



October 14, 2021

Head, Chemicals and Health Branch
Economy Division
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PARTNERSHIP REQUEST

Dear UNEP Chemicals,

I am writing on behalf of Alchemy Mining Group, Inc., (“AMGI”, the “Company”, “We”), a private Canadian start-up corporation with plans for operations in Ecuador’s Portovelo-Zaruma mining district.

Since June 30, 2015, the initial date of AMGI incorporation, our organization has been committed to supporting the UNEP Global Mercury Partnership overall goal to protect human health and the environment from the releases of mercury, The (COP) Minamata Convention on Mercury ratified 29th July 2016 by Ecuador, and the UNEP 2030 Agenda for Sustainable Development.

AMGI was originally incorporated in the USA as a Nevada for profit benefit Corporation having a mandate to provide innovative green gold mining solutions to the mercury dependent ASGM sector in S. America.

The Company is requesting to form a partnership with the UNEP Global Mercury Partnership for the Artisanal and small-scale gold mining and mercury waste management sectors.

One year before the Global Mercury Partnership debuted in 2005, the Company’s Advisor Dr. Marcello Veiga, P. Eng., was teaching his graduate students and artisanal miners sustainable and alternate solutions to using mercury in ore processing in 27 Countries to date including the Portovelo-Zaruma mining district since 2004.

In March 2017, the Company undertook a Joint Venture (JV) by and between Alquimia y Explotación Minera San Juan Alquiexmi S.A., our newly incorporated Ecuadorian Jr. mining company having granted mineral rights on 2 concessions in the Bella Rica mining district western Azuay province, Ponce Enríquez Ecuador.

March 20, 2018, we issued and listed for trading 7.14 Million (8 decimals) of the world’s 1st AlchemyLGCoin© climate action utility tokens on the decentralized Waves.Exchange open blockchain platform for Crowdfunding.

The Company abandoned the JV upon discovering the ongoing human health threats, local and global biodiversity destruction caused by the APROPLASMIN* Members (“Members”) use of mercury in the Portovelo-Zaruma mining district where our JV ore would be transported for processing.

December 2019 after several years of research, we sent the Members a PowerPoint Presentation outlining a partnership proposal to implement our Tailings Remediation Action Plan (TRAP) innovation to start the process and initiate climate action with the conversion of one of the Members 68 whole ore mercury amalgamation Chilean processing centers to a mercury free ore processing and cyanide salt free tailings reclamation center.

Our research sided with numerous Scientific publications and artisanal miners reports from 7 Countries that the Gravity Borax Method (GBM) for sustainable gold recovery using Borax as a flux for smelting safely recovers up to 3 times more gold than by using mercury amalgamation and producing no toxic tailings.

Our research concluded using shaker tables and gravity with rapid shaking has been proven and documented to recover mercury from tailings for safe and proper disposal and gold faster than by using toxic cyanide salts and expensive cyanidation circuits employed to remediate tailings which also produces toxic mercury-cyanide complexes and is poured into the rivers.

Unfortunately, COVID -19 shut down the global artisanal mining sector.

December 2020, we contracted with Edgar Granda Aguilar, P. Geo, P. Eng. a professional Geologist who was born and has lived in Zaruma for 35 years. Edgar resides in Machala 60 miles from Zaruma and is a highly respected professional known to all Members owning Chilean processing centers situated on the Calera riverbank in Zaruma.

Through Edgar, we are in advanced discussions with several Members including their President elect “hopeful” who assured that once elected, a Members Chilean processing center will be available under a Joint Venture Partnership to prototype the world’s 1st mercury free ore and tailings processing center for conversion to a mercury free center with the adaption of our TRAP innovation.

In May 2021, Dr. Marcello Veiga contacted the Company to introduce the Chemistry and innovative mechanical processes involved with using bitter cassava plant extract “manipueira” as a lixiviant to sustainably leach more gold from ore and to replace the use of mercury in ore processing and cyanide salts used in tailings remediation.

We redacted our TRAP to reflect the conversion of a Chilean processing center to a manipueira processing center equipped with innovative technologies incorporating processes based on years of R & D at the University of British Columbia Norman B. Keevil Institute of Mining Engineering.

