

Innovative Mining Solutions, Championing Environmental Justice

# SEYCHEM™-CZMA ALLIANCE



A CORPORATE & INVESTMENT PRESENTATION

2025



## MISSION

To become a leading, innovative organization offering integrated small-scale gold mining solutions, and value-addition initiatives in mining communities for sustainable development.

## VISION

To be a beacon of sustainable development, revolutionizing small-scale gold mining in Ghana by combining innovative practices, environmental conservation, and community empowerment.





Henry Ben-Smith  
CEO, CZMA

This is the **SEYCHEM-CZMA Alliance**, and we respectfully invite you to join us in the pursuit of the all-important mission of promoting and encouraging Artisanal and Small-scale Miners (ASMs) in doing business responsibly, by adopting and employing the best mining practices and complying with well-researched operational protocols. This is to ensure sector sustainability, a guaranteed livelihood that come with unprecedented perks for all in the form of high Return-on-Investments never before seen, without compromising the health of our precious Gold Entrepreneurs, and without harming Mother Earth.

This is what the Alliance stands for, ready and fully equipped with what it takes to proffer solutions to the ASM Sector that will achieve the much-expected mineral and income yields that the miners, and the country as a whole deserve and need for development.

*Let's work together and make  
Mother Ghana Proud, Great and Strong*

Edward Kwesi Sey  
MD, SEYCHEM

## DISCLAIMER

### **Confidential Information**

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“The good earth gives us so much.

Our food, the energy to power cities and our lives, minerals to build with, and even precious minerals such as gold.

We need to acknowledge this and value this in an ethical, transparent way, and to continually look at ways to enable a cleaner, richer earth.”

- *CleanEarth Technologies*



# Overview



Gold remains one of the world's most valuable natural resources, driving economic activity across continents and offering livelihood opportunities for millions. In Ghana, Africa's largest gold producer, the mining sector contributes significantly to GDP, foreign exchange earnings, and job creation. Within this landscape, **Artisanal and Small-scale Mining (ASM) plays a critical role, employing over one million Ghanaians directly and supporting countless families and communities indirectly.**

The small-scale mining sector, often located in remote and underserved areas, has proven to be a vital engine of rural economic empowerment, providing income, reducing poverty, and enabling community self-sufficiency. Yet despite its socio-economic importance, **the ASM sector faces serious challenges that threaten both human and environmental health.** Chief among these is the **widespread use of mercury and cyanide**, toxic substances that contaminate soil, water, and air, and expose miners and surrounding communities to life-threatening health risks.

While calls have been made to clamp down on small-scale mining, **the reality is that this sector cannot and should not be wished away.** Instead, **IT MUST BE REGULARIZED, SUPPORTED, AND MODERNIZED WITH A FOCUS ON RESPONSIBLE AND SUSTAINABLE PRACTICES THAT ELIMINATE HARMFUL CHEMICALS, IMPROVE OPERATIONAL EFFICIENCY, AND PROTECT BOTH PEOPLE AND THE PLANET.**

It is within this urgent context that **SEYCHEM LIMITED** and **COASTAL ZONE MINING ASSOCIATION (CZMA)** formed an **ALLIANCE (the ALLIANCE) to offer innovative, eco-friendly solutions, products, and services that help transform the ASM sector in Ghana and beyond. From green gold recovery technologies to training, hi-tech equipment supply, and process upgrades, the Alliance exists to drive a new era of responsible mining that aligns profitability with sustainability and social progress.**

To realize this vision at scale, the Alliance seeks strategic partners, technical collaborators, and impact-driven investors who share **OUR MISSION TO CLEAN UP, MODERNIZE, AND EMPOWER THE ASM SECTOR FOR THE BENEFIT OF ALL STAKEHOLDERS** - miners, communities, regulators, and the environment.



**In the spirit of the above, we conclusively find it prudent, based on our satisfactory preliminary assessments, findings and engagements to propose a STRATEGIC PARTNERSHIP with the GHANA NATIONAL ASSOCIATION OF SMALL-SCALE MINERS (GNASSM) to jointly execute this laudable Mission. Our corporate objectives and philosophy resonate perfectly with each other, and we believe, together we can bring on a synergy that will constitute a formidable force, powerful enough to crystallise and bring to realisation the implementation of this important patriotic undertaking of contributing significantly to the elimination of harmful chemicals, improving operational efficiency in the ASM ecosystem, and protecting our people and the environment.**



# Project Snapshot

|   |   |   |   |   |
|---|---|---|---|---|
|  <p><b>SEYCHEM-CZMA ALLIANCE</b> is an established, forward-thinking, and ambitious eco-conscious Alliance equipped with what it takes to lead the charge in sanitizing the Artisanal Small-scale Mining sector in Ghana and beyond.</p>   |  <p>The Alliance will help the ASM to increase Ghana's gold and Forex reserves and strengthen the GH Cedi in a responsible and sustainable manner.</p>   | <p>Our FLAGSHIP product, this is a unique, innovative, hi-tech, very low-toxic, eco-friendly leaching reagent for gold extraction. A disruptive game-changer, no doubt, and one of the best substitutes for cyanide.</p> <p><b>SEYCHEM CFX100</b></p> <p><i>Introduction of Sophisticated Hi-Tech Mining and Mineral Processing Equipment, Devices and Precision Instruments</i></p>  |  <p>Better Gold Recoveries</p>   |  <p>Prioritizing Skills Training and Education in mining as a cornerstone of our mission, empowering artisanal and small-scale miners with the knowledge, techniques, and best practices needed to operate safely, responsibly, and profitably in a modern mining environment.</p> |
|  <p><b>Key Commodity GOLD</b></p>   | <p>Committed to Environmental Stewardship by championing sustainable mining practices that protect natural ecosystems, promote responsible resource use, and ensure that artisanal and small-scale mining contributes positively to communities and future generations.</p>        |  <p>Forging Strategic and Intelligent Alliances with key industry players, government agencies, and technology partners to drive innovation, enhance sustainability, and accelerate the transformation of the artisanal and small-scale mining sector in Ghana.</p>   |  <p>Availability of an accomplished and dedicated workforce of industry professionals having considerable operating knowledge to guide the process and get the job done.</p>   |   |
|  <p><b>Compliance and Cooperation with Regulators</b><br/>Seychem Limited is firmly committed to compliance and cooperation with regulators, working closely with governmental and oversight bodies to ensure that all mining activities meet legal, environmental, and safety standards, while promoting accountability and sector-wide reform.</p> | <p>Exemplifying strong corporate leadership and management in the mining sector, driving strategic growth, operational excellence, and ethical practices that position the company as a trusted leader in transforming artisanal and small-scale mining in Ghana and beyond.</p>  |  <p><b>Generate More Employment and Improve Livelihoods</b><br/>Through our innovative support services and sustainable mining initiatives, we aim to generate more employment and improve livelihoods, creating economic opportunities for local communities while fostering inclusive growth within the artisanal and small-scale mining sector.</p> |  <p>All operations and partnerships initiated subject to the Minerals Commission's rules of engagement and licensing regime, ensuring full regulatory compliance and alignment with Ghana's national framework for responsible and sustainable mining.</p> |   |



