



# MINING SERVICES

## STATEMENT OF QUALIFICATIONS

### 2024

GEOTECHNICAL ♦ CIVIL ENGINEERING ♦ WATER RESOURCES  
ENVIRONMENTAL ♦ GEOLOGIC HAZARDS





## VISION STATEMENT

Tierra Group will earn our customers' respect and trust as a key team member providing leadership and focused expertise in geotechnical, water resources, civil, environmental, and geologic hazards engineering.

We will assist our customers' sustainable development of the earth's natural resources by providing forward thinking, innovative ideas, advice, and designs.

We will also provide an empowered company culture, promoting Teamwork and efficient execution, which will promote a healthy balance between professionals' careers and personal lives, making Tierra Group the consultancy of choice for the top talent in the mining industry.

Through the course of our journey we will remain proud, yet humble, of Tierra Group's contribution to our customers' successes while fulfilling our entrepreneurial spirit.

## CORE VALUE

*“Our Clients are First,  
the Team is Second,  
and I am Third.”*



Recognized as one of the leading Tailings and Heap Leach Stewardship firms in the world, Tierra Group International, Ltd. (Tierra Group) is an elite, client-focused engineering firm offering geotechnical, water resources, civil and environmental design, and consulting services to the mining industry.

Tierra Group's founding principle is to earn our clients' friendship and professional respect by providing practical consulting advice and innovative engineering design expertise. Accomplished through focused, personal client engagement, Tierra Group develops practical yet innovative solutions and delivers results focused only

on our clients' needs. Tierra Group does not desire nor proclaim to be "all things to all clients", rather "we only do what we do", and we strive to do it better than our peers every day.

Teamwork is fundamental to business and project success; therefore, TEAMWORK is the foundation upon which Tierra Group was formed and the cornerstone of everything we do. Tierra Group successfully executes projects by uniting clients, colleagues, and coworkers with directionally correct, focused execution plans.

Tierra Group's unselfish regard for project success is reinforced in our company credo:

***"Our Clients are First,  
the Team is Second,  
and I am Third."***

Applying this simple, straightforward belief system, Tierra Group has established strong relationships with junior, mid, and major (Fortune 500) mining companies worldwide. Headquartered in Lakewood, Colorado, Tierra Group has fully-staffed branch offices in Salt Lake City, Utah; Elko, Nevada; and Lima, Perú. We have successfully completed mining projects on six continents and are willing to go wherever and do whatever is required to support our clients' needs.

We are proud of our clients, our Team, and our desire to sustain success in all areas of our business, and we would now like to present our Company, Services, and Performance to you.

Sincerely,

Matt and Pete





# TIERRA GROUP INTERNATIONAL, LTD.

## COMMITMENT TO SAFETY

Tierra Group's primary asset is our people. As such, we place a very high value on ensuring each of our employees understands the importance of working safely and feeling empowered to stop working if they ever believe a situation to be unsafe. Tierra Group conducts regular safety briefings during staff meetings and daily project tailgate meetings to convey safety topics to all employees and ensure they are aware of any specific project-related concerns.



Tierra Group's registered MSHA Contractor ID is A4419. All Tierra Group employees who work on a mine site maintain active 24-hour MSHA safety training, obtain site-specific training as required, and deploy to projects with personal protective equipment (PPE) for the safe execution of their work assignments.

Tierra Group has internal procedures in place for near-miss and accident reporting and ***has never experienced a reportable incident or lost time accident.***

## COMPLIANCE WITH CLIENT POLICIES

Tierra Group is committed to environmental, health, safety, and social responsibility worldwide. Our personnel and subcontractors are required to comply with our Clients' Occupational Health and Safety policies and specific project policies pertaining to protocol areas, loss prevention, and drug and alcohol policies.

## COMPLIANCE WITH CONTRACTING POLICIES

Tierra Group is registered with Avetta to comply with the companies' specific contracting requirements. For companies that do not use Avetta, Tierra Group teams with the client to ensure compliance with all contractual requirements for executing work.

## DRUG AND ALCOHOL POLICY

The use and/or abuse of any drugs (prescription or non-prescription) has the potential to impair judgment and put an employee or others in harm's way. Tierra Group's personnel policies prohibit employees from being under the influence of drugs or alcohol while on the job.






TIERRA GROUP TEAM  
5-YEAR ANNIVERSARY CELEBRATION  
JANUARY 2017

PROJECT LOCATIONS



**Legend**

 Tierra Group Project	 Pre Tierra Group Project	 Office Location
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## TIERRA GROUP LEADERSHIP TEAM

### MATT FULLER, LEG, P.GEO



FOUNDING PRINCIPAL, CO

Mr. Fuller is a licensed Professional Engineering Geologist, QP, Chief Tailings Steward with over 35 years of providing geological, geotechnical, and geological hazards design and consulting services to the international mining industry.

