

Project Hydrogeologist

Expertise Alicia is a hydrogeologist with 3 years of experience in Hydrogeology consulting. Alicia has specialist groundwater qualifications and skills, including 3D & 2D numerical modelling of saturated and unsaturated groundwater flow, and Leapfrog 3D geological modelling. Alicia has participated in environmental impact assessments, seepage assessment, dewatering and monitoring projects.

Education Master's degree (Geology), 2022
University of Chile, Santiago, Chile
Bachelor's degree (Geology), 2019
University of Chile, Santiago, Chile

Professional Affiliations Member: International Association of Hydrogeologists (IAH)

Professional Experience

2023 – 2024 Geosyntec, Brisbane, Australia
Hydrogeologist
2022– 2023 Hidroestudios, Santiago, Chile
Project Hydrogeologist
2019 – 2019 Golder Associates, Santiago, Chile
Hydrogeologist

Project Experience

Numerical Model Development at Watershed Scale: Development of MODFLOW-USG models for various watershed systems in northern Chile, utilized for lithium extraction from brines. The model for the Salar de Atacama is particularly notable, featuring transient calibration using PEST with a significant number of observations and employment of pilot points. Another significant project involved assessing the feasibility of the Direct Lithium Extraction (DLE) method, which integrates nanotechnology for lithium capture from brines without relying on evaporation ponds. This method was evaluated across different scenarios of brine extraction and injection in diverse geological contexts.

Numerical Analysis of Unsaturated Groundwater flow in tailings: Alicia was as a technical hydrogeology team member for a major tailings facility at Collahuasi (Anglo American), Chile, focusing on detailed assessment of seepage risks during operational and closure phases. Her work involved comprehensive data review and 2D numerical groundwater flow modeling using SEEP-W to analyze seepage. Also, she developed Hydrus-1D models for tailings deposits in Sweden to evaluate various capping designs.

Hydrogeological and Seepage Assessment: Alicia conducted the hydrogeology assessment of the TSF Sajana Dam Safety Review, Cerro Matoso Mine (South32), Colombia. This included the review of reports and literature provided by the client, analysis of piezometer data and pumping tests, and seepage

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management assessment. She also collaborated in the hydrogeological assessment of the tailings facility at Telfer (Newmont), Western Australia, which presented evidence of instability in the embankment; the tailings closure at Gove (Rio Tinto), Northern Australia; the mine dewatering project at Escondida mine (BHP), Chile, the Rio Blanco Monitoring project at Codelco Andina (Codelco), Chile; among others. These included the analysis of VWP, standpipes, CPTu, SCPT, and geophysical data, and others geological and hydrogeological resources.