WORLD INTELLECTUAL PROPERTY ORGANIZATION

GENEVA, SWITZERLAND

Patent Cooperation Treaty (PCT)

Application for Registration & Protection

of

The KHALIX® Process:

"Thermo-Catalytic Solvay Calcination and Carbonization of Continental Lithium Brine Residuals by Means of Ultra-High-Efficiency, Zero-Pollution Combined Heat, Power and Cooling (CHPC)"

Submitted by:

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DATE: Rev. 0: 9.9.20, Rev. 1: 12.3.21, Rev. 2: 3.28.22, Rev. 3: 7.14.22

ABSTRACT

The KHALIX® Process represents a novel natural scientific method for the ultra-efficient refining of Lithium.

By way of the strategic introduction of thermal energy and carbon dioxide from integrated Combined Heat, Power & Cooling (CHPC) operations into a Solvay Calcination & Carbonization system, previously problematic residual halogen salts are efficiently converted into value-added carbonate sodas.

Most notably, The KHALIX® Process' unique ingenuity establishes a true zeroEMISSIONS system with zero wastes of any kind. Accordingly, The KHALIX® Process offers new and significant economic, ecological and social benefits on a global scale.

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1. INTRODUCTION,
and Identification of Applicant

J. Garrett Smith, PE, United States of America, does hereby apply for Registration and Protection of the novel and proprietary KHALIX® Process with the United Nation's World Intellectual Property Organization in Geneva, Switzerland.

As described herein, The KHALIX® Process provides a uniquely clean, efficient and economically-advantageous means of streamlining Lithium refining from Continental Brine Solutions.

Smith, the sole author of this Process, is an award-winning, Professionally-Licensed Mechanical Engineer/Natural Scientist who has used his High-Functioning Autistic (Asperger's) gifts to craft over a dozen patents to dynamically resolve the world's gravest challenges in hunger, dehydration, disease, pollution and climate.

Smith is founder and CTO of CONCENTRIC Industries, Inc., a syndicated corporation with over $100 billion USD in 'greenTECH' developments contracted on all 7 Continents.

This application, its strategic timing, and the extraordinary importance of it, especially to the people of the Western South America countries of Argentina, Bolivia and Chile, cannot be overestimated.

Since 2013, in Hate Crimes Against Autism and unconscionable hyprocrisy against authentic sustainability, US State of Washington (not D.C.) government officials are illegally stealing Smith's Liberty as a weapon to hide their criminal theft of his Properties (personal, Corporate and Intellectual). US Agencies, including the USPTO, cannot be relied upon for security because Smith is currently restrained in the United States for a police-fabricated crime that did NOT really happen while multiple government officials perpetuate the sabotage of his avant-garde cleanTECH commerce, domestically and internationally.

Although multiple legal proceedings that demand Smith's deliverance are currently underway (reference: FaceBook - 'FREE JOHN GARRETT SMITH NOW'), the urgency of this innovation cannot be responsibly ignored or suppressed any longer.

The ecological AND economic benefits of the KHALIX® Process demand application and exposure while operating with lawful protection that is unavailable in the United States today.

2. PROBLEM,
and its Negative Impact

Lithium (Chemical Symbol 'Li', element Atomic Number 3 in the alkali metal column 1 of the Periodic Table) has unique electrochemical properties, including light weight, heat resistance, and propensity for electronic energy storage, that are driving an accelerating worldwide demand for increasing extraction from both of its main sources: (a) hard-rock minerals, and (b) underground saltwater solutions, a.k.a. 'Continental Brines'.

While the process described herein has been developed primarily for optimizing the refinement of these brines, the principles still apply to hard-rock refining.

Nevertheless, because Western South American high Andes deserts in the nations of Argentina (Salar del Hombre Muerto), Bolivia (Salar de Uyuni), and Chile (Salar de Atacama) contain as much as 40% of the world's known Lithium deposits, and as many as 80% of its total Brine reserves, the KHALIX® Process holds special relevance to that region.

Of course, the global demand for Lithium, especially in the battery industry, renders KHALIX® valuable to the whole world.

Bolivia alone has 1/6th (17%) of the world's Lithium reserves, but production rates remain stymied by political dysfunction wrought by colonial manipulation, and acute scientific challenges related to the effective (economic AND ecological) separation of metal chlorides (of sodium, potassium and magnesium, especially) from the dissolved Lithium Brines.

Bolivia's compounding disadvantages include a 4x concentration of magnesium over the lower altitude salt flats of Argentina and Chile, and associated higher rainfall, that further slows evaporation rates in the current practice of concentrating the Lithium, via catalytic precipitation and settling, to the industry-standard of 99.5% purity for battery-grade Lithium.

Amidst the world's most profound Lithium supplies, Bolivia remains the region's poorest country. It's as if habits borne from centuries of oppressive European and American colonialism relentlessly defy the ideals of "EL LIBERTADOR", the nation's namesake, **Simón Bolivár**.

As an integral part of CONCENTRIC's "All Gain Sum™" ideology, the KHALIX® strategy provides pragmatic hope for real prosperity in this beleaguered territory – economically, ecologically, socially and spiritually.

