
Summary

Years of Experience

31 (8 with Wood)

Office of Employment

West US & LATAM - Denver

Professional Associations

- Member, National Association of Environmental Professionals
- Member, Society for Mining, Metallurgy and Exploration

Areas of Expertise

- Environmental Scientist - Expert
- Project Manager – Expert

Professional Summary

Mr. Weber has over 30 years of diverse experience focusing on environmental permitting and compliance, closure, and reclamation planning, NEPA compliance, baseline surveys, environmental audits, site investigations, remediation, and wildlife mitigation. His focus has been primarily in the mining and power industries and has permitted a variety of projects with federal, state, and local regulatory agencies. He has prepared and managed the development of numerous NEPA compliant documents including Categorical Exclusions and Environmental Assessments. He also has experience as the Deputy PM on a large mine expansion EIS. He has conducted this work for a variety of federal agencies including the BLM, USFS, USACE, DOE, and NGB. In addition to his NEPA and EIA experience, he has worked with clients and regulatory agencies to obtain a variety of permits for water use, water discharge, underground injection control, stormwater discharge, air emissions, mining and reclamation, dredge and fill of wetlands, road construction, and local special use permits. He has conducted and managed numerous Phase I and Phase II ESAs, assisted in the design and implementation of remediation systems, conducted compliance monitoring for mining and other industrial companies, and conducted environmental audits. Mr. Weber has conducted wildlife investigations resulting in development of wildlife mitigation strategies to reduce impacts.

Qualifications

Education

Master of Science, Biology, Northeastern University, 1990

Bachelor of Science, Biology, University of South Dakota, 1986

Registrations / Certifications / Licenses

Certified Environmental Manager, EM-1727

Additional Training

- MSHA 24 Hour
- OSHA 40 Hour HAZWOPER
- FAA Wildlife Hazard Assessment Training
- Wetland Delineation Training

Richard Weber, CEM

Associate Project Manager - Environmental



Experience

Project Manager

Standard Mine, TPPC and WPCP Renewal, Florida Canyon Mining Inc., NV

Mr. Weber was the project manager responsible for preparing the renewal application for FCMI's Standard Mine Water Pollution Control Permit (WPCP). In addition to the WPCP renewal package, Wood also assisted FCMI in updating the Tentative Plan for Permanent Closure (TPPC). The work included face-to-face meetings with the NDEP BMRR staff regarding expectations for the permit documents. Wood worked closely with FCMI's environmental staff to prepare the WPCP renewal application and TPPC. The package was submitted to NDEP for review and comment. Wood assisted FCMI's staff in addressing comments from the agency.

Environmental Lead

Rain Mine Final Plan for Permanent Closure Addendum, Nevada Gold Mines, NV

Wood was retained by Nevada Gold Mines to design an engineered cover for a portion of the Rain Mine North Waste Rock Disposal Facility and revise the existing Final Permanent Plan for Closure (FPPC). Mr. Weber was the lead in developing the addendum to the FPPC, which addressed the new cover design for a portion of the waste rock disposal facility. Mr. Weber reviewed the existing FPPC and determined through discussions with NGM that the best approach was to develop an addendum rather than revise the currently approved plan. Once the design was completed, Mr. Weber led the environmental group in preparing the addendum to the FPPC. The addendum provided a summary of the previous work conducted at the NWDF since the facility was construction, and summary of the proposed cover design for an approximately 75-acre area of the NWDF. The FPPC addendum package was submitted to NDEP for approval.

Project Manager

Haile Gold Mine Reclamation Plan and EIS, Haile Gold Mine Inc., Kershaw, SC

Project manager and project scientist to update the reclamation plan and reclamation cost estimate based on design changes and changes in unit rates from the original cost estimate. This included providing a description of the reclamation methods for each of the mine facilities, determining volumes of material, identifying the unit rates, and preparing the reclamation report. Several methods were used to calculate the reclamation cost estimate including a spreadsheet prepared by the original author of the reclamation plan and using the Nevada Standardized Reclamation Cost Estimator (SRCE). Numerous iterations were prepared as a result of meetings with the agencies and changes in the design during the EIS process. In addition, I supported the client with the EIS through critical reviews and edits to the reclamation section and project description. Currently working on an update to the reclamation plan and reclamation cost estimate based on a proposed expansion of the mine.

Project Manager / Lead Auditor

Northern Nevada Mine Site Legal Compliance Audit (Site Confidential), Newmont Mining Company, NV

Project Manager and lead auditor for environmental compliance audits at a large northern Nevada mine. Mr. Weber led a team of three auditors focusing on NEPA compliance, stormwater and water management, waste management, and air compliance. A team conducted the audit through review of records, site inspections and interviews. A report was prepared for Newmont's outside counsel.

Richard Weber, CEM

Associate Project Manager - Environmental



Lead Environmental Scientist

Environmental Permitting, Clients – Barrick, Hycroft, General Moly, NV

Prepare dam safety permits for three Nevada mines (Bald Mountain, Mt. Hope, and Hycroft). This included preparing the permit application forms, compiling the necessary design documents including geotechnical reports, design reports, drawings, and technical specifications. Also prepared the Artificial Industrial Pond permit application and assisted in the preparation of the Water Pollution Control permit application for the Mooney Basin heap leach expansion project.

Assistant Project Manager

Bald Mountain Mine, North Operations Area Project EIS, Barrick Gold Corporation, Elko, NV

Mr. Weber was the Assistant Project Manager for a third-party EIS for the Ely District Bureau of Land Management for the expansion of the Bald Mountain Mine located approximately 60 miles south of Elko, Nevada. The project included the expansion of several existing open pits, a new heap leach pad, and construction and or expansion of a variety of ancillary facilities. Mr. Weber's responsibilities for the development of the EIS included attending all internal and external project meetings, providing input to the resource specialists, writing specific sections of the EIS, reviewing the EIS for technical adequacy, and addressing comments on the Draft EIS. Significant issues included air quality (mercury), wildlife (mule deer migration), water quality, and threatened and endangered species. Mr. Weber conducted much of the communication with both the BLM specialists, and the proponent project manager, and assisted the Project Manager with budget and schedule control. From the initial start of the project, the PDEIS was completed in approximately 4.5 months.