## WHY SEYCHEM-CZMA



Best  
Leaching  
Reagent

Innovative  
Cutting-edge  
Technology

Reliable  
Int'l Supply  
Network

World-  
Class Team

SMART  
Strategic  
Partnerships

Ethical  
Leadership

Low-Toxic  
Gold  
Extraction

Maximized  
Resource  
Extraction

Environmentally  
-Conscious  
Approach

Capacity  
Building  
for ASM

Proprietary  
Technology

Certification  
and  
Recognition

Creative  
Customised  
Solutions

Proven  
Efficacy of  
SEYCHEM-  
CFX100



# Achievement Summary

## SEYCHEM HOUSE

Successfully invested and established the ultra-modern 'SEYCHEM HOUSE', as its official corporate headquarters, a command centre for its management, administration, and operations, marking a major milestone in institutional growth and stability.

## THE SEYCHEM-CFX SERIES

In strategic partnerships with internationally recognized manufacturers, we have successfully secured the exclusive rights to promote and distribute some of the best eco-friendly leaching reagents as alternatives to mercury and cyanide, advancing safer and more sustainable mining practices.

## TRIED AND TESTED

Our leaching reagents have been subjected to intense and critical testing in certified laboratories and have also been demonstrated practically on the field in various countries for its leachability and harmless capabilities and have come out with evidence-based success reports.

## STRATEGIC PARTNERSHIPS

Established strategic relationships with international equipment suppliers and manufacturers, facilitating access to modern, state-of-the-art, high-quality, high-tech mining tools for the artisanal and small-scale miners to improve their mining practices and gain an increase in gold recoveries.

## \$£€

Very significant financial investments made to position the Alliance at the forefront of the ASM ecosystem to lead in the sanitization agenda.

## BRAND DEVELOPMENT

Developed a branded portfolio of brochures, presentations, and investor-ready business plans, enhancing visibility, professionalism, and investor engagement.

## THE SEYCHEM-CZMA

ALLIANCE has a confident, carefully-researched portfolio of the latest and finest ASM-focused mining products and services packaged to provide solutions to almost every persisting concern in the sector

## SOLID WORKFORCE

Our team is comprised of experienced professionals with a deep understanding of sustainable practices, advanced technology and mining operations. Led by a passionate and dedicated group of experts, we leverage our collective knowledge to deliver innovative solutions for a more responsible future.



# The Case for Investment

The call for Promoters and Investors to invest, and Resource Facilitators to participate in responsible and sustainable Artisanal and Small-scale Mining (ASM) initiatives and ventures is grounded in urgent national needs, global sustainability goals, and commercial opportunity. Action must be taken, not just out of responsibility, but out of opportunity. Investing in responsible ASM:

- Protects the environment •Empowers communities •Generates ethical profits •Attracts sustainable finance and •Supports national development goals.

It is not charity, but a strategic business model with social impact and commercial returns.

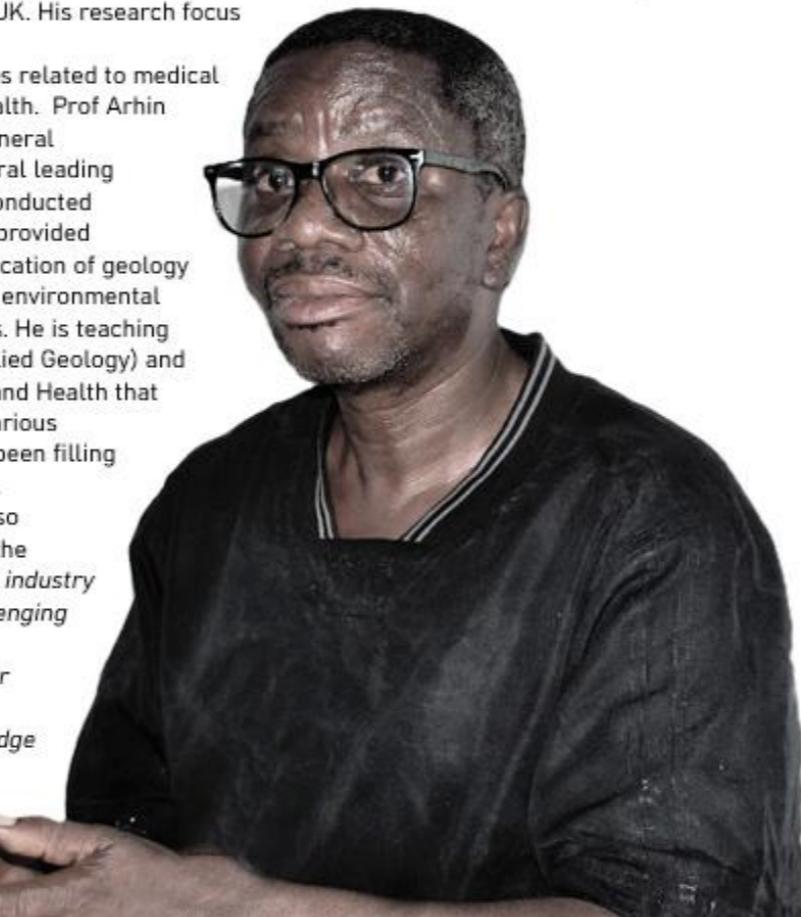
|          |   |  |  |
|----------|---|--|--|
| <b>1</b> | <b>NATIONAL ECONOMIC AND SOCIAL IMPERATIVES</b>               | <b>Employment &amp; Livelihoods</b>              | ASM supports over 1 million Ghanaians directly, with millions more indirectly relying on it for their livelihoods, especially in rural communities.<br>Supporting responsible ASM protects these livelihoods and uplifts rural economies.  |
|          |   | <b>Revenue Generation</b>                        | Ghana is one of Africa's top gold producers, with ASM contributing over 30% of total gold output.<br>Formalizing and improving ASM boosts government revenues through taxes, royalties, and foreign exchange earnings.   |
| <b>2</b> | <b>ENVIRONMENTAL AND PUBLIC HEALTH CONCERN</b>                | <b>Cyanide and Mercury Use and Toxic Waste</b>   | ASM is a leading source of cyanide and mercury pollution in Ghana, causing severe health issues and environmental degradation.<br>Poor waste disposal and chemical handling damage farmlands, rivers, and forests, undermining food security and biodiversity.   |
|          |   | <b>Need for Environmental Stewardship</b>        | Investing in eco-friendly technologies, such as cyanide replacement reagents and proper tailings management, reduces the environmental footprint of mining.<br>Promoters like Seychem can introduce greener gold recovery systems that protect both people and planet.   |
| <b>3</b> | <b>GLOBAL AND NATIONAL PRESSURE FOR SUSTAINABLE PRACTICES</b> | <b>International Expectations</b>                | Ghana is a signatory to the <b>Minamata Convention on Mercury</b> and must take steps to reduce mercury emissions from ASM.<br>There is growing demand for ethically and sustainably sourced gold globally (e.g., from the jewellery, electronics, and finance sectors).   |
|          |   | <b>ESG and SDGs Alignment</b>                    | Investments in responsible ASM contribute to: UN Sustainable Development Goals (SDGs): SDG 8 (Decent Work), SDG 12 (Responsible Consumption), SDG 13 (Climate Action), and SDG 15 (Life on Land).<br>Investments in responsible ASM contribute to: Environmental, Social, and Governance (ESG) metrics—critical for attracting impact investors. |
| <b>4</b> | <b>COMMERCIAL AND INVESTMENT OPPORTUNITIES</b>                | <b>High Demand for Ethical Gold</b>              | Brands and markets are increasingly sourcing gold that is conflict-free and responsibly mined.<br>Certified ethical gold fetches a premium price in international markets.   |
|          |   | <b>New Markets for Services and Technologies</b> | There is strong demand for: Portable processing plants; Safer reagents and high gold recovery systems<br>There is strong demand for: Training and certification services; Digital traceability platforms   |
|          |   | <b>Blended Finance and Grants</b>                | Development partners and impact investors are offering blended finance, grants, and low-interest funding for companies that support responsible mining.<br>The Minerals Development Fund and similar bodies can be strategic partners and resource facilitators in co-financing such transitions.  |
| <b>5</b> | <b>NEED FOR INSTITUTIONAL REFORM AND FORMALIZATION</b>        | <b>Illegal Mining ("Galamsey") Challenge</b>     | Lack of regulation leads to unregulated, destructive practices and often violent conflict.<br>Responsible promoters can support miners in transitioning from illegal to formal, licensed operations.   |
|          |   | <b>Empowering Mining Cooperatives</b>            | Organizing miners into cooperatives increases compliance, credit access, and bargaining power.<br>This creates a structured ecosystem in which promoters, financiers, and regulators can engage effectively.   |
| <b>6</b> | <b>MORAL AND NATIONAL RESPONSIBILITY</b>                      | <b>Mining with a Human Face</b>                  | ASM miners are not criminals, they are entrepreneurs with limited means.<br>Supporting responsible mining means protecting human rights, empowering communities, and ensuring justice in resource governance.  |