3. SOLUTION,
and its unprecedented uniqueness

The problems that KHALIX® methods are engineered to resolve are manifold: increasing the rate of Lithium refining while simultaneously decreasing/eliminating wastes from the process. Of course, these dual goals are mutual: increased process efficiency yields improved fiscal AND environmental performance, contemporaneously. Therefore, these gains open doors for authentic and durable social progress, as well.

The germane principle behind the KHALIX® Process is to use sound science to transform wastes into value-added products. While Lithium Carbonate (Li_2CO_3) remains the primary commodity to meet global demand (increasing from 2017 rates of 40,000 metric tonnes (2,205 lbs.) per year, from the 50 Million metric tonne global deposit reserves), the KHALIX® focus on the efficient refinement of residual wastes (by-products) is the pith of its performance.

Specifically, the multi-faceted optimization entails a total of twelve (12) end products (while eliminating all undesired wastes):

The KHALIX® Dozen™

I. < **6 CALCES** >

1. LITHIUM CARBONATE (Li_2CO_3)
2. MAGNESIUM SULFATE (EPSOM SALTS, $MgSO_4$)
3. CALCIUM CARBONATE (LIMESTONE, $CaCO_3$)
4. SODIUM BICARBONATE (BAKING SODA, $NaHCO_3$)
5. AMMONIUM BICARBONATE (BAKING POWDER, NH_4HCO_3)
6. POTASSIUM CARBONATE (POTASH, K_2CO_3)

II. < **6 SERENDIPITOUS PRODUCTS** >

7. SODIUM HYPOCHLORITE (HYDRAZINE SOLID FUEL, $H_2N.NH_2$)
8. PLANT FOODS (MICROGREENS)
9. FISH VIA AQUAZOE® (ZANDER, TILAPIA)
10. ALGAL BIOMASS VIA P.R. (SPIRULINA SPYROGYRA)
11. ELECTRIC ENERGY (AC AND STORED DC)
12. THERMAL ENERGY (HOT AND/OR CHILLED WATER AND/OR STEAM)

EXHIBIT ONE contains an engineering Process Flow Diagram (PFD) depicting the sequential integration of Combined Heat, Power & Cooling (CHPC) with Solvay Process calcination and carbonization of the array of brine refining residuals. *(The Solvay Process is eponymous for Ernest Solvay (1838-1922), the Belgian chemist who pioneered the method for "washing soda from salt").*

In essence, the "pieces of the puzzle" added by KHALIX® to the Continental Brine refining process are simple but profound: Heat + Carbon Dioxide (CO_2). Then, the surplus electricity and thermal energy (Heating & Cooling) are intelligently applied to a hybrid-strategic combination of BATTERY ENERGY STORAGE SYSTEMS (B.E.S.S.), and advanced NUTRIENT FILM TECHNIQUE (NFT) aquaponic production, with frequency-optimized lighting, for 'vertical farming' of micro-greens and other plants in an advanced-integrated system that uses 95% less water while yielding up to 400x more crops per acre than typical field agriculture.

The Solvay Process is the key to the transformation of presently undesirable (or 'undervalued') residuals from typical brine slurry processing practices, and CONCENTRIC's state-of-the-art Bushnellian CHPC technologies provide impetus for the Solvay dynamics.

By directly providing hot (engine exhaust) carbon dioxide-rich gas to the concentrated chloride solutions of Magnesium, Sodium and Potassium, that have been saturated with urea (ammonia), calcined carbonates ($MgCO_3$, $NaHCO_3$, and K_2CO_3) are forged.

The remnant weak hydrochloric acid is dissolved into hypochlorous acid (HOCl), which is readily esterified into the salt, Sodium Hypochlorite (NaHOCl), and mixed with Ammonia (NH_3) to synthesize HYDRAZINE ($H_2N.NH_2$) solid fuel (that can be disassociated into H_2 and N_2 gases over an Iridium catalyst).

The option is now available to conduct an ion exchange between the $MgCO_3$ and the $CaSO_4$ (calcium sulfate, or 'gypsum') precipitated and filtered out of the concentrated Li_2SO_4 + CaO (lime) solution, to form $CaCO_3$ (limestone) and $MgSO_4$ (EPSOM Salts), for cement and fertilizer use, respectively. Note that this exchange is an option because the $CaSO_4$ is usable as gypsum, as is the $MgCO_3$ for building material aggregate.

Similarly, the division of the use of both Heat and Power for the CHPC system can readily be scaled at system sizing and deployed during operations to provide (a) sufficient thermal energy and CO_2 for the Solvay Process, and (b) surplus electricity and heating/cooling for supplemental Battery Energy Storage Systems (BESS) and the aquaZOE® aquaponics system, after all parasitic loads of the Lithium refinery itself are met.

Regarding prime mover selection, reciprocating engines offer superior efficiency over turbines in the sub-20 MW class, while sufficiently providing thermal energy from exhaust (typically 900-1000 °F / 480-540 °C) and engine block coolers (typically at 185-195 °F / 85-90 °C) for both the Solvay calcination and auxiliary heating and cooling (via adsorption chilling) needs of the overall facility.