The Company provided Members preliminary design schematics and equipment lists to convert and prototype one Chilean facility to a 60 tonne/day state-of-the-art mercury free processing center to recover more gold sustainably potentially mitigating further human and child in utero health threats, local and global biodiversity destruction from that center.

“We propose to use a solution extracted from plants, bitter cassava, as a gold leaching lixiviant for the first time in the history of the mining industry.” Dr. Marcello M. Veiga, P. Eng.

Conversion of one of the 87 Portovelo-Zaruma Chilean processing centers to manipueira processing contributes to the UNEP Global Mercury Partnership overall goal by eliminating that center

- monthly use of 2.2 kg mercury,
- monthly use of 2 tonnes of toxic cyanide salts,
- pro-rata discharge of 1.9 million tonnes of toxic tailings wastes laden with mercury providing mobility for mercury, tonnes of cyanide, mercury-cyanide complexes, arsenic, lead, and other heavy metals,
- pro-rata release of 303 kg of mercury to our environment from burning the gold amalgams.

Once completed, the center will be made available for demonstrations and the plant specifications will be blueprinted and published open source for worldwide replication.



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Our organization continues to contribute and support the UNEP Global Mercury Partnership in achieving their overall goals by applying our academic strengths, credentials, knowledge of Science, Chemistry, mercury, financing, and marketing abilities to implement the TRAP innovation which will help to eliminate anthropogenic mercury releases to air, water, and land, one center at a time.

Our organization includes Bruce A. Cosgrove, B.Sc., M.Sc. (Solution Chemistry) Simon Fraser University British Columbia, AMGI President/C.E.O., Founder Alchemy Liquid Gold Coin®.

July 17, 2019, Bruce published "[Amazon Mercury Pollution — A Global Issue — A Solution](#)" on Medium describing the outstanding mercury problem in the Portovelo-Zaruma mining district also detailing an alternate solution for ASG miner's to safely and sustainably recover more gold than by using mercury.

To date the Article has > 15,600 views.

July 01, 2021, an 8-page digital "[interview with Bruce Cosgrove](#)" was published by Skillings Mining Review, a global online digital magazine "equipping the mining industry with legal services since 1893", which was featured for 3 months and still is a cover story on their web site.

During the interview, Bruce espoused to a global audience about the human health threats and biodiversity destruction caused by miners use of mercury in ore processing and described the innovative state-of-the-art processes involved with using manipueira as a lixiviant to sustainably leach more gold from ore than by mercury amalgamation.

Alexandra D. F. Cosgrove, B. Com. (Marketing), Sauder School of Business University of British Columbia (UBC), AMGI Principle, Financial and Securities Advisor, co-Founder Alchemy Liquid Gold Coin®. The world's 1st climate action utility token.

In July 2021, the Cosgrove's incorporated Alchemy Mining Group, Inc., a British Columbia Corporation.

August 15, 2021, P.Torkaman, M.M. Veiga, L.R.P. de Andrade Lima, L.A. Oliveira, J.S. Motta, J.L. Jesus, L.M. Lavkulich published to the Scientific community "[Leaching gold with cassava: An option to eliminate mercury use in artisanal gold mining](#)"

Marcello, Professor Emeritus University of British Columbia (UBC) Norman B. Keevil (Chairman Emeritus of Teck Resources) Institute of Mining Engineering is a globally respected expert on mercury and ASG mining and a former Technical Advisor to GEF/UNDP/UNIDO Global Mercury Project based in Vienna.

September 09, 2021, Marcello with co-Author Pariya Torkaman in conjunction with Newlox Research & Development Corp. (NERD) submitted "[Alternatives to Eliminate the Use of Mercury in Artisanal Gold Mining](#)" to the planetGOLD Exhibition Opportunity designed to "assist artisanal and small-scale miners to transition to gold production technologies that do not use mercury".

Marcello, in his capacity as Chairman of Newlox Gold Ventures Research and Development Corporation, continues research experimenting with cassava plant extract to increase the free cyanide content up from 287 mg/l to 1,000 mg/l. to increase the efficiency of leaching gold from ore and tailings

And continues to promote the use of alternative lixivants to eliminate the use of mercury in ore processing and his model of co-existence as the being the best solution to remove ore processing and mercury use from the artisanal miners' hands.