### PETE KOWALEWSKI, PE



FOUNDING PRINCIPAL, UT

Mr. Kowalewski is a Principal Engineer with over 30 years of experience within the mining industry, providing design, construction, operation, and closure of tailings/heap leach projects.

### JULIO JUAREZ, CIP



GENERAL MANAGER, LIMA

Mr. Juarez is a Peruvian registered geological engineer with more than 20 years of experience providing geotechnical, geological, and geo-environmental services to the international mining industry.

### JUSTIN KNUDSEN, PE



SR. GEOTECHNICAL ENGINEER, CO

Mr. Knudsen is a Professional Engineer and Project Manager with over 19 years of experience in the mining industry applying his geotechnical expertise in designing tailings dams, heap leach pads, waste rock dumps, etc.

### FRANCISCO BARRIOS, PE



PROJECT MANAGER, AZ

Mr. Barrios has over 19 years of experience in the mining industry in civil/environmental engineering. He is experienced in design, planning, construction, and project management for various international mining projects.

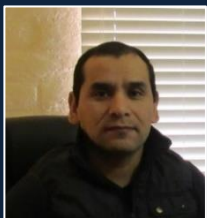
### JARED PURDY, PE



SR. GEOTECHNICAL ENGINEER, UT

Mr. Purdy has 23 years of professional experience in mining geotechnics, geotechnical investigations, foundation design, and construction management projects in the United States and Latin America.

### DANTE BOLANOS, PE



SR. GEO-ENVIRONMENTAL ENGINEER, AZ

Mr. Bolanos is a geo-environmental engineer with 18 years of experience providing analyses and designing environmental mining facilities, including TSFs, waste rock storage facilities, and heap leach facilities.

### JESUS TORRES, CIP



CIVIL ENGINEER, LIMA

Mr. Torres is a Civil Engineer with 14 years of experience in hydraulics, hydrology, drainage facilities, and water and tailings management for TSFs and leach pads.

### ALCIDES PANEZ, CIP



GEOTECHNICAL ENGINEER, LIMA

Mr. Panez is a Civil Engineer with more than 10 years of experience in geotechnical and geological studies, mining facility design, mine closure, and surface water management. In addition, he has extensive experience in administrative, technical, and leadership skills.

### OMAR MORI, CIP



CIVIL ENGINEER, LIMA

Mr. Mori is a Civil Engineer with 10 years of experience in the mining industry, specializing in mining infrastructure design, including TSFs, leach pads, pits, and waste rock dumps.

### MARCO NOA, CIP



CIVIL ENGINEER, LIMA

Mr. Noa is a Civil Engineer with 17 years of experience in civil-hydraulic design and construction of mining infrastructure projects, including leach pads, TSFs, waste rock dumps, process ponds, diversion channels, access and haul roads, and mine closure plans.



# MINING SERVICES FOR THE MINING LIFE-CYCLE

## PROJECT PLANNING/EVALUATION

Tierra Group provides services for the entire mining life-cycle, beginning with early-stage strategic planning, initial siting, pre-feasibility, and feasibility studies. Our contributions include designing tailings storage facilities (TSF), heap leach pads, process ponds, water supply reservoirs, waste rock storage facilities, and other surface infrastructure. We then develop capital and operating expense (CAPEX/OPEX) estimates and provide Qualified Person ("QP") signature authority for Security Exchange Technical Reports (NI 43-101).

- Preliminary Economic Assessments
- Pre-Feasibility / Feasibility Studies
- OPEX/CAPEX Estimating
- NI 43-101 Technical Reports

## DESIGN, CONSTRUCTION, AND OPERATION



Tierra Group's capabilities extend through detailed engineering design and construction, providing bidding and procurement support, resident engineering, and construction quality assurance (QA) / quality control (QC) during construction. Following commissioning, Tierra Group has provided ongoing operations management support at several mines for many decades.

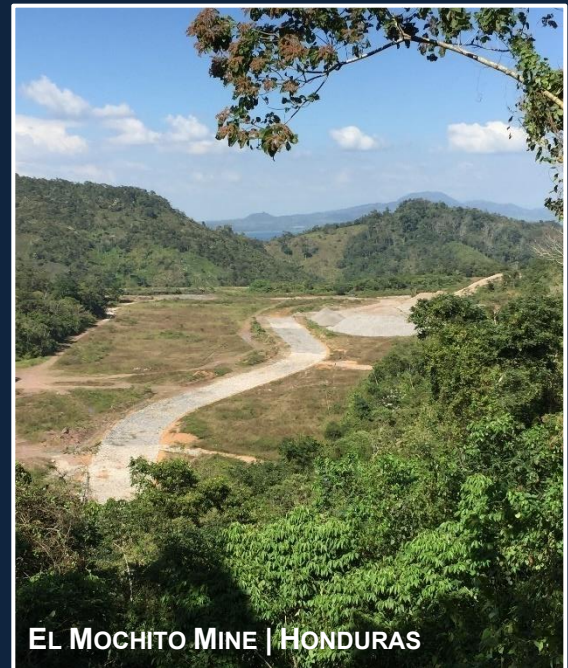
- Resident Engineer
- Construction Quality Assurance
- As-Built Drawings
- Operations Support
- Engineer of Record
- Tailings Stewardship



