

Article

# **NATURALLY FORMED NEPHELINE SYENITE ALUMINO-SILICATE [AL<sub>2</sub>O<sub>3</sub>/SiO<sub>2</sub>] HIGH PERFORMANCE Roman Cement ‘PASTE’ IS BEING LEFT BEHIND IN A ONE-SIDED CONTROLLED RACE TO REPLACE EXCESSIVE HIGH GREENHOUSE GAS [GHG] PRODUCTION, CAUSED BY THE MANUFACTURING OF AN OUT-OF-DATE PORTLAND CEMENT**

By Sharon Ehlman

A MININGMAGAZINES.COM WHITE PAPER IN A PASSWORD PROTECTED PDF INTENDED FOR PEER REVIEW DISTRIBUTION FOR “CORRECTIVE” COMMENTS ON DELIVERING A NON-PROPRIETARY HOME BUILDING MATERIAL USED TO PROTECT ORDINARY HUMAN BEINGS AGAINST CATASTROPHIC CLIMATE CHANGE COLLAPSE..

## **A HISTORICAL INTRODUCTION**

**A** CURIOUS THING HAPPENS WHEN DISCUSSING ‘GEO-LOGICAL’ TIME divided into Epochs and Ages — even amongst those that profess to understand the earth sciences. We also collectively like to think that a solid bit, of a solid rock, chip of rock sample that can be seen to be different, even without a examination glass, tossed to another for a scratch, feel, taste, field test that really does not really apply to the advertising industry standard of trust of, “solid as a big rock”, something not being that important today during an emerging of nano technology breakthroughs becoming “breaking news”, with answers to combat disputed political battles using “Global Warming” dis-information to cover-over the cause and effect of [NASA’s proven Climate Change Evidence: Vital Signs of the Planet.](#)

Just as Oregon’s “big” plutonic plug, pipe, or sill deposit of Nepheline Syenite, identified as an Alimino-Silicate, containing the Rare Earth’s of Lanthamun and Cerium identified by the Bureau of Mines Research Facility in Albany Oregon —since closed by Congress as a costs savings?

A typical [“conservative” miscalculation](#) that directly benefited China’s Rare Earths superiority when it comes to Electric Vehicle motors and batteries that already have shown a measurable difference in turning back the Global Warming Greenhouse Gas Doomsday Clock —something that apparently cannot be accomplished by the political energy wasted by talking-head flapping lips.

This unique, large, and until recently unknown Nepheline / Feldspathic nano science Cement, identified with two light REEs supporting the pyroclastic flows [think Obsidian and volcanic Tuff] Nepheline Syenite roles in modern glass resistance and an unexplored oxide that allows the selective absorption of ultraviolet light.

Through the BM/USGS “glassy” volcanic research on the unique Table Mountain

ore we are just now beginning to understand that as  $\text{SiO}_2$  —naturally soluble— Atomic Weight # 14, when combined with  $\text{Al}_2\text{O}_3$  Atomic Weight 13, —another unusual naturally soluble part of Nepheline polycondensation happening— where Aluminum oxide reacts with Silicon dioxide to produce aluminum silicate.

Lately this natural mixture has been defined as a **Calcium-Aluminum-Silicate-Hydrate** “cement binder” — also is being labeled the (CASH) formula— of a rare zeolite association that other papers are now reporting to be the lost (NP) or **Natural Pozzolina** ingredient of a historic super-strength hydraulic Roman Concrete.

This volcanic produced C-A-S-H density of the matrix is what China, Russia, France, Holland recognized as having importance when developing their medium light “geopolymer” cement for 3D printing systems of affordable housing.

It appears in a lack of publicly published (or affordable priced) papers that America is falling behind on true geopolymer concrete research needed to build [incredible long span bridges](#) over the [Great Gorges of China](#) and dealing with an Alaskan style permafrost by using raised pylons of a “special concrete” poured into a wintertime frozen ice mold on a [railway headed to Tibet](#), or a ‘Chunnal’ under the Bering Sea to connect with an extended Trans-Siberian rail system linking New York/London; and what was happening in Russia, China, Africa, Egypt, and especially Australia — where engineering breakthroughs in [3D geopolymer cement /concrete house design](#) and the [World’s first public building with structural Geopolymer Concrete](#), apparently do not impress New World financiers more interested in flipping bitcoins for fun and profit.

