THEOMNIVOLT

Brief Mining Profile

Mining Activities

From exploration to full-scale production, THEOMNIVOLT provides end-to-end mining design, planning, financing, and operational excellence. Our team of engineers, and mining specialists guarantees sustainable, profitable, and world-class project execution.

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EXPERIENCE 40 years

CERTIFIED QUALITY CERTIFIED

24/7

"THEOMZNIVOLT" *Where Power Meets The Potential*



Mining Activities

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1- A About Mining



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Mining is the essential industrial process for extracting Geological Materials and valuable commodities, such as metals, industrial minerals, and construction aggregates, that cannot be artificially synthesized. The selection of the extraction technique is governed by economic viability, geological factors, and ore body characteristics.

The Four Primary Methods of Mineral Extraction

The four primary methodologies governing resource acquisition are detailed below, categorized by their proximity to the Earth's surface and mechanism of extraction.

1. Surface Mining (Opencast) :

I. **Surface Mining:** This technique involves removing the overburden (soil and overlying rock) to directly access and extract mineral deposits located near the Earth's surface. It is highly mechanized, relying on heavy equipment like dragline excavators and large haul trucks to achieve high production volumes.

II. **Strip Mining:** Used predominantly for coal and lignite where the ore seam is shallow, involving the removal of long, successive strips of overburden before extraction.

III. **Open-Pit Mining:** The standard method for extracting bulk minerals and rocks, creating a progressively deepening, cone-shaped excavation.

IV. **Mountaintop Removal (MTR):** A major coal extraction process utilizing powerful explosives to remove the mountaintop rock above the seam.

V. **Dredging:** A specialized technique that uses hydraulic or mechanical equipment to suction or scoop valuable sediments from the bottom of water bodies.

VI. **Highwall Mining:** A remotely operated process used to recover additional coal reserves adjacent to the final pit wall, extending profitability without risking human entry.

2. Underground Mining (Subsurface)

Employed when the depth or grade of the ore body prevents profitable surface extraction, this method requires constructing horizontal tunnels (adits), vertical openings (shafts), or inclined ramps (declines) to access the deeply buried resource. While significantly more capital-intensive, it is necessary for accessing deeper, high-value deposits.

I. **Room and Pillar Mining:** Tunnels are driven in a grid pattern, leaving large square pillars of ore intact to provide necessary roof support, commonly used for coal and industrial minerals.

II. **Narrow Vein Stoping:** An excavation technique utilized along thin, sheet-like geological veins to target high-grade, structurally controlled deposits, often for platinum or gold.

III. **Block Caving:** A mass mining method where the base of a large ore body is undermined, allowing the rock to progressively fracture and collapse under its own gravity for collection.

3. Placer Mining

This method leverages the high specific gravity of valuable minerals (typically gold or tin) to separate them from less dense sediments in alluvial deposits using water. This low-tech or highly mechanized method is ideal for deposits accumulated by natural erosion and water flow.

I. **Panning:** The ancient, low-cost practice of swirling sediment in a pan, relying on the differential settling velocity of heavy metals.

II. **Dredging** (Bucket-Ladder): A large-scale, mechanized operation that uses a continuous chain of buckets on a floating vessel to scoop up material from riverbeds or offshore areas for subsequent concentration.

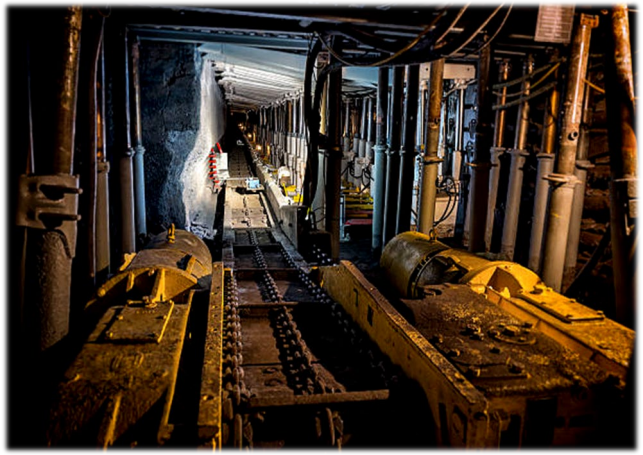
4. In-Situ Recovery (ISR)

Also known as In-Situ Leaching, ISR is a highly specialized, non-conventional technique that bypasses physical excavation. It involves drilling boreholes into the ore body and injecting a leaching solution (lixiviant) that chemically dissolves the target mineral (e.g., uranium or copper). The pregnant solution is then pumped back to the surface for extraction.

I. **Environmental Profile:** Represents the most environmentally sound method due to minimal ground disturbance, drastically reducing waste, dust, noise pollution, and surface footprint.

II. **Safety and Cost:** Eliminates the need for personnel underground, leading to lower operating costs and a significantly reduced safety risk to the workforce.

The final selection of a mining methodology—be it mechanical surface work, complex underground development, alluvial separation, or chemical recovery—is ultimately determined by a comprehensive assessment of the ore body's geometry, depth, grade, and the necessary economic justification to manage high capital expenditure and environmental costs.



2- A Major Strategic Factors in Global Mining Project Viability

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1. Economic and Market Dynamics

These factors govern whether the project is financially feasible and sustainable over its 15-to-30-year lifespan.

- **Commodity Price Volatility and Forecasting:** Project viability is entirely dependent on the long-term forecast for the mineral price. Miners must manage extreme volatility and secure robust economic models that survive price dips, ensuring the project generates sufficient return on the massive Capital Expenditure (CAPEX) required for construction.
- **Offtake Agreements and Marketing:** The ability to secure guaranteed sales contracts (offtake agreements) with reputable buyers (refiners, smelters) before the mine is even operational. This guarantees a buyer for the product, stabilizes projected revenue, and is often a non-negotiable requirement for project financing.
- Cost Control and Inflation: Strict management of operational costs (OPEX) over two decades is vital. This includes controlling the high and often volatile costs of energy (diesel, electricity), steel, and reagents. Unforeseen inflation in these areas can erode margins quickly.

2. Geopolitical and Regulatory Framework

The stability of the host country's government and the predictability of its laws are paramount to protecting long-term investment.

- **Permitting and Licensing Security:** Obtaining and maintaining the foundational legal permissions (mining license, land use rights, environmental permits) is complex. More critically, the project requires regulatory stability, meaning the host government is unlikely to change the rules (taxes, royalties, environmental standards) once the investment is committed.
- **Fiscal Regime and Taxation:** The total tax burden—including corporate taxes, production royalties, import/export tariffs, and potentially resource nationalism measures like windfall taxes—directly impacts cash flow. The legal advisor must ensure long-term fiscal stability is enshrined in initial agreements.
- **Foreign Investment Protection:** Projects in emerging markets require robust legal frameworks and insurance against high-level risks, such as nationalization (government seizure of assets), expropriation, or being unable to repatriate profits due to currency restrictions.



3. Human Capital and Talent Management

Mining projects are highly specialized and require a global workforce that must integrate with local employment requirements.

- **Specialized Talent Pool:** The industry faces a global shortage of highly skilled professionals, including geotechnical engineers, metallurgists, and digital mining experts. The project must have a competitive strategy for global recruitment, visa management, and retention of these critical employees, especially in remote areas.
- **Local Content and Skills Transfer:** Meeting governmental and social requirements to prioritize local employment, procurement, and training. Failing to maximize local content can quickly lead to labor disputes, union actions, and the erosion of the Social License to Operate (SLO).
- **Health and Safety Culture (Beyond Compliance):** Implementing a proactive safety culture that goes beyond regulatory compliance to achieve a Target Zero Harm goal. This includes behavioral safety training, comprehensive occupational health programs, and managing the health risks associated with a large, temporary construction workforce.

4. Infrastructure and Digital Integration

The logistical and technological foundations that support the mine's operations and efficiency.

- **Energy and Decarbonization** Strategy: Access to reliable, affordable, and increasingly low-carbon power is crucial. Mines often require massive amounts of energy. The shift toward renewable energy sources (solar/wind hybrid) is now a major factor in both cost control and meeting investor-mandated ESG targets.
- **Logistics and Transportation Infrastructure:** Establishing reliable and cost-effective means to transport the raw commodity (ore or concentrate) to port, as well as delivering enormous volumes of consumables (fuel, supplies) to the remote mine site. This often involves building or upgrading roads, rail lines, or port facilities.
- **Digitalization and Cybersecurity:** The transition to modern, efficient mining relies on automation, real-time data analysis, and remote operations centers. Protecting this critical operational technology (OT) from cyberattacks is essential, as a breach could paralyze production or compromise critical monitoring systems.

3 Core Policy Statements for Human Rights & Sustainability in Mining

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1. Corporate Human Rights and Social License to Operate (SLO) Policy
Statement: We formally adopt and commit to the UN Guiding Principles on Business and Human Rights (UNGPs) and the International Finance Corporation (IFC) Performance Standards as the minimum standard for all project activities. Our commitment is to exercise continuous human rights due diligence to identify, prevent, mitigate, and account for potential adverse impacts. We shall proactively engage with stakeholders to maintain a robust and measurable Social License to Operate (SLO) throughout the full life cycle of every project.

2. Environmental Stewardship and Community Health Policy
Statement: We recognize the fundamental Right to a Healthy Environment and the Right to Health for all affected communities. We are committed to minimizing our ecological footprint by implementing certified Environmental Management Systems (EMS), strictly controlling air and noise emissions, and adhering to rigorous standards for habitat restoration and biodiversity conservation. Furthermore, we shall proactively assess, mitigate, and remediate any project-induced health risks, ensuring that our operations do not contribute to social diseases or strain local public health infrastructure.

3. Water Stewardship and Resource Protection Policy
Statement: We uphold the Right to Water by prioritizing community and ecosystem water needs over our operational requirements. Our policy mandates the development and public disclosure of a comprehensive, transparent Water Management Plan for every site. We commit to implementing closed-loop systems, maximizing water recycling, and investing in state-of-the-art treatment technologies to prevent chemical contamination, acid rock drainage, and hydrological depletion of local surface and groundwater sources.

4. Indigenous Peoples and Free, Prior, and Informed Consent (FPIC) Policy
Statement: Where our activities may affect the lands, territories, or resources of Indigenous Peoples, our paramount commitment is to the principle of Free, Prior, and Informed Consent (FPIC), in line with IFC Performance Standard 7. We shall engage with traditional governing structures and provide culturally appropriate consultation, ensuring that all agreements are based on the community's self-determined development goals, protect their cultural heritage, and include binding terms for equitable long-term benefit sharing.

5. Ethical Labor and Security Management Policy
Statement: We maintain zero tolerance for child labor and forced labor, adhering strictly to the International Labour Organization (ILO) Core Conventions across our entire supply chain and workforce. We ensure fair wages, safe working conditions, and the right to freedom of association. Additionally, we mandate that all private and public security personnel comply with the Voluntary Principles on Security and Human Rights (VPs), prohibiting the use of excessive force and maintaining transparent protocols to ensure the safety of both personnel and community members.

4 Our Trajectory

VISION : To emerge as a distinguished leader in the mining sector by consistently exceeding expectations and upholding our commitments.

MISSION : Safely and sustainably extract the essential mineral resources required to advance global industry while delivering maximum value for our stakeholders..

SOCIAL RESPONSIBILITY

- ★ Prioritizing safe, clean, and healthy environments.
- ★ Complying with environmental regulations.
- ★ Contributing positively to society and sustainability.

STRATEGIC APPROACH :

- ★ We target Tier 1 deposits with proven long-term potential.
- ★ The approach integrates digital and autonomous technologies for efficiency.
- ★ We prioritize decarbonization across all phases of operation.
- ★ xtraction methods are geologically tailored for maximum recovery.
- ★ We secure and maintain a robust social license to operate.

TEAMWORK :

- ★ Respectful communication and collaboration are our foundations.
- ★ We value individual contributions within a cohesive team.
- ★ Embracing diverse perspectives to drive innovation.
- ★ A culture anchored in integrity, respect, and teamwork.

COMMERCIAL EXCELLENCE :

- ★ Fostering a profit-driven, efficient business mindset.
- ★ Implementing best practices for optimal performance.

TRUSTED PARTNER :

- ★ Building strong relationships with stakeholders.
- ★ Promoting collaboration and mutual trust.
- ★ Aligning with governments, partners, customers, etc.



- Project Assessment
- Conceptual Studies
- Technical Due Diligence
- Pre-feasibility Study
- Capital & Operating Cost Estimates
- Financial Projections
- Mine Evaluation & Investment Analysis
- Project Operating Strategy
- Exploration
  - Prospecting (Conventional)
  - Geologic
  - Geo-chemical
- Laboratory Services
  - Ore Sample Test & Evaluation
  - XRF Test, 36 minerals
  - Fire Assay Test, Gold & Platinum group
- Mine Development
  - Equipment Configuration & Planning
  - Equipment Supply & Selection
  - Maintenance Planning
  - Infrastructure Requirements and Utilities
  - Project Management
  - Plant Site Selection
  - Site Design & Construction
  - Plant Assembly, Installation, Test Run
  - Environmental Consideration
  - Impounds & Dams
- Mine Exploration
  - Mining Method Selection
  - Systems Engineering
  - Training
  - Mine Survey
  - Production Operations

5 Flexible Mining Cadence

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A. Strategic Project Planning
B. Comprehensive Financial Structuring
C. Mine Design & Engineering
D. Supply Chain & Logistics Management
E. Procurement of Mining Plant, Equipment etc.
F. Regulatiry & Compliance Navigation
G. Sustainable Mining Practices
H. Operation Management & Execution
I. Technology Integration
J. Risk Management & Mitigation
K. Mineral Processing & Metallurgy
L. Security & Asset Protection
M. Commodity Trading & Market Access

5-A Strategic Project Planning

- **Feasibility Studies:** Conducting detailed technical, economic, and financial feasibility studies to validate a project's viability.
- **Resource Estimation:** Using advanced geological modeling to accurately estimate the quantity and quality of mineral reserves.
- **Location and Infrastructure Analysis:** Assessing the site's logistical viability, including access to power, water, and transport routes.
- **Community and Social Impact Assessment:** Evaluating and planning for social and environmental impacts to secure local support and regulatory approval.
- **Environmental Baseline Studies:** Establishing a clear understanding of the pre-mining environmental conditions to guide future reclamation and mitigation efforts.
- **Permitting and Licensing Strategy:** Developing a clear, step-by-step plan to acquire all necessary permits from local and national authorities.
- **Tailings Management Planning:** Designing secure and sustainable plans for managing mine waste from the project's inception.
- **Risk Assessment and Mitigation:** Identifying and creating strategies for all potential risks, from geological to financial and political.
- **Stakeholder Engagement:** Establishing and maintaining open communication with all stakeholders, including government bodies, local communities, and investors.
- **Project Timeline and Budgeting:** Creating a realistic timeline and detailed budget to guide the project from exploration to operation.
- **Market and Commodity Pricing Forecast:** Analyzing global market trends to forecast future commodity prices and ensure the project's long-term profitability.
- **Security Assessment:** Evaluating and planning for the physical security of the site, equipment, and personnel.
- **Post-Mining Reclamation Plan:** Designing a comprehensive plan for the rehabilitation of the mine site after operations cease.