## PROFESSIONAL & TECHNICAL LEADERSHIP

Supporting this vision, and a driving force behind the promotion of the Alliance's game-changing eco-friendly gold leaching reagent, SEYCHEM-CFX100, is Prof Emmanuel Arhin, a renowned expert in Applied and Medical Geology with over 33 years of experience in academia and the mining industry. A Ph.D. graduate from Leicester University, Prof Arhin is widely recognized for his groundbreaking work in Mineral Exploration and **Environmental Health**. His dual expertise in research and field practice positions him as a key asset in advancing Seychem's mission to transform the Artisanal and Small-scale Gold Mining (ASGM) sector through science-led, sustainable solutions.

Prof Arhin is a highly respected expert in the field of Applied Geology and Medical Geology. With 33 years of experience and a remarkable track record, Prof Arhin has made significant contributions to both academia and industry. Prof Arhin holds a Ph.D. in Geology from Leicester University, one of the prestigious universities in UK. His research focus includes techniques to explore minerals and geological studies related to medical science and environmental health. Prof Arhin has worked as a Consulting Mineral Exploration Geologist for several leading organizations, where he has conducted groundbreaking research and provided valuable insights into the application of geology in the mineral exploration and environmental geochemistry and health fields. He is teaching courses in Earth Science (Applied Geology) and Environmental Geochemistry and Health that includes Medical Geology at various universities. His specialty has been filling the knowledge gaps in mineral exploration and this has been so because of his experiences in the industry - *"The transition from industry to the university was not challenging because of my knowledge in geological sciences. This rather made it easy for me to blend industry and academic knowledge in solving mineral exploration and environmental health issues."* My current research is in two folds: **finding gold mineralization under cover** and **helping to define and outline disease causing elements in the environment**. Prof Arhin is currently the Consultant for Supercare Group exploring for gold in Ahafo district, the Head of Research for Coastal Zine Mining Association (CZMA), the Principal Consultant for SEYCHEM Limited and the Consulting Head of Geology, Mining and Environment for one of the biggest gold trading companies in Ghana.



## The Challenge



**TOXICITY**  
in gold processing

## Why cyanide is a problem:

- Accidents / containment failures lead to catastrophic pollution
- Massive environmental and health risks
- Significant environmental incidents, some involving water bodies, have continued to occur globally



## Why mercury is a problem:

- **Minimata Convention 2023** – This is a UN initiative with over 128 countries signed up to ban the use of Mercury. This is to address:
- **Health** – prolonged inhalation of mercury leads to neurological damage to miners
- **Communities** – contaminated water and soil leads to accumulation of mercury in food staples
- **Child Development** – mercury emission results in physical and mental disabilities and compromised development in children



# “Dirty Gold”

This is how the world's commercial gold is processed today



Ore collected from gold mines



Gold dissolved using toxic cyanide



Gold recovered from the ore, remaining toxic slurry is disposed in tailings dam



Waste rock from the mine is used to build the dam, retaining the toxic slurry in a pond where solids settle and compact



Extracted gold is further refined for smelting



Molten gold is poured into moulds producing bars of bullion



# “Clean Gold”

This is how the world's commercial gold should be processed



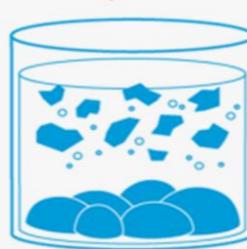
Ore collected from gold mines



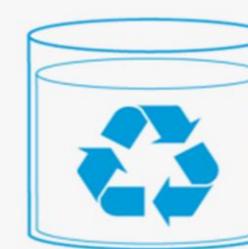
Gold dissolved using Clean Mining /CSIRO reagent



Ore is cleaned and recovered from extraction



Gold is recovered from the ore using Resin



Leftover reagent is recycled and reused



Extracted gold is further refined for melting



Molten gold is poured into moulds producing bars of bullion



# WHAT ARE THE BENEFITS?

**Non-toxic and eco-friendly**

**Dry milling** with minimal water consumption

**Scalable** features to suit capex / opex

## Mid-scale operations:

- Fixed / mobile plant, processing upwards of 10 tonnes of material per hour
- Mobile plant easily deployed and relocated within weeks
- Process configurable up to 200 tonnes of material per hour