EXHIBIT ONE depicts oil (Diesel)-fired internal combustion engines (I.C.E.) as the prime movers-of-choice for the high-altitude (> 8,000 feet / > 2,400 meters ASL) applications in the Andean Puna de Atacama where their derating is less severe than for external combustion turbines.

BUSHNELL SCIENTIFIC, holder of one of "*The Seven Optimizations*™" in CONCENTRIC's "NAUTILUS ENERGY ALLIANCE", is the strategic engineer for arrowheading each custom CHPC application. Flue gases are comprehensively scrubbed via Selective Catalytic Reduction (SCR) for NO_x, Oxidation Catalyst (OxCat) for CO, and Flue Gas Desulfurization (FGD) for S_2, before delivery to the Solvay System.

Upon exhaust temperature reduction following heat transfer to the Solvay Process, all surplus CO_2 is directed to CONCENTRIC's Photosynthetic Regeneration (P.R.) algae harvesters for true ZEROemissions operations.

Note also that whereas lean-burnable gaseous fuel (natural gas, Woodgas, biogas, etc.) engines may be more suitable in some applications where such fuels are available, it is envisioned that Lithium mining/refining sites will be remote so that tank-stored diesel distillates will be most practical. Additionally, with the full array of ZEROpollution abatement systems from CONCENTRIC Industries, the presumed anathema to diesel-cycle operation is rendered erroneous and based only on mis-information.

Of course, site-specific optimization will determine the count and size of engines, and associated thermal recovery equipment, for each application, and the reliability/availability advantages of multi-unit redundancy (e.g. 6 modular units) will prevail.

4. CLAIMS,
Numbered Claims Describing the Inventive Steps

< Natural Scientific Irony: The Synthesis of Good from Apparently bad >

The primal claim of The KHALIX® Process is the conversion of presumed wastes from the refining of lithium brines and mineral reserves into value-added commodities.

The sublime irony of KHALIX® is epitomized by the fact that the two (2) core drivers of this restoration are, themselves, presumed villains: *Heat & Carbon Dioxide*.

Herein lies the patent uniqueness of the invention: a 'negative' times a 'negative' really is a 'positive' ... twelve (12) of them, to be precise, "The KHALIX® Dozen":

Claim #1. Superior synthesis of Lithium Carbonate (Li_2CO_3)

The germane goal of Lithium Carbonate synthesis remains the same, only with The KHALIX® Process, the stable powder is produced faster by the forced thermal evaporation that increases the rate of concentration of the Lithium Sulfate precipitate.

The consistent addition of Lime catalyzes the separation into Lithium Carbonate and the heretofore undesirable residual halogen-alkali chlorides of Magnesium, Potassium and Sodium. Finally, cooling and heating from the integrated CHPC system optimize the final processing of the Lithium Carbonate for delivery.

Claim #2. Novel synthesis of Magnesium Sulfate / EPSOM Salts ($MgSO_4$)
and
Claim #3. Novel synthesis of Calcium Carbonate / Limestone ($CaCO_3$)

Two of the elemental by-products from the introduction of Lime in step #1 are (a) Calcium Sulfate, or "Gypsum", and (b) Magnesium Carbonate. While usable in their own right, these two compounds are more valuable upon hydraulic ion-exchange to forge (c) Magnesium Sulfate, or "EPSOM Salts". and (d) Calcium Carbonate, or "Limestone".

The remaining three (3) calces derived from The KHALIX® Process are the direct result of the integrated Solvay Calcination & Carbonization that is simply, yet powerfully, driven by the strategic provision of *Heat & Carbon Dioxide* from the integrated CHPC system.

In this instant application of Ernest Solvay's robust method for "*washing soda from salt*" that yields profound future ramifications, those 'sodas' are ubiquitous carbonates and the 'salts' are equally as ubiquitous chlorides:

Claim #4. Novel synthesis of Sodium BiCarbonate / Baking Soda ($NaHCO_3$)

Sodium naturally bonds to the HCO_3 hydrocarbon radical, whose elements are copiously supplied in the Carbon Dioxide.

Claim #5. Novel synthesis of Ammonium BiCarbonate / Baking Powder (NH_4HCO_3)

Ammonia (added via injected urea that is contemporaneously used in the CHPC exhaust Selective Catalytic Reduction (SCR) deNOx system) naturally bonds to the HCO_3 hydrocarbon radical, whose elements are copiously supplied in the Carbon Dioxide.

Claim #6. Novel synthesis of Potassium Carbonate / Potash (K_2CO_3)

Potassium naturally bonds to the CO_3 carbonylic radical, whose elements are copiously supplied from the Carbon Dioxide.

Claim #7. Novel synthesis of Sodium Hypochlorite - Hydrazine / Solid Fuel ($H_2N.NH_2$)

The remnant chloric acids are dissolved further into iso-hypochlorous acid which is readily esterified into the stabilized salt, Sodium Hypochlorite, and finally mixed with more ammonia (from the same urea supply) to synthesize HYDRAZINE solid fuel. Later,

in the presence of an Iridium catalyst, this $H_2N.NH_2$ solid fuel can be disassociated into pure H_2 and N_2 gases, respectively, for fuel and corrosion-prohibition use, respectively.