Project Manager / Project Scientist

Haile Gold Mine Reclamation Plan and EIS Support, Haile Gold Mine Inc, Kershaw, SC

Project manager and project scientist to update the reclamation plan and reclamation cost estimate (RCE) based on design changes and changes in unit rates from the original cost estimate. This included providing a description of the reclamation methods for each of the mine facilities, determining volumes of material, identifying the unit rates, and preparing the reclamation report. Several methods were used to calculate the reclamation cost estimate including a spreadsheet prepared by the original author of the reclamation plan and using the Nevada Standardized Reclamation Cost Estimator (SRCE). Numerous iterations were prepared as a result of meetings with the agencies and changes in the design during the EIS process. In addition, Mr. Weber supported the client with the EIS through critical reviews and edits to the reclamation section and project description. The Reclamation Plan and RCE were updated in 2018-2019 to address a planned expansion of the mine.

Project Manager / Project Scientist

Mule Canyon EA, Newmont Mining Company, Battle Mountain, NV

Mr. Weber was the project manager and lead scientist in the development of a spring mitigation EA as part of the Mule Canyon Mine. Spring mitigation was required under the mitigation section of the EIS for the mine. Once a mitigation site was selected, the EA was required to address potential impacts associated with improving the spring to prevent cattle access to the spring but allow water for livestock through installation of a spring box and piping to a trough. Significant issues included water quality and quantity, and grazing, which included providing better water availability to livestock.

Richard Weber, CEM
Associate Project Manager - Environmental



Project Manager

South Railroad Exploration Project, Gold Standard Ventures Corporation, NV

Mr. Weber was the project manager for baseline surveys, preparation an EA, and permitting for an exploration project containing over 8,000-acres and located south of Carlin, NV. Surveys included documenting noxious weeds, vegetation communities, rare plants, general wildlife, bat habitat, breeding and migratory birds and nests, and raptors. Wood biologists also conducted aerial and terrestrial raptor surveys, and ambient noise monitoring at numerous sage grouse lek locations. Wood prepared a NEPA-compliant EA, which did not receive any public comments during the public comment period. Staff closely coordinated with the client, project designers, and the BLM Tuscarora Field Office to ensure all requirements were met and the project moved forward in a timely manner.

Summary

Years of Experience

28

Office of Employment

Reno, Nevada

Education

- Bachelor of Science, Civil Engineering, California State University, Chico.

Registrations / Certifications / Licenses

- Registered Civil Engineer - Nevada No. 13199
- Registered Civil Engineer - California No. C57795

Professional Summary

Mr. Minard is a registered civil engineer with 25+ years of experience specializing in leading large multi-disciplined design projects supporting the mining industry, primarily with tailings storage facilities (TSF), heap leach facilities (HLF), ponds and haul roads. He manages all aspects of project development, from siting, preliminary economic assessments, pre-feasibility, feasibility, detailed design, permitting, construction, operations, and reclamation. Mr. Minard has performed all aspects of civil design; layout, water balances, hydrology, hydraulics, geomembrane liner, pressure and gravity pipeline design. He has global experience designing mine waste facilities and leach pads in Nevada, Australia, Africa, Turkey, China, Panama, Mexico, Peru, and the Dominican Republic.

Experience

Project Manager

Heap Leach and Processing Containment Facilities, Kirazlı Project, Alamos Gold Inc., Turkey

Mr. Minard was the Project Manager of the multi discipline project, and Lead Design Engineer for the design of a 750,000 square meter (m²) geomembrane lined leach pad that is designed to process 28.2 million tonnes of ore. The Kirazlı Project is a green field gold and silver mining development located in the Biga Peninsula in the province of Çanakkale, in north-western Turkey. To facilitate the permitting and design many technical studies were conducted including; an extensive deterministic seismic hazard analysis, probabilistic water balance, climate studies, Surface water hydrology and hydraulic, geochemistry (ore and waste), and geotechnical. The Kirazlı leach pad was designed in two phases; with the second phase constructed on top of a waste rock dump (the waste rock dump was developed during the operations of Phase 1).

Project Manager and Design Engineer

Ruby Hill Mine – Cell L Heap Leach Facility Expansion, Barrick Gold, NV

Project Manager and Design Engineer for the design and construction of a 512,00-square-foot expansion of the heap leach facility to process 3.1 million tons of gold bearing ore stacked to 200 feet. Due to material sourcing restraints the solution collection liner systems included a geosynthetic clay liner (GCL) below the HDPE geomembrane liner. Prepared design drawings, technical specifications and supporting design documents.

Todd Minard

Senior Tailings Engineer/Associate



Project Director

Cerro de Gallo, Argonaut Gold, Guanajuato, Mexico

Project Director for the Feasibility Design of a heap leach facility (HLF) that has an approximately 92 million tonnes ore capacity. The leach pad was designed to meet or exceed North American standards, such as the Nevada Administration Code 445A.434 for the lining system design and Mexican Standard NOM-155-SEMERNAT-2007 for stability of the HLF, which are intended to lessen the risk of environmental impact to the local soils, surface water, and ground water. An underdrain system was designed for the foundation of the HLF to capture potential spring water and transport it to the toe of the process pond fill. Mr. Minard also sited and designed a lined gypsum pond to manage a gypsum slurry that will be produced as a by-product of the SART operations.

Project Manager and Lead Design Engineer

Ağı Dağı Project, Alamos Gold Inc., Turkey

Project Manager and Lead Design Engineer for the design of a 1.3 million square meter (m²) geomembrane lined leach pad that is designed to process 82.2 million tonnes of ore. The Ağı Dağı Project is a gold and silver mine development project located in the Biga Peninsula in the province of Çanakkale, in north-western Turkey. Supporting work involved geotechnical characterization of the site, and storm water control.

Project Manager and Design Engineer

Ruby Hill Mine – 426 Heap Leach Facility Expansion, Barrick Gold, NV

Project Manager and Design Engineer for the design of a 1.2-million-square-foot expansion of the heap leach facility to process 7.2 million tons of gold bearing ore stacked to 200 feet. Included design of geosynthetic liner systems, two-cycle leachate collection systems, leak detection systems, and solution and overflow pond. A deterministic water balance was prepared for pond sizing and to estimate return water and make-up water requirements. Prepared design drawings, technical specifications and supporting design documents.