5-B Comprehensive Financial Structuring

- **Capital Expenditure (CAPEX) Modeling:** Creating detailed models to forecast all capital investments required for the project.
- **Operational Expenditure (OPEX) Analysis:** Providing a clear breakdown and forecast of all costs associated with daily mining operations.
- **Project Finance Arrangement:** Securing and structuring financing through loans, bonds, or private equity investments tailored to the project's needs.
- **Equity and Debt Allocation:** Determining the optimal balance between equity and debt to fund the project while minimizing risk.
- **Investor and Joint Venture Agreement Negotiation:** Crafting and negotiating terms that protect the interests of all financial partners.
- **Revenue Forecasting and Sensitivity Analysis:** Predicting future revenue streams and analyzing how changes in commodity prices and production affect profitability.
- **Taxation and Royalty Planning:** Developing a strategy to manage tax obligations and government royalties in the host country.
- **Financial Reporting Framework:** Implementing a robust system for transparent and accurate financial reporting to investors and regulators.
- **Cash Flow Management:** Establishing procedures for managing the project's cash flow to ensure liquidity and sustainability.
- **Hedging Strategies:** Utilizing financial instruments to hedge against commodity price volatility.
- **Cost Control and Management Systems:** Implementing systems to track and control project costs in real-time.
- **Exit Strategy Planning:** Developing a clear plan for investors to exit the project, such as through a sale or IPO.
- **Insurance and Financial Guarantees:** Securing the necessary insurance policies and financial guarantees to protect against unforeseen financial losses.



5-C Mine Design & Engineering

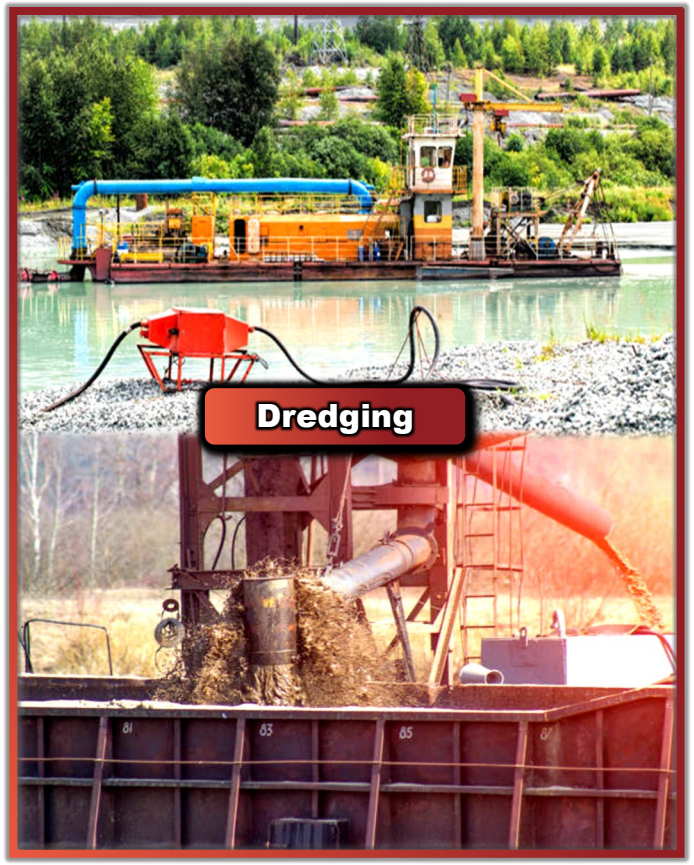
- **Geological Modeling:** Creating 3D models of ore bodies to determine optimal mining locations and methods.
- **Geotechnical Assessment:** Analyzing rock and soil stability to ensure the safety of open-pit walls and underground tunnels.
- **Mine Layout and Infrastructure Planning:** Designing the physical layout of the mine, including roads, shafts, and processing areas.
- **Ventilation and Safety Systems:** Engineering robust ventilation systems for underground mines and ensuring all safety protocols are integrated into the design.
- **Equipment Selection:** Choosing the most appropriate type and size of machinery and equipment for the specific geological conditions and mining method.
- **Water Management Systems:** Designing systems for managing water on-site, including dewatering, runoff control, and water treatment.
- **Tailings Storage Facility (TSF) Design:** Engineering a stable and environmentally sound TSF to store mine waste safely.
- **Material Flow and Handling Systems:** Optimizing the movement of ore and waste rock to maximize efficiency.
- **Blasting and Excavation Planning:** Creating detailed plans for blasting patterns and excavation sequences to minimize disruption and maximize yield.
- **Automation and Robotics Integration:** Incorporating automated systems and robotics to enhance safety and efficiency in high-risk areas.
- **Energy and Power Supply Planning:** Designing a reliable and sustainable energy solution for the mine's operations.
- **Waste Rock Management:** Creating a plan for the safe and compliant disposal of waste rock.
- **Closure Planning:** Integrating mine closure and rehabilitation plans into the initial design.



5-D Supply Chain & Logistics Management

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- **Global Sourcing Strategy:** Establishing a network of trusted international suppliers to source all required materials and equipment.
- **Vendor and Supplier Management:** Managing relationships and contracts with all suppliers to ensure timely and cost-effective delivery.
- **Freight and Transport Coordination:** Coordinating all modes of transport, including air, sea, and land, to move goods to and from the mine site.
- **Inventory and Warehouse Management:** Implementing a system to track and manage all materials and equipment in storage to prevent shortages and waste.
- **Customs and Import/Export Compliance:** Handling all necessary customs documentation and procedures to ensure smooth cross-border logistics.
- **Just-in-Time (JIT) Delivery:** Optimizing logistics to ensure critical components and consumables arrive exactly when needed, reducing storage costs.
- **Reverse Logistics Planning:** Managing the return or disposal of used equipment, parts, and waste.
- **Security of Goods in Transit:** Implementing measures to protect valuable assets during transportation from theft or damage.
- **Real-Time Tracking:** Utilizing GPS and other tracking technologies to monitor the location and status of all shipments.
- **Cost Optimization:** Continuously analyzing logistics routes and methods to identify opportunities for cost savings.
- **Performance Metrics (KPIs):** Tracking key performance indicators such as delivery time, cost per shipment, and supplier reliability.
- **Emergency Logistics Plan:** Developing a plan to respond to unforeseen logistical disruptions, such as transport delays or natural disasters.
- **Sustainable Logistics Practices:** Choosing environmentally friendly transport options and partners to reduce the carbon footprint of the supply chain.

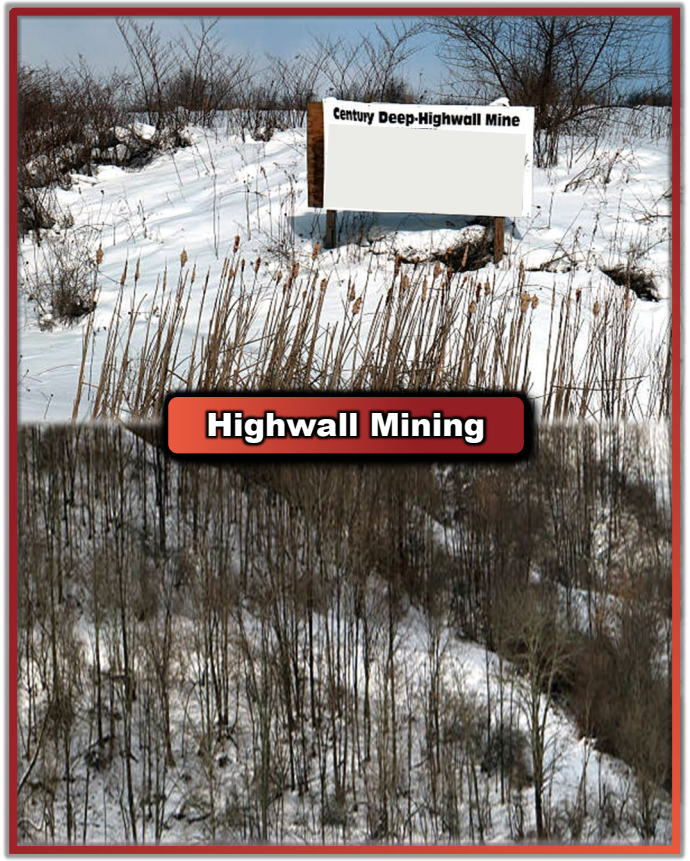


5-E Procurement of Mining Plant, Equipment

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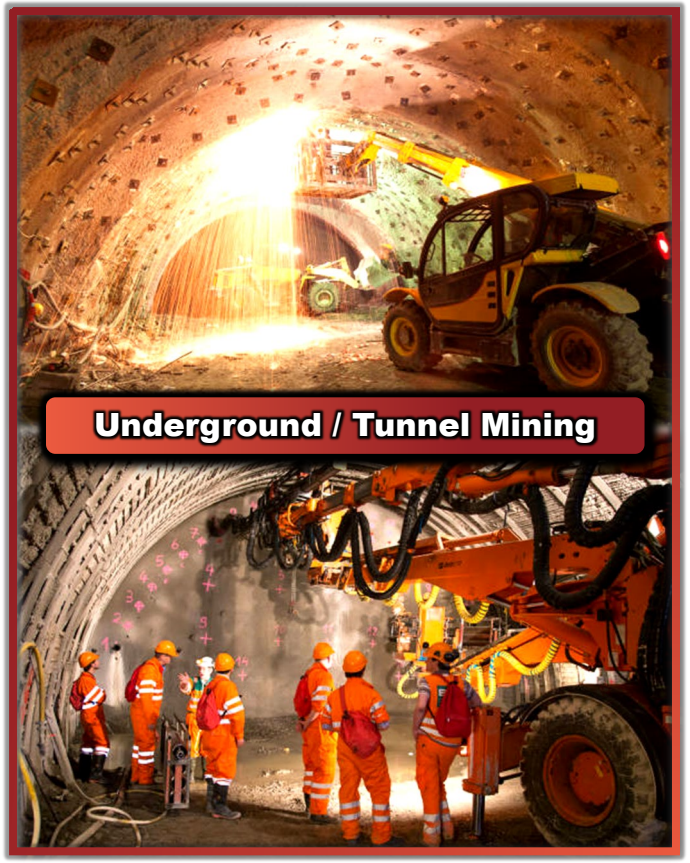
- **Needs Assessment and Specification:** Accurately defining the project's exact requirements for machinery and equipment.
- **Vendor and Manufacturer Selection:** Identifying and evaluating top-tier global manufacturers and suppliers to ensure quality and reliability.
- **Price and Contract Negotiation:** Securing the most competitive prices and favorable contract terms, including warranties and maintenance agreements.
- **Lease vs. Buy Analysis:** Evaluating whether it is more cost-effective to purchase, lease, or rent specific equipment.
- **Financing and Payment Management:** Structuring the financing for large-scale equipment purchases and managing payment schedules.
- **Customization and Fabrication:** Overseeing the customization of equipment to meet the unique demands of the project's geological conditions.
- **Quality Control and Inspection:** Performing independent inspections of equipment before shipment to ensure it meets all specifications.
- **Shipping and Transport Logistics:** Managing the complex logistics of transporting large and heavy equipment to the mine site.
- **On-Site Assembly and Commissioning:** Supervising the assembly and testing of the mining plant and equipment on-site to ensure it is operational.
- **Spare Parts Inventory:** Establishing a comprehensive inventory of critical spare parts to minimize downtime from equipment failure.
- **Maintenance and Service Agreements:** Securing long-term service agreements with manufacturers to ensure ongoing maintenance and support.
- **Asset Management System:** Implementing a system to track and manage the lifecycle of all assets, from purchase to disposal.
- **Depreciation and Tax Planning:** Strategically planning for equipment depreciation to optimize tax benefits.

etc.



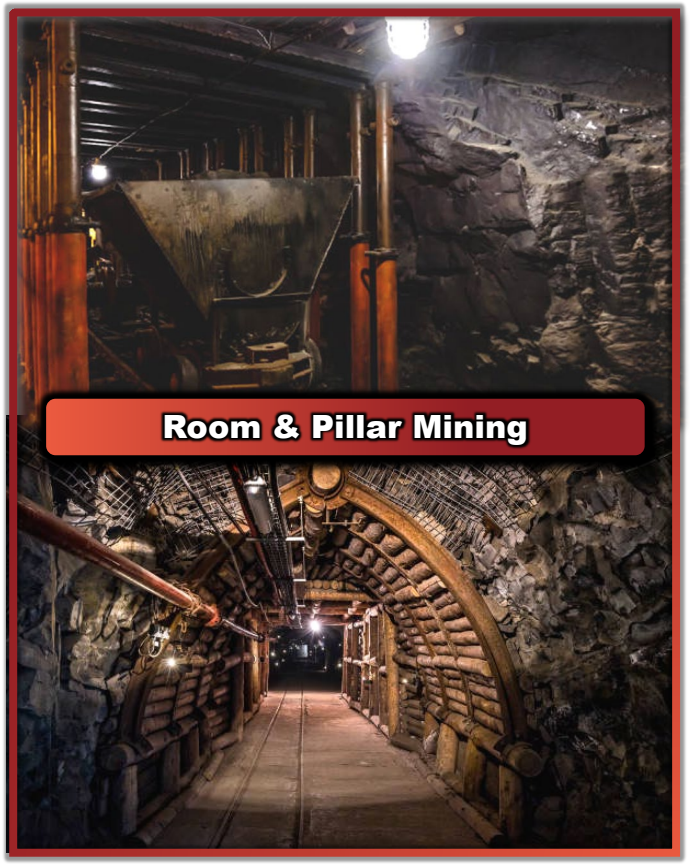
5-F Regulatory & Compliance Navigation

- **Permitting and Licensing:** Securing all necessary permits, licenses, and approvals from government and environmental agencies.
- **Environmental Impact Assessment (EIA) Submission:** Preparing and submitting detailed EIAs to demonstrate a project's environmental sustainability.
- **Social and Community Engagement Protocols:** Implementing formal protocols to manage community relations, including consultation and benefit-sharing agreements.
- **Health and Safety Regulation Compliance:** Ensuring all operations adhere to strict national and international health and safety standards for mining.
- **Labor Law Compliance:** Complying with all local and national labor laws, including those related to wages, working hours, and union relations.
- **Reporting and Disclosure Requirements:** Submitting regular reports and disclosures to regulatory bodies as required by law.
- **Waste Management Regulations:** Adhering to all regulations concerning the storage, handling, and disposal of mine waste and tailings.
- **Water Use and Discharge Permits:** Securing permits for water use and ensuring compliance with all water quality and discharge regulations.
- **Land Use and Zoning Compliance:** Ensuring the project operates within the designated land use and zoning regulations.
- **Security Regulations:** Complying with all security regulations related to the storage and transport of high-value minerals.
- **Customs and Trade Compliance:** Managing all import and export regulations for equipment and final products.
- **Auditing and Inspection Preparation:** Preparing for and managing audits and inspections by regulatory agencies.
- **Legal Dispute and Arbitration Management:** Having a clear legal framework and strategy to handle any disputes that may arise.