## A “C-A-S-H” FORMULA NATURAL POZZILINA SIDEBAR

**O**NE OF THE CURIOUS SELF-SERVING SCIENTIFIC TWISTS HOLDING BACK the re-invention of a Roman Cement Polymer in a so-called sophisticated country where just about every US paper released for public investment of adversing purposes concerning concrete breakthroughs is through the use of smart concrete “F-class coal dust fly ash”, which is **not a natural volcanic pozzilina**.

And, somehow, an endorsement of an 1800-1900s clear-air polluting Portland Cement Association listing monopolistic standards today have become the authority when it comes to just anyone applying for a government infrastructure contracts, or justifying the issue of so called “carbon credits” for reducing greenhouse gas pollution.

The truth is — the use of a “sustainable” for being a “low cost” recyclable F-Fly (Coal) Ash to somehow reduce the Greenhouse Gas [GHG] Production caused by the

manufacturing of Portland Cement, is flawed engineering. The (coal) fly ash [Al 3.59-5.93, and Si 36.63-39.09 percentages ratio] used to replace nature's supply of a superior volcanic fly ash of a correct  $\text{Al}_2\text{O}_3 / \text{SiO}_2$  Table Mountain Natural Nepheline Syenite pozzilina ratio of a near twenty percent Alumina, with nearly sixty percent Silica — which also has a desirable  $\text{TiO}_2$  addition, where the replacement of 1% in ordinary cement has shown an increased compressive strength by 8 percent.

According to Qiang Yuan, ... Cong Ma, in [CIVIL ENGINEERING MATERIALS, 2021](#)

“Natural pozzolans —The reactive chemical compositions of natural protozoans are silica ( $\text{SiO}_2$ ), alumina ( $\text{Al}_2\text{O}_3$ ), and iron oxide ( $\text{Fe}_2\text{O}_3$ ). The sum of these three oxides is required to a minimum value of 70% by mass for a suitable pozzolan.”

Adding up Table Mountain Nepheline Syenites' Natural Pozzilina  $\text{Al}_2\text{O}_3 / \text{SiO}_2 / \text{Fe}_2\text{O}_3$  to a mass of 78.57% safely validates this as the superior chemistry of all suggested pozzolan substitutes. This paper also answers a mystery about Pozzolanic materials of *“volcanic origin, which may be found in loose (incoherent) or compacted (coherent) forms in nature. The latter results from the post depositional processes such as weathering, compaction, cementation, and hardening of the originally loose material. These processes may change the original structure into clayey or zeolitic character.”*

As the manufacturing of a synthetic fly ash substitute is done by scraping [dangerous black carbon dust](#) from the smokestack of a coal burning electrical generating facility is not something out of the Industrial Age that should be “Green Washed” for Digital Age credits that only benefit institutional investment style advertising..

See, Prof. Dr. Joseph Davidovits French based Geopolymer Institute dramatic paper in a pass-along PDF, worrying about Australia as: [A continent is on fire. STOP promoting fly-ash based cements!](#)

## POSSIBILITIES LOOKING PAST “GREEN, AFFORDABLE HOUSING”

**So, WHAT IF SOME GRAD STUDENT IN AN UNDERFUNDED INDIA/PAKISTAN EDUCATIONAL INSTITUTION** were to consider that the “dirty” Silica in the smart roof and geopolymer walls, and following a 26 year-old Albert Eisenstein's —discredited at the time— interest of the “photoelectric effect” of ultraviolet light knocking electrons off the surface of a piece of metal, noted in a 1905 paper on the “Photovoltaic Effect’ which really became part of his 1921 Nobel Prize in Physics. Where 100 years later his Albert's Asperger's thinking finally understood as seeing solar light promising, just in time, to replace the carbon energy we burn from a depleting stockpile of coal, oil, natural gas.