Senior Design Engineer

La Colorada, Argonaut Gold, Hermosillo, Mexico

Senior Design Engineer for feasibility and construction design of a four additional phases of leach pad expansion. The leachate solution from the addition phases will flow via gravity to new ponds. Mr. Minard prepared a water balance to optimize the use of existing ponds, and to size the new ponds. Due to property boundary limitations the additional expansions extended over steep grades (greater than 2 Horizontal to 1 Vertical). To facilitate construction in the steep grades a geosynthetic clay liner (GCL) was placed below the LLDPE geomembrane liner. The design also included a geomembrane lined conveyor corridor.

Project Manager and Senior Design Engineer

El Castillo Mine - Cell 8, Argonaut Gold, Durango, Mexico

Project Manager and Senior Design Engineer for the feasibility study, design, of a multi-celled leach pad expansion for processing gold ore. Included civil grading design of to mitigate large fill slopes in steep terrain, working with mine plan to optimize local borrow and economical use of mine waste.

Todd Minard

Senior Tailings Engineer/Associate



Senior Design Engineer

El Castillo Mine – La Victoria Pad, Argonaut Gold, Durango, Mexico

Senior Design Engineer for the feasibility study and construction design of the La Victoria leach pad expansion. The La Victoria Pad is confined by existing leach pads on 3 sides, and the pad was constructed over the footprint of the mined-out La Victoria Pit. Included design of geosynthetic liner systems, leachate collection systems, leak detection systems, and calibrating the existing water balance to evaluate if additional pond storage capacity is required. Mr. Minard conducted an extensive settlement and stability analysis, including evaluation of site mine waste material that was used as pit backfill prior to leach pad construction.

Project Manager and Senior Design Engineer

San Agustin Mine – Heap Leach Facility, Argonaut Gold, Durango, Mexico

Project Manager and Senior Design Engineer for the green field development and construction of the heap leach facility. Included design of geosynthetic liner systems, leachate collection systems, leak detection systems, and solution collection ponds. Prospected, investigated, and delineated material borrow sources and designed stormwater diversion facilities. Mr. Minard developed a deterministic water balance for pond sizing and to estimate return water and make-up water requirements. During the operation Prepared a grading plan and design documents. Mr. Minard made several site visits during construction to evaluate the client's third-party Quality Assurance Testing program.

Project Manager and Design Engineer

Hycroft Mine – Tailings Storage Facility, Hycroft Mining, Sulfur, NV

Served as project manager and design engineer for the design from Scoping Study through Feasibility Design to store 730 million tons of gold tailings. The project involved site selection and conceptual design of the dam and lined impoundment, as well as design of tailings delivery and water return pump/pipe systems. Site selection was based on capital and operating costs, as well as the non-cost selection criteria of geotechnical risk, environmental risk, regulatory acceptance, and construction risk. As water supply was a critical issue, Mr. Minard developed several water balances to predict water usage planning and return water system design. Mr. Minard conducted tailings consolidation testing and used analytical modelling to estimate the final dry density and beach slope of the subaqueous deposited tailings. Deliverables included development of design drawings showing staged development of the dam, lined basin, and storm water controls, as well as documents required for NEPA permitting support.

Tailings Management Facilities

Project Manager

Pumpkin Hollow Dry Stack Tailings Facility Test Cell, Nevada Copper Inc, Yerington, NV

Served as project manager for Pumpkin Hollow DSTF Test Cell design and construction. The Test Cell is a standalone facility designed to store 140,000 tons of filter press tailings. The facility was designed and constructed without a geomembrane base liner; the base was composed of 12 inches of compacted tailings. The design included an extensive instrumentation and monitoring plan, which included a combination of lysimeters, volumetric moisture sensors and matric potential sensors. Deliverables included issued for construction drawings, technical specifications, construction inspections/testing, and a post construction Record of Construction Report.

Todd Minard

Senior Tailings Engineer/Associate



Project Manager

Bomboré Hybrid Facility, OreZone Gold Corporation, Burkina Faso, Africa

Served as project manager for Bomboré's Hybrid Facility, from concept through feasibility design. The Hybrid Facility is a single facility designed to store 33.5 million tons of gold tailings and process 31.5 million tons of gold bearing ore on a lined leach pad. A "scrubber" separation process is applied to the mined ore to generate coarse material that is process via the heap leaching operation and fine material that is sent to a CIL tank leaching circuit. The residue from the CIL operation is discharged as tailings. The heap leach ore will be contained and processed on a geosynthetic lined surface. The tailings will be contained within a geosynthetic lined impoundment formed by compacted waste rock fill on 60% of the perimeter and by the conveyor-stacked heap leach ore on the remaining 40% of the perimeter. Deliverables included Trade-off studies, and several reports (scoping, prefeasibility and feasibility). Studies Include; Site Characterization, Tailings Characterization, Heap Leach Ore Characterization, Stability and Settlement, Mass Balance, Water Balance, Gravity Pipe Design, Pipe Crushing Analysis.

Project Manager and Design Engineer

Randall's Integrated Waste Landform (TSF & WRD), Integra Mining, Western Australia

Served as project manager and design engineer for the Randalls' Integrated Waste Landform, from concept through feasibility design and construction. The integrated waste landform was designed to store 4.3 million tons of gold tailings and 5.2 million tons of waste rock in a single integrated facility. Deliverables included Trade off studies, and several reports (scoping, prefeasibility and feasibility) and Construction Documents (drawings and technical specifications).

This project was presented at the Mine Waste 2010 Conference in Perth Australia; "An environmentally and economically attractive integrated landform for the storage of tailings and waste at the Randalls Gold Project in Western Australia".

Project Manager and Design Engineer

Paddington In-Pit Tailings Storage, North Gold Fields Limited, Kalgoorlie, Western Australia

Served as project manager and design engineer for the Feasibility Design to place tailings into the mined-out Paddington Pit to accommodate 56 Mt of tailings over 14 years of deposition. Mr. Minard conducted tailings characterization testing and used analytical modelling to predict the tailings performance during operations from being discharged into the pit from a single point. Mr. Minard managed several studies including a hydrogeological study and seepage analysis to assess the response of the groundwater system for conditions prior to, during, and following tailings deposition. Deliverables included development of a design report, which included Drawings, Tailings Characterization, Geotechnical Hazard Assessment (including Rapid Drawdown Assessment), Consolidation Modelling, Seepage Analyses, Water Balance, Surface Water Management, Emergency Action Plan and Decommissioning and Rehabilitation Recommendations.

