



June 12, 2023

Executive Summary
The Genesis ECO Friendly Mineral Extraction Processes

Genesis Ore Extraction Process

On March 19, 2023, Star Alliance acquired 51% of the capital stock of Lion Works, including 51% of the intellectual property rights and know-how related to the Genesis proprietary systems (“Genesis”) pursuant to the Share Purchase Agreement.

This green, environmentally friendly process, extracts up to 98% of the minerals, including gold and many other minerals from Oxide and complex Ores. Furthermore, the process takes 12 - 48 hours which is considerably shorter than the 2 to 6 months other leaching processes take. The most used leaching systems are heap leaching and CIL.

Heap leaching is an industrial mining process used to extract precious metals, gold, copper, uranium, and other minerals from ore using a series of chemical reactions that absorb specific minerals and re-separate them after their division from other earth materials.

The heap leaching process takes the crushed ore placing it on a liner, adding chemicals via a drip system to the ore. Heap leaching is widely used in modern mining operations as it produces the desired concentrates at a lower cost compared to other processing methods such as flotation, agitation, and vat leaching, however the environmental risks and length of time for the process and lower extraction rate makes it expensive compared to the Genesis system.

The heap leaching process extracts up to 70% of the gold or other minerals from the ore during a 2 to 6 month leaching time. If left in the leaching ponds for one to two years, it is possible to extract up to 90% of the minerals from the ore and when compared to CIL plant processing, has the same effectiveness without the added costs.

CIL stands for carbon in leach. This is a minerals extraction process called cyanidation where carbon is added to the leach tanks or reaction vessels so that leaching and absorption take place in the same tanks. It is the most commonly used leaching process for the extraction of gold, however it has a higher capital and operating cost.

Genesis is a sustainable closed loop extraction method, that yields an improved recovery rate in a much shorter time period even where the presence of gold is as little as 0.10 parts per million. There are no emissions, and the system is environmentally friendly.

Genesis is the key process that makes previously **economically unviable** deposits around the world profitable.

The Genesis Oxide System, (“Our First Patented Technology”)

The Genesis system accelerates the rate of dissolution of gold to nearly an immediate rate, therefore reducing the standard time of extraction from approximately 4 to 6 months to a mere 12 to 48 hours. Consequently, the costs of production are dramatically reduced. The system is scalable, and the smaller units are modular and can easily be transported from location to location.

Beyond the economic advantages it also provides immediate technical solutions to difficulties caused by fine materials and resolves the need to agglomerate. The speed of extraction of gold is up to 400 times faster than conventional heap leaching.

Versatility

At the heart of the Genesis system is a reactor module that makes the system versatile in its relationship with installation, construction, and repositioning. The system's conception, design, and its structural development is the innovative solution to older methods of extraction. In addition to the numerous international collaborations, and many years of testing, the Genesis system is now ready for the provision of a practical and economical solution that is effective, feasible, and reliable; characteristics which the mining industry has always required.

The area needed to operate a complete module is merely 2,500 square meters which includes the absorption plant, a convenient reduction in space requirements as compared to Heap leaching.

Key Benefits of this process:

- Lower capital investment needs in comparison to the standard processes available in the industry.
- System is much faster than regular heap leaching methods.
- Improved rate of extraction.
- Solution for low gold grade deposits.
- Economic Solutions for previous unviable deposits.
- Genesis has the same efficiency as a CIL plant without the costs.
- Lower cost of production per ounce as compared with standard methods of extraction.
- **Environmentally friendly process**
- Modular structure system
- Easy to scale
- the smaller units are mobile, designed to be easily transported without any secondary costs
- Easy to adapt and displace in complicated terrains
- Option to substitute cyanide for a green chemical agent
- The construction of processing plant from scratch would require under 6 months
- Capacity for complete automation
- Precise control and measurement of the recovery of the precious metals.
- Experience in managing conventional mining plants is not required for setting-up Genesis
- Eliminates all risk in setting-up production in a non-explored gold-bearing zone
- Eliminates the need to grind the mineral ore
- Genesis is a closed system, eliminating the risk for spillages
- Considerably reduces the need for water, making it particularly viable for arid sites
- Water and chemical agents are all reutilized and recycled
- Machine has no emissions, making it very safe.

The cost effectiveness of our Genesis eco-friendly system means that many closed and unprofitable mines can be operated again due to the significant increase in profitability with the lower cost of operations.

The Genesis Refractory System “Our Second Patented technology”

Processing Innovation for the Future of Mining

The Genesis Refractory system works with complex ores. This genesis system has up to a 98% transformation rate from double refractory lock gold into free oxide gold. The system operates within a 12 to 48 hour process time thereby reducing very significantly the time that a heap leaching system would take.

