

# BRIANA GUNN, PE

**CIVIL ENGINEER • WATER RESOURCES/WATER MANAGEMENT • CLOSURE/RECLAMATION**

## EDUCATION

M.S. Civil Engineering, Water Resources, University of Colorado at Boulder, Boulder, Colorado, United States, 2002

B.S. Civil Engineering, University of Colorado at Boulder, Boulder, Colorado, United States, 2002

## PROFESSIONAL AFFILIATIONS

Professional Engineer, CO #39762

Professional Engineer, NM #19644

Professional Engineer, AZ #13966

Professional Engineer, AR #54260

Society of Mining Engineers - Corporate Member. Currently serving on the Professional Engineering Committee for Mining Engineering, Young Leaders and the Environmental Committee

Denver Coal Club and Gold Group

## AREAS OF EXPERTISE

Mine Reclamation and Closure Planning

Design and Construction Oversight and QA/QC

Hydrology and Hydraulic Analysis and Modeling

Water Management and Infrastructure Design and Construction

Water Balance Modeling

## SUMMARY OF EXPERIENCE

Briana Gunn has domestic and international experience in hydrologic and hydraulic analysis, civil/hydraulic design, construction engineering and project management. This includes mine reclamation and closure, surface water management for operation of mine sites, design of stormwater infrastructure including pumps and pipelines, diversions, dams, floodplain management and streambed restoration. Her project management includes multidisciplinary teams for permitting, design and construction of water resources related projects.

Briana's focus on the development of water and tailings management and stewardship for her clients develops strategies to assist operations in sustainability and managing risk during both operation and closure.

---

Briana has completed closure projects on a variety of mining infrastructure including tailings, stockpiles and waste rock piles at various mine sites within the Americas. She has completed evaluations, design and construction oversight as well as QA/QC for these projects. She has also completed review and updating of closure plans for international mining practices in Canada, New Zealand and Latin America. These include developing recommendations for risk evaluations, cost valuations, best management practices, operational controls and associated costs for required closure elements. She has also managed multidisciplinary projects that include demolition of major infrastructure.

## RELEVANT EXPERIENCE

Newmont Mining Company, Viewing water as fundamental to success a water strategy was developed to outline an approach for managing withdrawal and reducing consumption. As Environmental Affairs director this strategy was reviewed and updated to provide a focus on the physical, reputational and regulatory risks facing the watersheds in which we operate. The revised water stewardship strategy delivers on superior operational execution, support the portfolio and demonstrates transparency and responsibility.

Kennecott Utah Copper, OoM Closure for Tailings, Magna, Utah, United States, Project Manager to develop a conceptual plan, report and drawings for the closure of the north embankment of the existing tailing facility. The project included challenges for space and separation of stormwater and seepage.

Freeport-McMoRan Copper & Gold, Chino Tailings Dam Reclamation, Hurley, New Mexico, United States, Project Engineer. Project Manager for the development of the tailings dam reclamation at the Chino Mine. This included coordinate of personnel as well as completion of surface Water Hydrology/Hydraulic calculations for the basic and final engineering plans for the closure of the tailing ponds at the Phelps Dodge Chino Mine, Hurley, NM. Work including optimizing channel locations on the top surface and outslopes of the tailing ponds, developing a best management practices report including erosion and sediment control measures both during and post construction.

Teck, Pend Oreille Closure, Washington, United States, Project Engineer. Project engineer for the development of a closure plan for a waste rock pile and associated features. Included development of risk based cost estimate and design alternatives memorandum identifying borrow materials, high risk areas, and other potential issues during construction.

Freeport-McMoRan Copper & Gold, Redrock Diversion Channel, Tyrone, New Mexico, United States, Project Manager. Developed alternatives analysis, design calculations and construction drawings for the rehabilitation of a large diversion channel located between two tailing dams. Diversion channel construction included four roller compacted concrete drop/check structures to reduce velocity and potential for headcutting and erosion in the future. Following development of alternatives a final design was chosen, developed and construction was completed. Work included construction oversight and completion of as-constructed drawings.

Chevron, Questa Mine Water Management and Closure, New Mexico, United States, Project Engineer. Project Engineer for a number of projects involving water resources including sediment control and surface water collection, geophysics investigations, and support to the mine on a background determination by the USGS. Closure has evaluated geomorphic design for both erosion protection and revegetation diversity. Included development of design for waste rockpile closure.

Freeport-McMoRan Copper & Gold, Magnetite Delisting, Fierro, New Mexico, United States, Project Manager. Cobre is currently mining down their Magnetite Tailing Dam for resale. As part of the mine plan Cobre requested that URS prepare a delisting plan for the New Mexico OSE to evaluate the stability and water management during these activities. Mrs. Gunn served as the assistant project manager for the evaluation of these activities, preparation of the report and drawings and coordination with the client and state agencies.

Freeport-McMoRan Copper & Gold, EAP and O&M, Various, Project Manager. Project Manager for the development of more than 5 Emergency Action Plans (EAPs) and Operation and Maintenance (O&M) Manuals for tailing, earthen and concrete dams for Freeport-McMoRan Copper & Gold. Work included developing hydrology, modeling dam failures, creating flood inundation maps and routing downstream. EAPs were prepared with coordination of mine site and emergency personnel as well as state agencies. Work has also included

Freeport-McMoRan Copper & Gold, Tailing Dam Closure, Colorado, United States, Project Manager. Briana worked to develop a conceptual reclamation plan for the face of the tailing dam at the Henderson Mine. Work included conceptual hydrology and hydraulics and the layout of a grading plan for the slope and channels. Work continued with the development of a closure plan for the site with staged phases for construction over a several year period.