Since 2021, Newlox Gold Ventures Costa Rica ongoing tailings minerals reclamation operations using manipueira as a lixiviant sustainably recovered gold from tailings faster and cheaper than by cyanidation using toxic cyanide salts.

The University of British Columbia (UBC) Norman B. Keevil Institute of Mining Engineering has proven and Scientifically documented manipueira to safely recover more gold from ore than by using mercury amalgamation.

Results with Newlox material:

- 99.6% of gold removal from solution in 2 hr. from mercury-tailings (mercury was also removed)
- 99.3% of gold removed from Newlox ore

Marcello is advising two additional companies on the construction of an 80 tonnes/day custom-built reclamation technique using "manipueira" to reclaim tailings gold in Sudan and Mauritania.

October 3, 2021, Edgar's Via Minera "[Zaruma: World Heritage in danger due to mining disorder](#)" Interview was published.

Edgar continues as member of the citizen oversight on the situation of vulnerability of Zaruma "Illegal, irregular and anti-technical underground exploitation of mineral resources has destroyed the foundations of Zaruma"

"We will go to international bodies to denounce this destruction of a World Heritage City since 1998, with its 245 heritage houses, due to the greed of a few scoundrels who, in addition, have divided an entire people."

AMGI plans to

- introduce "Gold Toll Milling", a transactional process whereby Members provide miners an immediate and fair price for their unprocessed ore and tailings after assaying,
- Gold Toll Milling promotes the co-existence between Members and miners which eliminates the participatory ASG miner's use of mercury mitigating his own further health threats,
- introduce a novel sustainable process to create value from remediated tailings by mixing them with sulphur to stabilize any residual mercury, add cement with sand and gravel to form concrete for building blocks, structures, etc. creating a secondary industry, new jobs, generating income while improving the livelihood of the community,
- acquire land to create a local bitter cassava plant growing industry with an environmentally friendly processing plant to produce flour, tapioca, and beer for consumer consumption, and extract for the mining sector creating new sustainable jobs,
- allocate 3% of company net proceeds from operations to develop a mercury detoxification programme and facility for all the Portovelo-Zaruma mining district resident's health benefit.

The Company proposes to host an event in Zaruma Q1 2022 for the 65 APROPLASMIN Members, family, and certain community representatives.

The goal is to inform and educate them as to the January 01, 2021, OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (CAHRAs) of which



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Ecuador qualifies and teach them to be compliant otherwise non-compliance will negatively impact their gold sales and stimulate the black market unless changes are made.

We plan to invite representatives of two Peru based Swiss Refineries introduced by Carla Neefs of Solidaridad Corporate Partnerships based in the Netherlands.

Additionally, we plan to introduce the concept for Gold Toll Milling successfully practiced in Costa Rica and Peru.

Bruce and Alexandra judiciously selected Zaruma, one of Ecuador's 5 UNESCO World Heritage Sites and ongoing biodiversity disaster to implement our TRAP innovation due to the localized density of the 87 processing centers and the high density of the ~ 10,000 local and ~ 40,000 neighbouring miners who have their ore and tailings processed there.

Also knowing that ~ 80% of the artisanal gold supply is produced from processing centers which are largely responsible for the collective annual discharge of 2,000 tonnes of mercury to our biosphere; not the wrongly accused informal ASG miners which produce 20% of the gold.

There are 87 centers in total located 1,200 meters high up in the Amazon Andes situated along one-square mile on the Calera and Amarillo riverbanks. Collectively they are responsible for the annual discharge of 1.9 million tonnes of acidic toxic tailings surface sludge poured directly into the rivers.

This toxic pollutant laden with 222 kg of mercury, 2,033 tonnes of cyanide, mercury-cyanide complexes, arsenic, lead, and other heavy metals zigzags down the Andes throughout the Amazon rivers to empty into the Pacific Ocean 350 Km west poisoning the fish consumers eat especially tuna, where mercury bioaccumulates the most.

A 1999 survey by the Swedish Environmental System estimated discharges of mercury at 40 Kg per year in the River Siete and 160 Kg per year in the River Calera.

To accomplish our goal to convert and prototype the world's 1st 60 tonnes/day sustainable processing center using a cyanogenic plant-based extract manipueira to leach gold from ore and tailings, we will announce our Initial DEX Offering (IDO) seeking to raise \$USD 1.5 million fiat equivalent Impact Investment Capital Q1 2022.