Project Manager and Design Engineer

Wiluna Uranium Project – Heap Leach Facility, Toro Energy, Western Australia

Served as project manager and design engineer to provide technical support and design of a uranium trial heap leach facility at the Wiluna Uranium Deposit in Western Australia. The design was prepared to support a Mining Proposal. The heap leach process consisted of placing uranium-rich ore on a lined pad, and then irrigating the ore with sodium carbonate. The pregnant solution is collected above the lined pad via a gravity drainage system, which will direct the solution to a lined Pregnant Liquor Solution Pond. The

Todd Minard

Senior Tailings Engineer/Associate



liquor is cycled through the heap several times until the liquor achieves the targeted concentration of uranium at which time the leaching ceases and rehabilitation and closure of the heap leach facility begins. Deliverables included development of a Mining Proposal Report, which included Drawings, Site Characterization, Ore Characterization, Geosynthetic Liner, solutions collection, Leak Detection, Stability Assessment, Seepage Management, Stormwater Management (including Flood Protection), Environmental Impacts and Management (including Radiation and Air Emissions), and Rehabilitation and Closure.

Design Engineer

Uranium Tailings Management, Client: Confidential, Australia

Served as design engineer for the site selection and storage concepts of the storage of 9.6 million tonnes of Uranium tailings, which would be produced in two productions streams (7.0 Mt of tailings and 2.6 Mt of slimes). Deliverables included development of a Scoping Study Report, which included Drawings, Tailings Characterization, and Water Balance.

Project Manager and Design Engineer

Mt. Keith Central Discharge Tailings Storage, BHP Billiton, Western Australia

Served as project manager and design engineer for the Life-of-Asset Planning for the centralized discharged tailings storage facility consisting of a containment embankment that has a diameter of approximately 2.9 miles (4.6 k). The tailings storage facility had been operating for approximately 13 years and Mr. Minard was consulted to evaluate the operations and safety of the facility, including tailings deposition and embankment construction.

Design Engineer

Phoenix Mine – Stage 3 Tailings Impoundment, Newmont Mining Corporation, NV

Design Engineer for the design of Stage 3 Tailings Impoundment Facility (a 20-foot-high raise and lined impoundment) for combined gold and copper mill tailings. The project included extending the gravity decant system, liner and drainage systems design, stormwater diversion design, facility sizing and layout, and preparation of construction drawings, specifications, and an Engineer's cost estimate. Following the design Mr. Minard served as the project manager during Stage 3 construction. The design incorporated an HDPE geomembrane liner in the impoundment as well as an overlying hydraulic relief layer. Staged dam expansion used both downstream and centerline raise construction techniques.

Project Engineer

Twin Creeks - Piñon Tailings Dam, EAP, Newmont Mining Corporation, NV

Project Engineer for the preparation of an Emergency Action Plan (EAP) for the Piñon Tailings Dam. The project included a notification flowchart, inundation map, preplan work sheets, and technical analysis of dam break flood (DAMBRK software by Boss International). Breach parameters were chosen based on guidelines established by the Federal Energy Regulatory Commission (FERC) for earth dams. Additionally, Mr. Minard's analysis and formal application was successful in re-classifying the Piñon Dam from "significant hazard" to a "low hazard".

Project Engineer

Willow Creek Reservoir, EAP, Newmont Mining Corporation, NV

Project Engineer for the preparation of an Emergency Action Plan (EAP) for the Willow Creek Dam. The project included a notification flowchart, inundation map, preplan work sheets, and technical analysis of dam break flood (DAMBRK software by Boss International). Breach parameters were chosen based on guidelines established by the Federal Energy Regulatory Commission (FERC) for earth dams.

Todd Minard

Senior Tailings Engineer/Associate



Project Engineer

Phoenix Tailings Dam, EAP, Newmont Mining Corporation, NV

for the preparation of an Emergency Action Plan (EAP) for the Phase 7 Tailings Dam. The project included a notification flowchart, inundation map, preplan work sheets, and technical analysis of dam break flood (DAMBRK software by Boss International). Breach parameters were chosen based on guidelines established by the Federal Energy Regulatory Commission (FERC) for earth dams.

Project Engineer

Midas Mine – Ken Snyder Dam, EAP, Midas, NV

for the preparation of an Emergency Action Plan (EAP) for the Phase 5 Tailings Dam. The project included a notification flowchart, inundation map, preplan work sheets, and technical analysis of dam break flood (DAMBRK software by Boss International). Breach parameters were chosen based on guidelines established by the Federal Energy Regulatory Commission (FERC) for earth dams.

Mine Reclamation and Closure

Design Engineer

McLaughlin Mine – Tailings Impoundment Closure, Barrick Gold, CA

Design Engineer responsible for the closure design and closure implementation of a 44 million ton tailings storage facility. Evaluated closure options for both drained and ponded closure scenarios, considering effects from earthquake-induced liquefaction settlement of the final closed surface, the long-term reliability of the dam, long-term environmental impacts. Developed drawings and specifications for placement of the closure cover, as well as rehabilitation design of storm water diversion facilities.

Transportation

Project Manager

Stead Airport – Runway 14-32 Reconstruction, Reno-Tahoe Airport Authority, Reno, NV

Responsible for completing plans, specifications and estimate (PS&E), as part of a team. Project scope included portions of the civil engineering design and construction administration assistance for reconstruction and extension of Runway 14-32. This runway is 9000 feet long and 150 feet wide designed for airplane design group III-C aircraft. Direct responsibilities included oversight of civil design for Hot-Mix Asphalt (HMA) jointing, drainage design, demolition and construction management.