## Qualified improvement

vs. cyanide (e.g. 50% higher gold recovery from carbonaceous ores)

## Large-scale operations:

Fully scalable fixed plant options can fit range of needs and operations

**Recyclable and re-usable water** and leaching solutions

Potential to eliminate hazardous tailings dams entirely



## Self-contained leaching systems include:

- Small-scale, front-end crushing / grinding
- Back-end recovery
- De-watering circuits



# Innovative Technology, Sustainable Solutions for ASMs

1



## FLAGSHIP PRODUCT

### SEYCHEM-CFX100 GOLD LEACHING REAGENT

SEYCHEM-CFX100 eco-friendly gold leaching reagent is an innovative high-tech product for gold extraction, one that can 100% replace Sodium Cyanide without changing the original leaching process and equipment, as well as meet the advantages of both Sodium Cyanide and other eco-leaching reagents. SEYCHEM aims at substituting the present 'commonly and illicitly' used and highly toxic" sodium cyanide. Our eco-friendly gold leaching reagent can completely replace sodium cyanide in the gold leaching process. SEYCHEM dissolves the fine gold out of ores (the gold that has not been recovered by gravity) at similar rates. This means tailings from alluvial deposits that employ gravimetric method can be extracted using this chemical, meaning we don't have to lose gold to tailings. Use of toxic chemical mercury (Hg) that was banned in the MINAMATA Convention on mercury and still being used illegally can be removed from the gold extraction flowchart by grinding the ore to powder. In that state SEYCHEM will digest the contained gold and will be extracted. It is safe and lowers any negative impact on the environment.

2



### PORTABLE INTEGRATED VAT-AGITATION LEACHING TANK (PIVATANK)

The **SEYCHEM PIVATANK**, an Integrated VAT and Agitation Leaching Tank Equipment is a custom-designed, all-in-one leaching system specially developed specifically to meet the unique needs of artisanal and small-scale gold miners (ASM), especially those engaged in VAT leaching in remote or rural areas who run on relatively low operational budgets. It combines the benefits of traditional VAT leaching and agitation leaching into a single, compact, and more efficient unit.

***This equipment is a hybrid leaching system that:***

- looks like a standard leaching VAT tank but is internally fitted with mechanical agitators and mixers
- includes built-in filtration or decantation sections
- operates using diesel-powered or electricity-assisted motors for agitation
- is portable and self-contained, eliminating the need for external infrastructure like large generators or pumps



3



#### PORTABLE SMALL-SCALE FREE GOLD GRAVITY SEPARATION PROCESSING PLANT

The plant is suitable for artisanal and small-scale mine owners to recover granular gold from quartz vein ore, hard rock ore, alluvial deposit, placer deposit and other materials. The plant can be fixed in one place for operation or often moved to different mining areas. The raw ore is first crushed by the jaw crusher, then it is fully crushed by the hammer mill to liberate free gold completely. Gravity separation processing obtains the concentrate which is further smelted and casted to get the bullion. The processing plant adopts the recovery processes without mercury or other chemicals, so it is environmentally friendly and protects health.

4



#### 10TPD MOBILE GOLD CIL PLANT

**MOBILE CIL PLANT:** the ore is manually fed to the jaw crusher after mining out from the mine, the products from jaw crusher are conveyed to the steel-made ore bin by the elevator, the products after ore bin are fed to the ball mill evenly for grinding, then the products go into the spiral classifier for classifying, the return sand from the spiral classifier is conveyed to the ball mill again and form a circuit, the overflow of the classifier is pumped back to the high efficiency thickener box for thickening by the pump, the pulp is pumped to the leaching tanks for leaching, the activated carbon and leaching chemicals are put into the leaching tank manually, and the carbon is lifted by the air lifer, finally the gold loaded carbon is carried to the elution desorption electrolysis and smelting after washing by the fixed screen.

5



#### PORTABLE HI-TECH SMCETING TOOLS

Metal Melting is Fantastic!

Imagine that you put a solid metal block into the melting furnace, turn it into liquid, then you can pour it into different kinds of interesting molds. You are the master!



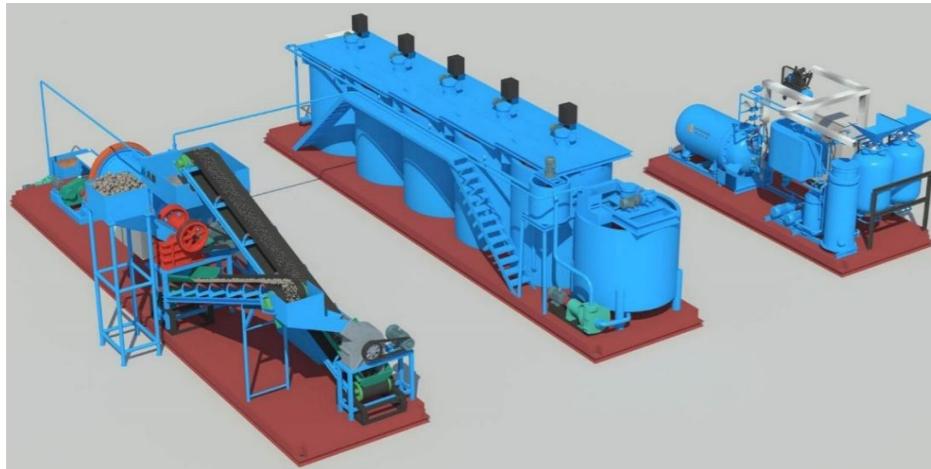
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### PORTABLE HI-TECH SMELTING TOOLS

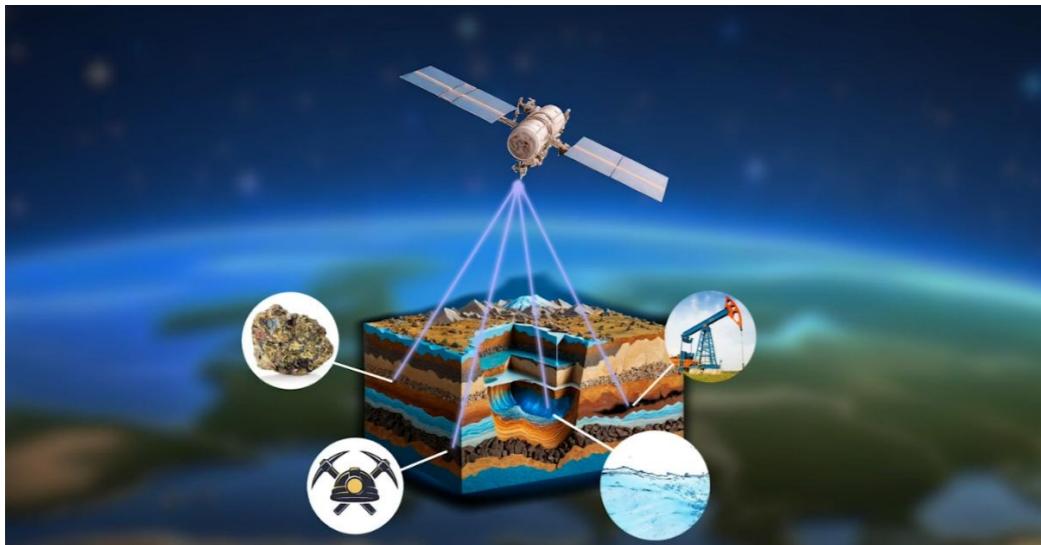
Induction Melting Furnaces: reliable equipment supplier for jewellery manufacturers, offering the most dependable precious metal melting and smelting equipment with capacities ranging from 1 kg to 250 kg. These induction melting furnaces are capable of operating continuously for 24 hours without any malfunctions, helping customers enhance production efficiency. We provide top-tier induction melting furnaces that deliver exceptional performance and reliability.