The genesis system is the only economically feasible solution for complex low-grade deposits and the only Cost-effective process to treat double refractory gold and other minerals.

This system, like the Genesis oxide system, is an innovative solution that significantly improves the older methods. It is environmentally safe, has no emissions and its speed of extraction is very cost effective. The true benefits are that it can be used on tailing piles, extracting in most instances more minerals than was originally extracted with the older methods.

It also cleans up these tailing piles during the extraction process leaving smaller rocks and gravel that can be used on roads and rail tracks etc. Although Genesis works on all tailings, the dirtiest are coal tailings and the system works very efficiently on these tailings extracting minerals and leaving useable residue.

This new processing patent for up to double refractory minerals with preg-robbing, uses Genesis reactors as a precursor to pre treated minerals ranging from the most complex to the simplest. The project was first visualized in 2010 and its experimentation began and has continued from 2016 to our current time. Now in its third and final stage, the first world-class industrial size plant is being built to be ready in early 2024. The project is called Genesis-Rubi and it consists of three phases.

Phase 1: Transformation of coal/carbon to gas –

Phase 2: sulfides to oxides –

Phase 3: Leaching of an oxidized ore without preg-robbing or locked gold or silver.

Within our patented design reactors, both leaching and pretreatment occur, reducing costs. This versatility also gives us the ability to treat the ore to regulate the pH or other chemical levels necessary to accelerate the regeneration of the discarded soil.

Currently complex coal-sulfide minerals, known as double refractoriness minerals, require roasters to burn the coal and after this some other method that can treat the sulfides making it potentially dangerous for the environment and economically very difficult to achieve. Mines with complex low-grade minerals are currently unprofitable using conventional methods of leaching.

However, in our process, we attack both refractoriness in the same reactor system in a hydro/electric way without the use of fossil fuels. We achieve this transformation, in situ, through low power electricity converting the most complex gold-carbon-sulfide ore into a free gold oxide that can then be leached in any traditional way.

Genesis will convert any ore with one or two refractoriness to oxidized ore making them economically viable and environmentally friendly. It is worth mentioning that our reactor system can be used to treat already oxidized minerals, without the need for pretreatment. This is our first patent to leach minerals with free gold. In this third phase we treat oxides, which can be used to replace processes such as heap leaching, CIL or gravimetric processes, since pulverizing the ore for leaching is not necessary.

It also has many other advantages, such as the speed of leaching, greater control, automation, Ore reconditioning and full recovery of precious metals.

Conclusion

The “Genesis” systems are cost effective and environmentally safe. Their extraction process is much faster than conventional methods and the Genesis system is emission free. Genesis extracts minerals from oxide and complex ores and can be moved easily from location to location in its smaller modular form.

This system can be manufactured relatively quickly and shipped easily to mining locations. This green and environmentally safe process will allow any government authorities to quickly approve this system on site.

Management believes that once fully marketed, our two Genesis Systems will become the primary systems used in mining and at tailing sites worldwide.

RECENT DEVELOPMENTS:

A 2022 federal court ruling against an Arizona copper mine, now known – infamously among mining corporations and their political allies – as the “Rosemont decision.” has mining developers all over the Country trying to decide how they can proceed.

This decision by a U.S. appellate court ruled that “while federal mining law allows companies to mine on federal land where economically valuable minerals are present, they are not guaranteed the right to use federal land without valuable minerals as a dumping site for the mine.”

This ruling can drastically change how prospective mining projects proceed, if at all, due to the issues relating to the mining waste/tailings.

Genesis solves this problem by not only extracting minerals from the tailings but also cleaning those tailings and leaving the residual as usable gravel for roads and railways. As a result, there is no damage to the land and the land that is the dumping site generates revenue from the extraction of minerals from that rock on that land which therefore provides a positive answer in regards to this federal appellate court ruling.

The full article that refers to this court ruling and mining in Nevada is attached as Exhibit A

First Prototype of the GENESIS oxide System



The Prototype Genesis Refractory System



EXHIBIT A

NV mines test boundaries of 150-year-old mining law

BY: [JENIFFER SOLIS](#) - MONDAY JUNE 12, 2023 4:57 AM

Nevada is emerging as a major battleground to determine the fate of a century-and-a-half-old mining law as demand for critical minerals in the U.S soars.

Mining developers looking to extract minerals in Nevada are grappling with the aftermath of a 2022 federal court ruling against an Arizona copper mine, now known – infamously among mining corporations and their political allies – as the “Rosemont decision.”

The decision by a U.S. appellate court ruled that while federal mining law allows companies to mine on federal land where economically valuable minerals are present, they are not guaranteed the right to use federal land without valuable minerals as a dumping site for the mine.