Project Engineer

Stead Airport – Taxiway A and D Realignment and Taxiway Lighting, Reno-Tahoe Airport Authority, Reno, NV

Project scope included the development of plans, specifications, estimate, engineering report, construction support services, record drawings and Construction Report for this project. Project included demolition and realignment of two existing taxiways. To meet FAA requirements a mile of an existing access road was also realigned. Major design considerations included; onsite and offsite hydrology, modification of existing monitoring wells, grading striping per FAA design criteria, and many access and scheduling restrains.

Todd Minard

Senior Tailings Engineer/Associate



Project Engineer

USPS Apron Development, Reno-Tahoe Airport Authority, Reno, NV

This project consisted of preparing plans, specifications, engineer's reports as well as construction service for the reconstruction of an apron area on the northwest portion of the Reno/Tahoe International Airport. The plans for this apron were developed in an emergency timeline, and Mr. Minard completed the design prior to the stated deadline. Was responsible for the drainage design, inlet capacity, engineering estimate, design details, records drawings and final report.

Staff Engineer

South Terminal Apron Rehabilitation, Reno-Tahoe Airport Authority, Reno, NV

The project consisted of the demolition of an unusable Asphalt Concrete ramp area and replacement with a new portland cement concrete (PCC) pavement apron. Was responsible for the drainage design, inlet capacity, engineering estimate, design details, records drawings and final report. Was also responsible for the sizing and construction of an oil/water separator (Stormseptor).

Staff Engineer

Sealcoat and Stripe Runway, Reno-Tahoe Airport Authority, Reno, NV

Project scope included development of the plans, specifications, estimate, engineering report, construction support services, record drawings and Construction Report for this project. Project included placing an emulsified asphalt sealcoat to the surface of two existing runways at the airport. Responsible for construction engineering.

Project Engineer

Wells Avenue Rehabilitation, Nevada RTC, Reno, NV

Major work items include removal and replacement of curb, gutter, sidewalk, driveways, pedestrian ramps; removal of existing bituminous surface; subgrade preparation; base placement; cement roadbed modification; placement of bituminous surface; Roundabout construction; signal work; striping; traffic control; and incidentals as required to complete the work for approximately 10,000 LF of arterial roadway in the City of Reno. Responsible for completing plans, specifications and estimate (PS&E) for project, which included, drainage improvements, complete roadway reconstruction and public involvement. Performed complete construction administration including submittal review of traffic control plans and construction schedule. Responsibilities included inspection and testing of material and construction process.

Project Engineer

Neighborhood Streets Rehabilitation, City of Reno, Reno, NV

Mr. Minard supported the City of Reno with their neighborhood streets rehabilitation program, including 2003, 2000, 1999, 1997 and 1996. Project scope included field surveys, geotechnical investigation, laboratory testing, pavement design, pavement condition surveys, special assessment district make-up, Phase I Environmental Investigation, PS&E (plans, specifications & estimate) and complete construction administration services. Responsibilities included inspection of curb, gutter, sidewalk and asphalt pavement; pavement sections selection, design all grades and alignments; developing an engineer's estimate; providing construction plans and specifications; resident engineer during construction; final report; and as-built record drawings.

Todd Minard

Senior Tailings Engineer/Associate



Project Engineer

McCarran Boulevard Rehabilitation, Nevada RTC, Reno, NV

The major work items include removal and replacement of curb, gutter, sidewalk, driveways, pedestrian ramps; removal of existing bituminous surface; subgrade preparation; base placement; cold in place recycled asphalt concrete; cement roadbed modification; placement of bituminous surface; sound wall; signal work; guardrail; striping; traffic control; and incidentals as required to complete the work for approximately 34,000 lf of arterial roadway in the City of Reno. Responsible for completing plans, specifications and estimate (PS&E) for project, which included, drainage improvements, complete roadway reconstruction and public involvement. Performed complete construction administration including submittal review of traffic control plans and construction schedule. Responsibilities included inspection and testing of material and construction process.

Project Manager

Lemmon Drive Reconstruction, Nevada RTC, Reno, NV

Responsible for completing plans, specifications and estimate (PS&E) for project, which included drainage improvements, subgrade preparation; base placement; cement roadbed modification; placement of bituminous surface; striping; traffic control; and incidentals as required to complete the work for approximately 3 miles of rural two-lane roadway in Lemmon Valley. Performed complete construction administration including submittal review of traffic control plans and construction schedule. Responsibilities included inspection and testing of material and construction process.

Project Manager

Sullivan Way Reconstruction, Nevada RTC, Reno, NV

Responsible for completing plans, specifications and estimate (PS&E) for project, which included drainage improvements, complete roadway reconstruction, cold in place mill and asphalt pavement overlay rehabilitation, public involvement and incidentals as required to complete the work for approximately one mile of roadway in the City of Sparks. Performed complete construction administration including submittal review of traffic control plans and construction schedule. Responsibilities included inspection and testing of material and construction process.

Staff Engineer

Arlington Avenue Reconstruction, Nevada RTC, Reno, NV

Assisted with plans, specifications and estimate submittal to the Regional Transportation Commission (RTC) for the rehabilitation of approximately 3,000 feet of roadway in downtown Reno, Nevada. Some of these aspects are five signalized intersections including one intersection managed by the Nevada Department of Transportation, a railroad crossing and a hospital emergency entrance. Also responsible for complete construction management of the project as required by the RTC and provided separate plans for curb, gutter and sidewalk for assessment district (SAD).

Staff Engineer

Center Street Reconstruction, Nevada RTC, Reno, NV

Project scope included engineering services for the rehabilitation and reconstruction of Center Street, a two-lane roadway, from Mill Street to South Virginia Street (approximately 4,760 feet) in the City of Reno. During construction provided contract administration, resident engineering and engineering construction services. Responsibilities included inspection of curb, gutter, sidewalk and asphalt pavement; and preparing engineers estimate.

Infrastructure

Project Manager

Portable Classroom Project, Washoe County School district, Reno, NV

Provided engineering design services for construction of portable classrooms at 13 local elementary schools for the Washoe County School District. Services included site design, surveying, utility coordination, cost estimating, preparation of plans and specifications and construction assistance. The focus of this project was the extremely quick turnaround to meet the client's tight construction schedule and Mr. Minard's team completed all work within identified deadlines.

Project Engineer

Water Main & Street Design, City of Live Oak, CA

Prepared PS&E (plans, specifications & estimate) for the water main replacement, street and sidewalk reconstruction for Connecticut Avenue, including parking lot improvements for the Luther Elementary School in Live Oak, California.