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### 10TPD MOBILE GOLD CIL PLANT

8



### SATELLITE-BASED ATOMIC MINERAL RESONANCE TOMOGRAPHY

This technology is akin to how NASA surveys and detects minerals on other planets, stands out in the market with its unique and precise detection capabilities, setting the company at the forefront in the field of mineral exploration. By harnessing this satellite-based AMRT Technology, oil and gas exploration Companies, Miners, Prospectors, Geologists, Geophysicist and Archaeologists alike can obtain detailed insights into subsurface mineral deposits, man-made deposits, and voids without even stepping foot on site. The History Channel has successfully used this satellite-based AMRT Technology to locate and document one of Yamashita's Treasure Sites buried in the Philippines, as featured in its TV documentary "Lost Gold of World War II" series in 2020. Satellite-based AMRT Technology can accurately up to 93% or more (proven by drilling and trials) detect the positions and depths of most elements on the periodic table from space. This process provides not only zero site environmental impact but also a very significant cost and time savings when compared to traditional mineral exploration methods. In the realm of mineral and other exploration, the utilization of CC Explorations' ability to locate Sub-Surface Minerals, Oil and Gas Hydrocarbons, Gold, Silver, Copper, Lithium, Water, Voids, and other Valuable Items is highly advised prior to spending money and time on traditional, expensive and time-consuming exploration methods.



**Coin Making Solution**

- Square, Round And Irregular Shapes
- Exquisite And Smooth Finished Product
- Provide Professional Guidance
- For minting 0.6-1kg Au,Ag,Cu ect coin and bars

**Automatic Jewelry Diamond Setting Machine**

- 100% handmade effect
- 6000-10000 diamonds per hour
- Fast 3d scanning programming
- Different colors and sizes in one wax

**Jewelry Casting Kit**

- Automatic cast for Pt,Pd,Au,Ag
- Compact design for cost saving
- Inert gas protection to avoid oxidation
- Easy operation suits jewelry designer

**Gold Bar Making Machine**

- One-Stop Service
- No Oxidation And No Loss
- High Quality Of Finished Product
- Customizable Gold, Silver And Copper

- Focus on precious metal smelting;
- Support 1-250kg melting;
- IGBT Induction smelting technology;
- Fast smelting, efficient refining.

**Jewelry Vacuum Casting Machine**

- Automatic cast for Pt,Pd,Au,Ag,SS
- Inert gas protection to avoid oxidation
- Fast casting and high-quality product
- Easy operation suits jewelry designers

**METAL MELTING& CASTING SOLUTION EXPERT**

Over 20 YEARS Technical experience in manufacturing all types of metal melting furnaces& casting Machine

CCCAST WILL TAKE CARE OF ALL YOUR CUSTOMIZED REQUIREMENT

ONE-STOP operational resource

**Powder & Granules Making Machine**

- High-Quality Powder And Granules
- No Oxidation And No Loss
- Customize Design
- 24 Hours Continuous Work

**Gold Silver Bullion Casting Machine**

- Vacuum Casting
- No Oxidation And No Loss
- High-Quality GoldSilverBullion
- Customized Graphite Mold

**Laboratory Vacuum Induction Melting Furnace**

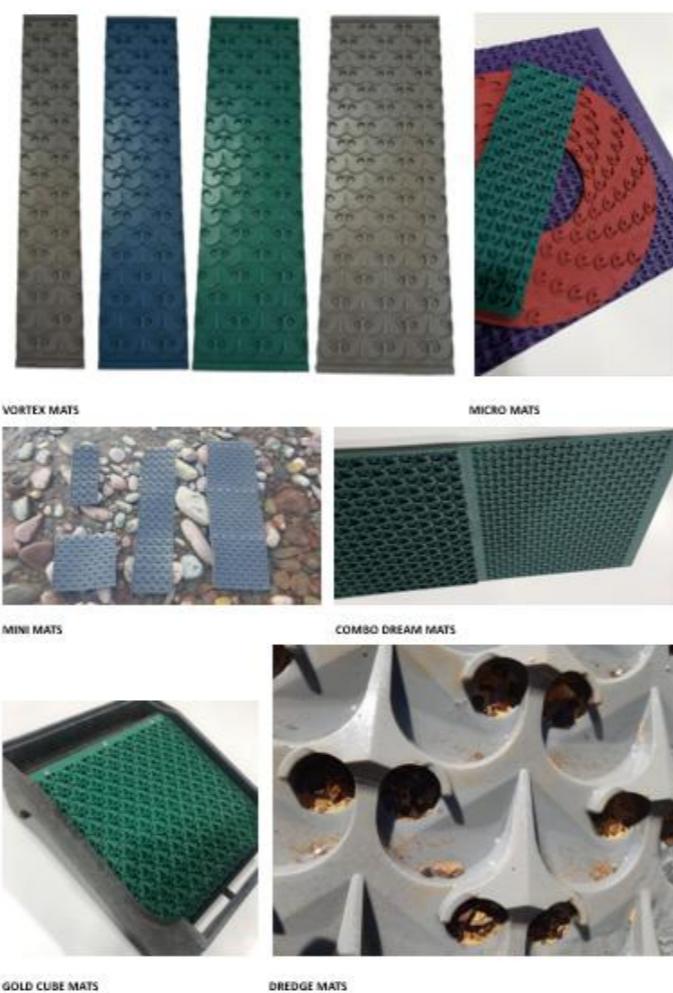
- Advanced IGBT dedicated power supply and fully digital circuit
- Under vacuum atmosphere can melt all types of metal materials
- Double-layer water cooling structure furnace shell
- Equipped with a secondary feeding device

Gold and Jewellery electro-machinery expert dealing in the manufacturing, sales, and distribution of **MELTING, CASTING, AND FORMING MACHINES** for smelting or molding gold, silver, copper, bronze, zinc, aluminum and lead.