5-G Sustainable Mining Practices

- **Environmental Management System (EMS):** Implementing an ISO-certified or similar EMS to systematically manage environmental performance.
- **Water Conservation and Recycling:** Designing systems to minimize water consumption and recycle process water wherever possible.
- **Land Reclamation and Biodiversity Conservation:** Implementing a plan to restore mined land to its natural state and protect local biodiversity.
- **Energy Efficiency and Renewable Energy Integration:** Reducing energy consumption and exploring the use of renewable energy sources to power operations.
- **Tailings and Waste Management:** Using advanced methods to stabilize and safely store tailings, minimizing environmental risk.
- **Carbon Footprint Reduction:** Developing strategies to reduce greenhouse gas emissions throughout the mining lifecycle.
- **Dust and Noise Control:** Implementing systems to control dust and noise pollution from operations, protecting both workers and local communities.
- **Social License to Operate (SLO):** Actively engaging with communities to build trust and secure the social permission needed for the project to succeed.
- **Worker Health and Safety Programs:** Going beyond compliance to implement proactive health and safety programs that protect all personnel.
- **Post-Closure Planning and Financial Provision:** Setting aside a financial provision to ensure a thorough and complete closure and rehabilitation of the site.
- **Waste Heat Recovery:** Capturing and utilizing waste heat from operations to improve overall energy efficiency.
- **Responsible Sourcing and Certification:** Adhering to standards for responsibly sourced minerals and working towards relevant certifications.
- **Transparent Reporting:** Publicly reporting on sustainability performance, including environmental metrics and community benefits.



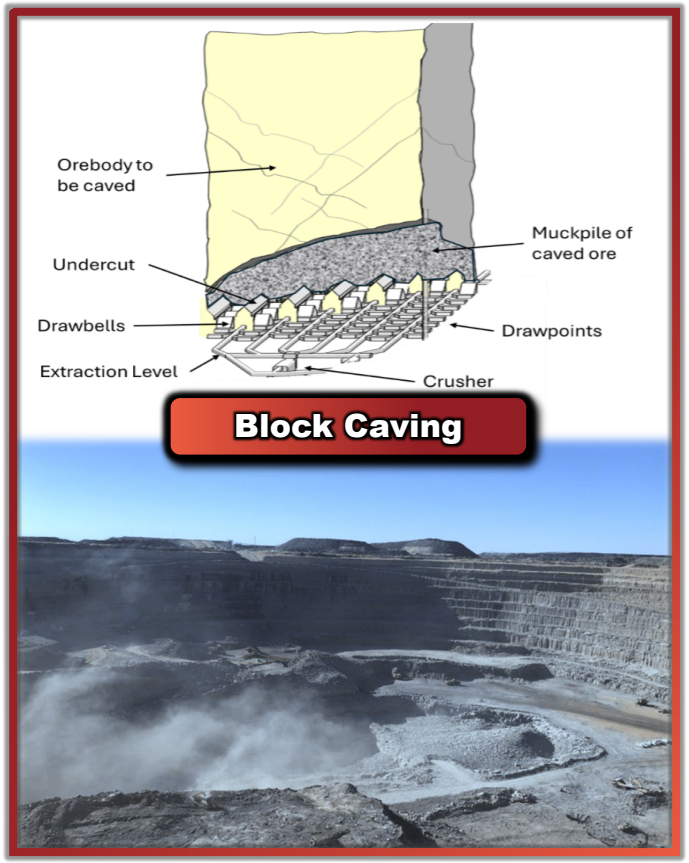
5-H Operational Management & Execution

- **Production Planning and Scheduling:** Creating detailed production schedules to meet targets for mineral extraction and processing.
- **Fleet and Equipment Management:** Maximizing the uptime and efficiency of all machinery through proactive maintenance and real-time monitoring.
- **Workforce Management:** Managing personnel, from training and recruitment to scheduling and performance evaluation.
- **Safety Protocol Implementation:** Enforcing strict safety protocols, including regular safety audits and training programs.
- **Real-Time Performance Monitoring:** Using sensors and data analytics to monitor operational performance in real-time and make immediate adjustments.
- **Quality Control:** Implementing procedures at every stage to ensure the final mineral product meets all quality specifications.
- **Maintenance and Repair:** Designing and executing a comprehensive preventive maintenance plan to minimize equipment downtime.
- **Cost Control:** Continuously monitoring and managing operational costs to ensure the project remains within budget.
- **Resource Optimization:** Maximizing the recovery of minerals from the ore body through efficient extraction and processing techniques.
- **Blasting Optimization:** Fine-tuning blasting patterns to improve fragmentation and reduce energy consumption.
- **Environmental Performance Monitoring:** Continuously monitoring environmental metrics such as water quality and air emissions to ensure compliance.
- **Communication and Reporting:** Establishing clear communication channels and reporting procedures for all on-site activities.
- **Emergency Response Planning:** Developing and regularly practicing an emergency response plan to handle any potential incidents.



5-I Technological Integration

- **Automation and Robotics:** Implementing automated drilling, hauling, and processing equipment to enhance safety and efficiency.
- **Internet of Things (IOT) Sensors:** Deploying sensors on equipment and in the mine to collect real-time data on performance, safety, and environmental conditions.
- **Data Analytics and Business Intelligence:** Using big data and analytics to gain insights into operational performance and optimize decision-making.
- **Drone and Satellite Imaging:** Utilizing drones and satellites for high-resolution mapping, geological surveys, and environmental monitoring.
- **Digital Twin Technology:** Creating a virtual replica of the mine to simulate operations, test new strategies, and train personnel in a safe environment.
- **Remote Operation Centers:** Establishing remote centers to control and monitor equipment and operations from a safe, off-site location.
- **Predictive Maintenance Software:** Using software to predict equipment failures before they occur, scheduling maintenance to prevent costly downtime.
- **Mine Planning Software:** Utilizing specialized software to create and update mine plans, geological models, and production schedules.
- **Advanced Communication Systems:** Deploying robust communication systems, including mesh networks and satellite links, to ensure reliable connectivity across the mine site.
- **Augmented and Virtual Reality (AR/VR):** Using AR/VR for hands-on training and visualizing complex geological data.
- **Enterprise Resource Planning (ERP) Systems:** Implementing ERP systems to manage all business processes, from procurement to finance.
- **Cybersecurity Measures:** Protecting all digital infrastructure and data from cyber threats.
- **Blockchain for Supply Chain Transparency:** Using blockchain technology to create a secure and transparent record of the commodity's journey from mine to market.



5-J Risk Management & Mitigation

- **Geological Risk Assessment:** Evaluating the risk of unexpected geological conditions that could affect mining operations or reserve estimates.
- **Market and Price Risk Hedging:** Using financial derivatives to protect against volatility in commodity prices.
- **Political and Geopolitical Risk Analysis:** Assessing the stability of the host country and managing risks related to changes in government policy or regulations.
- **Environmental and Tailings Risk Management:** Implementing engineering and operational controls to prevent environmental accidents, such as tailings dam failures.
- **TSF and Environmental Protection (EP) Monitoring:** Continuously monitoring the stability of tailings facilities and the overall environmental impact of the mine.
- **Health and Safety Risk Assessment:** Proactively identifying and mitigating risks to worker health and safety on the mine site.
- **Financial Risk Modeling:** Building financial models to stress-test the project's profitability under various economic scenarios.
- **Operational Risk Mitigation:** Creating contingency plans for operational failures, such as equipment breakdowns or power outages.
- **Social Risk Management:** Proactively addressing community concerns to prevent social unrest or opposition to the project.
- **Natural Disaster Preparedness:** Developing a plan to respond to and recover from natural disasters such as floods, earthquakes, or hurricanes.
- **Security Risk Assessment:** Evaluating the risk of theft, sabotage, or other security threats and implementing protective measures.
- **Insurance and Indemnification:** Securing comprehensive insurance policies and indemnification clauses to protect against losses.
- **Crisis Communication Plan:** Having a clear communication plan to manage public perception in the event of an incident or crisis.



5-K Mineral Processing & Metallurgy

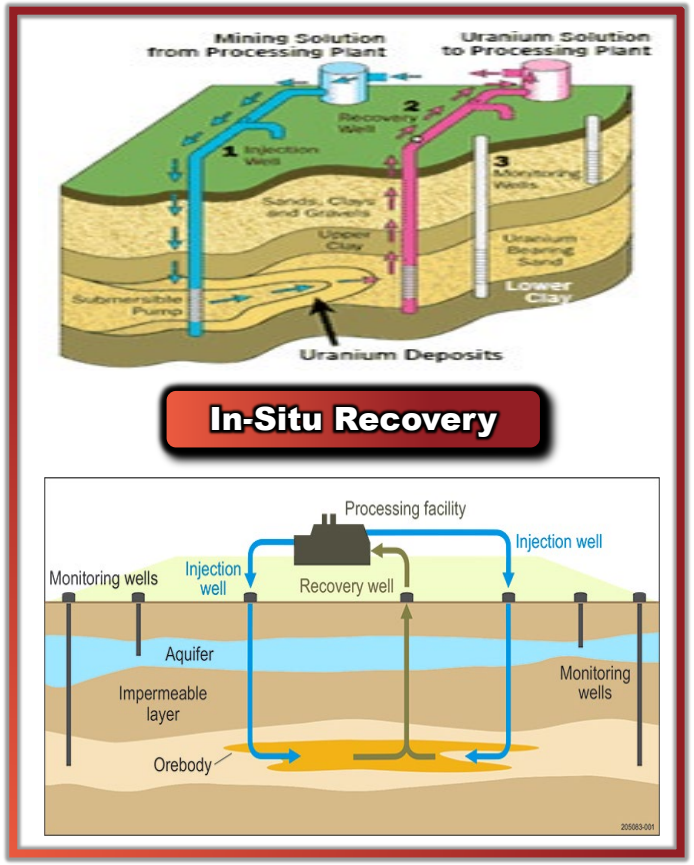
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- **Ore Characterization:** Thoroughly analyzing the ore to determine its mineralogical properties and develop the most effective processing method.
- **Process Plant Design:** Engineering a specialized processing plant tailored to the specific ore body and desired final product.
- **Crushing and Grinding Optimization:** Implementing efficient crushing and grinding circuits to prepare the ore for mineral separation.
- **Flotation and Gravity Separation:** Utilizing these processes to physically separate target minerals from waste rock.
- **Leaching and Chemical Extraction:** Using chemical processes to dissolve and extract precious metals like gold or silver from the ore.
- **Refining and Smelting:** Managing the final stages of purification to produce a high-purity metal or concentrate.
- **Tailings Management from Processing:** Designing a system to handle the waste generated during the processing stage.
- **Reagent Management:** Sourcing, handling, and managing the chemicals used in the processing plant in a safe and efficient manner.
- **Water Management within the Plant:** Implementing a closed-loop water system to minimize water consumption and treat wastewater.
- **Energy Consumption Monitoring:** Continuously monitoring the energy consumption of the processing plant to identify opportunities for efficiency improvements.
- **Quality Control and Assaying:** Performing regular assays and quality checks on the final product to ensure it meets market specifications.
- **Process Optimization:** Continuously analyzing the processing circuit to identify ways to improve recovery rates and reduce costs.
- **By-Product Recovery:** Exploring and implementing methods to recover valuable by-products from the waste stream.



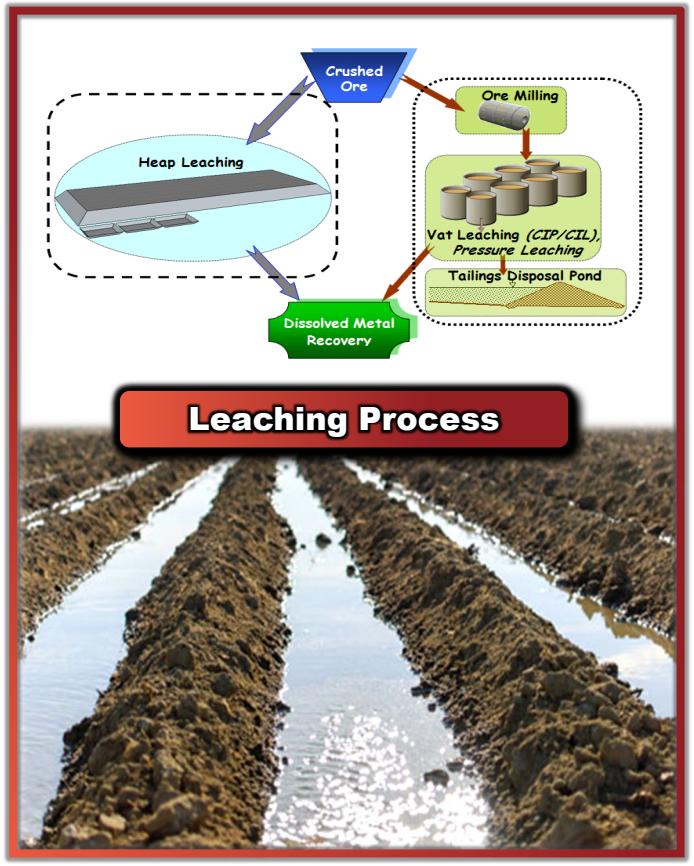
5-L Security & Asset Protection

- **Site Security Planning:** Designing and implementing a comprehensive security plan for the entire mining site, including fences, gates, and access control.
- **Patrol and Surveillance:** Deploying security personnel and advanced surveillance technology to monitor the site 24/7.
- **Asset Tracking and Management:** Using technology to track the location and status of all high-value assets, including equipment and vehicles.
- **Mineral Transport Security:** Implementing strict security protocols for the transport of minerals from the mine to the refinery or port.
- **Cybersecurity:** Protecting the project's digital infrastructure, including operational technology and financial data, from cyber threats.
- **Insider Threat Mitigation:** Establishing protocols to prevent internal theft or sabotage.
- **Emergency Response Protocols:** Creating and training teams on protocols for responding to security incidents, such as theft, vandalism, or trespassing.
- **Access Control Systems:** Implementing biometrics, smart cards, and other access control systems to restrict access to sensitive areas.
- **Physical Barriers and Hardening:** Constructing physical barriers and hardening critical infrastructure to deter unauthorized access.
- **Intelligence Gathering:** Monitoring local and regional intelligence to anticipate and respond to potential security threats.
- **Personnel Vetting:** Conducting thorough background checks on all employees and contractors with access to sensitive areas.
- **Audit and Compliance:** Conducting regular security audits to ensure all protocols are being followed.
- **Community Engagement for Security:** Collaborating with local communities and law enforcement to create a secure environment around the project.