And what if, an Iranian student familiar with his country's similar chemistry to the Table Mountain Nepheline Syenite deposit goes past building a nuclear waste, self healing, glass casket as used by redacted at redacted, took a look at sealing, to protect the parts-per-million chemical invasion of safe drinking water from the use of lead pipes, by an endoscopic inserted geopolymer hydrate Nepheline Syenite interior sleeve seal-coat, as there are a lot of 'Flint townships' in all the developing world.

Of course, using the very same material that filters swimming pools and aquariums, and safely transferred by flushing waste from an imported nepheline "white china" ceramic toilet, and a long-time tested use of nepheline slimes in leak-proof raw sewage system pipes? Other possible uses in need of research is "Nepheline + Graphene".

Barry Murray's use of proceeds and material delivery from [ECO-Mining-Milling Limited Cooperative Association](#) is already spoken for as an yet unorganized employee owned [FloatKrete.com](#) natural insulation tilt-up walls making a difference in fire, flood, wind proof, affordable housing— perhaps a part of [ECO-Housing-America.com](#).

And then the [explorer](#) has plans to experiment with an unsinkable, ceramic, bullet proof, Nepheline Syenite "FloatKrete" sailing catamaran (with solar auxiliary power) to make his boyhood adventurous dream of doing a circumnavigation on a proof of a concept voyage, totally (with the help of a few new friends) a DIY adventure.

## EARLY USA NEPHELINE SYENITE REPORTS

**T**HE FIRST PUBLICLY ACCESSIBLE PUBLISHED REPORT IDENTIFYING the uniqueness of Oregon's Table Mountain Nepheline Mineral Materials Deposit was a [GEOLOGICAL SURVEY PROFESSIONAL PAPER 840](#), Descriptions and Analyses of Eight New USGS Rock Standards, Compiled and edited by F. J. FLANAGAN.

The importance of this was the Table Mountain Peralakaline Nepheline Natural Fly-Ash in a mineable Alumino-Silicate form. With a Moh 6 hardness in wide jointed uniform blocks making is somewhat difficult to channel chip sample, this mineral was no longer a mineral thought of by some geologists as a "Iguessyouareright", of the family of "Leaveitrightthere"!

Then the very aware State of Oregon Department of Geology and Mineral Industries published, in 1973, ENVIRONMENTAL GEOLOGY of LINCOLN COUNTY, OREGON chapter in [Bulletin 81, defined the ECONOMIC MINERAL RESOURCES, at that time.](#)

This very professional Nepheline Syenite study recognized for having a weight of

159.2 pounds per cubic foot in wide spaced jointed blocks of “Nepheline Syenite jetty stone” —was just one of 14 other identified “Swiss Army knife” commercial uses. Back then the assumed raw material base level, in place, market value was considered be \$15 per ton. Which, when using a cumulative inflation rate 400%, works out to be \$75 per ton, today, at the start of 2022.

Barry Murray ([TheProspector.com](http://TheProspector.com)) first staked Table Mountain in partnership with a geologist attending Law school, for an easy sale to a small business set-aside contractor. When that venture fell through the cracks in favor of a very large construction business, the freshly minted Attorney was forced to divest as he was hired by the BLM to review Mineral Plans of Action, very similar to what was submitted, below. After a few years in Washington D.C., he was offered a prestigious legal firm partnership to deal with the Mining Law of 1872. Unfortunately, after Barry lost his Mining Lawyer father, his former partner could not offer advice beyond that of it should be a “slam dunk” — for conflict of interest to his firm. But, this connection did lead to something new.

In 2005 RIA [APPLIED RESEARCH LABORATORY](#) (RARL), which included a Russian Nepheline Syenite expert who could demonstrate to investors how the Alumino-Silicate could foam into useful products, attracted capital from worldwide sources.

March 2006 RIA MINES INC published a [FEASIBILITY STUDY](#), by Tomas Manton, a former professor of International Business at the University of Washington in Seattle, who logically assumed that the Table Mountain Nepheline Syenite was the equivalent of 3M’s Arkansas deposit being used for a fire resisting roofing material.