The capital will fund the implementation our TRAP innovation proven to sustainably recover more gold safely replacing the use of mercury, and the introduction of Gold Toll Milling which eliminates participatory miners use of mercury both of which goals, supports the UNEP GMP overall goal "*where possible to eliminate mercury use*" which our innovation does one center at a time.

Call to Action!

The Company is currently seeking \$USD 150K Impact Investment Seed Capital to cover Ecuadorian legal costs, drafting and registering of various consulting and JV Agreements to operate legally in Ecuador, principles, consulting Geologist and Advisor due diligence site visits, travel and accommodations, meetings with APROPLASMIN and Community Members, the ASOCIACION DE MINEROS DE MULUNCAY Society, and the purchase of lab testing equipment for tailings mineral content analysis.

We would accept grant monies and/or directional input.

Thank you for your partnership and funding consideration.

Sincerely

[Alchemy Mining Group, Inc.](#), (AMGI), an Innovation Provider to #MakeMercuryHistory in ore processing and profit proudly from sustainably reclaimed tailings gold, a globally wasted commodity.

Bruce A. Cosgrove, B.Sc., M.Sc. (Solution Chemistry) AMGI President/C.E.O.

| [Research Gate Profile](#) | [LinkedIn Profile](#) |

Alexandra D. F. Cosgrove, B. Com., AMGI Financial Advisor

| [LinkedIn Profile](#) |

Edgar Granda Aguilar, P. Geo., P. Eng., AMGI Chief Technical Officer (C.T.O.), Liaison

| [LinkedIn Profile](#) |

Dr. Marcello Veiga, P. Eng. AMGI Technical Advisor

| [Biography](#) | [Research Gate Profile](#) | [LinkedIn Profile](#) |

The organizations continuing support includes Social Media awareness campaigns, postings on [LinkedIn](#), [Reddit](#), [Medium](#), [fb](#), [Steemit](#), [AMGI Twitter](#), [AlchemyLGCoin Twitter](#) re-Tweeting .orgs, [AMGI Blogging](#), promoting our [YouTube channel](#) with 5 playlists and several hundred videos to our collective ~15,000 followers.

C.C. metals.chemicals@unep.org, eisaku.toda@unep.org, kenneth.davis@unep.org, desiree.narvaez@unep.org, gunnar.futsaeter@unep.org.

* Asociación de Proprietarios de Plantas de Beneficio Mineral (Association of Owners of Plants of Ore Reduction, Smelting and Refining of Mineral Substances of El Oro Province in Portovelo-Zaruma)



UNEP GLOBAL MERCURY PARTNERSHIP FORM FOLLOWING PAGE



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Yellowfin Tuna, Courtesy NOAA Fisheries, © Photo by Jeff Muir

PARTNERSHIP AREAS

Please check the partnership area(s) to which your organization intends to contribute to:

- Artisanal and small-scale gold mining
- Mercury cell chlor-alkali production
- Mercury air transport and fate research
- Mercury in products
- Mercury releases from coal combustion
- Mercury waste management
- Mercury supply and storage
- Mercury releases from the cement industry

> Please specify in your support letter how your organization intends to contribute to each of the selected partnership area(s).

ORGANIZATION APPLYING TO BECOME A PARTNER

Name of Organization:

Type of Organization:

- Government
- Intergovernmental Organization
- Non-governmental Organization
- Industry
- Academia
- Other, please specify

Mailing Address:

Postcode: City: Country:

E-mail:

Telephone: Website:

ORGANIZATION'S REPRESENTATIVE TO THE UNEP GLOBAL MERCURY PARTNERSHIP

Mr. Ms.

First Name: Last Name:

Functional Title:

Section / Department:

E-mail:

** UNEP Global Mercury Partnership registration forms are to be accompanied by a letter to UNEP signifying support for the UNEP Global Mercury Partnership and commitment to achieving its goal. The support letter should specify how the organization intends to contribute to meeting the goal of the UNEP Global Mercury Partnership. Please submit the support letter and registration form to:*

**Head, Chemicals and Health Branch, Economy Division
United Nations Environment Programme**

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