Claim #8. Novel synthesis of Plant Foods / microGREENS
and
Claim #9. Novel synthesis of Fish / aquaZOE™ (Zander, Tilapia)

Green Produce and Pescal Proteins cultivated in the aquaZOE™ Nutrient Film Technique aquaponics system are the natural products of the controlled water and nutrient environments. Notably, these environments are uniquely established by (a) water temperature control via heat/cool exchangers from the CHPC system, for optimized fish health, in the range of 85-95°F (30-35°C), and (b) fertilizer (primarily Nitrates in the range of 40-160 mg/L (ppm) from fish refuse, for optimized plant growth, whose quantities are monitored by real-time Instrumentation & Control (I & C) Supervisory Control And Data Acquisition (SCADA) networks with Programmable Logic Controllers (PLCs) that are integral to CONCENTRIC's **BUSHNELL SCIENTIFIC** advanced CHCP system.

The concept of using an optimized and wholly integrated aquaponics system as a healthy food producer while simultaneously serving as a 'heat sink' for a CHPC system is uniquely germane to CONCENTRIC's KHALIX® process.

This is simply yet another instance of a serendipitous bonus, indeed, even a classic Quechuan lagniappe, embedded in the novel KHALIX® method.

Claim #10. Novel synthesis of Algal Biomass / Spirulina Spyrogyra

Furthermore, the ingrained feature of total sequestration and conversion of all residual CO_2 not consumed by the Solvay part of the KHALIX® process into valuable algal biomass proteins is yet another testament to the uniquely comprehensive engineering ingenuity of The KHALIX® Process.

COGENCY SYNDICATED is CONCENTRIC's wholly-owned subsidiary that holds exclusive rights to the "*Photosynthetic Regeneration*" construct that uses Deep Water Closed Loop Reactors (DWCLR) to foster, cultivate and harvest an average of 180 g/m²-day on a scale of 2,000 tons/year for every MegaWatt of gross fired power generation productin.

Claim #11. Novel integration of THERMAL ENERGY - Hot and/or Chilled Water, and/or Steam

Following the priority delivery of Heat & Carbon Dioxide to the Solvay part of the KHALIX® process, Heating (via Steam and/or Hot Water) and/or Cooling (derived on demand via adsorption chillers) is intelligently distributed to support subsystem operations.

Bushnellian thermal load matching, a.k.a. 'right-sizing' strategies, prevail for the thermal energy design as the focus of engineering optimization of the CHPC support system.

Claim #12. Novel integration of ELECTRICAL ENERGY – Electricity (AC and Stored DC)

Surplus electricity in excess of KHALIX® needs is delivered for grid sales and/or preserved in on-site Battery (Lithium-Ion, of course) Energy Storage Systems (B.E.S.S.).

< The polymathic elegance of KHALIX® IS the very basis of its ultimate Claim to consilient totality that is, at once, wholly unique AND patently unsurpassed in the Lithium refining industry. >

5. CONCLUSION, Why Protection of this I.P. is Especially Vital Now

The technical merits of the KHALIX® Process are axiomatic – the unprecedented results speak for themselves: greater yield in less time and total elimination/conversion of wastes.

Quantitatively, the modular system is scalable to match the processing needs of any refinery size because all surplus electricity after thermal matching to the Solvay demand can be readily assigned to the adjacent aquaZOE® aquaponics operation and/or to B.E.S.S.

The economic and ecological benefits of the KHALIX® Process are remarkable. But the primal and most cogent value of this strategy at this time rides in its momentous socio-political power. Socially, KHALIX® builds communities because it provides high-quality work in purposeful pursuits in the inherently healthy fields of clean Energy and Agriculture. Politically, KHALIX® provides the dynamic Nations of the great Inca Empire, especially Bolivia, with the power of autonomy. The independent pursuit of, and benefit from, the provision of Lithium, the "White Gold" of the 21st Century, promise to revitalize this awesome part of the world.

Especially while the United States reels from the bitter consequences of its "debt-trap diplomacy" schemes of the 19th-20th Centuries, and a culture of self-centered victimization makes sport of the tyrannical restraint of the author of this application, the United Nations now has the unique opportunity to vibrantly champion its UNIVERSAL DECLARATION OF HUMAN RIGHTS (1948) on a globally-visible scale.

In 1903, R.C.K. Diesel published "SOLIDARISMUS" to face and resolve the iconic ironic **"Technology & Society"** Paradox:

'Q: Why is there a greater output of goods, yet intensified physical and spiritual poverty?

A: To find solidarity, the mass of humanity must become part owners in the sources of production.'

Diesel's insight in the midst of the Industrial Revolution was timely yet also prescient. The KHALIX® resolution to threats to Quality Of Life (QOL) by means of establishing equitable ownership rights in state-of-the-art technologies is timeless in its importance.

Yet this value exceeds even the cultivation of authentic prosperity in Andean Civilization where globally-important natural Lithium resources are in abundant supply.