And, as explained in a [PRESENTATION TO THE SINGAPORE GOVERNMENT](#), Tomas Manton, after bulk samples were sent to requesting main-stream corporations wanting to actually build something, instead of just playing credit-default-swap-insider-trader stock games, was pursuing project funding, world wide, presenting Nepheline Syenite as a magic answer to Tsunami relief, and replacing fishing boats, lightweight armor for Humvees, nuclear waste containers, and solar powered lightweight foam coolers for 3rd world villages. Also included in the package was a conditional purchase order from a paint company wanting nepheline as a glass-like surface to save bunker fuel moving very-large tankers about. But, the RIA corporation collapsed just as if it had been a British Prime Bank pump and dump scheme, which apparently it was.

## HOW DID THIS EFFORT FAIL?

**And what was learned from the experience?** Professor Manton, who have been an Asian schoolmate of Benazir Bhutto, a twice elected Pakistani prime minister, was on his way to a perhaps be an Ambassador (if John Carry was elected POTUS) to another

Nepheline Syenite producing country. Unfortunately, the Honorable Professor stopped by when headed to the airport to pick up his laptop computer from the repair shop of Gualinni and Sons, when he was arrested for allegedly having kiddie-porn buried deep in his hard drive.

Tom did not survive a Florida county jail. His childhood friend Benazir did not last much longer. She was assassinated when returning after exile to assume being Pakistani prime minister in 2007. In other words, Oregon's uncommon Nepheline Syenite had already shown itself, before a Global Warming Climate Change, a political football.

So, enter in 2008, Consulting Geologist Ricardo Villasenor, did a [FIELD RECONNAISSANCE AND SAMPLING](#) across 640 acres consisting of 32-twenty acre lode claims located after the Department of the Interior moratorium on patenting the existing associated placer mining claims. He accomplished, again proving the uniformity of chemical values across the deposit, and followed up and unpublished Bureau of Mines report concerning the researched presence in elevated levels of Lanthanum and Cerium.

A footnote mentioned that the largest Nepheline Syenite deposit in the world is on the Kola Peninsula in Russia and was mining alumina with as a byproduct. And, that the Unamin Blue Mountain Nepheline Syenite quarry in Ontario, Canada, also was developing as a Rare Earth's source.

The dramatic problem was the report had been done for the brothers of a Kentucky coal mine family, known for not caring about environmental "back yards", also had a bad year financially in 2008. It was then that a "find and flip" prospector claim holder realized it was up to him to lay out and lead a workable, reasonable, sensible, joint venture plan of action to go underground for environmental reasons, no surface disturbance, or tailing piles—in as close to a "zero carbon" way as possible.

This period of preparation was enhanced by some exciting visits led by the Board Chairman of Disen Construction & Mining Ltd of Qingdao, China, who wanted to buy Table Mountain outright, with no continuing royalty control over exactly how mining was to be done, IE: "how big of an open pit it would take to build a luxury hotel at the mouth of the Alsea River, in Waldport?"

Fortunately this "take over, move aside" attitude, of not listening to the political wisdom of Oregon's backyard tree-huggers, disappeared when the politicians of the People's Republic decided to purge what were now calling "shadow banking" exploiters.

The upside was that someone who had only worked as a actual hard rock miner underground early in his career (Colorado during the uranium rush of '55; Montana, Oregon, Nevada in the 1960s) was finally forced to come in from the field to do

something the right way, by perhaps spending too many years filling out a FS 2800-5 Plan of Action form when a simple notification of intent covering activity already in progress should, according to the very well done, especially Pages 18 through 20 of the [USFS Anatomy of a Mine](#), suggested that following CFR law a simple acceptance that on the grandfathered in quarries no trees were marked for removable would have been easier than “ghosting” a properly prepared [FS 2800-5 Plan of Action Form](#) .

The only possible benefit to anyone by not validating the acceptance for the use of a historic USFS road, was for a very large, Canadian managed, yet very much involved in extremest US politics [supporting both left and right PAC paid politicians], where a Real Estate Trust, operating a US quarry just across the line on an edge of the deposit on a privatively owned “School Section” that legally ships US jobs-in-logs, overseas, because “US mill workers aren’t smart enough to translate a 2x4” into 5cm by 10cm”.