5-M Commodity Trading & Market Access

- **Market Research and Analysis:** Continuously monitoring global commodity markets to identify pricing trends, supply/demand shifts, and trading opportunities.
- **Off-take and Sales Agreements:** Negotiating long-term contracts with buyers to secure a stable and predictable revenue stream for the project's output.
- **Financial Hedging Strategy:** Using financial instruments (futures, options) to lock in prices and protect against market volatility.
- **Global Distribution and Logistics:** Managing the distribution of final mineral products to buyers worldwide, ensuring timely and cost-effective delivery.
- **Broker and Exchange Relationship Management:** Building and maintaining strong relationships with commodity brokers and exchanges to ensure optimal trading conditions.
- **Trading Platform Integration:** Utilizing advanced digital platforms to execute trades, track positions, and manage risk in real-time.
- **Price Discovery:** Employing sophisticated models and market intelligence to determine the fair value of commodities and optimize selling prices.
- **Contract Negotiation and Management:** Drafting and managing all sales contracts to ensure favorable terms and clear obligations for all parties.
- **Quality and Certification Compliance:** Ensuring that the final product meets the quality standards and certifications required by global buyers.
- **Market Access Expansion:** Strategically expanding into new markets and regions to diversify the client base and reduce dependency on a single market.
- **Client Relationship Management:** Building and maintaining strong relationships with buyers and end-users to secure repeat business.
- **Legal and Regulatory Compliance:** Adhering to all international laws and regulations governing commodity trading and exports.
- **Strategic Advisory Services:** Providing clients with expert advice on commodity portfolio management and market timing.



6-A Essential Procedural Points for Geochemical Studies

1. Objective Definition and Scoping
Clearly define the primary purpose of the study (e.g., identifying gold anomalies, establishing pre-mining soil contamination levels, or characterizing tailings for long-term stability). The objective dictates the required sample density, analytical suite, and quality assurance standards, ensuring the study is fit for purpose.



2. Sampling Design and Strategy
Develop a statistically robust sampling grid and medium strategy. This involves selecting appropriate materials (rock, soil, stream sediments, groundwater) and determining spacing based on the project phase (regional reconnaissance vs. close-spaced definition). Designs must account for terrain, geology, and potential anthropogenic contamination.



3. Sample Collection and Quality Control (QA/QC)
Implement rigorous field protocols to ensure sample integrity. This includes standardized depth and volume, meticulous contamination prevention (e.g., using stainless steel tools, cleaning equipment between sites), and immediate, indelible labeling. Critical QA/QC steps involve inserting blanks, duplicates, and certified reference materials (CRMs) directly in the sample stream.

4. Sample Preparation and Sub-sampling
Establish strict laboratory protocols for processing bulk samples. Procedures must detail drying, crushing, and pulverizing to achieve the required particle size (typically <75µm for full analysis). Sub-sampling must use riffle splitters or rotary splitters to ensure the representative portion taken for analysis is homogeneous and bias-free.



5. Analytical Method Selection and Suitability
Select appropriate analytical techniques based on the elements of interest and the required detection limits. For exploration, methods like ICP-MS or XRF may be used for trace elements. For environmental work, sensitive techniques (e.g., cold vapor for mercury) and total digestion methods are often mandatory to ensure all regulated elements are accurately measured.

6. Data Validation and QA/QC Review
Perform a comprehensive post-analysis review of laboratory data. This includes validation of all QA/QC results (CRMs, blanks, duplicates), flagging or rejecting batches where standards fail, and managing censored data (values below the detection limit) using appropriate substitution methods for statistical integrity.

6-B Essential Procedural Points for Geochemical Studies

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7. Geochemical Data Interpretation and Modeling
Apply advanced statistical techniques (e.g., Principal Component Analysis, cluster analysis) to identify element associations and define geochemical anomalies related to mineralization. For environmental data, use spatial modeling and baseline comparisons to delineate potential zones of impact.

8. Baseline Environmental Geochemistry
Formally establish the natural, pre-mining concentrations of heavy metals and critical ions in the Project Influence Area (PIA). This baseline is essential for future regulatory compliance, providing a non-negotiable benchmark against which all future mine-related environmental monitoring data will be measured.

9. Predictive Geochemistry (ARD/ML)
Conduct specialized testing on representative samples of waste rock, low-grade ore, and tailings to predict the potential for Acid Rock Drainage (ARD) and Metal Leaching (ML). This involves static (e.g., acid-base accounting) and kinetic (e.g., column tests) methods, which directly inform the Tailings Storage Facility (TSF) design and closure strategy.

10. Documentation, Mapping, and Reporting
All findings, procedures, and QA/QC results must be formally documented in a technical report compliant with relevant reporting codes (e.g., JORC, NI 43-101) and regulatory requirements. Key outputs include thematic maps illustrating element distribution and anomalies, and a clear summary of environmental risks.

11. Essential Elements of a Water Management Plan
A robust Water Management Plan (WMP) must begin by establishing a detailed site-wide water balance model to quantify all inflows and outflows, optimizing supply against demand. Essential elements include designing infrastructure to segregate clean and process water, alongside maximizing recycling and conservation efforts to minimize reliance on external sources. Finally, the plan requires rigorous effluent treatment and discharge strategies to ensure continuous compliance with all permit limits, supported by a system for real-time monitoring of water quality.

For FULL DETAILS of "Essential Procedural Points for Geochemical Studies", please send us a request via Email.

7 General Exploration Activity Chart

ACTIVITY	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6	MONTH 7	MONTH 8	MONTH 9	MONTH 10	MONTH 11	MONTH 12
PLANNING AND COMPILATION. WORKING PROTOCOLS	■											
ROAD CONSTRUCTION IMPROVEMENTS	■	■										
LIDAR		■	■									
ROAD, TRAILS, LINECUTTING	■	■	■									
CONSTRUCTION CAMP	■	■										
FIELD STUDIES: GEOLOGICAL, GEOPHYSICS		■	■	■	■	■						
ROCK SAMPLING, TRENCHING		■	■	■	■	■						
DRILLING AND SAMPLING (Contingent on results)				■	■	■	■	■	■	■	■	■
SAMPLE ANALYSIS				■	■	■	■	■	■	■	■	■
EQUIPMENT PURCHASE AND DELIVERY IN GUYANA	■	■	■	■	■	■						
MINING EQUIPMENT SET UP					■	■						
MINING EXPLOITATION						■	■	■	■	■	■	■
EVALUATION AND REPORTING				■	■	■	■	■	■	■	■	■

8-A Risk Assessment & Human Resources (HR) Impact

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1. Risk Assessment (Applicable Social And Environmental Standards)
A comprehensive risk assessment begins with establishing non-negotiable compliance with national law and global standards like the IFC Performance Standards. This process systematically identifies, categorizes, and prioritizes project-specific social and environmental risks throughout the entire lifecycle. Commitments to these defined standards form the auditable ESG baseline against which all project performance and mitigation efforts will be measured.



2. Not Applicable Social And Environmental Standards
Any decision to deem a standard "not applicable" must be formally documented, rigorously justified, and based on verifiable field data, not simply operational convenience. This justification must be reviewed and approved by senior management and transparently communicated to investors and regulators. Maintaining a registry of non-applicable standards ensures policy scope integrity while avoiding unnecessary project expenditure.

3. Right To A Healthy Environment
The company is fundamentally required to prevent, mitigate, and remedy all environmental harm, including pollution, land degradation, and loss of critical habitats. Our commitment ensures that project activities do not undermine the local community's ability to access clean air, safe lands, and healthy ecosystems. Compliance necessitates early planning for pollution controls, post-closure land rehabilitation, and transparent environmental monitoring accessible to local stakeholders.



4. Community Self-Assessment Questions (Healthy Environment)
These questions serve as a critical participatory mechanism, empowering communities to voice their primary concerns regarding the project's environmental impact. They focus specifically on the perceived changes to air quality, noise levels, and the integrity of local ecosystem services, linking technical impact data to human well-being. Integrating this feedback validates our mitigation strategies and ensures they are culturally and contextually relevant to the Project Influence Area.

5. Right To Health
The project must proactively assess and mitigate potential adverse impacts on local community health, covering risks from occupational hazards, dust exposure, and strain on existing public health services. HR and EHS teams must establish rigorous occupational health and safety protocols for the workforce, minimizing risks of disease transmission and injury. We commit to collaborating with local health authorities to support preventative care and strengthen community health infrastructure.

6. Community Self-Assessment Questions (Right To Health)
These focused questions capture specific local feedback regarding the accessibility of medical facilities, concerns about infectious disease vectors, and the community's perceived stress or anxiety related to project activities. The gathered data helps the company identify non-physical health impacts and ensure that worker presence does not overwhelm existing community medical capacity. Responses inform targeted investments to enhance local public health resilience and services.

7. Right To Water
The project acknowledges the human right to water, mandating the prioritization of community consumption and ecological flow requirements over all operational water needs. A comprehensive Water Management Plan must be developed to prevent the contamination of surface and groundwater sources and manage physical water scarcity risks. Continuous monitoring and community engagement on water allocation are essential for demonstrating transparency and securing water-related compliance.

8. Community Self-Assessment Questions (Right To Water)
These questions capture essential local and traditional knowledge concerning the use, availability, and seasonality of water resources in the project area. They allow the community to provide feedback on the perceived impact on aquifers, streams, and traditional water collection points. This data is non-negotiable for validating the project's hydrological model and designing effective, location-specific water security measures.

9. Additional Considerations (Cross-Cutting Risks)
This section covers critical cross-cutting risks that require integrated management, including the total prohibition of child and forced labor and the protection of cultural heritage. HR must establish auditable policies for security force engagement, ensuring strict adherence to the Voluntary Principles on Security and Human Rights. Transparent, accessible grievance mechanisms must be in place to address all stakeholder concerns related to these complex issues.

10. Indigenous Community Self-Assessment Questions
These queries are uniquely designed to gauge the project's adherence to the principle of Free, Prior, and Informed Consent (FPIC) for any activities affecting traditional lands or resources. The assessment evaluates the adequacy of consultation, the protection of cultural sites, and the equitable distribution of project-related benefits. Failure to secure and maintain a positive assessment, affirming FPIC, constitutes an existential threat to the project's license to operate.

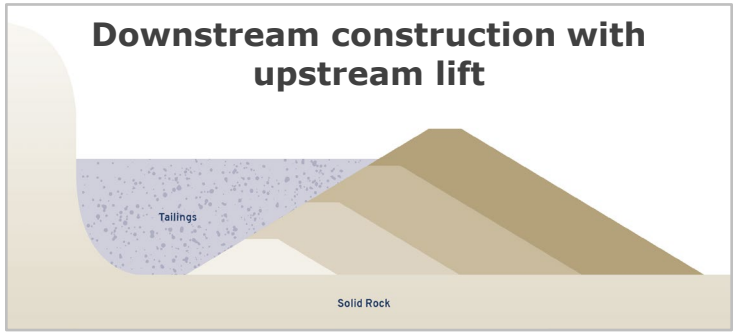
For FULL DETAILS of "Risk Assessment & Human Resources (HR) Impact," please send us a request via Email.

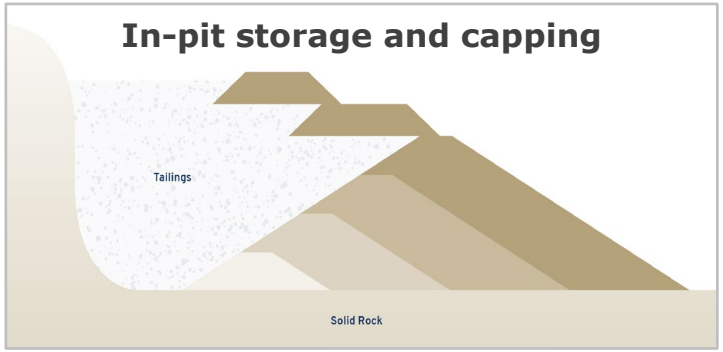
9 Critical Procedures for Tailings Management

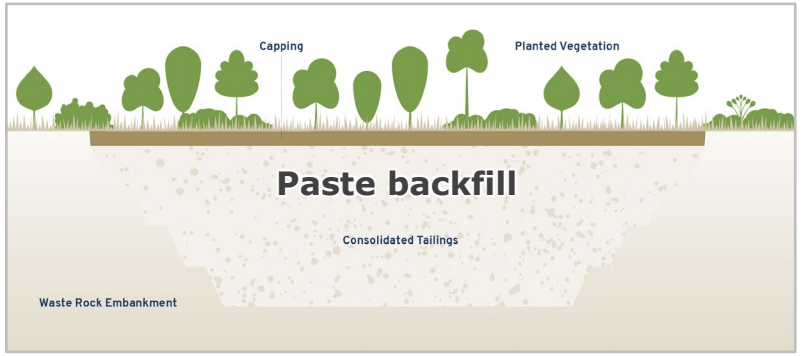












9-A Critical Procedures for Tailings Management

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These procedures represent the non-negotiable standards required to secure safety, minimize environmental risk, and maintain the Social License to Operate (SLO) for any Tailings Storage Facility (TSF).

1. Governance and Accountability Framework
Establish clear Board-level accountability for TSF safety, including the appointment of a dedicated, independent Responsible Tailings Facility Engineer (RTFE). This framework must foster a culture where workers are empowered to halt operations if safety is compromised.

2. Mandatory GISTM Compliance
Achieve and maintain auditable compliance with the Global Industry Standard on Tailings Management (GISTM) as the minimum performance requirement. Compliance must be verified through regular, independent third-party audits throughout the life of the mine.

3. Geotechnical and Seismic Integrity
Prioritize geotechnical stability in site selection, conducting detailed investigations to characterize subsurface conditions. Design the TSF to withstand the Maximum Credible Earthquake (MCE) and the Probable Maximum Precipitation (PMP) to prevent catastrophic failure.

4. Independent Technical Review Board (ITRB)
Establish a multidisciplinary ITRB of external experts with the mandate to challenge and review all major design, construction, and operational decisions. The ITRB must report directly to senior leadership, and its recommendations must be treated as mandatory.

5. Water Balance and Drainage Control
Implement a strict, real-time Water Balance Model and robust internal drainage systems (e.g., filter blankets) to prevent over-saturation of the tailings mass. Proactive drainage is essential to control internal water pressure and mitigate liquefaction risk.

6. Emergency Response and Preparedness Plan (ERP)
Develop a comprehensive ERP based on detailed downstream inundation modeling and clear communication protocols. The plan must be tested through mandatory annual rehearsal drills involving all potentially affected communities and local emergency services.

7. Life-of-Mine Closure and Financial Assurance
Integrate progressive rehabilitation and final closure planning into the design from the project's inception. Maintain adequate financial assurance (e.g., trust funds) throughout the TSF life to guarantee that closure and perpetual post-closure monitoring can be fully executed.

8. Digital Monitoring and Instrumentation

Deploy advanced digital systems, including piezometers and remote sensing technologies (e.g., InSAR), to continuously monitor structural deformation and internal pressures. Data must feed into automated alerting systems for early risk identification.

9. Tailings Chemistry and Dewatering Technology

Actively manage tailings chemistry to mitigate the risk of Acid Rock Drainage (ARD). Prioritize dewatered technologies, such as Paste or Filtered (Dry Stack) Tailings, where feasible, to significantly reduce stored water volume and improve long-term stability.

10. Community Engagement and Transparency

Ensure continuous engagement with local and downstream stakeholders regarding TSF safety and performance. Commit to public disclosure of key safety data and audit summaries, supported by an accessible Grievance Mechanism for all community concerns.