A message to Goldbod and all gold holders that homegrown services are available here to transform their dore gold into finished, polished high-value end products without investing into multimillion refineries



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### DREAM MAT

*100% manufactured in the USA. Every product designed is made to get you more gold, because more gold equals more fun!*

Prospectors Dream is proudly the #1 prospecting mat creator in the world. We offer an unmatched fine gold recovery and stand by this with our 100% satisfaction guarantee.

Dream Mat users around the world have been coining phrases like "**Front Row Gold**", "**Fastest Clean Out ever**", and "**Turning every novice into an expert**".

We hope one day everyone will have the chance to see what happens to their pan when using our products. Good luck & pray for nuggets!

### HESSIAN CLOTH FOR FILTRATION UNDER VAT LEACHING

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#### Jute Hessian Cloth

**SEYCHEM LTD** is supplying fine quality jute Hessian Cloth to its esteemed client in Ghana. Our Hessian Cloth is well known for its high Quality at very low price. This make in India Hessian cloth is woven from jute fibers. Our products are widely used in agriculture, horticulture, geological, civil engineering industries. Further, it is also useful in erosion control and military applications.

Some of the salient features of this Jute Hessian Cloth:-

- ✓ High tearing strength
- ✓ Long lasting nature
- ✓ Resistance against shrinkage
- ✓ 100% biodegradable



**Proven Performance**  
Minelab GPX Series detectors have found  
**MORE GOLD in Africa than any other detector.**

# GPX Series

- Much Deeper Detection
- Very Quiet Operation
- Proven Gold Success

# GPX Series

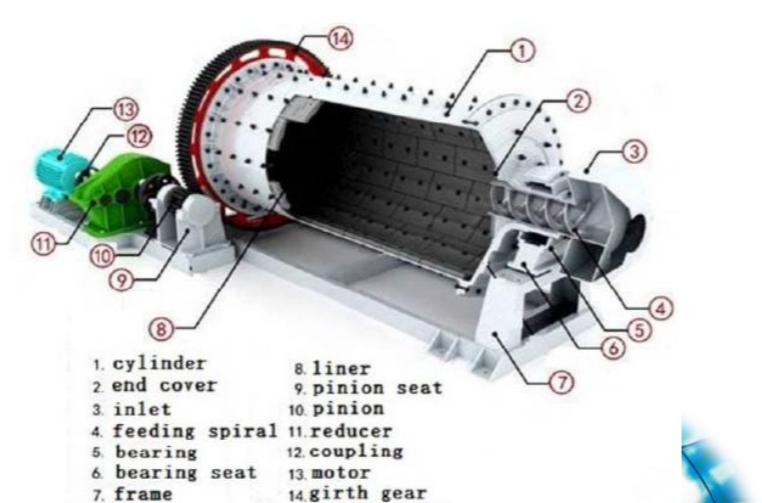
*The detector of choice for professional gold prospectors!*

"I love the GPX detectors as I have had so much success with them and still am. I have sold 122.2 grams since I've hit this area and still have over 2oz."  
STOPSY - AUSTRALIA

MPS™ DVT™ SETA™  
World's Best Metal Detection Technologies

## HAND-HELD GOLD METAL DETECTORS

To the gold prospector: We know your quest. Minelab detectors are engineered for discovery. In fact, our R&D team is 50 engineers strong. That's what makes our hand-held metal detection technology the best in the world. We welcome the challenge of 'difficult' terrain. Magnetic minerals, iron-rich soil and deep water are no match for our innovation. You will see deeper with a Minelab detector than any other on the market. Miners in Africa make life-changing gold discoveries with our detectors. We know your quest and our detectors are precisely engineered to find the fortune you seek. With Minelab, you'll find performance is everything.



## COMPACT, PORTABLE BALL MILL FOR ASMs

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**BACKHOE LOADERS FOR ASMs**

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**DIGITAL PH METER FOR**

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**ENERGY DISPERITIVE X-RAY  
FLUORESCENCE (EDXRF)  
ELEMENTAL ANALYZER FOR  
GOLD LEACHING**FOR GOLD DETECTION IN  
SOLUTION

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**SPECIAL RUGGED LAPTOPS, TABLETS & SMART PHONES DESIGNED TO WITHSTAND THE TOUGH OUTDOOR ENVIRONMENT & ACTIVITIES OF MINING PROFESSIONALS**

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### **PORTABLE XRF ANALYZERS FOR MEASURING GOLD IN ACTIVATED CARBON**

Activated carbon is routinely used as part of the gold recovery process at many mines around the world. Activated carbon is used in both carbon in leach (CIL) and carbon in pulp (CIP) techniques. These CIL and CIP techniques recover gold (Au) from pulp or solutions derived from the cyanidation process. According to the World Gold Council, more gold is recovered from cyanidation than any other process. Gold cyanidation is a hydrometallurgical process that extracts gold from ore by converting the gold to a water-soluble coordination complex. Activated carbon adsorbs the gold from the resulting solution. The carbon is then stripped of the gold before being passed through an electrowinning circuit and smelted to produce gold bars. Monitoring the content of gold and other elements within the activated carbon enables process optimization and maximum gold recovery. The Vanta™ portable XRF analyzer is used as a replacement for traditional laboratory techniques within the mine-site laboratory due to its speed, ease of use, and significantly improved accuracy and precision.

The Vanta analyzer provides accurate chemistry for more than 30 elements in solids and liquids, from trace level to percent level, from samples across the entire minerals cycle. The Vanta analyzer can be used to measure the gold loading of activated carbon from each of the tanks used as part of the process either in unprepared coarse form or after undergoing a fine grind.

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### **THERMO SCIENTIFIC™ NITON™ XL5 PLUS HANDHELD XRF ANALYZER**

#### **Small Size, Big Power. Fast, Accurate, Versatile XRF Analysis**

Successful mining companies are those that are able to quickly identify and recover the most economically viable resources. Utilize the powerful Niton XL5 Plus XRF analyzer to gather accurate, real-time geochemical data and maximize overall productivity. Determine the concentration of elements from Mg to U in various types of geochemical materials. Quickly identify drill targets on site and in real time. Cost effective solution for mineral discovery, mining operations and oil and gas exploration.

#### **Applications:**

- Non-destructive field inspections for positive material identification
- Precious metal assay of bullion and jewelry
- Real-time geochemical analysis for mining exploration
- On-site heavy metal screening of polluted soils



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### **ACID DIGESTION SYSTEMS FOR ASMS**

There are devices designed to perform acid digestion in a controlled and safe manner, minimizing exposure to harmful fumes such as those released from sulfuric and nitric acids.