## WHAT SEEMS TO BE THE CORE OF THE PROBLEM?

**T**he Rule of Mining Law, with Code of Federal Regulations has been violated in that a bureaucratic USFS District Ranger made too many arbitrary (perhaps requiring an Hatch Act investigation) lazy (directed?) decisions concerning Cornell Law Schools’ Interpretation of the Mining Law of 1872, Code of Federal Regulations, of:

### **36 CFR 228.41 Scope.**

(a) Lands to which this subpart applies. This subpart applies to all National Forest System lands reserved from the public domain of the United States

~~(c) This subpart applies to mineral materials which consist of petrified wood and common varieties of sand, gravel, stone, pumice, pumicite, cinders, clay, and other similar materials. (Sorry, that is the wrong one to cite)~~

(d) Mineral used in manufacturing, industrial processing, or chemical operations for which no other mineral can be substituted due to unique properties giving the particular mineral a distinct and special value... (Such minerals may include):

*(3) Silica suitable and used for glass manufacture, production of metallic silicon, flux, and rock wool;*

*(4) Alumino-silicates or clays having exceptional qualities suitable and used for production of aluminum, ceramics, drilling mud, taconite binder, foundry castings, and other purposes for which common clays cannot be used;*

(7) Stone recognized through marketing factors for its special and distinct properties of strength and durability making it suitable for structural support and used for that purpose.

The long delayed by ‘ghosting’ a registered delivered, on July 12, 2018, of a formal [USFS 2800-5 reply](#) by newly promoted District Ranger by Secretary Sunny Purdue’s USDA/USFS, that replaced the Hispanic named Ranger, and fired Area Geologist, Ruth Seeger and Mining and Minerals Administration Manager, Robert Ginn, whom had been present in a ‘meet and greet’ where Barry Murray was handed a blank USFS 2008-5 Plan of Action (for any planned surface disturbance exceeding five acres) which really had very little to do with the **BLM jurisdiction** —the agency that validated that the grandfathered in mining claims which had been quarried for a specialized jetty stone, and had been [collecting an annual precious metals rental fee](#) (now well over \$5,000 per year) for an Associated Claims, and then Lode claim block, since the early 1980’s.

Months after a Mining Law of 1872, Code of Federal Regulations [CFR] mandated response of a 30 day “yes” or “no” —on the form dated 7/12/18— or a further 60 days for negotiation returned on said signed for— the claim-holder over-complying to protect the USFS from any militant tree-hugger demonstrations concerning the intent to resume operations past that of a USFS contracted mining for common variety road gravel for maintaining a long established US Forest Road #52, was informed in a personal letter from the Siuslaw National Forest, Central Coast Ranger at Waldport (visible from a unique Table Mountain), that:

*“The Forest Service recognizes that you may have identified what you believe are special or unique values and/or uses for the material [presented as Nepheline Syenite]. However, because this proposal addresses Mineral Materials, the Forest Service cannot evaluate your proposal under the U.S. mining laws or locatable mineral authorities at [36 CFR 228 Subpart A](#).”* [very important]

This ludicrous legal statement mockery— overriding [CFR 228.5 Plan of operations](#) minerals approval as stated in : *(d) In the provisions for review of operating plans, the Forest Service will arrange for consultation with appropriate agencies of the Department of the Interior with respect to significant technical questions concerning the character of unique geologic conditions... with respect to mineral values, mineral resources, and mineral reserves—* was answered with a revised USFS 2800-5 Plan of Action filed May 1, 2021, which contained a lot of information concerning the value of “Cement Geopolymers” where a focused attention was paid to the clear-listed mining of, again:

*(3) Silica suitable and used for glass manufacture, production of metallic silicon, flux, and rock wool;*

The unqualified, bureaucratic, Waldport, Siuslaw District Ranger response here was, *“While it is possible to produce glass from nepheline syenite, this is not what you have proposed to do, nor is this material silica.”*

Interesting, in that reverse engineering Elon Musk's silica glass solar roof is enhanced by a Nepheline like chemistry with traces of light glass REEs. The Westinghouse use of a silica flux used in nuclear waste "glass logs" is of course a secret, just as a Dr. Yang of Ontario experiments with Blue Mountain, and Table Mountain Nepheline Syenite as a clean air flux for the manufacturing of steel.

