Anya Brose – ITASCA Minneapolis

Geotechnical Engineer

Expertise	Geology and Geotechnical Engineering
Education	B.Sc. (Geology), 2012 University of Wisconsin, Eau Claire, Wisconsin B.Sc. (Geoengineering), 2012 University of Minnesota, Minneapolis, Minnesota
Registration	Registered Professional Engineer, Minnesota Geologist in Training (GIT)
Affiliations	Member of the TRB Standing Committee on Geotechnical Instrumentation and Modeling (AKG60), Member of the Planning Committee for the University of Minnesota Geotechnical Engineering Conference

Professional Experience

	ITASCA Minneapolis
2024 – Present	Senior Geotechnical Engineer
2013 – 2024	Geotechnical Engineer
2012	American Engineering Testing, St. Paul Summer Engineering Technician Intern
2010 – 2011	University of Wisconsin – Eau Claire Research Assistant

Project Experience

Rock Mechanics Applied to Surface Mining — Surface-mining activities include estimating rock mass properties, geotechnical block model generation, quality control of numerical models, calibrating numerical models for slope stability assessments, back-analyzing slope failures, and studying remedial measurements.

Point Load Testing Campaign Coordination and Block Model Development for an Underground Molybdenum Mine — Coordinated and conducted a point load testing campaign for an underground molybdenum mine. Point load testing data was used to produce a block model of rock strength.

Highwall Stability Assessment for a Proposed Redevelopment Project — Geotechnical engineer for the stability assessment of a sandstone highwall in Wisconsin. Tasks included developing a jointing model, conducting a rockfall analysis, assessing long-term stability and raveling, and developing a draft trigger and response action plan (TARP).

Slope Stability Analysis for a Large Open Pit Copper Mine — Built, analyzed, and calibrated a three-dimensional numerical model to assess the slope stability of a large open pit copper mine using *FLAC3D*.

Slope Stability Analysis for a Large Open Pit Diamond Mine — Built and analyzed a three-dimensional numerical model to assess the slope stability of a large open pit diamond mine using *3DEC*.

Pompeys Pillar National Monument Rock Stabilization — Geotechnical Engineer for the stability assessment of Pompeys Pillar National Monument. Duties included geologic mapping, joint mapping, and 3D modeling using *3DEC*. The numerical models were used to identify potentially hazardous rocks as well as develop remediation options.

Wabasha Street Rock Stabilization — Geotechnical Engineer for the investigation of the Wabasha Street rock slide in Saint Paul, Minnesota. Duties included conducting a thorough assessment of the cause of the rock slide as well as the immediate and long-term threats posed by the rock slide and remaining materials, developing remedial measures for review by the City, and assisting in construction plan preparation.

Investigation of a Domeout in an Underground Limestone Mine — Geotechnical Engineer for the investigation of the cause of a domeout in an underground limestone mine. Duties included mapping the extent of the domeout using 3D scanning, videography, and photography. Additionally, the investigation included mapping joints and rockbolts, investigating broader site information regarding geologic setting, and observing current roof conditions. Processed data was used to develop a *FLAC* model to assist in determining the cause of collapse.

Mesa Verde National Park Spruce Tree House Alcove Local Arch Analysis — Geotechnical Engineer for the stability assessment of the Spruce Tree House Alcove arch. Duties included geologic and joint mapping, core drilling, and 3D modeling. The numerical models were used to identify remediation options. Additional duties included assisting with construction cost estimates, aesthetic considerations, and construction documents.

T.H.53 Relocation Project — Geotechnical Engineer for the relocation of T.H. 53 near Virginia, Minnesota. Duties included coordinating geomechanical core logging, point load testing, and data processing. Processed data was used to characterize the rock mass according to a number of classification systems.

Site Investigation and Mine Design for a Large Underground Cu-Ni-PG Mine — Geotechnical Engineer for this conceptual and pre-feasibility design project. Duties as part of this multi-year project included geomechanical core logging, point load testing, analyzing downhole acoustic televiewer (ATV) logging data from exploration boreholes, and empirically estimating rock-mass quality using both the Q system and RMR system.

Raccoon Mountain Shaft Condition Assessment — Geotechnical Engineer. Duties included shotcrete sounding, shotcrete condition observation, geologic and civil document review, data compilation, and reporting.

Software Support — Provided *FLAC* technical support.