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## DISSOLVED OXYGEN (DO) METERS

Dissolved Oxygen (DO) meter is used in mining operations to measure the amount of oxygen dissolved in water. Its main function is to help monitor and control various hydrometallurgical and environmental processes. Primary Functions of a DO Meter in Mining:

- 1. Process Optimization in Leaching Operations:** In cyanidation or bioleaching processes, oxygen is crucial for the dissolution of gold or other metals. A DO meter helps ensure there is sufficient oxygen in the leach solution, which is necessary for efficient metal recovery. Low oxygen levels can slow down the reaction and reduce recovery rates.
- 2. Environmental Monitoring:** Mines often discharge treated water into the environment. DO meters help assess the quality of effluent water, ensuring it is aerated enough to support aquatic life. It's a key tool for complying with environmental regulations and avoiding pollution of rivers and lakes.
- 3. Monitoring in Tailings Ponds:** In tailings ponds, DO levels indicate whether anaerobic (oxygen-depleted) or aerobic conditions are present. Low DO can lead to the production of harmful gases like hydrogen sulfide ( $H_2S$ ) or cause acid mine drainage (AMD).
- 4. Biological Treatment Systems:** Some mining operations use biological treatment to remove contaminants (like ammonia or cyanide). DO meters help control aeration systems in these biological reactors to maintain optimal microbial activity.

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## HIGH-GRADE ACTIVATED CARBON

Our manufacturer partner's cutting-edge technology and expertise enable them to specialize in providing high-quality activated carbon products that play a pivotal role in various gold recovery processes. Activated carbon plays a crucial role in the process of gold recovery, particularly in the field of mining and metallurgy. This remarkable material is known for its exceptional adsorption properties, which enable it to selectively capture and concentrate minute traces of gold from complex ore solutions.

Gold recovery using our high grade, high quality occurs through a process called carbon-in-pulp (CIP) or carbon-in-leach (CIL), where finely ground ore is mixed with a cyanide solution to dissolve the gold. The resulting solution, laden with gold ions, is then passed through a bed of activated carbon, which traps the gold particles, effectively stripping them from the solution. Subsequent heating or chemical treatments allow for the retrieval of the captured gold, making activated carbon an indispensable tool in modern gold mining operations, ensuring efficient and environmentally responsible gold extraction.



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**COMPACT MOBILE JAW CRUSHERS FOR ASMs**

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**HYDROGEN PEROXIDE**

To improve low oxygen during leaching

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**LIME / CAUSTIC SODA**

To be used as an additive for alkalinity adjustment of the slurry to be at pH of 11±1 (that is 10-12) under plant conditions.

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**THERMO SCIENTIFIC™ NITON™ DXL PRECIOUS METAL ANALYZER**

*Laboratory-quality analysis with the push of a button*

Throughout the precious metal life cycle – from refining to recycling – the goals are always to ensure quality, control costs, and achieve accurate purity analysis. With the high price of gold and other precious metals, even a small variation in composition accuracy can be costly. Designed specifically for countertop use in retail environments, yet portable and rugged enough for use in remote testing locations, the Niton DXL X-ray fluorescence (XRF) precious metal analyzer delivers fast, reliable results...and unlike more traditional testing methods, it is completely non-destructive. **These analyzers provide you with the ideal method to test the purity and chemistry of all precious metals**, with proven simplicity, performance, features, and portability.

And Thermo Scientific Au/gold Detection & Identification Technology (AuDIT™) provides instant detection of gold plating with the simple push of a button.



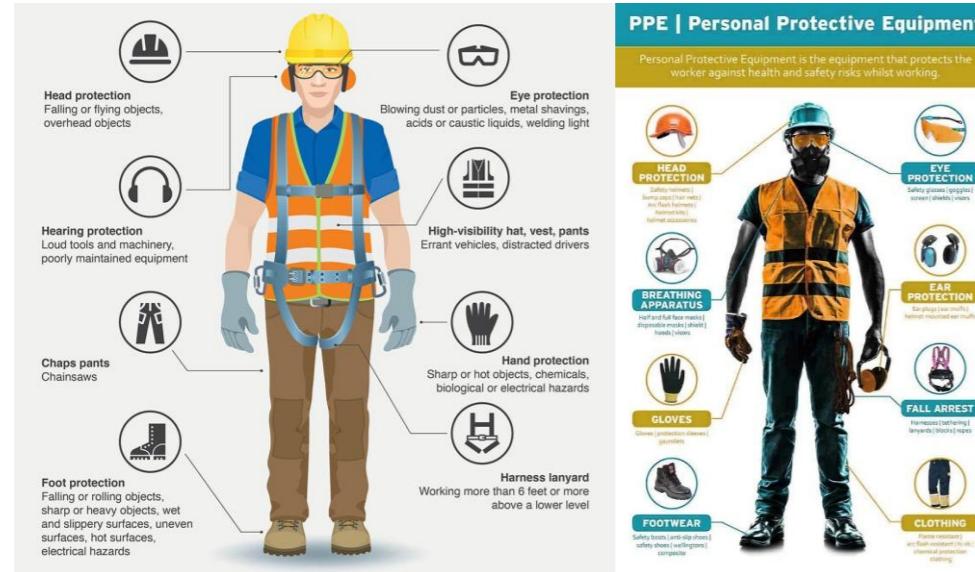


### PPE MINING GUMBOOTS

Our heavy-duty range of mining gumboots feature steel toe caps, metatarsal protection, and steel midsoles to protect you against injury from heavy and sharp falling objects.

### RECOMMENDED PPE ITEMS FOR YOUR MINERS

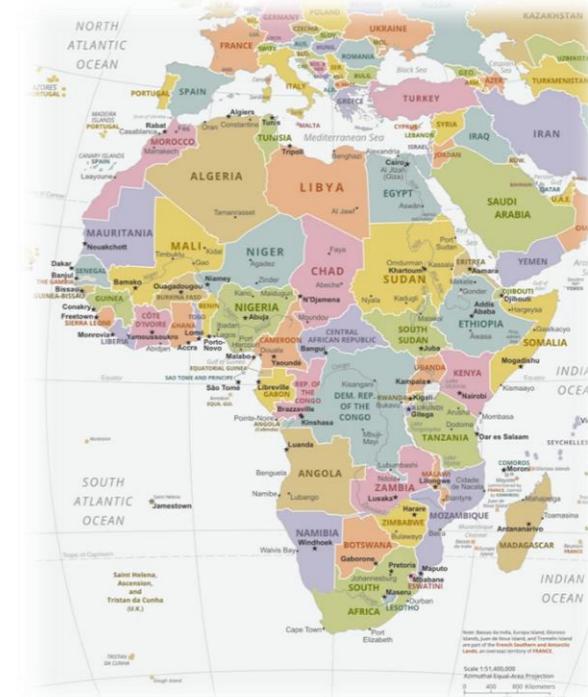
- Respirators with mercury/cyanide filters (half/full face)
- Dust masks (N95 or higher)
- Chemical-resistant gloves
- Hard hats with lamps
- Steel-toe boots
- Reflective coveralls or vests
- Goggles or safety glasses
- Ear protection
- Fire-retardant clothing for burning zones



## Ghana Mining Jurisdiction



# Our Business Model



## REVENUE GENERATION

The Alliance generates revenue through the sale of its responsibly sourced eco-friendly reagents for the innovative extraction of gold, and hi-tech mining and mineral processing equipment for automated and mechanised processing of ore material . Another source of revenue may come from professional consulting and advisory services rendered.