But, of far more importance was the Ranger's biased rational concerning:

*(4) Alumino-silicates or clays having exceptional qualities suitable and used for production of aluminum, ceramics, drilling mud, taconite binder, foundry castings, and other purposes for which common clays cannot be used;*

And, as said Ranger totally ignored *Alumino-silicates* to responded with instead:

*"Section (d) does not apply because your plan does not describe how nepheline syenite is unique in creating a geopolymer"*

Curious that <https://www.sciencedirect.com/topics/engineering/natural-pozzolans>



showed a need for expertise, happened just a the firing(?) of USFS Area Geologist Ruth Seeger, and USFS Mining and Minerals Administrator Robert Ginn? So is Murray.

Further, failing to consult with the Department of the Interior, US Geological Survey (that already had defined the Table Mountain Nepheline Syenite rock standard) and Bureau of Land Management that had already validated the filing of Nepheline #1-32 Lode Mining Claims as locatable minerals (reviewed and repeated many years with a \$5,000 plus annual "rental fee") was an egregious error of 'failing to understand' at least the role of geopolymer *Alumino-silicates in ceramics*, needed today, along with Nepheline Mortar as a significant answer to escalating effects of Climate Change. And in *Defense*?

Was the politically influenced appointment of Secretary Perdue to mismanage the USDA/USFS ignoring Global Warming Scientific papers in the "ghosted" Plan of Action not really required for any surface disturbance of a grandfathered in quarry wanting to do the proper ECO protection of going underground —just as the major European Nepheline Syenite competitors has done in Norway/Finland/Russia?

For some more up-to-date answers presented by claim holder who had to scramble to do some difficult explaining why he was not a fraud, to the small buy-the-ton investors of a very forward looking, employee owned [FoamKrete.com](http://FoamKrete.com), which somehow was slanderously defined (by whom) as “wacky” to the population of Waldort, Oregon.

One of several explanations about the potential of Nepheline Syenite, when Russia put Table Mountain, Oregon, on a world map in [\*Evolutional Development of Alkaline Aluminosilicates Processing Technology\*](#) (Andrey Panov, Sergey Vinogradov, and Svyatoslav Engalychev) of sources is so important, in Alumina-Silicate Geopolymer Chemistry world, that mentions a need for Nepheline Syenite from this day forward. And, yes, this paper was part of the original filing of a “blacklisted?” Plan of Action.

[\*Production of nepheline/quartz ceramics from geopolymer mortars\*](#) by C. Kuenzel<sup>1,2</sup>, L.M Grover<sup>4</sup>, L. Vandepierre<sup>2</sup>, A. R. Boccaccini<sup>2,3</sup>, C. R. Cheeseman<sup>1\*</sup> <sup>1</sup>Department of Civil and Environmental Engineering, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom <sup>2</sup>Centre for Advanced Structural Ceramics, Department of Materials, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom <sup>3</sup>Institute of Biomaterials, University of Erlangen-Nuremberg, Cauerstrasse 6, 91058 Erlangen, Germany <sup>4</sup>School of Chemical Engineering, University of Birmingham Edgbaston, Birmingham B15 2TT, United Kingdom

#### **ABSTRACT**

*“This research has investigated the mechanical properties and microstructure of metakaolin derived geopolymer mortars containing 50% by weight of silica sand, after exposure to temperatures up to 1200 °C. The compressive strength, porosity and microstructure of the geopolymer mortar samples were not significantly affected by temperatures up to 800 °C. Nepheline (NaAlSiO<sub>4</sub>) ... the mortar samples were transformed into polycrystalline nepheline/quartz ceramics with relatively high compressive strength.”*

**STANCO | Products.** Again a Chinese source at [www.stancogroup.com/product.php](http://www.stancogroup.com/product.php)