The strength of KHALIX® is in the elegance of its simple and Natural Applied Science, and its backbone is the employee-ownership, profit-sharing structure of its deployment within the CONCENTRIC business model.

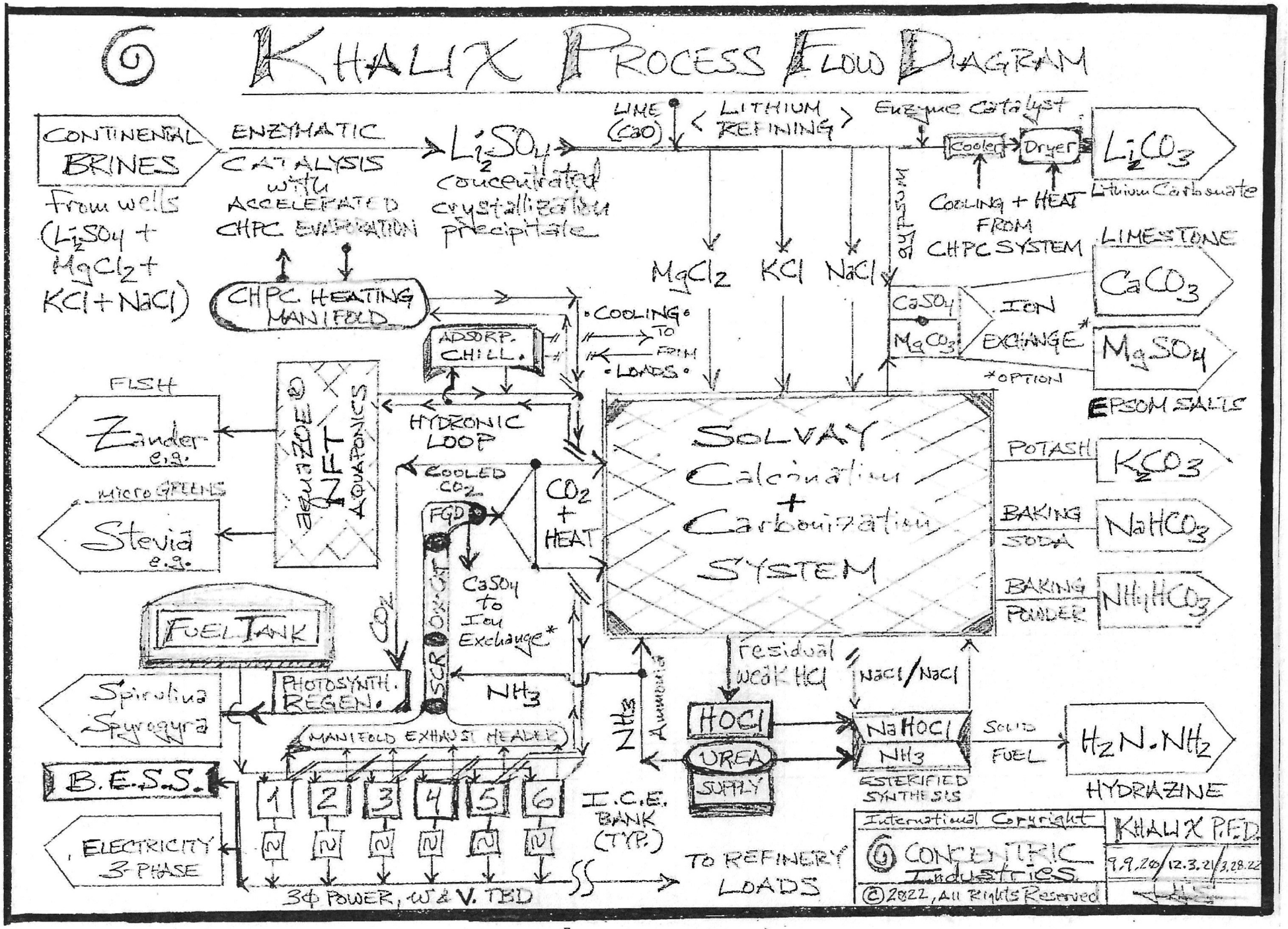
With solidarity must also come Meritocracy, and this is where CONCENTRIC and KHALIX® bring sublime performance-based Commonwealth marked by sustainable, durable, and true success for South America as a model for the whole world.

jgsPE, 7.14.22, America

EXHIBIT ONE – Process Flow Diagram (PFD)

Technical Description of THE KHALIX® PROCESS

KHALIX PROCESS FLOW DIAGRAM



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6. Potassium Carbonate (Potash, K_2CO_3)

II. < **6 Serendipitous Products** >

7. Sodium Hypochlorite (Hydrazine Solid Fuel, $H_2N.NH_2$)
8. Plant Foods (microGREENS)
9. Fish via aquaZOE® (Zander, Tilapia)
10. Algal Biomass via P.R. (Spirulina spyrogyra)
11. Electric Energy (AC and stored DC)
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Similarly, the division of the use of both Heat and Power for the CHPC system can readily be scaled at system sizing and deployed during operations to provide (a) sufficient thermal energy and CO_2 for the Solvay Process, and (b) surplus electricity and heating/cooling for supplemental Battery Energy Storage Systems (BESS) and the aquaZOE® aquaponics system, after all parasitic loads of the Lithium refinery itself are met.