Universal Applicability of the Protocol

1. Focus on Foundational Risk Factors

The protocol centers on fundamental hazards that are present in every TSF:

- **Geotechnical Stability:** The risk of dam failure due to seismic events (MCE) or extreme rainfall (PMP) is a physical risk, not a commodity risk. All TSFs require the same level of geotechnical investigation and stability assurance.
- **Hydraulic Control:** Water balance and pore pressure management (Point 5) are essential for stability in all TSFs, as over-saturation is the leading cause of liquefaction.

2. Adherence to Global Standards

The mandatory inclusion of the Global Industry Standard on Tailings Management (GISTM) (Point 2) ensures universal coverage. GISTM is the single recognized global benchmark for TSFs, requiring compliance for all types of facilities regardless of the jurisdiction or mineral being mined.

3. Addressing Diverse Material Risks

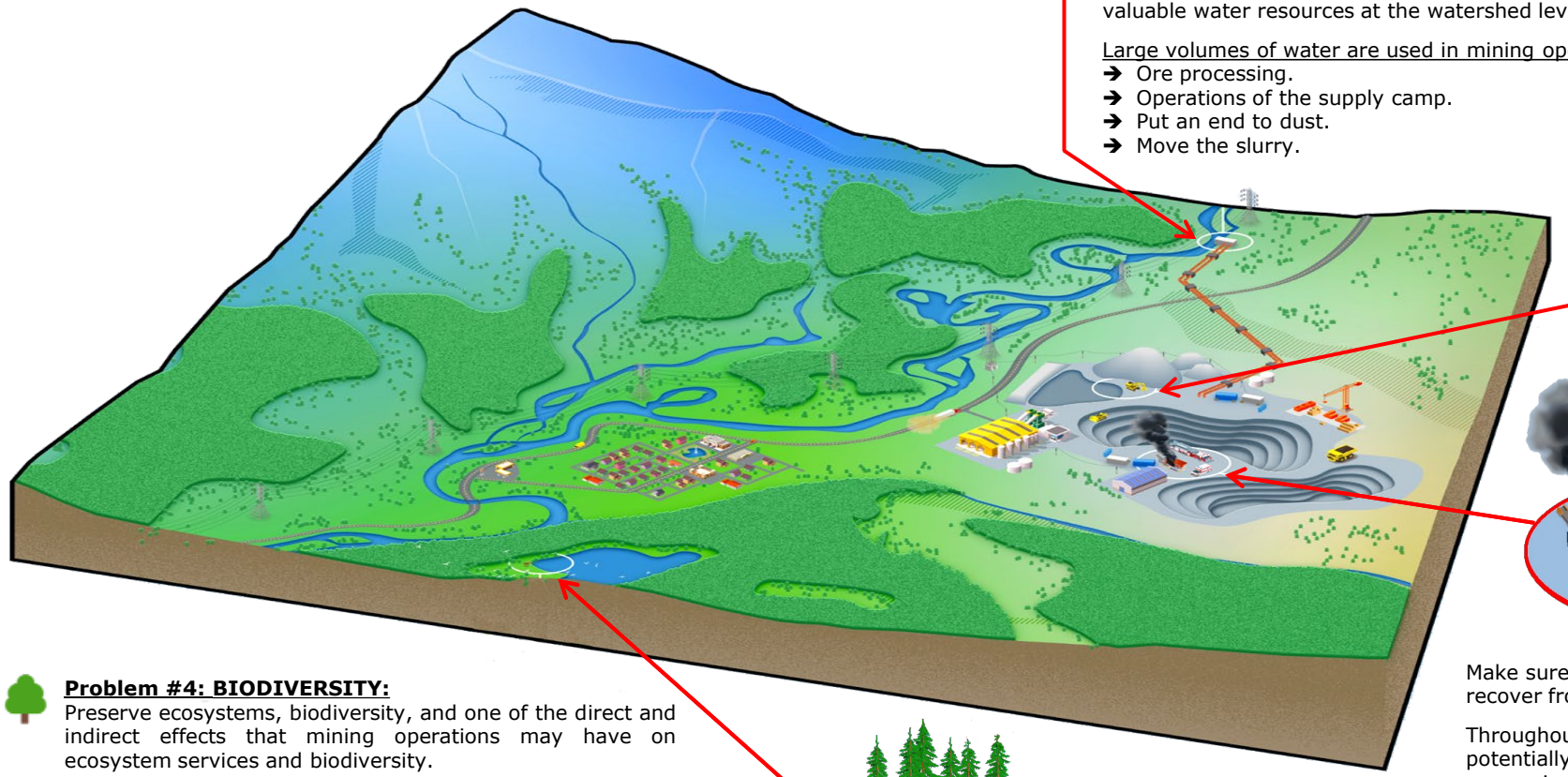
The procedures account for the chemical and physical variability of tailings:

- **Chemical Risk (ARD/ML):** Point 9 addresses Acid Rock Drainage (ARD) and metal leaching (ML). While some minerals (like sulfides) are more prone to ARD, the requirement to characterize and mitigate the chemical risk is mandatory for every project.
- **Physical Risk (Dewatering):** The focus on dewatered technologies like Paste and Filtered Tailings (Point 9) is relevant because these technologies are often used regardless of the mineral being mined to achieve superior long-term stability and reduce risk.

For FULL DETAILS of "Critical Procedures for Tailings Management", please send us a request via Email.

10 Sustainable Mining Requires Rigorous Environmental Oversight

Four important factors should be taken into account while managing the environment in mining, according to the Guidance for Governments: **Environmental Management and Mining Governance.**



Problem #1: WATER

Manage the amount and quality of water resources for all users and the ecosystems they depend on in an efficient and fair manner.

In addition to controlling water consumption, discharges, and quality, governments must control the extraction of valuable water resources at the watershed level.

Large volumes of water are used in mining operations to:

- ➔ Ore processing.
- ➔ Operations of the supply camp.
- ➔ Put an end to dust.
- ➔ Move the slurry.

Problem #2: MINE WASTE

Assure the long-term chemical and physical stability of all mine waste, including:

- ➔ Waste rock.
- ➔ Tailings and associated facilities.
- ➔ Facilities and spent heap leach pads precipitates and sludges from mineral recovery or water treatment.
- ➔ Dirt / Dust.

Waste facilities and systems must be designed to reduce risk and exposure to people, land, crops, vegetation, and animals, as well as to remove the possibility of failure.



Problem #3: PREPAREDNESS AND RESPONSE TO EMERGENCY

Make sure that everyone involved is ready to handle, avoid, respond to, and recover from emergencies.

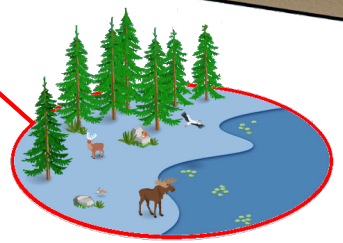
Throughout the mine life cycle, national governments must make sure that all potentially impacted parties recognize and comprehend possible dangers and are equipped to handle and respond to them. Programs for emergency response and preparedness should consist of:

- ➔ Evaluation of risk.
- ➔ Plans for prevention and readiness Reaction strategies.
- ➔ Plans for recovery.
- ➔ Communications plans for crises.

Problem #4: BIODIVERSITY:

Preserve ecosystems, biodiversity, and one of the direct and indirect effects that mining operations may have on ecosystem services and biodiversity.

- ➔ Loss of habitat
- ➔ Degradation and fragmentation of ecosystems.
- ➔ Pollution of soil, water, air, and noise.
- ➔ The expansion of the human population.
- ➔ More hunting, collecting, and clearing of land for farming.
- ➔ Inadvertent introduction of invasive species.



Source and Purpose: The content of this protocol is based on guidance from the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF). Any included imagery serves purely to aid visualization.

10 - A Universal Environment Protection Plan (EPP) Framework

1. Introduction and Project Scope

This Environment Protection Plan (EPP) outlines the measures to be implemented to prevent, minimize, and mitigate potential adverse environmental and social impacts associated with the [Project Name] mining operation, spanning the phases of Exploration, Construction, Operation, and Closure.

1.1 Objectives

- ➔ Ensure compliance with all relevant national and international environmental laws, permits, and standards.
- ➔ Implement best practices to prevent pollution and environmental degradation.
- ➔ Establish clear monitoring and reporting protocols.
- ➔ Define roles and responsibilities for environmental management.

2. Water Resources Management

The primary goal is to maintain the quality and quantity of both surface and groundwater resources.

2.1 Surface Water Control and Drainage

Requirement	Mitigation Measures	Monitoring Protocol
Erosion & Sedimentation	Install sediment traps, silt fences, and check dams around disturbed areas. Divert clean runoff away from active work sites.	Weekly visual inspection of control structures; measuring sediment accumulation monthly.
Runoff Management	Design and construct adequate drainage channels and culverts to handle the Probable Maximum Precipitation (PMP) event.	Annual structural integrity checks of drainage infrastructure.

2.2 Water Quality and Treatment

Requirement	Mitigation Measures	Monitoring Protocol
Process Water	Implement a closed-loop system where feasible, minimizing the discharge of process water. All discharge must meet regulatory limits.	Continuous monitoring of flow and pH; bi-weekly sampling for heavy metals and TSS at all discharge points.
Acid Rock Drainage (ARD)	Characterize waste rock before placement. Isolate and safely store Potentially Acid Forming (PAF) material; use encapsulation and alkaline covers (e.g., lime) where necessary.	Geochemical testing of waste rock piles quarterly; monitoring leachate quality regularly.

3. Air Quality and Dust Control

Management of particulate matter (dust) and emissions from mobile and stationary sources.

3.1 Dust Suppression

- ➔ Apply water or approved non-toxic dust suppressants to unpaved roads and active work areas.
- ➔ Enforce speed limits on site roads to reduce dust generation.
- ➔ Cover all material haul trucks when transporting fine materials.

3.2 Vehicle and Equipment Emissions

- ➔ Ensure all mobile equipment is regularly serviced and meets national emission standards.
- ➔ Use ultra-low sulfur diesel fuel where available.
- ➔ Implement anti-idling policies.

4. Biodiversity and Ecosystem Protection

Protection of terrestrial and aquatic flora and fauna, especially in environmentally sensitive areas.

4.1 Habitat Protection

- ➔ Clearly demarcate the project boundaries and No-Go Areas (e.g., high-value ecosystems, primary forests, critical habitats).
- ➔ Conduct pre-clearance surveys and rescue/relocation operations for endemic or protected species.
- ➔ Minimize the overall footprint of the operation.

4.2 Rehabilitation

- ➔ Develop a progressive rehabilitation plan, commencing during the operations phase.
- ➔ Use native and endemic species for revegetation efforts.
- ➔ Establish Rehabilitation Performance Indicators (RPIs) to measure success (e.g., ground cover, species diversity).

5. Waste and Hazardous Materials Management

Protocols for handling, storage, and disposal of all waste streams.

5.1 Non-Hazardous Waste

- ➔ Implement a three-bin system (recyclable, organic, residual) across the site.
- ➔ Transport municipal waste to licensed off-site facilities.
- ➔ Minimize food waste and use appropriate disposal methods to avoid attracting wildlife.

5.2 Hazardous Waste and Chemicals

- ➔ Maintain a detailed Chemical Inventory and Safety Data Sheet (SDS) register.
- ➔ Store chemicals and fuels in bunded, secure, and clearly labeled areas away from water bodies.
- ➔ Ensure spill response kits are readily accessible at all storage and fueling locations.

6. Tailings Storage Facility (TSF) Management

The TSF is a critical infrastructure that requires rigorous management and oversight.

6.1 Design and Stability

- ➔ The TSF must be designed and constructed by a qualified Engineer of Record (EoR).
- ➔ Design criteria must account for the Maximum Credible Earthquake (MCE) and Probable Maximum Flood (PMF).
- ➔ Maintain a minimum required freeboard at all times to prevent overtopping.

6.2 Monitoring and Surveillance

- ➔ Implement continuous monitoring of piezometric levels, surface movements (via instrumentation and satellite), and embankment settlement.
- ➔ Conduct annual Independent Tailings Review Board (ITRB) audits.

7. Emergency Response and Contingency Planning

Detailed procedures for responding to environmental incidents.

7.1 Key Emergency Scenarios

- Major Chemical/Fuel Spill (land or water).
- TSF Failure/Breach.
- Major Fire.
- Discovery of Unidentified Cultural Heritage Artifacts (Stop Work Protocol).

7.2 Response and Reporting

- Designate an On-Site Emergency Response Team (ERT).
- Mandatory immediate reporting of all Level 2 (major) and Level 3 (catastrophic) incidents to the relevant government authorities.
- Conduct annual spill and breach simulation drills.

8. Closure and Post-Mining Land Use

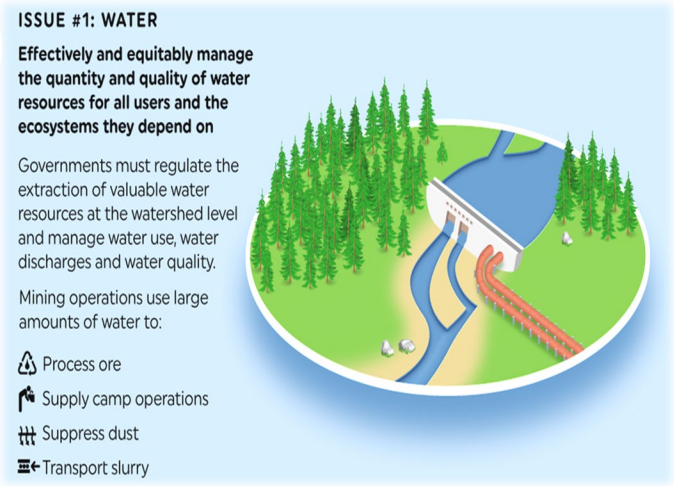
The plan for decommissioning the site and ensuring long-term environmental stability.

8.1 Closure Planning

- Develop a progressive and detailed Mine Closure Plan with guaranteed financial provisioning (e.g., bond).
- Decommission infrastructure and remove all non-essential equipment and buildings.

8.2 Final Landform and Stability

- Ensure all disturbed areas are re-contoured and revegetated to create a stable, non-eroding landform.
- Seal all mine openings (shafts, adits) securely.
- Implement a long-term post-closure monitoring program for water quality, stability, and revegetation success.





For FULL DETAILS, regarding the following please send us a request via Email.

