

# Michael Mahon, P.E.

Project Management / Civil and Environmental Engineering

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## PROJECTS

- Waste Rock Reclamation
- Tailing Impoundment Closures
- Water Distribution Designs
- Uranium Mine and Mill Closures
- Mine Audit Closures
- Leach Stockpile Closures
- PLS Conveyance Designs
- Spill Containment Designs
- Railroad Remediation
- Groundwater Characterization and Remediation
- Site Restoration Design
- Demolition Design
- Stormwater and Evaporation Pond Design
- Reclamation Planning and Bonding
- Environmental Permitting
- SWPP, SPCC Development
- Hydraulic Structures Design
- Sediment and Soil Stabilization, Removal and Disposal
- Streambank Stabilization
- Residential and Commercial Property Reclamation

## PROJECT EXPERIENCE EXAMPLES

### Uranium Mine and Mill Closure, Wyoming

Developed comprehensive mill and mine closure designs, including evaporation pond and mill tailings feasibility study level characterization and closure designs, groundwater extraction system designs, pit lake characterization and closure, and site characterization (including surface water, groundwater, and soils). Work included material characterization, development of closure alternatives, dewatering and water balance evaluations, 60-acre evaporation pond system design, earthwork and regrading design, pit backfill design, hydrology and hydraulic designs, closure scheduling, cost estimates, and risk analysis. Project value (consulting): \$5M.

### Phosphate Mine Waste Rock Stockpiles Closure, Idaho

Performed evaluation and reclamation design for more than 100 acres of waste rock stockpiles at former phosphate mines in Idaho, including hydrology/hydraulics, cap and cover design, material regrading, and slope stabilization. Work also included constructability assessment, construction cost estimating, reclamation bonding, and scheduling. Project value (consulting): \$1.3M.

### Copper Mine Reclamation, Arizona

Developed reclamation design of 2,000+ acre waste rock and heap leach stockpiles, including hydrology/hydraulics design, geotechnical evaluations, permitting, and earthworks/regrading design for approximately \$60M+ construction, spanning several years, facility locations, and contracts.

### Acid Production and Effluent Storage Tanks System Design and Construction, Arizona

Led the design and construction of two, 1.3 MG process acid storage tanks, and one 430K gallon concrete effluent tank, including geotechnical evaluations, process pumping and piping systems, P&ID, lighting, spill containment, and construction specifications. Project value (consulting and construction): \$5M.

### Uranium Mill Site Reclamation, Colorado





Engineer of record for a former uranium mill site near Telluride, Colorado. Led site characterization, design and construction oversight for removal and disposal of radioactive materials near a busy highway. Project value (consulting and construction): \$12M.

### Polymetallic Mine Reclamation, New Mexico

Key engineer in design, construction oversight, management and QA/QC, waste rock consolidation, stream reconstruction, wetlands remediation, soil/GCL cover installation, groundwater interception system construction, XRF soil sampling, hydrology evaluations, hydraulics design, revegetation operations QA/QC, and contractor management. Project value (consulting and construction): \$11M.

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## PROJECTS

CERCLA Characterization and Remediation

Heap Leach Facility Closure

Acid Storage Tank and Piping Design

Wastewater Treatment Plant Design

Mine Waste /Acid Rock Drainage Treatment

Pit Backfill Design

Waste Rock Cap and Cover Design

Dam Safety Evaluations

Floodplain Reconstruction

Mine Reclamation Permitting

Utilities Piping Design

Evaporation Pond Closure

Industrial Facilities Repair and Revetment

Smelter Facility Acid Effluent

Industrial Piping Design

Sulfuric Acid Loadout Pads Design

Community Outreach and Education

## PROJECT EXPERIENCE EXAMPLES

### Copper Rod Mill Facilities Revetment, Texas

Managed the development of site assessments, project planning, contractor bidding and hiring, design, and construction management and QA/QC of 15 facilities including site channels, loading areas, sulfuric acid storage areas, waste storage, and copper plating tankhouse. Project Value: \$2M.

### Tailings Impoundment Closure, Arizona

Managed design and construction of tailing impoundment reclamation. Design included evaluation of seven existing tailing impoundments for reclamation and final closure. The reclamation included regrading and rock cover placement to detain and attenuate storm water and mitigate tailing remobilization by wind and surface water erosion.

### IX Effluent Management Alternatives Evaluation and Design, Arizona

Managed design of IX effluent management pond, effluent reduction evaluations, and pond construction alternatives analysis on an active copper mine.

### Wastewater Treatment Plant, Town of Miami, Arizona

Leader of site design and construction of a 640,000 gpd wastewater treatment plant including site regrading design, utilities relocation, collection system evaluation and piping design, effluent reuse options evaluation (recharge basin and water re-use systems), cost estimating and permitting. Project Value: \$5M.

### Mine Utilities Engineering, Arizona

Provided design, construction management and construction inspection and QA/QC for relocation of several miles of natural gas, acid effluent, sulfuric acid, industrial water, potable water, and process solution pipeline systems an operating copper mine. Services included piping systems design, dual containment design and environmental considerations, and permitting.