Regarding prime mover selection, reciprocating engines offer superior efficiency over turbines in the sub-20 MW class, while sufficiently providing thermal energy from exhaust (typically 900-1000 °F / 480-540 °C) and engine block coolers (typically at 185-195 °F / 85-90 °C) for both the Solvay calcination and auxiliary heating and cooling (via adsorption chilling) needs of the overall facility.

EXHIBIT ONE depicts oil (Diesel)-fired internal combustion engines (I.C.E.) as the prime movers-of-choice for the high-altitude (> 8,000 feet / > 2,400 meters ASL) applications in the Andean Puna de Atacama where their derating is less severe than for external combustion turbines.

BUSHNELL SCIENTIFIC, holder of one of "*The Seven Optimizations*™" in CONCENTRIC's "NAUTILUS ENERGY ALLIANCE", is the strategic engineer for arrowheading each custom CHPC application. Flue gases are comprehensively scrubbed via Selective Catalytic Reduction (SCR) for NO_x, Oxidation Catalyst (OxCat) for CO, and Flue Gas Desulfurization (FGD) for S_2, before delivery to the Solvay System.

Upon exhaust temperature reduction following heat transfer to the Solvay Process, all surplus CO_2 is directed to CONCENTRIC's Photosynthetic Regeneration (P.R.) algae harvesters for true ZEROemissions operations.

Note also that whereas lean-burnable gaseous fuel (natural gas, Woodgas, biogas, etc.) engines may be more suitable in some applications where such fuels are available, it is envisioned that Lithium mining/refining sites will be remote so that tank-stored diesel distillates will be most practical. Additionally, with the full array of ZEROpollution abatement systems from CONCENTRIC Industries, the presumed anathema to diesel-cycle operation is rendered erroneous and based only on mis-information.

Of course, site-specific optimization will determine the count and size of engines, and associated thermal recovery equipment, for each application, and the reliability/availability advantages of multi-unit redundancy (e.g. 6 modular units) will prevail.

4. CLAIMS,
Numbered Claims Describing the Inventive Steps

< Natural Scientific Irony: The Synthesis of Good from Apparently bad >

The primal claim of The KHALIX® Process is the conversion of presumed wastes from the refining of lithium brines and mineral reserves into value-added commodities.

The sublime irony of KHALIX® is epitomized by the fact that the two (2) core drivers of this restoration are, themselves, presumed villains: *Heat & Carbon Dioxide*.

Herein lies the patent uniqueness of the invention: a 'negative' times a 'negative' really is a 'positive' ... twelve (12) of them, to be precise, "The KHALIX® Dozen":

Claim #1. Superior synthesis of Lithium Carbonate (Li_2CO_3)

The germane goal of Lithium Carbonate synthesis remains the same, only with The KHALIX® Process, the stable powder is produced faster by the forced thermal evaporation that increases the rate of concentration of the Lithium Sulfate precipitate.

The consistent addition of Lime catalyzes the separation into Lithium Carbonate and the heretofore undesirable residual halogen-alkali chlorides of Magnesium, Potassium and Sodium. Finally, cooling and heating from the integrated CHPC system optimize the final processing of the Lithium Carbonate for delivery.

Claim #2. Novel synthesis of Magnesium Sulfate / EPSOM Salts ($MgSO_4$)
and
Claim #3. Novel synthesis of Calcium Carbonate / Limestone ($CaCO_3$)

Two of the elemental by-products from the introduction of Lime in step #1 are (a) Calcium Sulfate, or "Gypsum", and (b) Magnesium Carbonate. While usable in their own right, these two compounds are more valuable upon hydraulic ion-exchange to forge (c) Magnesium Sulfate, or "EPSOM Salts". and (d) Calcium Carbonate, or "Limestone".

The remaining three (3) calces derived from The KHALIX® Process are the direct result of the integrated Solvay Calcination & Carbonization that is simply, yet powerfully, driven by the strategic provision of *Heat & Carbon Dioxide* from the integrated CHPC system.

In this instant application of Ernest Solvay's robust method for "*washing soda from salt*" that yields profound future ramifications, those 'sodas' are ubiquitous carbonates and the 'salts' are equally as ubiquitous chlorides:

Claim #4. Novel synthesis of Sodium BiCarbonate / Baking Soda ($NaHCO_3$)

Sodium naturally bonds to the HCO_3 hydrocarbon radical, whose elements are copiously supplied in the Carbon Dioxide.

Claim #5. Novel synthesis of Ammonium BiCarbonate / Baking Powder (NH_4HCO_3)

Ammonia (added via injected urea that is contemporaneously used in the CHPC exhaust Selective Catalytic Reduction (SCR) deNOx system) naturally bonds to the HCO_3 hydrocarbon radical, whose elements are copiously supplied in the Carbon Dioxide.

Claim #6. Novel synthesis of Potassium Carbonate / Potash (K_2CO_3)

Potassium naturally bonds to the CO_3 carbonylic radical, whose elements are copiously supplied from the Carbon Dioxide.