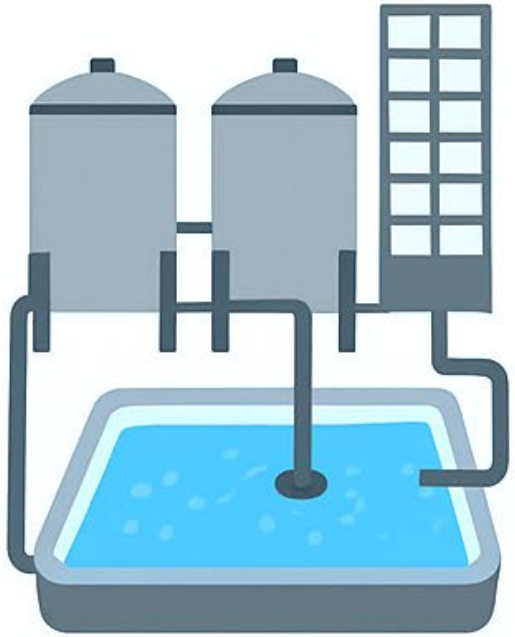
1. **"Universal Environment Protection Plan (EPP) Framework"**
2. **"Construction Phase EPP Compliance Checklist"**
3. **"Construction Phase EPP Monitoring Protocol"**

11 Universal Mining Sewage / Waste Water Management





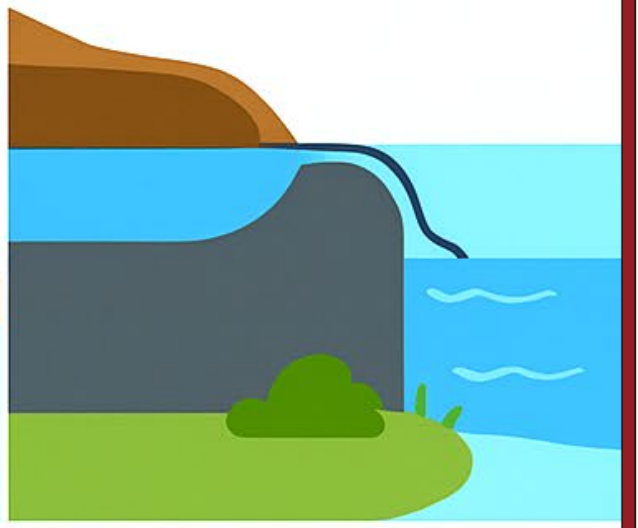
TAILINGS MANAGEMENT



WATER TREATMENT



REUSE & RECYCLING



DISCHARGE

Here it unifies the framework for sanitary sewage treatment with the complex challenges of industrial process water management, providing a holistic overview of water stewardship in mining.

Part 1: Synthesis of Frameworks

The overall mining wastewater protocol requires two distinct and highly specialized treatment systems. The initial file focused on **Sanitary Treatment**, which is universal. The second file provided the necessary details on **Advanced Technologies** and the highly specific **Industrial Treatment** required for mineral processing water.

Relationship Between Frameworks

Feature	Sanitary Sewage Treatment (Framework Focus)	Industrial Process Water Treatment (Advanced Focus)
Source Water	Domestic effluent from camps, offices, and change houses.	Water used in the process plant, heap leach, tailings storage, and waste rock runoff.
Primary Contaminants	Biological Oxygen Demand (BOD), Total Suspended Solids (TSS), Pathogens, and Nutrients.	Heavy Metals (Cu, Zn), Residual Reagents (Cyanide), and high acidity (AMD).
Treatment Goal	Public health protection and water reuse (non-potable).	Environmental protection, resource recovery, and large-scale water recycling.
Treatment Method	Primarily **biological** (microorganisms) and physical (filtration, UV).	Primarily **chemical** (neutralization, precipitation, oxidation).

Part 2: Sanitary Sewage Treatment Framework (STP)

The universal STP framework involves three core stages to treat domestic wastewater from mine camps, regardless of the mining method (open pit, underground, etc.).

2.1 Primary Treatment: Physical Separation

The goal is to remove large, coarse solids and protect downstream biological systems.

- **Screening and Grit Removal:** Raw sewage is passed through **bar screens** to remove coarse debris (rags, plastics). Flow velocity is reduced in the **grit chamber** to settle dense, inorganic particles (sand, gravel).
- **Primary Clarification:** Wastewater enters a **primary clarifier** where gravitational forces cause lighter organic solids to settle out as **primary sludge**, while oils and grease are skimmed off the surface.

2.2 Secondary Treatment: Biological Stabilization

This stage uses controlled biological processes to consume dissolved organic matter.

- **Aeration Basin:** Wastewater is mixed with **activated sludge** (microbial culture). Continuous oxygen supply maintains the aerobic environment, allowing microorganisms to metabolize dissolved contaminants (BOD), converting them into inert byproducts and new biomass.
- **Secondary Clarification and Sludge Return:** The mixture moves to a clarifier where biomass settles. A portion is recycled back (**Return Activated Sludge - RAS**) to the aeration basin to maintain the required microbial population.

2.3 Advanced Technologies for High-Quality Effluent

Mining often uses compact, high-performance systems for remote or temporary sites:

- **Sequencing Batch Reactors (SBR):** Utilize a time-sequenced process where all steps (aeration, settling, and decanting) occur in a single tank. They are highly flexible and adaptable to fluctuating camp populations.
- **Membrane Bioreactors (MBR):** The gold standard for water reuse. The MBR replaces the secondary clarifier and tertiary filter with a physical **membrane barrier**. This technology maintains a high concentration of biomass for faster breakdown and produces exceptionally high-quality effluent (**permeate**) free of suspended solids, bacteria, and viruses.

Part 3: Industrial Process Wastewater Challenges

Industrial wastewater is chemically complex and requires specific treatment protocols focused on neutralization, precipitation, and detoxification before the water can be recycled or safely discharged.

3.1 Issue A: Acid Mine Drainage (AMD)

AMD is the most severe long-term issue, occurring when **sulfide minerals** (FeS_2 or Pyrite) in waste rock and tailings are exposed to air and water, generating sulfuric acid and leaching heavy metals.

- **Chemistry:** The oxidation of pyrite (FeS_2) releases sulfuric acid, driving the pH to extremely low, acidic levels (often below 4.0) and mobilizing heavy metals. The overall chemical process is: Pyrite (FeS_2) + Oxygen (O_2) + Water (H_2O) -> Ferrous Iron (Fe_2+) + Sulfate (SO_4^{2-}) + Acidity (H^+ ions). $$FeS_2 + \frac{7}{2}O_2 + H_2O \longrightarrow Fe^{2+} + 2SO_4^{2-} + 2H^+$$
- **Active Treatment (Neutralization):** Lime ($Ca(OH)_2$) or soda ash (Na_2CO_3) is added to raise the pH above 8.5. This causes the dissolved heavy metals (Fe, Cu, Zn) to precipitate out as solid hydroxides and sulfates, which are then physically settled and removed.

3.2 Issue B: Heavy Metal and Suspended Solids Contamination

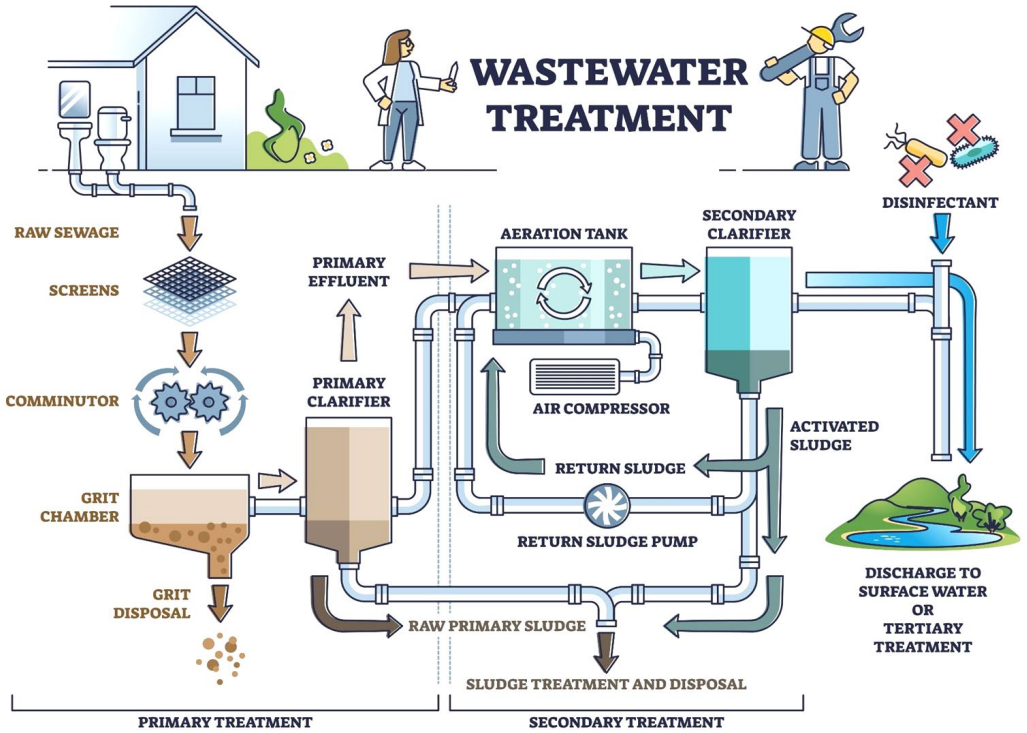
Process water contains elevated levels of highly toxic heavy metals and large amounts of finely ground rock particles (**TSS**).

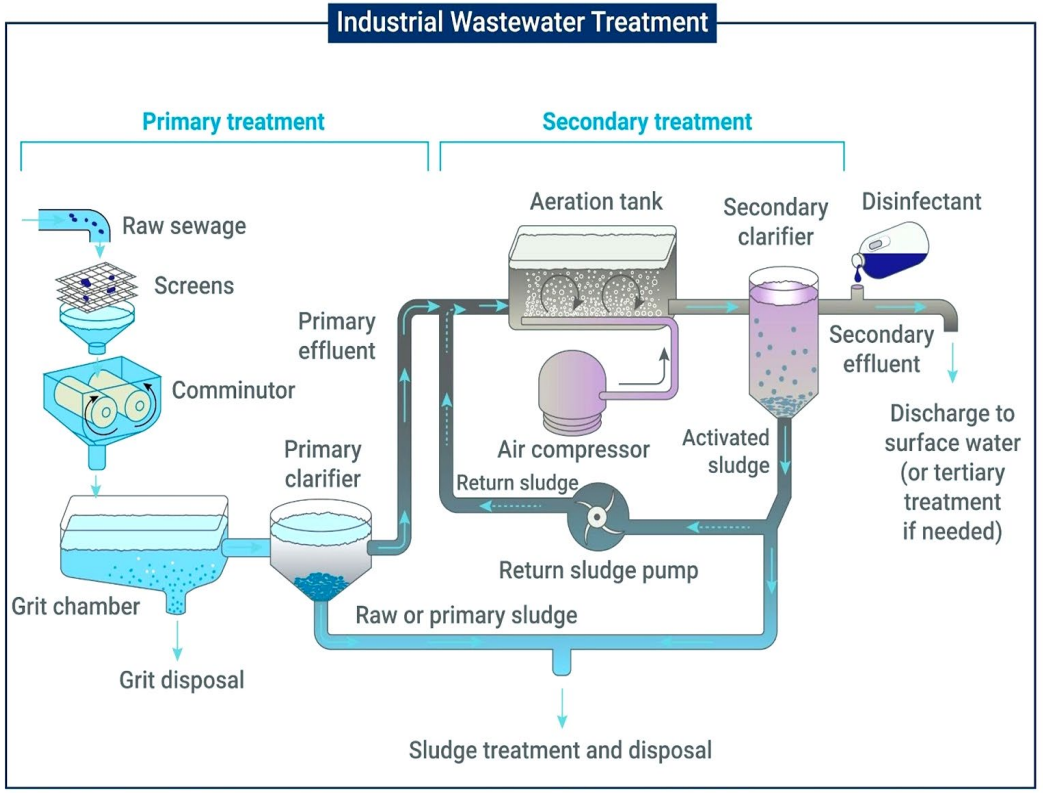
- **Heavy Metal Treatment:** Chemical precipitation via pH adjustment is the first line of defense. For ultra-low discharge limits, advanced polishing techniques like **Ion Exchange** or **Reverse Osmosis (RO)** are used.
- **Suspended Solids (TSS) Treatment:** High-rate **thickeners and clarifiers** are used, often with chemical **flocculants** added to rapidly bind fine particles into larger, settleable clumps, allowing for rapid water recycling.

3.3 Issue C: Cyanide and Reagent Management

Mines using cyanide (CN^-) for gold and silver leaching must strictly regulate and destroy the acute toxin before releasing the water.

- **Cyanide Destruction:** The most common method is the **SO2/Air Process (INCO)**, where sulfur dioxide and air are used to chemically oxidize free cyanide (CN^-) into less toxic cyanate (OCN^-)). **Alkaline chlorination** is also used under high pH conditions.





For FULL DETAILS, regarding the following please send us a request via Email.

1. **"Detailed Universal Mining Sewage Treatment Framework"**
2. **"Advanced STP Technologies and Industrial Mining Wastewater Issues"**

12 Mobile Water Treatment Plant as per World Heath Organization Standard

THEOMNIVOLT



Integrated Operation Featuring PLC & HMI







12 - A Mobile Water Treatment Plant as per World Heath Organization Standard

The Crucial Importance of Water Treatment Plants (WTPs) as per World Health Organization (WHO) Standards

The World Health Organization (WHO) establishes the global benchmark for safe drinking water, primarily through its **Guidelines for Drinking-water Quality (GDWQ)**. Adhering to these standards is not merely a technical compliance issue; it is a fundamental public health imperative that dictates the design, operation, and maintenance of all Water Treatment Plants (WTPs).

The importance of aligning WTP operations with WHO standards can be categorized into four essential pillars:

1. Protecting Public Health (The Primary Mandate)

The most critical function of a WTP is to eliminate waterborne disease, a leading cause of illness and death globally. WHO standards provide the necessary framework to achieve this.

- **Pathogen Elimination:** WHO guidelines strictly prioritize the removal or inactivation of microbial pathogens, including bacteria (like *E. coli*), viruses (like Norovirus), and protozoa (like *Cryptosporidium* and *Giardia*). Compliance ensures that disinfection methods (e.g., chlorination, UV) are correctly applied and monitored.
- **Chemical Hazard Mitigation:** The GDWQ sets stringent limits for thousands of chemical contaminants, prioritizing those known to cause acute or chronic health problems, such as arsenic, lead, nitrate, and heavy metals. WTPs must employ advanced processes (e.g., membrane filtration, coagulation, adsorption) to reduce these levels to safe thresholds.
- **Preventing Acute Outbreaks:** A WTP compliant with WHO standards implements a **multi-barrier approach** (source protection, treatment, distribution integrity). This layered defense system prevents single failures from leading to widespread contamination and subsequent disease outbreaks.

2. Regulatory Compliance and Global Trade

Adherence to WHO guidelines often forms the legal and regulatory foundation for national water quality standards worldwide, facilitating economic and diplomatic stability.

- **National Standard Setting:** Many countries, particularly developing nations, adopt the WHO GDWQ directly or use it as the basis for their national drinking water regulations. Compliance ensures the WTP meets the nation's legal requirements.
- **International Auditing and Trust:** For international organizations, foreign investment, and public-private partnerships, achieving WHO compliance is a recognized indicator of operational excellence and responsible governance. It builds consumer and industrial confidence in the water supply.
- **Emergency Standards:** The WHO provides guidance on treating water during emergencies (e.g., floods, disasters), ensuring that WTPs and emergency responders have protocols to maintain a baseline of safe water supply under extreme stress.