Freeport-McMoRan Copper & Gold, North Lampbright Diversion Channel, Bayard, New Mexico, United States, Project Manager. Served as the project manager for the North Lampbright Diversion project. The project included developing alternatives, final design and construction drawings for the diversion of stormwater north of the Lampbright Stockpile. The channel includes sediment control structures, a concrete apron and baffled outfall structure and a reconstruction of a lined dam. This project also included the construction of the channel. URS provided construction oversight during the construction activities. A construction summary and as-built drawings were provided.

AngloGold Ashanti, Dam Breach and Flood Inundation Modeling, Cuiaba Dam Project Manager. Briana served as the project manager of updates for the Emergency Action Plans for the Cuiaba Dam. This included evaluating the existing and final raise conditions for the dam looking at a piping, overtopping and structural failure. Work included developing hydrology, modeling dam failures, creating flood inundation maps and routing downstream. Presentations and flood animations were provided to the client to summarize the results of the analysis.

Umetco, Gas Hills, Wyoming, United States, Project Engineer Design Engineer for the release of lands associated with Uranium mining in the Gas Hills region of Wyoming. This site is located west of Casper, Wyoming. Work includes surface water hydrology and hydraulic design of runoff control structures associated with existing and regraded reclaimed lands. URS is currently designing detention structures and riprap lined channels including design of channels to repair erosion damage.

Umetco, Hot Springs Arkansas, Project Engineer for the development of the tailings closure and site wide water management. Included reclamation of the tailings, regrading, stormwater management and erosion control as well as identifying methods for capturing seepage and evaluating methods for in-situ passive treatment.

EPA, West Willow Creek, Creede, Colorado, United States, Project Manager for the West Willow Creek and Commodore Waste Rock Pile rehabilitation project. Evaluation of the existing waste rock pile and adjacent drainage, West Willow Creek. Evaluations were made for stabilizing the waste rock pile, redeveloping the open channel system to convey the 100-year, 24-hour storm

event. The design included erosion control with the channel as well as a concrete drop structure. Seepage beneath the pile was also a concern, so a seepage control system was recommended. Construction drawings and specifications were prepared. Periodic construction oversight during the 2008 construction season.

Goldcorp, Camino Rojo, Zacatacas, Mexico, Project Manager as well as the task lead for the development of a green field project in Mexico. The project includes coordinating a team of multidiscipline engineers, meeting with the client and the associated executive team, as well as developing standards and scopes for the future phases of the project. Additionally, the project includes developing a water balance and water management strategy for the site including comparison of potential sources. Project work included the development of alternatives for the deposition of tailings including paste, dry stack, and conventional.

Freeport-McMoRan Copper & Gold, Reservoir 17 Hydrology, Santa Rita, New Mexico, United States, Project Manager to update the hydrology for the Emergency Response Plan for Reservoir 17. A GoldSim model was developed to evaluate existing and proposed conditions for each of the contributing areas and reservoirs.

BHP, Navajo Extension Project, New Mexico, Project Manager to develop a reclamation surface for the permit application of an extension project for the Navajo Mine near Farmington, New Mexico. The project involved utilizing the program Natural Regrade to develop pre and post-mining topography. The program utilizes geomorphologic principles to develop stable landform design. The project also included a drainage density analysis. The mine is an existing coal mine that feeds a nearby power plant.

Coeur Mining, Stewardship - Tailings and Water, Various, Bolivia, Project Manager working with principal geotechnical engineer developed and implement a stewardship program for the operating tailings dams and water management at each of the operating sites for Coeur. This program has been successful implemented for several years identifying best management practices and reducing overall risks related to tailings and water at the sites.

Coeur Mining, Golden Cross, Waihi New Zealand, Supported the development of the Closure and Post-Closure Risks Assessment and Bonding for the Golden Cross Mine. This included developing the closure evaluation, updated costs, completing a formal risk assessment, working with the engineering team to identify short and long-term risk and potential modes of failure and quantifying these for developing bonding for the site during and post-closure. Post-closure activities included care and maintenance.

Freeport-McMoRan Copper & Gold, West/East Dam Expansion, Morenci, Arizona, United States, Project Engineer who served as the task manager for the development of a water balance for the expansion of the existing tailing facilities. The project included developing a GoldSIM model to estimate reclaim water and seepage storage and pumping requirements. Values were used to size and cost facilities for the overall study.

Freeport-McMoRan Copper & Gold, Tyrone Tailing Dam Closure, Tyrone, New Mexico, United States, Project Manager. Developed Surface Water Hydrology/Hydraulic calculations and reports for the reclamation of several Tailing Dams at the Tyrone tailing dams in Grant County, New Mexico. The project included developing stormwater control measures for the upstream watersheds, tailing pipe top surfaces and tailing outsoles. Work has also included ongoing evaluation of operation and maintenance activities with the reclamation.

## **CAREER HISTORY**

- 2017 – Present Newmont Mining Company, United States, Environmental Affairs Director
- 2015 - 2017 Hatch, Lakewood, United States. Mining Tailings and Water Consultant
- 2002 - 2015 AECOM (Formally URS), Denver, United States. Consultant, Project Manager and Americas Mining Business Line Leader