Claim #7. Novel synthesis of Sodium Hypochlorite - Hydrazine / Solid Fuel ($H_2N.NH_2$)

The remnant chloric acids are dissolved further into iso-hypochlorous acid which is readily esterified into the stabilized salt, Sodium Hypochlorite, and finally mixed with more ammonia (from the same urea supply) to synthesize HYDRAZINE solid fuel. Later,

in the presence of an Iridium catalyst, this $H_2N.NH_2$ solid fuel can be disassociated into pure H_2 and N_2 gases, respectively, for fuel and corrosion-prohibition use, respectively.

Claim #8. Novel synthesis of Plant Foods / microGREENS
and
Claim #9. Novel synthesis of Fish / aquaZOE™ (Zander, Tilapia)

Green Produce and Pescal Proteins cultivated in the aquaZOE™ Nutrient Film Technique aquaponics system are the natural products of the controlled water and nutrient environments. Notably, these environments are uniquely established by (a) water temperature control via heat/cool exchangers from the CHPC system, for optimized fish health, in the range of 85-95°F (30-35°C), and (b) fertilizer (primarily Nitrates in the range of 40-160 mg/L (ppm) from fish refuse, for optimized plant growth, whose quantities are monitored by real-time Instrumentation & Control (I & C) Supervisory Control And Data Acquisition (SCADA) networks with Programmable Logic Controllers (PLCs) that are integral to CONCENTRIC's **BUSHNELL SCIENTIFIC** advanced CHCP system.

The concept of using an optimized and wholly integrated aquaponics system as a healthy food producer while simultaneously serving as a 'heat sink' for a CHPC system is uniquely germane to CONCENTRIC's KHALIX® process.

This is simply yet another instance of a serendipitous bonus, indeed, even a classic Quechuan lagniappe, embedded in the novel KHALIX® method.

Claim #10. Novel synthesis of Algal Biomass / Spirulina Spyrogyra

Furthermore, the ingrained feature of total sequestration and conversion of all residual CO_2 not consumed by the Solvay part of the KHALIX® process into valuable algal biomass proteins is yet another testament to the uniquely comprehensive engineering ingenuity of The KHALIX® Process.

COGENCY SYNDICATED is CONCENTRIC's wholly-owned subsidiary that holds exclusive rights to the "*Photosynthetic Regeneration*" construct that uses Deep Water Closed Loop Reactors (DWCLR) to foster, cultivate and harvest an average of 180 g/m²-day on a scale of 2,000 tons/year for every MegaWatt of gross fired power generation productin.

Claim #11. Novel integration of THERMAL ENERGY - Hot and/or Chilled Water, and/or Steam

Following the priority delivery of Heat & Carbon Dioxide to the Solvay part of the KHALIX® process, Heating (via Steam and/or Hot Water) and/or Cooling (derived on demand via adsorption chillers) is intelligently distributed to support subsystem operations.

Bushnellian thermal load matching, a.k.a. 'right-sizing' strategies, prevail for the thermal energy design as the focus of engineering optimization of the CHPC support system.

Claim #12. Novel integration of ELECTRICAL ENERGY – Electricity (AC and Stored DC)

Surplus electricity in excess of KHALIX® needs is delivered for grid sales and/or preserved in on-site Battery (Lithium-Ion, of course) Energy Storage Systems (B.E.S.S.).

< The polymathic elegance of KHALIX® IS the very basis of its ultimate Claim to consilient totality that is, at once, wholly unique AND patently unsurpassed in the Lithium refining industry. >

5. CONCLUSION, Why Protection of this I.P. is Especially Vital Now

The technical merits of the KHALIX® Process are axiomatic – the unprecedented results speak for themselves: greater yield in less time and total elimination/conversion of wastes.

Quantitatively, the modular system is scalable to match the processing needs of any refinery size because all surplus electricity after thermal matching to the Solvay demand can be readily assigned to the adjacent aquaZOE® aquaponics operation and/or to B.E.S.S.

The economic and ecological benefits of the KHALIX® Process are remarkable. But the primal and most cogent value of this strategy at this time rides in its momentous socio-political power. Socially, KHALIX® builds communities because it provides high-quality work in purposeful pursuits in the inherently healthy fields of clean Energy and Agriculture. Politically, KHALIX® provides the dynamic Nations of the great Inca Empire, especially Bolivia, with the power of autonomy. The independent pursuit of, and benefit from, the provision of Lithium, the "White Gold" of the 21st Century, promise to revitalize this awesome part of the world.

Especially while the United States reels from the bitter consequences of its "debt-trap diplomacy" schemes of the 19th-20th Centuries, and a culture of self-centered victimization makes sport of the tyrannical restraint of the author of this application, the United Nations now has the unique opportunity to vibrantly champion its UNIVERSAL DECLARATION OF HUMAN RIGHTS (1948) on a globally-visible scale.

In 1903, R.C.K. Diesel published "SOLIDARISMUS" to face and resolve the iconic ironic "**Technology & Society**" Paradox:

'Q: Why is there a greater output of goods, yet intensified physical and spiritual poverty?