3. Water Safety Planning (WSP) Methodology

The WHO champions the **Water Safety Plan (WSP)** framework, which shifts the focus from solely testing final water quality to managing the entire water supply chain proactively.

- **Risk Assessment:** The WSP methodology requires WTP operators to systematically identify, assess, and prioritize risks from the catchment area (source) all the way to the consumer's tap. This includes analyzing risks from pollution sources, treatment failures, and distribution leaks.
- **Preventative Management:** Rather than reacting to contamination, the WSP dictates preventative measures and operational controls at every critical point of the treatment process. This proactive approach is far more reliable and cost-effective than purely reactive testing.
- **Continuous Improvement:** WSP implementation mandates a continuous review and improvement cycle, ensuring the WTP adapts to new challenges, emerging contaminants, and changes in source water quality over time.

4. Operational Excellence and Sustainability

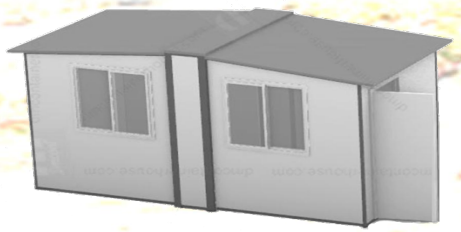
WTPs designed and operated according to WHO principles are inherently more efficient, robust, and sustainable.

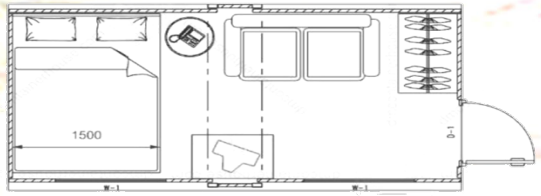
- **Technology Selection:** WHO guidance informs the selection of appropriate, context-specific treatment technologies—whether simple, low-cost options for rural areas or advanced, energy-intensive processes like Reverse Osmosis for highly contaminated sources.
- **Training and Capacity Building:** The guidelines stress the need for trained, competent WTP operators who understand the technical and health significance of every process step, ensuring consistent output quality.
- **Sustainable Development Goals (SDG 6):** Compliance with WHO standards is critical for countries working toward **UN Sustainable Development Goal 6 (SDG 6)**, which calls for "availability and sustainable management of water and sanitation for all." Safe water is foundational to economic development and poverty reduction.

13 Mobile Accommodation

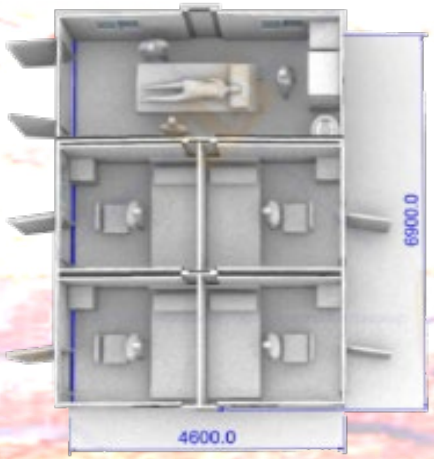
THEOMNIVOLT

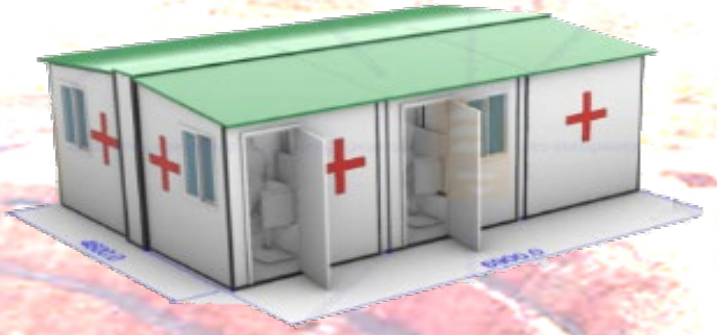
14 Mobile Medical Camp

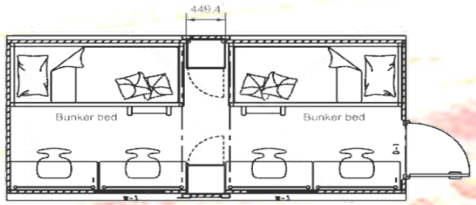




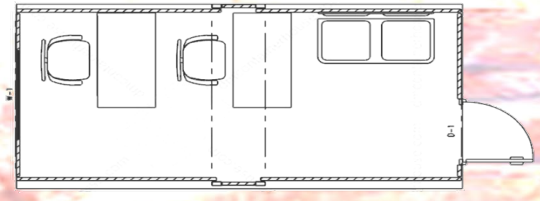
A. Management Room - 6 Persons - 6 containers.
1* 1.5m bed , 1*sofa , 1* wardrobe , 1 * bed table



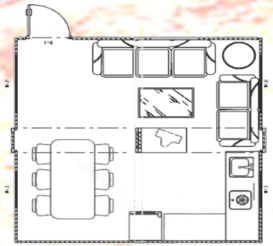




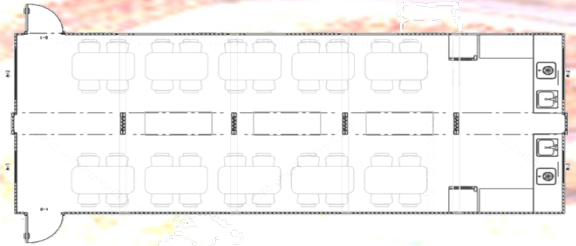
B. Staff Accommodation - 40 Persons - 10 containers
2*bunker bed, 2* two layer cabinet, 4*Computer desk



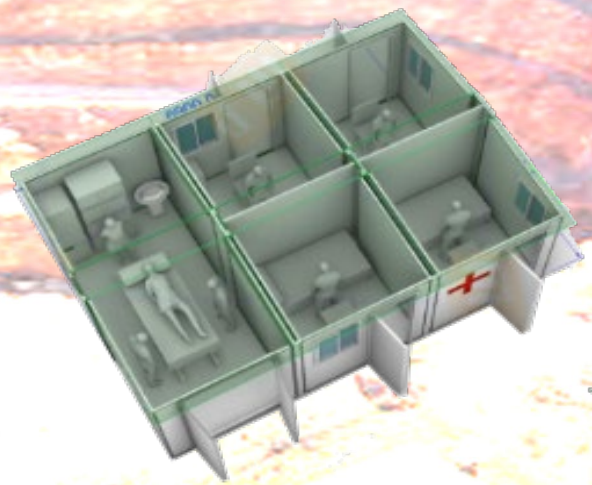
C. Management Office - 4 Containers
2*office table and chair. 1x long sofa

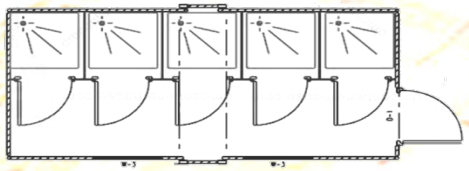


D. Management Dining Room - 2 containersJoin as one bigger house
1 x L shape kitchen , 1x refrig, 1 sofa , 1 coffee table , 1 x dinner table set

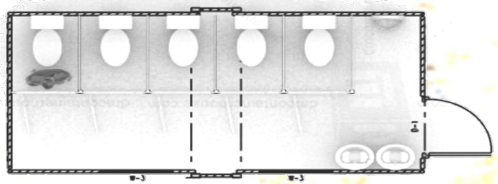


E. Staff Dining Room + Kitchen - 40 Persons5* winghouse join together
10 table set each with 4 chair , 2 * L shape kitchen , 2* refrig





F. Staff Shower - 5 Persons per container - 2 containers
5 bathroom with partition wall and doors



G. Staff Toilet - 5 Persons per container - 2 Containers



13 - A Importance of Proper Accommodation

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The Critical Importance of Proper Accommodation for Crew in All Types of Mining

The provision of high-quality accommodation and support services, often referred to as "Camp Management," is not merely a welfare issue but a fundamental component of operational efficiency, risk management, and the long-term sustainability of any mining project—whether surface, underground, or remote exploration.

Proper accommodation is a universal requirement that directly impacts the four pillars of modern mining management: Health, Safety, Productivity, and Social License to Operate (SLO).

1. Health and Well-being Management

Accommodation facilities serve as the primary source of rest and sustenance for the workforce. Failures here directly translate into increased sick leave, lower energy levels, and higher staff turnover.

- **Infection Control:** High-density living requires robust health protocols. Accommodation must be designed to prevent the rapid spread of communicable diseases (e.g., flu, COVID-19). This includes adequate ventilation, sanitation procedures, and access to medical facilities.
- **Mental Health and Stress Reduction:** Comfortable, private spaces, access to recreational facilities (gyms, common areas), and reliable communication services (internet, phone) are essential for mitigating the psychological toll of working long shifts in remote or isolated environments.
- **Nutrition and Diet:** High-quality, balanced catering and kitchen facilities are necessary to support the energy demands of heavy physical labor. Poor catering leads to malnutrition, fatigue, and decreased job satisfaction.

2. Safety and Operational Risk Mitigation

Worker safety extends beyond the pit or tunnel; it is intrinsically linked to the quality of rest received at the accommodation camp.

- **Fatigue Management:** Adequate, quiet sleeping quarters are the cornerstone of any effective fatigue management system. Miners operating heavy equipment or engaged in intricate tasks (e.g., drilling, blasting) must be fully rested to prevent errors that lead to accidents. Improper accommodation is a recognized causal factor in industrial accidents.
- **Emergency Preparedness:** Camps must adhere to local building codes and fire safety regulations. Clear evacuation plans, functioning fire suppression systems, and designated muster points are mandatory, especially in densely populated modular camps.
- **Security:** The camp must be secure against external threats and internal conflict. Proper lighting, access control, and dedicated security personnel protect both the workforce and valuable camp assets.

3. Productivity and Efficiency

The quality of life provided at the camp directly influences the morale and retention rates, which in turn affect project timelines and operational costs.

- **Retention and Recruitment:** In a globally competitive labor market, high-quality, comfortable accommodation is a key differentiator for attracting and retaining skilled labor (geologists, engineers, specialized operators). High turnover associated with poor living conditions is extremely costly due to recruitment, training, and downtime.
- **Minimizing Commute Time:** Locating accommodation adjacent to the mine site (where feasible) maximizes time spent resting and reduces non-productive travel time, directly increasing daily effective operational hours.
- **Focus and Performance:** By eliminating basic concerns related to housing, food, and security, management allows the crew to focus entirely on their high-value, primary tasks within the mining operation.

4. Social and Regulatory Compliance

Providing superior accommodation demonstrates a commitment to ethical labor practices and strengthens the company's Social License to Operate (SLO).

- **Labor Standards Compliance:** Mining companies are often required to comply with international labor conventions (e.g., International Labour Organization—ILO) and national regulations that stipulate minimum standards for worker housing, sanitation, and food service.
- **Community Relations:** Well-managed, self-sufficient camps minimize the operational impact on nearby local communities. By housing staff within the secured site, mining companies reduce the pressure on local housing markets, water resources, and social infrastructure.
- **Worker Dignity:** Ensuring comfortable, clean, and dignified living conditions is a non-negotiable ethical obligation, particularly for remote Fly-In/Fly-Out (FIFO) operations where workers are separated from their families for long periods.

14-A Importance of On-Site Medical Facilities (Medical Camps)

The establishment of a dedicated on-site medical camp or clinic is non-negotiable for any modern mining operation. It is a critical investment that mitigates risk, ensures compliance, and sustains the physical capacity of the workforce in isolated and hazardous environments.

The importance of the medical camp is divided into four strategic areas:

1. Safety and Emergency Response (Life-Saving Function)

Mining sites—whether underground, open pit, or processing plants—present high risks of severe trauma, requiring immediate medical intervention that cannot wait for external emergency services.

- **Golden Hour Intervention:** The presence of qualified medical staff (doctors, paramedics) and equipment ensures immediate response to accidents (e.g., crush injuries, falls, heavy equipment trauma). This rapid stabilization within the critical "golden hour" significantly increases survival rates and minimizes long-term disability.
- **Stabilization and Transfer:** The camp functions as a crucial triage and stabilization point. Medical staff can manage severe bleeding, secure airways, and prepare critically injured patients for safe Medevac (medical evacuation) transfer to a definitive care facility (hospital) hundreds of miles away.
- **Toxicological Incidents:** Specialized mining hazards, such as exposure to cyanide, chemicals, or underground gases (e.g., carbon monoxide), require immediate access to specific antidotes and specialized medical protocols, which only an equipped on-site facility can provide.

2. Occupational Health and Preventative Care (Risk Mitigation)

The medical camp is essential for proactive health management, reducing long-term occupational illness liabilities.

- **Fitness to Work and Baseline Testing:** Conducting pre-employment, annual, and routine health screenings directly on-site ensures every worker meets the physical and medical requirements for the job, especially for safety-critical roles (e.g., heavy machinery operators).
- **Monitoring Occupational Exposure:** Staff monitor workers for exposure to common mining hazards, including:
  - **Noise-Induced Hearing Loss:** Routine audiometric testing.
  - **Respiratory Illnesses:** Monitoring dust exposure (silica, coal dust) and conducting spirometry (lung function) tests to catch diseases like silicosis early.
- **Infection and Epidemic Control:** The clinic manages common camp illnesses (e.g., flu, gastroenteritis), preventing minor outbreaks from escalating into site-wide epidemics that can paralyze production. It also manages essential vaccination programs.

3. Productivity and Financial Impact

By managing day-to-day health issues on-site, the medical camp provides direct financial returns through reduced downtime and improved workforce availability.

- **Reduced Absenteeism (Downtime):** For minor injuries, burns, or common ailments, the medical camp can provide immediate treatment, allowing the worker to return to work quickly, often avoiding lengthy and costly trips off-site to external clinics.
- **Drug and Alcohol Management:** The medical team often manages the site's drug and alcohol testing program, ensuring compliance with safety policies and providing necessary intervention or counseling, which is vital for maintaining a fit-for-duty workforce.
- **Reduced Staff Turnover:** A visible, well-staffed medical facility boosts crew morale and demonstrates the company's commitment to worker welfare, which is critical for retaining skilled employees in remote, FIFO (Fly-In/Fly-Out) operations.

4. Regulatory Compliance and Social License

Operating a medical facility is often a regulatory requirement and an ethical mandate that supports the mine's reputation.

- **Legal Compliance:** Most jurisdictions have mandatory requirements for providing immediate medical access based on the nature of the industry and the remoteness of the site. The medical camp ensures these standards are met.
- **Duty of Care:** Providing comprehensive on-site medical services fulfills the company’s ethical duty of care, especially when workers are working long shifts away from their families and primary care networks.
- **Stakeholder Trust:** It strengthens the company’s Social License to Operate (SLO) within the local community and with government regulators, demonstrating that worker health is prioritized over profit margins.

