers.

Implementation of projects in mining processes: Design and plan of piping maintenance to replace HDPE pipes for tailings transport and coated steel for concentrate transport. Responsible for the expansion of the Reverse Osmosis Plant (RO) that generated potable and demineralized water for the processes. Proposed and led the construction of a thermosolar plant (16 hectares and 1280 collectors) to heat up solutions in the SX-EW process. Also led the construction of a Photovoltaic Concentration Plant (CPV) to supply electricity to the onsite Data Center of El Tesoro.

Project management in mining operations: Led large teams of engineers, geologists, and technicians (+200) when in charge of mine dewatering, water supply, ore concentrate transportation and tailings storage in mining operations. Managing annual budgets of OPEX USD $15 MM and CAPEX USD $40 MM.

Papers and Publications

Espinoza, C.; Tore, C.; Brown, M. Groundwater Sustainable Management of Chicureo & Chamisero Valleys. Vertiente Magazine, ALHSUD, N°10, Year 10. December 2005.

Alvarez, I.; Brown, M. Uncertainty Analysis in Groundwater Flow Models as a Tool to Support Decision Making: Assessing the Influence of Infiltrations from a TSF over an Open Pit. IMWA Conference 2023, Wales. July 2023.

Gutierrez, M.; Brown, M. Use of Groundwater Numerical Model to Support Decision Making At Large Open Pit. IMWA Conference 2023, Wales. July 2023.