*“Nepheline can reduce the firing temperature of the sanitary ware and the firing cycle of the porcelain body. Transparency also has a unique role. Unique role in high-end daily-use porcelain: Nepheline helps to dissolve and disperse MgO and P<sub>2</sub>O<sub>5</sub> in the glass phase, making its crystals small, thus achieving high light transmittance, exquisite ...”*

**Rongsheng Kiln Refractory Co., Ltd. of China** Aluminous Concrete Manufacturer produces various kinds of high alumina refractory cement with—

*“High mechanical strength, long service life. Chemical stability, not easily to react with other materials. Good performance under high temperature. Properties of Aluminous Cement:*

**High hardening speed:** aluminous cement could be hardened very fast. Within a day's hardening, its strength can reach more than 80% of the standard strength. Within three days the strength can reach 100% of the standard strength.

**Frost-resistance and corrosion resistance:** the hydration heat of aluminous cement released concentrated. So it has better characteristic of freezing resistance, corrosion resistance than ordinary cement and other cement. It also has a strong sulfate resistance and mineral water erosion abbearence. **Good waterproof performance:** since the cement has a high density, so it is waterproof ability. **High refractoriness:** aluminate cement does not contain dicalcium silicate, so it is a good heat-resistant cement. The fire resistance of concrete can be up to 1300-1400 degrees.”

To bring another foreign competitor into the global common variety picture, without going into an International struggle for some of the “light, glassy” REEs associated with the unique occurrence of a natural volcanic Nepheline Syenite Alumina-Silicate ash, tuff, here is what Russia may have to say about Nepheline Syenite having a McClarty test of a locatable mineral deposit, as Nepheline Syenite, having a “distinct and special value.”

Which is why a competitive Russia has exported their [Nepheline Syenite Geopolymer to Texas](#) —as shown in regional TV broadcasts— to 3D print “affordable housing.”

Further documented in [Russian LimeCementE1-56-22.pdf](#), that contains the flow-chart for

Soda ash	45-90
Cement	62

Table 1. Economic index of integrated reprocessing of nepheline concentrate

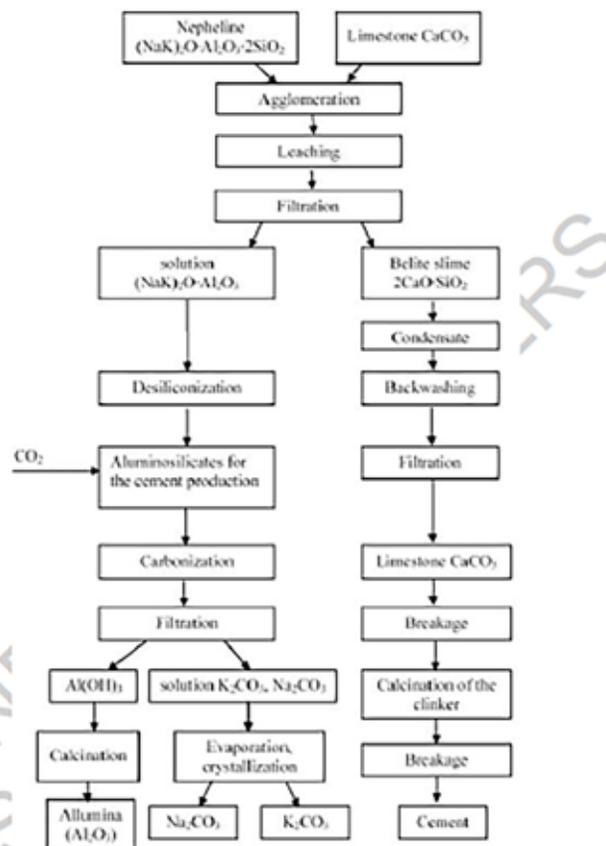


Figure 2. Integrated reprocessing of the nepheline concentrate by Glinozem, in Pikalevo

processing “common variety” Nepheline Syenite, following.