## RECLAMATION AND CLOSURE

Tierra Group completes the mining life cycle by developing and implementing facility-specific and/or site-wide mine decommissioning, reclamation, and closure plans. An integrated approach during design and operations incorporating best available technologies (BAT) and best management practices (BMP) ensures that areas impacted by mining can be reclaimed to provide beneficial use to surrounding communities post-closure.

- Progressive Closure Activities
- End-of-life Facility Planning
- Decommissioning Plans
- Reclamation Plans
- Closure Plans
- Post-Closure Monitoring Plans



EL MOCHITO MINE | HONDURAS

## ENGINEERING EXPERTISE

Tierra Group applies the following engineering skills throughout the mine life-cycle.

### GEOTECHNICAL

Site Characterization  
Geotechnical Analyses  
Design and Specifications  
Construction Documents  
Resident Engineering  
Quality Assurance  
Operations Support  
Forensic Investigations  
Peer Reviews

### WATER RESOURCES

Climatology  
Water Supply  
Water Balance  
Water Storage  
Water Distribution  
Dams (Tailings/Water)  
Treatment Systems  
Hydraulic Structures  
Supply Systems

### CIVIL DESIGN

Dams (Tailings/Water)  
Heap Leach Pads  
Waste Rock Dumps  
Hydraulic Structures  
Infrastructure  
Conceptual Plans  
Feasibility Designs  
Final Engineering Designs  
'For Construction' Drawings



EL LIMÓN MINE | NICARAGUA



# CLIENTELE



# REPRESENTATIVE PROJECTS

## GOLDSTRIKE MINE | NEVADA

The Goldstrike Mine processes 30,000 tons of gold ore per day from its combined open-pit/underground operations in the historic Carlin Trend in Nevada, U.S.A. Goldstrike's tailings are stored in the North Block Tailings Disposal Facility (NBTDF) and Tailings Storage Facility 3 (TSF3). The NBTDF was commissioned in 1994 and is among the largest rockfill tailings dams in the world. It is also one of the mining industry's largest geomembrane-lined tailings storage facilities.

Tierra Group Team members began working at Goldstrike in 2003. In January 2012, Nevada Gold Mines LLC (formerly Barrick) hired Tierra Group as Engineer of Record for 12 jurisdictional dams, including NBTDF. In addition, Tierra Group provides engineering consultancy, design, and construction-engineering services for four TSFs.



## EL MOCHITO MINE | HONDURAS

El Mochito is an underground zinc/silver mine in the Santa Barbara Mountains in north-central Honduras. Tierra Group's Team has continuously provided Tailings Stewardship Services at El Mochito for the past 30+ years. Since

1989, Tierra Group engineers have provided engineering consultancy, design, and construction services for three TSFs (El Bosque, Pozo Azul, and Soledad).

Being in the tropics, tailings management at El Mochito has been fraught with many challenges, including monsoons, floods, karstik terrain, debris flows, constructing with tropical soils (laterite and saprolite), and social unrest. During the full mine life-cycle of three TSFs, Tierra Group has persevered with the owners and mine management to maintain continual operations with zero lost-time accidents.





### PERPETUA RESOURCES | IDAHO

The Stibnite Gold Project is in Idaho's remote central Rocky Mountains (U.S.A.). Stibnite Gold is a Brownfields gold-antimony project featuring legacy open pits, waste rock dumps, and relic infrastructure. Tierra Group designed a TSF and developed a site-wide water management plan for a NI 43-101 compliant pre-feasibility Technical Report.

The TSF includes a 460-foot rockfill dam with a composite geosynthetic liner system. The water management system includes a channel network and tunnel to divert a perennial mountain stream around the mine. The tunnel diversion will reconstitute salmon migration, which has been blocked for decades due to historical mining activities.



### B2GOLD, MASBATE MINE | PHILIPPINES

Tierra Group performed a due diligence study of Masbate's 12-Mt TSF. Services provided included a forensic study to determine the cause of seepage through an abutment and performed an independent safety audit of tailings management practices. Tierra Group completed a risk analysis and provided water management optimization recommendations. Tierra Group and its sub-consultants then designed and commissioned a 1,500-m<sup>3</sup>/d supernatant water treatment plant. The water treatment plant was commissioned in early 2015 and has run continuously at 90 to 95% efficiency, significantly improving the mine's site-wide water balance.







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