## PRICING STRATEGY

Our pricing strategy is competitive, considering the potential market demand for Seychem-CFX100 and related products, and the value proposition of our eco-friendly approach.

## SALES CHANNELS & CUSTOMER SEGMENTS

We specifically target the artisanal and small-scale miners in Ghana first, and give consideration to other markets in the Africa sub-region.



# Why Invest in Us?



## A Proven Team

Our team of experienced professionals brings together expertise in mining, technology, and sustainability.

## A Sustainable Future

*The ALLIANCE* offers a path to profitable mining that respects the environment and benefits local communities.

## Innovation at the Forefront

We leverage cutting-edge technology to maximize resource extraction and minimize environmental impact.

## A Strong Return on Investment

We are confident in our ability to deliver exceptional financial returns while upholding our sustainability commitments.



# SMART Collaboration Call – GNASSM



The SEYCHEM-CZMA ALLIANCE is excited to learn that a critical and very important component of GNASSM's mandate interestingly resonates very much with our own intentions.

Our intention is one of ambitiously contributing to the sanitization of the Artisanal and Small-scale Mining (ASM) ecosystem, through the provision of eco-friendly, hi-tech mining solutions, training and education, and the promotion and implementation of responsible and sustainable mining practices to improve the lives of our esteemed brothers and sisters.

It is in view of this alignment that we propose a Strategic Collaboration with your distinguished organization to pursue this Mandate and bring laughter to all stakeholders involved.

The Alliance has the solutions and stands to play a pivotal role in complementing the efforts of the GNASSM to realize its objectives.

**WE THEREFORE CALL ON THE GNASSM, WHICH WE CONSIDER A FORMIDABLE AND CREDIBLE CAPABLE PARTNER  
TO JOIN FORCES WITH US AND WORK TOGETHER TO ACHIEVE THIS ALL-IMPORTANT NATIONAL DESIRE OF TRANSFORMING GHANA'S  
ARTISANAL AND SMALL-SCALE MINING SECTOR INTO  
A MODEL BEFITTING OUR STATUS AS THE NUMBER 1 GOLD PRODUCTION FORCE IN AFRICA**



Together we can

Transform Artisanal & Small Scale

Gold Mining in Ghana



# THE SEYCHEM-CZMA ALLIANCE

- MINING SUPPORT SERVICES
- IMPORTER & DISTRIBUTOR OF MINING REAGENTS & EQUIPMENT
- EXCLUSIVE IMPORTER & DISTRIBUTOR OF SEYCHEM-CFX100 FOR AFRICA
- FOCUSED ON SUSTAINABLE AND ECO-FRIENDLY GOLD EXTRACTION TECHNOLOGIES



# ASM SECTOR IN GHANA

- CONTRIBUTES SIGNIFICANTLY TO GHANA'S ECONOMY
- PROVIDES EMPLOYMENT TO THOUSANDS OF MINERS
- FACES CHALLENGES: ENVIRONMENTAL DEGRADATION, LOW GOLD RECOVERY RATES, LACK OF ACCESS TO MODERN EQUIPMENT
- NEED FOR SUSTAINABLE AND HIGH-TECH SOLUTIONS



# GNASSM-SEYCHELLES STRATEGIC COLLABORATION

- JOINT EFFORT TO PROMOTE RESPONSIBLE MINING
- IMPLEMENTATION OF SUSTAINABLE GOLD EXTRACTION TECHNIQUES
- ESTABLISHMENT OF MODEL MINING ZONES FOR IMPROVED PRACTICES
- TRAINING AND CAPACITY BUILDING FOR ARTISANAL MINERS



# INNOVATIVE SOLUTIONS & TECHNOLOGIES

- SEYCHEM-CFX100: A SAFER ALTERNATIVE TO CYANIDE FOR GOLD EXTRACTION
  - MODERN HI-TECH EQUIPMENT FOR BETTER GOLD RECOVERY
- ADVANCED GRAVIMETRIC CONCENTRATORS FOR MERCURY-FREE PROCESSING



# INVESTMENT & FUNDING REQUIRED

- INVESTMENT NEEDED TO PROCURE AND DISTRIBUTE ECO-FRIENDLY GOLD EXTRACTION CHEMICALS
  - HIGH-TECH MINING EQUIPMENT PROCUREMENT
  - TRAINING AND CAPACITY BUILDING FOR ASMs
- ESTABLISHMENT OF INFRASTRUCTURE FOR MODEL MINING ZONES
- - FINANCIALS AVAILABLE ON REQUEST FOR POTENTIAL INVESTORS



# ENVIRONMENTAL & SOCIAL IMPACT

- REDUCTION IN MERCURY AND CYANIDE USE
- TRAINING AND EDUCATION PROGRAMS FOR MINERS
- IMPROVED MINING PRACTICES AND SAFER WORK ENVIRONMENTS
- COMMUNITY ENGAGEMENT AND SUSTAINABILITY INITIATIVES



# CONCLUSION & CALL TO ACTION

- SEYCHEM-CZMA AND GNASSM LEADING A SUSTAINABLE MINING REVOLUTION
- OPPORTUNITIES FOR INVESTORS, REGULATORS, AND STAKEHOLDERS TO JOIN
- LET'S COLLABORATE FOR A GREENER, SAFER, AND MORE PROFITABLE MINING INDUSTRY



# SEYCHEM

CF><100



**Safer and More Sustainable Practices** : Cyanide- and mercury-free, delivering materials and processes that take leakages, spillages or exposure to hazardous chemicals out of the equation.



**Future-Focused** : Kinder to the environment in production, use and disposal, contributing to a cleaner, healthier planet for future generations.



**Ethically Responsible** : The safest and most sustainable gold processing reagent to date, with benefits for communities, companies, governments and workers.

## REFERENCES:

- Clean Earth Technologies Group
- Clean Mining





*Contact us:*

## **SEYCHEM HOUSE**

Plot #47, Bort 111 St.

Solo Avenue, New Bortianor, Accra

P. O. Box AN12227, Accra-North, Accra, Ghana

Office Tel.: +233 302 859054

M: +233 20 812 0786 / +233 24 421 1989 / +233 20 641 7540 / +233 20 536 2274

E-mail: [seychemlimited@gmail.com](mailto:seychemlimited@gmail.com)

G-Location: GMR2+836, MILE 11, Ghana

GhanaPost-GPS: GS-0254-1034