Project Manager

High School Tennis Courts, Washoe County School District, Reno, NV

Mr. Minard supported the Washoe County School District with the design and construction of several tennis courts, including: Proctor R. Hug High School, Incline High School, Reed High School, and McQueen High School. Project Engineer for the reconstruction of the several tennis courts, which involved an asphalt concrete (AC) pavement surface, color-coated surface, net post and replacing surrounding fencing fabric. Responsibilities included preparing plans, specifications, cost estimate (PS&E), and construction management for site design, court surface, net and surrounding fence.

Project Engineer

Reed High School Parking Lot, Washoe County School District, Reno, NV

This project involved the reconstruction of the Reed High parking lot, which involved pulverizing existing asphalt concrete, grading, and asphalt concrete (AC) pavement surface. Responsibilities included preparing plans, specifications and cost estimate (PS&E) for site design, court surface, net and surrounding fence.

Hydrology and Hydraulics

Staff Engineer

Design of the Pabco Road Erosion Control Structure, Clark County, Las Vegas, NV

This structure is the first of 15 erosion control structures planned for the Las Vegas Wash to stop the advancement of a severe headcutting erosion condition, which threatens local wetlands and upstream public improvements. This \$1.8 million low height, gabion weir is being designed as a three-stage overflow spillway structure, 1,150 long and is capable of passing in excess of the 500-year frequency discharge of 24,000-cubic-feet per second. Responsibilities included gabion sizing and design, and channel sizing using HEC-2.

Todd Minard

Senior Tailings Engineer/Associate



Staff Engineer

Sunrise Mountain Landfill Closure, Clark County, NV

Responsibilities included hydrology and hydraulic analysis for sizing and placement of a rainwater runoff collection system and transporting the water to an offsite location. Was also responsible for the design of a large energy dissipation channel.

Staff Engineer

Lake Mead Boulevard Drainage Design, City of Henderson, Southern Nevada

Project scope included the hydrologic analysis and hydraulic design of all roadway drainage improvements including drop inlets, parallel channel design, cross roadway drainage conveyance, inlet and outlet energy dissipation and erosion control designs. Responsibilities included off site hydrology to determine peak discharge, design of roadside ditches and storm drain system which included calculating capacity of drop inlet grate. Responsibilities also included producing storm drain schedule, structures list and engineers estimate.

Project Engineer

State Route 28 Drainage and Erosion Control Design, Nevada DOT, Lake Tahoe Basin, NV

Project scope included the drainage report, plans, specifications and cost estimates for the drainage, erosion/sediment control and slope stabilization related components of the design. Responsibilities included determining off site hydrology to calculate peak discharge, design of roadside ditches, storm drain system which included calculating capacity of drop inlet grate and sizing sediment traps. Responsibilities also included producing storm drain schedule, structures and engineers estimate.

Staff Engineer

Boneyard Flat Feasibility Design, city of Sparks, Spanish Springs Valley, Nevada

This project consisted of developing a feasibility plan to divert storm water runoff from Griffith Canyon to Boneyard Flat to decrease the peak flows and runoff volume contributing to downstream development and the City of Sparks. Responsibilities included designing three feasible alternatives for collecting 100-year storm event and transporting it past a proposed subdivision and releasing it into the Boneyard Flat area. The channel was placed in three alignments which considered existing topography, right of way cost and availability, utilities including a 30-inch high pressure gas main, and structures required to cross existing roads including Pyramid Highway. Was also responsible for producing design plans, details and an engineer's estimate.

Staff Engineer

Truckee River Bridge at Patrick Interchange, Nevada DOT, Washoe and Storey Counties, NV

Responsibilities included producing a computer model of the Truckee River using HEC-2 to match existing FEMA model, and to show impact of bridge structure on flood plain.

Technical Lead

Carson River Valley, University of Nevada Reno, NV

Study the chemical and mineral transportation of the Carson River Valley. Responsibilities include modeling the Carson River in WASP (computer software for modeling water quality and quantity) and sampling of the river

Todd Minard

Senior Tailings Engineer/Associate



Staff Engineer

Pavement Management System

Mr. Minard implemented many pavement management programs for several Counties, cities and Army basis, including Aberdeen Army Depot (Maryland), Fort Belvoir (Virginia), West Point Military Academy (Ney York), City of Modesto (California), County of Lake (California) Sierra Army Depot (California), Tracy Army Depot (California), Sharpe Army Depot (California). Responsibilities included, inspections, or re-inspections, of pavement network, setting up the data base (MTC or Paver software) and development of network level five year maintenance and repair plan.

Summary

Years of Experience

17+

Office of Employment

Reno, NV, United States

Professional Summary

Mr. Yuan currently serves as a Senior Associate Geotechnical Engineer in Wood Environment & Infrastructure Solutions Inc's Reno office. He has about 17 years of geotechnical and civil consulting experience. He is specialized in soil mechanics, foundation engineering, and surface mine facility design.

Mr. Yuan's project experience includes design of tailings impoundments, heap leach pads, and mine waste disposal facilities; infrastructure foundations; seismic design and liquefaction analysis; slope design, remediation, and monitoring instrumentation; construction monitoring and quality control; and geotechnical numerical modelling. His experience also includes studies from scoping levels to closures and projects located throughout North America, South America and Asia.

Mr. Yuan authorized and co-authored more than 20 technical papers published in engineering journals and conference proceedings on slope design, lined facility design, soil liquefaction and ground damage, and other geotechnical engineering topics.

Qualifications

Education

PhD/Geotechnical Engineering/Clemson University/2003

MSc/Geotechnical Engineering/Zhejiang University/2000

BS/Civil Engineering/Zhejiang University/1997

Registrations / Certifications / Licenses

Professional Engineer/NV/#019348

Professional Engineer/CA/#69618

Professional Engineer/AZ/#58253

Professional Engineer/ID/#16913

Languages

- English

Representative Experience

Lead engineer

Thacker Pass Lithium Project, Lithium Nevada Corp, Humboldt County, Nevada

Lead engineer for an independent review of a dry stack Tailings Storage Facility design, along with performing a geotechnical characterization program of lithium tailings. Lead engineer for a geotechnical foundation investigation supporting a feasibility study (FS) design of a Rail Transloading Facility, as a part of the Thacker Pass Project.