15 - A General Surface / Open-Pit Earth Moving Equipments

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Drilling Rig

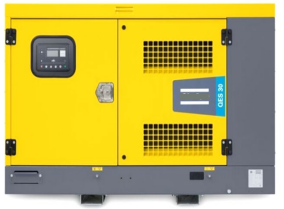


Bulldozer



Generators







Hammer Breaker



Tower Light



Land Crusier



Dump Truck



Telehander



Excavator



Site Loader



Wheel Loader



Air Compressor



Fuel Tank Traiiler Truck





15 - B Safety & Productivity Solutions - Surface / Open-Pit Mining

THEOMNIVOLT

Automation Centre



Automation



Teleremote



Line-Of-Sight



Machine Interface Control (MIC)



Fuel cap isolation



Tray warning systems



Payload management



Park brake alarm



Speed limiters





Fatigue warning systems



Excess Idle timer



Engine protection



Machine monitoring



Machine Data Gateway



Pedestrian Alert System



Camera Systems



Live fuel lockouts



Fire controllers



SmarTrack Fleet Management



16 - A General Underground / Tunnel Earth Moving Equipments

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Face Drill Rig



Underground Trucks



Production Drill Rig



Sebsor



Continuous Loaders



Raiseboring



Rock Reinforcement

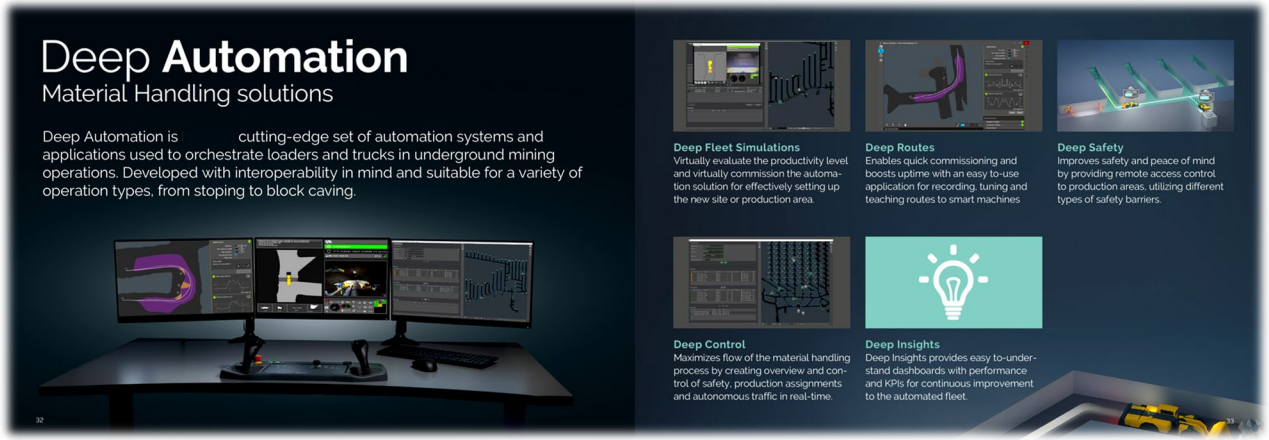


Underground Loaders



Grouting





Ventilation





Safety & Productivity Solutions - Underground / Tunnel Mining

Automation Centre



Automation



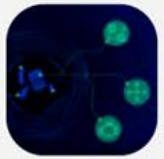
Teleremote



Line-Of-Sight



Machine Interface Control (MIC)



Digital comms



Fuel cap isolation



Tray warning systems

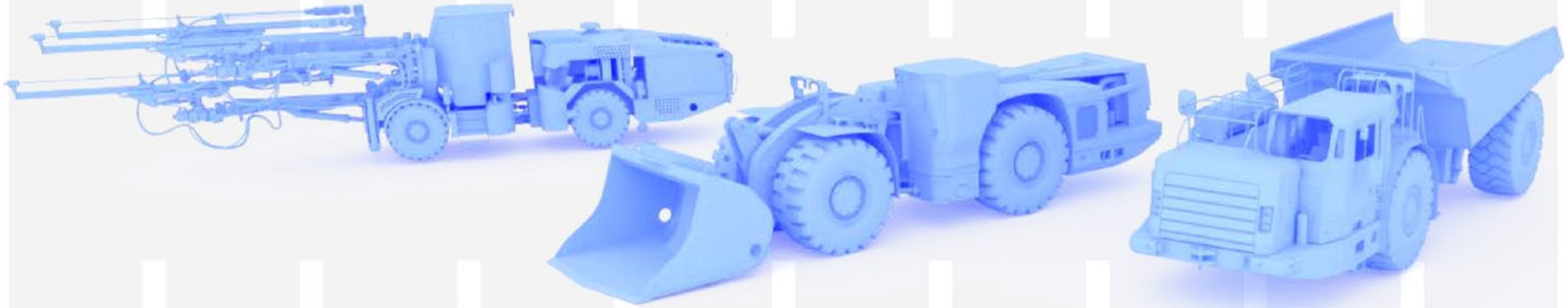


Payload management



Park brake alarm





Speed limiters



Fatigue warning systems



Excess Idle timer



Engine protection



Machine monitoring



Machine Data Gateway



Pedestrian Alert System



Camera Systems



Live fuel lockouts



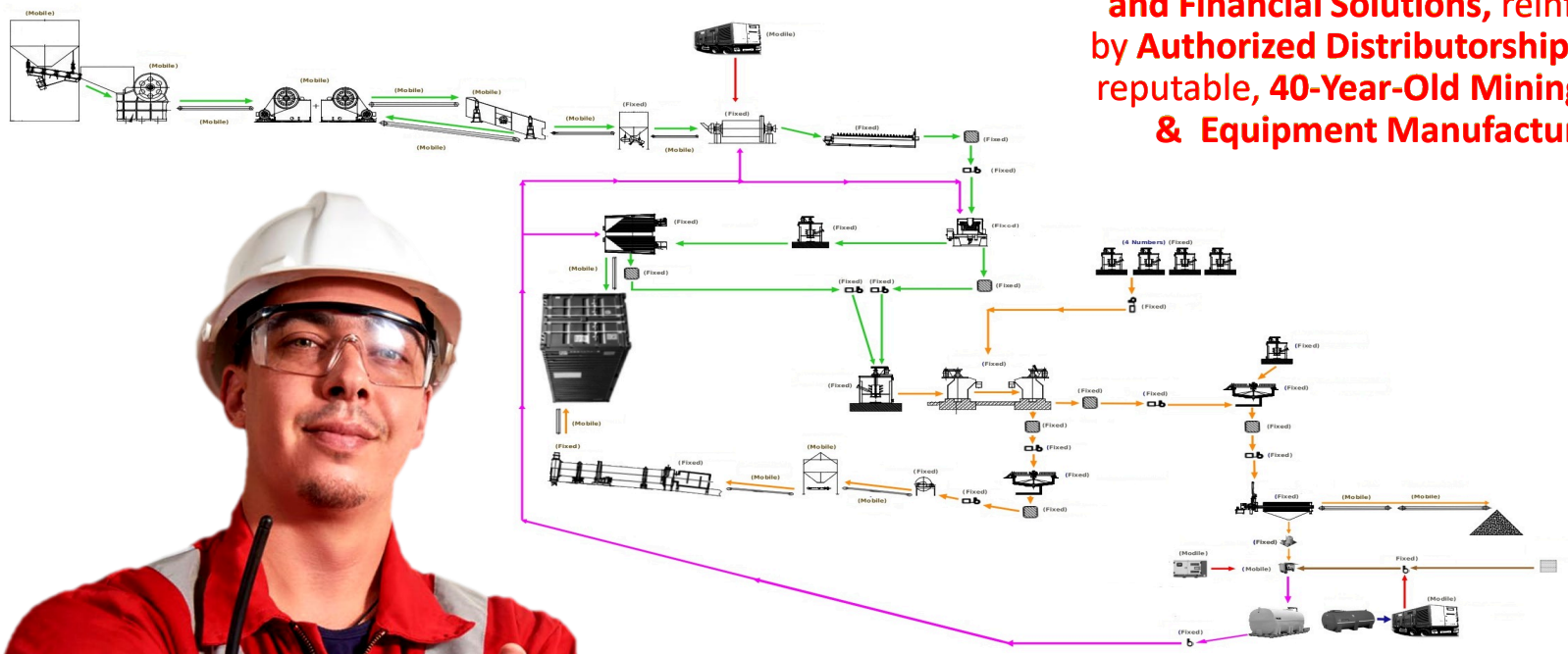
Fire controllers



17 Mining Plant Design & Equipment

THEOMNIVOLT

We provide **Specialized Technical, Operational, and Financial Solutions,** reinforced by **Authorized Distributorship** from a reputable, **40-Year-Old Mining Plant & Equipment Manufacturer.**







17 - A Jaw Crusher



MOBILE CRUSHING AND SCREENING STATION
STASIUN PENGHANCURAN DAN PENYARINGAN MOBILE













CJ SERIES EUROPEAN TYPE JAW CRUSHER
PENGHANCUR RAHANG TIPE EROPA SERI CJ



IMPACT CRUSHER
MESIN PENGHANCUR IMPAK



HD SERIES GERMAN TYPE JAW CRUSHER
PENGHANCUR RAHANG TIPE JERMAN SERI HD



HDX SERIES GERMAN TYPE JAW CRUSHER
PENGHANCUR RAHANG TIPE JERMAN SERI HDX



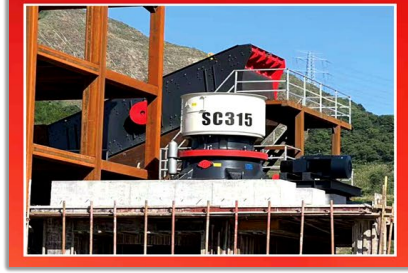


SINGLE CYLINDER HYDRAULIC CONE CRUSHER
PENGHANCUR KERUCUT HIDROLIK SILINDER TUNGGAL



MULTI CYLINDER HYDRAULIC CONE CRUSHER
PENGHANCUR KERUCUT HIDROLIK MULTI SILINDER







17-B Power Grinding Mill



VERTICAL
GRINDING MILL



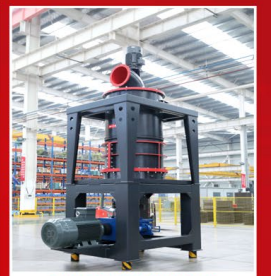
ULTRA-FINE VERTICAL
GRINDING MILL



INTELLIGENT
GRINDING MILL



RAYMOND
MILL



MICRO POWDER RING
ROLLER MILL

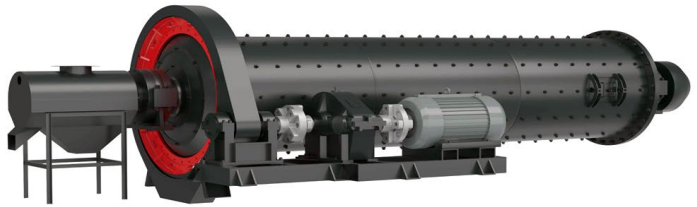








17-C Ore Processing Equipment



BALL MILL
PENGGILING BOLA



ROTARY DRYER
PENGERING PUTAR



SPIRAL CLASSIFIER
KLASSIFIER SEKRUP





17-D Sand Making Equipment



SAND MAKING MACHINE
MESIN PEMBUAT PASIR









17-E Mobile Mining Plant

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The customized mobile stations are distinguished by their aesthetically pleasing design and high-quality construction. Equipped with the latest host technology, they deliver stable, reliable, and high-output performance. A key feature is the inclusion of a large, vehicle-mounted conveyor belt, which eliminates the need for external conveyor belts and contributes to a tidy and organized worksite. Furthermore, each mobile station is fitted with a track plate device, allowing for rapid on-site installation and commissioning and significantly reducing setup time.







17-F Modular Mining Plant

The customized modular and integrated design provides greater flexibility in equipment layout, leading to a more streamlined and efficient site. The high level of integration allows for quick production startup with minimal on-site installation, requiring only simple lifting operations. The frame structure eliminates the need for a concrete foundation, significantly reducing both the cost and time associated with pre-production site preparation. This results in a substantial decrease in overall project setup time and investment.







For FULL DETAILS, please send us a request via Email.

17-G Vibrating Feeder (Mobile)



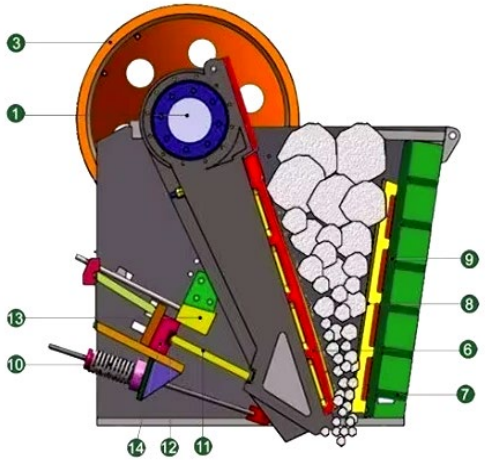


17-H Vibrating Screen (Mobile)





17-I Jaw Crusher (Mobile)



1. Eccentric Shaft
2. Balance Plate
3. Fly Wheel
4. Toggle
5. Cheek Plate
6. Movable Jaw Plate
7. Crusher Frame
8. Fixed Jaw Plate
9. Fixed Jaw plate Shim
10. Retraction Spring
11. Toggle Plate
12. Toggle Seat
13. Adjusting Wedge
14. Groove Block

17-J Electric Magnetic Vibrating Feeder (Modular)





17-K Ball Mill (Modular)





17-L Slurry Pump (Modular)





17-M Spiral Classifier (Modular)





17-N Centrifugal Concentrator (Modular)





17-O Agitating Tank (Modular)





17-P Flotation Machine (Modular)





17-Q Shaking Table (Modular)





17-R High Efficiency Concentrator





17-S Blotter Filter Press



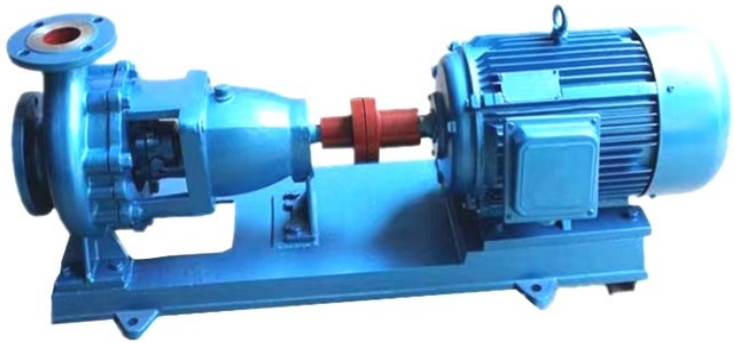


17-T Water Pump DG (Modular)





17-U Water Pump IS (Modular)





17-V Disc Vacuum filter (Modular)





17-W Belt Scale





17-X Dryer





17-Y Hot Air Furnace





17-Z Conveyor Belts (Mobile)





17 - AA Containerized Gold Room

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business@theomnivolt.biz

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Email Subject:

Mention exact requirement, keep them brief (around 5–9 words), personalize them, incorporate keywords, and urgency (if required)

Email Matter:

Keep it brief and straightforward. Just the most crucial details should be included.













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