A: To find solidarity, the mass of humanity must become part owners in the sources of production.'

Diesel's insight in the midst of the Industrial Revolution was timely yet also prescient. The KHALIX® resolution to threats to Quality Of Life (QOL) by means of establishing equitable ownership rights in state-of-the-art technologies is timeless in its importance.

Yet this value exceeds even the cultivation of authentic prosperity in Andean Civilization where globally-important natural Lithium resources are in abundant supply.

The strength of KHALIX® is in the elegance of its simple and Natural Applied Science, and its backbone is the employee-ownership, profit-sharing structure of its deployment within the CONCENTRIC business model.

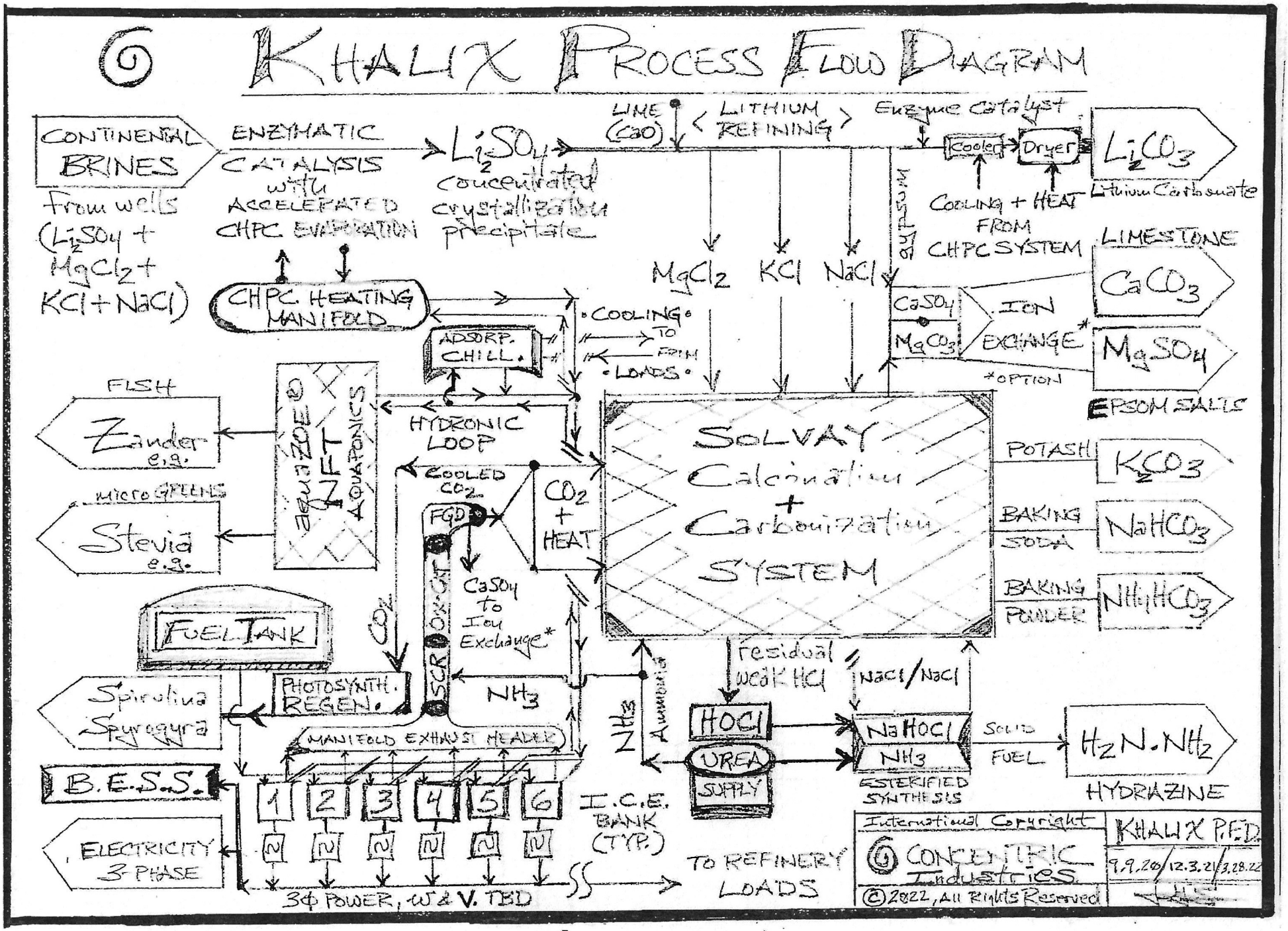
With solidarity must also come Meritocracy, and this is where CONCENTRIC and KHALIX® bring sublime performance-based Commonwealth marked by sustainable, durable, and true success for South America as a model for the whole world.

jgsPE, 7.14.22, America

EXHIBIT ONE – Process Flow Diagram (PFD)

Technical Description of THE KHALIX® PROCESS

KHALIX PROCESS FLOW DIAGRAM



KHALIX P.F.D.
9.9.20 / 12.3.21 / 3.28.22