Lead engineer and EOR

North Waste Rock Disposal Facility Cover Improvement Project, Rain Mine Site, Nevada Gold Mines, NV

Lead engineer and EOR for this closure project to improve a cover system over a 75-acre area of a waste rock disposal facility. Scope of services includes design of a cover system involving geomembrane/soil covers, a surface water drainage system, and preparation of an addendum to the Final Plan for Permanent Closure (FPPC).

Lead Geotechnical Engineer

ASARCO/Southern Copper Corporation, Multiple Projects in Peru and Mexico

Lead geotechnical engineer for an ongoing review project involving tailings storage facilities, heap leach facilities and waste storage facilities (where applicable) of multiple mining projects, including Torquepala, Cuajone, Tia Maria, Los Chancas (Peru) and El Arco (Mexico). Upon completion of the project, to serve as a Qualified Person (QP) for the TSF, HLF, and WRD of each S-K 1300 Technical Report.

Dam Safety Inspections as Lead Engineer

McLaughlin Mine, Homestake Mining Company (Barrick), CA

Lead geotechnical engineer (through year 2013) for multiple mine closure projects that involve a tailings impoundment, a water dam, two open pits, multiple waste dumps and sediment control ponds. Performed annual geotechnical audits, dam safety inspections as Lead Engineer, and monitoring reviews of all dam structures, including a Davis Creek Reservoir Dam.

Lead Engineer and EOR

Bunker Hill Central Treatment Plant Upgrade Project, Kellogg, ID

Lead engineer and EOR for design of a 10-acre lined sludge impoundment with a tailings impoundment. Lead geotechnical engineer for a foundation investigation in support of water treatment infrastructure facility designs.

Dam Safety Review and Third-Party Review

Santa Rita Mine, Atlantic Nickle/Appian Capital Advisory, Bahia, Brazil

Project manager and lead engineer for performing a dam safety review and third-party design review of a tailings storage facility. Technical reviewer for detailed engineering designs of the TSF raises and conceptual design of a new TSF. Qualified Person (QP) for the TSF portion of the NI 43-101 Technical Report.

Peter H. Yuan, PE, PhD
Senior Associate Geotechnical Engineer



Lead Geotechnical Engineer

Tracy Power Generating Station, NV Energy, NV

Lead geotechnical engineer and designer for Tracy Pond 4 design and provided permit support and CQA. The project is classified as a jurisdictional impoundment and dam in Nevada. Peter also provided geotechnical and civil design services for NV Energy on multiple other infrastructure facilities across the State.

Lead designer and geotechnical engineer

Confidential Mine Closure and Remediation Project, Lyon County, NV

Lead designer and geotechnical engineer of Remedial Design / Remedial Action (RDRA) task for fluid management system designs and regrade/cap designs of five (5) heap leach facilities. Responsibilities included supervising geotechnical characterization, RD activities, as well as providing miscellaneous geotechnical support for this large remediation and mine closure project. Lead geotechnical engineer for Remedial Investigation/Feasibility Study (RI/FS) activities of five (5) other Operable Units, including tailings storage facilities, evaporation ponds, and waste storage areas.

Project manager and geotechnical engineer

Goldstrike Arturo Project, Nevada Gold Mines, Inc, NV

Project manager and geotechnical engineer (through year 2017) for providing design, geotechnical studies and/or construction quality control/assurance services in support of miscellaneous infrastructure development, including heap leach pad, ore stockpile pad, ponds, electrical substation, explosives magazines, fueling bay, stormwater dam, silos, and others.

Geotechnical and civil engineer

Pinto Valley Mine, Capstone Mining Corp, AZ

Geotechnical and civil engineer participating in three prefeasibility-level designs of tailings storage expansions. Lead civil engineer for construction-level designs of multiple earthen embankment dam raises and boundary dam raises.

Lead geotechnical engineer and project manager

Gold Quarry Mine, Nevada Gold Mines, NV

Lead geotechnical engineer and project manager for a geotechnical study evaluating interaction between a gyro crusher foundation and pit slope layback. Lead geotechnical engineer and project manager for a truck shop foundation mitigation project. Lead geotechnical engineer and project manager for design of a lined ore stockpile pad to receive concentrate ore material; project reviewer for relocating an escape way and extending a reclaim tunnel of a mill crushing circuit. Technical reviewer for CQA of a Mill 5/6 East tailings storage facility expansion.

Project manager and lead engineer

Serrote Copper Project, Mineração Vale Verde/Appian Capital Advisory, Alagoas, Brazil

Project manager and lead engineer for performing a peer review of a tailings storage facility with the earthen starter dam also planned to be used for mine start up water. Project reviewer for Phase 1 detailed engineering designs of the TSF.

Peter H. Yuan, PE, PhD
Senior Associate Geotechnical Engineer



Civil/geotechnical engineer and project manager

CSH Project, Jinshan Gold Mines, Inner Mongolia, China

Civil/geotechnical engineer and project manager for design and construction of a heap leach facility, two bankable feasibility level studies of new expansions/heap leach facilities; also participated in foundation designs for multiple surface mining facilities.

Geotechnical engineer

Permanente Quarry, Lehigh Southwest Cement Company, CA

Geotechnical engineer for designs of multiple waste dumps, topsoil stockpiles, and open pit slopes involving weak rocks and soils. Participated as the lead geotechnical engineer for preparation of the mine closure plan.

Lead geotechnical engineer and project manager

Cortez Mine, Nevada Gold Mines, NV

Lead geotechnical engineer and project manager for a geotechnical study in support of ore characterization and buttress design for a heap leach facility; lead geotechnical engineer for miscellaneous projects related to ground subsidence studies, foundation investigations, tailings seismic design practice reviews, and an in-pit backfill study.

Geotechnical engineer

Confidential Mine Closure and Remediation Project, CA

Geotechnical engineer for a site-wide geotechnical study in support of a Remediation Investigation and Feasibility Study (RI/FS) program on an environmental remediation and closure project. Responsibilities included developing a work plan for site geotechnical characterization, landslide investigation and monitoring, preparation of preliminary designs for ponds and a sludge impoundment, as well as providing miscellaneous geotechnical support for RI/FS operations.