The tactic of late by professional science disbelievers is to state the undisputed obvious, as the McClarty test of the 1900’s, when discussing a McCarthyism style miss-understanding of a Nepheline Syenite “Geopolymer” that somehow does not compute when considering the uncommon value of a locatable Alumino-Silicate, otherwise shown, with a Boolean operators search query of “Geopolymer” + “Alumino-Silicate” + “Nepheline” is used to locate trendy papers as these, which have been showing up lately:

## 27th European Symposium on Computer Aided Process Engineering

*“Geopolymer concrete is more durable than Portland cement concrete, ... Geopolymer is an inorganic polymer binder formed from the alkaline activation of reactive alumino-silicate materials resulting in two- or three-dimensional polymeric network. It is a promising alternative to Portland cement-based materials.”*

And, following the chemistry past the untested “economics” of using a [inferior, dangerous, Coal Ash](#), with trace elements of arsenic, chromium, mercury, lead —to the point that infrastructure repair costs will bankrupt a small minded government, especially when Eisenhower freeway bridges need to be replaced, as already happening.

A fun and simple background explanation report of the Table Mountain, Oregon, Nepheline Syenite deposit, further defined as ECO-Geo-Rock, for the proposed contractor/operator of the claims, [ECO-Mining-Milling](#), stepping in to fairly share a unique wealth of the Earth for the benefit of mankind, instead of a selected few, to survive Climate Change.

Barry Murray, a USFS Strategic Air Command Photo Intelligence (with a one step above Top Secret clearance) Veteran would also like to follow JFK’s “Ask not what your country can do for you - ask what you can do for your country” with an offer to pay back with a material that [absolutely is not a common variety](#).

Cat calls (or woofs) from Smokey the Bear, hopefully answered to Bobo’s satisfaction, lets move on using ‘for real’ science to show how some undefined substance traced at least back to the burning of coal to generate electricity, is used to produce an inferior, manufactured, coal ash version of a true clean air *Geopolymer Alumino-silicate*.

As for the economics of an [ECO-Mining-Milling project](#), the Ranger’s “*Courts of Appeals FS...Explained ‘value’ by indicating price cannot be the exclusive way that a deposit has a distinct and special value attributable to the unique property of the deposit.*” ... is...?... really nothing more than what a Ranger Bear is known to deposit in the woods.

What if “economic value” is all in the  $\text{SiO}_2 / \text{Al}_2\text{O}_3$  percentages, being offered for sale in a supposedly fair and open US marketplace — *WHAT IS GOING ON?*



# The insider's information here is in the chemistry:

<b>Chinese Nepheline Syenite In Bulk</b>	<b>Oregon Nepheline Syenite In Bulk</b>
SiO <sub>2</sub> = from 60% to 64%	SiO <sub>2</sub> = from 58% to 59.62%
Al <sub>2</sub> O <sub>3</sub> = from 17.4% to 19.3%	Al <sub>2</sub> O <sub>3</sub> = from 18.25% to 19.35%
CaO = from 0.9% to 1.3%	CaO = from 0.85% to 1.3%
MgO = from 0.2% to 0.4%	MgO = from 0.2% to 0.3%
LOI = from 0.5 to 0.6	LOI = from 0.31 to 4.61
K <sub>2</sub> O = from 5.4% to 7%	K <sub>2</sub> O = from 4%
Na <sub>2</sub> O = from 6.1% to 7%	Na <sub>2</sub> O = from 12.52%

**\$250 per -325  
face powder ton,  
Freight on Board, China**

**\$25 per in-place  
ton of rock,  
Lincoln County, Oregon**

Chemical Component	Actual Monthly Results	Typical Range*	
		Lower	Upper
Silicon Dioxide (SiO <sub>2</sub> )	58.7	57.9	60.5
Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> )	19.1	17.6	20.5
Potassium Oxide (K <sub>2</sub> O)	5.9	5.4	6.7
Sodium Oxide (Na <sub>2</sub> O)	7.7	5.7	10.4
Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> )	2.9	2.1	4.0
Calcium Oxide (CaO)	1.9	1.1	2.0
Titanium Dioxide (TiO <sub>2</sub> )	1.0	0.3	1.6
Magnesium Oxide (MgO)	1.2	0.0	1.8

**The other commercial size Nepheline Syenite in the US is 3M. As they make good use of their material in a number of innovative products, it is difficult to calculate their raw tonnage cost.**

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