Lead designer and task manager

Rhyolite Ridge Lithium-Boron Project, Paradigm Minerals USA, Nevada

Lead designer and task manager for design of a drystack tailings storage facility as a part of a prefeasibility study (PFS) for this greenfield project. Responsibilities included leading several trade-off studies for waste management options and a PFS design for dry-stacking residue material from leaching along with other waste materials.

Geotechnical professional

Kidd Operations Intergraded Closure Project, Ontario, Canada

Geotechnical professional leading a feasibility level closure design for the tailings management area; responsibilities included development of tailings deposition plans, civil designs of tailings covers, and berm raises, and preparation of construction tender packages.

Peter H. Yuan, PE, PhD
Senior Associate Geotechnical Engineer



Project manager and geotechnical engineer

Goldstrike Betze-Post Northwest Layback Project, Nevada Gold Mines, NV

Project manager and geotechnical engineer for foundation investigations in support of powerline relocation and silo relocation projects. Geotechnical engineer overseeing the construction quality assurance services for the SWE secondary containment pad construction and silo installation.

Project manager

Goldstrike Mine Banshee Project, Barrick/DMC Mining Services, NV

Project manager for providing geotechnical engineering, construction quality assurance, and field engineering services for a 1200-foot-deep ventilation shaft sinking project.

Geotechnical engineer and project manager

Turquoise Ridge Mine, Barrick/DMC Mining Services NV

Geotechnical engineer and project manager for a foundation investigation in support of the design of an underground backfill plant and appurtenance surface facilities. Geotechnical engineer for a foundation investigation and CQA services in support of multiple ventilation fan structures founded on non-engineered fill.

Geotechnical engineer

Lone Tree Mine, Nevada Gold Mines, NV

Geotechnical engineer for the design of the Stages 11 and 12 tailings impoundment expansions. Also participated in several other projects that involve heap leach facility designs, open pit slope studies and waste dump stability reviews.

Lead geotechnical engineer and project manager

Twin Creeks Mine, Nevada Gold Mines, NV

Lead geotechnical engineer and project manager for providing design and field engineering services for a tailings closure project (Pinion Tailings Storage Facility).

Lead geotechnical engineer and/or project manager

Golden Sunlight Mine, Barrick Golden Sunlight Mines, MT

Lead geotechnical engineer and/or project manager for multiple engineering projects, including mine waste dump designs, open pit designs, tailings storage facility siting studies, and landslide monitoring and remediation.

Lead geotechnical engineer

Phoenix Mine, Nevada Gold Mines, NV

Participated in design and construction of a tailings storage facility with an ultimate capacity of 290 million tons of tailings (through year 2013). Lead geotechnical engineer for tailings impoundment instrumentation, and for foundation designs of several mining facilities, including crushers, mill, and laboratory buildings. Performed a site-wide geotechnical audit for mining infrastructure, including the tailings impoundment and heap leach facility.

Peter H. Yuan, PE, PhD
Senior Associate Geotechnical Engineer



Lead geotechnical engineer and project manager

Yanacocha Mine, Minera Yanacocha S. R. L. (Newmont), Peru

Lead geotechnical engineer and project manager for a civil/geotechnical study to support the design of a large in-pit waste disposal facility and several pit slope movement remediation projects. Participated in periodic slope design practice reviews.

Geotechnical engineer and project manager

Kori Chaca Project, Empresa Minera Inti Raymi S.A./Newmont, Bolivia

Geotechnical engineer and project manager and provided engineering support in the design and development of the Kori Chaca pit and the subsequent Southwest Expansion. This project involves development of slopes in weak alluvial deposits that were submerged under water prior to mining. Also served as project manager for a site-wide geotechnical review in support of development of a mine closure plan; the involved facilities included several open pits, waste dumps, a tailings impoundment, two heap leach facilities, and flood protection dikes.

Lead engineer

Merian Project, Newmont Mining Corporation, Suriname

Lead engineer for design of saprolite slopes in support of a pre-feasibility-level study and a feasibility-level study. Design of multiple open pits of which the upper slopes up to 100m (or 330ft) high are to be developed in saprolites with shallow pre-mining groundwater tables and challenging hydrogeological settings for depressurization. Duties included supervising geotechnical investigation and strength characterization, performing stability analyses, and providing recommendations of saprolite slope design.

Lead engineer and project manager

Homestake Mine Closure Project, Homestake Mining Co., Lead, SD

Lead engineer and project manager (through year 2013). Performed biannual stability reviews and monitoring instrument installation and prepared a geotechnical monitoring plan for the open pit and mine waste disposal facilities. Also served as lead engineer and project manager on a slope remediation project for a landslide within a waste disposal facility; duties included performing geotechnical site characterization, monitoring instrument installation and data review, stability evaluation, preparing a civil design package, and providing engineer support and Construction Quality Assurance (CQA) management during construction.

Technical reviewer

Coeur Rochester Mine, Coeur Rochester Inc, NV

Technical reviewer for Construction Quality Assurance services in support of the Stage IV Overland Conveyor construction project. Geotechnical engineer leading a foundation evaluation in support of a concrete vault construction.

Miscellaneous Review Projects

Mr. Yuan has also been involved in many other internal or external review/audit projects that involve tailings storage facilities (TSFs) and heap leach facilities (HLFs), including:

- Newmont's Cripple Creek Mine HLFs (Colorado)
- Freeport-McMoRan's Morenci Producer Leach Stockpile PFS Project (Arizona)
- NOVAGOLD's Donlin Creek Gold Project TSF, Waste Rock Dump, and Water Dams (Alaska)
- PVDC's Pueblo Viejo TSF (Dominican Republic)
- Nevada Copper's Pumpkin Hollow Project TSF (Nevada)
- Alamos's Agi Dagi and Kirazli HLFs (Turkey)
- Hycroft's HLFs (Nevada)
- La Herradura's Heap Leach Project (Mexico)
- Dipolos' Heap Leach Project (Mexico)
- Oyu Tolgoi's TSF (Mongolia)
- Endeavor Silver's Bolanitos TSF raise (Mexico).