The ruling has the potential to send mining projects — years in the making — back to square one.

In the case of a planned molybdenum mine by Nevada-based developer Eureka Moly LLC, a district court judge vacated the 2019 Bureau of Land Management’s approval of the project after ruling the developer did not have the right to dump waste rock on federal land without valuable mineral deposits.

District Judge Larry Hicks, who oversaw the Eureka Moly case, cited the Rosemont decision in his ruling, noting there was no evidence of valuable mineral deposits on the federal land it proposed to use as a waste dump, making the developers mining claims for those acres invalid.

“BLM cannot skirt the Mining Law requirement that valuable mineral deposits must be found in order to occupy the land,” Hicks wrote in his March decision.

Both Republicans and Democrats in the U.S. Senate described the ruling as “[a significant departure from long-held mining practices](#),” but mining law experts say the ruling is simply a continuation of the General Mining Act of 1872.

“It’s not really a departure from the mining law,” said Mark Squillace, a professor of natural resources law at the University of Colorado. “It’s a long overdue reform of the way the federal government has administered the General Mining Law.”

Under the General Mining Law, anyone who discovers a valuable deposit of minerals has the right to develop those claims. However proving a potential mining site has valuable minerals that can be profitably developed is a strict test.

Squillace argued burying public land under waste rock is a clear indication that those public lands do not hold the economically valuable minerals that would make a mining claim valid.

“I’m hard pressed to see how anybody could think that they had a reasonable chance of making a profit and developing those claims, if they wanted to bury them under billions of tons of waste rock. So it doesn’t make any sense to say those claims were valid,” Squillace said.

“What the Rosemont Court did, and what these other courts have now done, is fully consistent with the way that the General Mining Law was always supposed to work,” he continued.

The Biden administration likewise acknowledged the legitimacy of the Rosemont decision in a federal opinion from the Solicitor's Office.

Less space for potentially largest lithium mine in the U.S

In May, the Department of the Interior [provided guidance](#) for mining developers affected by the decision while "affirming that the Mining Law and the relevant Bureau of Land Management regulations do not allow for approval of those facilities on federal lands where there is no evidence of mineral discovery."

But the ruling has had far reaching ramifications for mining sites in Nevada, including the Thacker Pass lithium mine which has the potential to be the largest lithium mine in the United States.

Earlier this year, Chief Judge Miranda M. Du ordered federal land managers to [reexamine a state permit](#) allowing Lithium Americas Corp.'s Thacker Pass mine to produce and store mining waste on more than a thousand acres of public land, citing the recent Rosemont decision.

The judge concluded that BLM violated federal law when it approved Lithium Americas plan to bury 1,300 acres of public land under waste rock without determining the company's mining rights to those lands, however she did not vacate federal approval of the mine.

A federal review found that about 80 acres of federal land claimed by Lithium Americas did not have evidence of mineralization, making the use of those lands as a waste dump invalid. The plan of operations for the mine includes about 150 acres for "exploration-related disturbances" within the project area, a sizable chunk of land.

In response Lithium Americas said they plan on using the mine pit itself as a site for waste rock in a process known as backfilling, [according to the review](#).

Under the Interior Department's new guidance, Lithium Americas also has the option to conduct additional work to show mineralization on land planned for waste rock dumping, or use mill site claims — which can be placed on public lands without valuable minerals — instead of load claims for the affected areas. Lithium America was given the nearly limitless time to come up with a plan of action.

But environmental groups argue the Rosemont decision is still in play for the Thacker Pass lithium mine.

"Basically, the lower court did agree that it's a Rosemont related case," said John Hadder, the director of the Great Basin Resource Watch, which is involved in lawsuits against both the Thacker Pass lithium mine and the molybdenum case.

Environmentalists have appealed the ruling on the lithium mine to the San Francisco-based 9th Circuit Court, which is expected to hear oral arguments this month.

"What we're hoping is that the 9th Circuit will say, okay, this is like Rosemont, which we already decided on so yes, the permit should be vacated," Hadder said.

"The question is, are those claims valid under the mining law? Meaning can you turn a profit from them? Are they extractable for profit? Clearly for a pit area I'm sure the company does have valid mining claims. But what about outside the pit area where they're putting millions of tons of material that they would later have to dig up? It stands to reason that you don't put all that waste rock and tailings and so forth, where you would mine in the future," Hadder continued.

Lawmakers knuckle-up

The Rosemont decision has put federal lawmakers on the defense, especially in Nevada where elected officials are pushing to make the state the center of lithium production in the U.S.

In April, Democratic Sen. Catherine Cortez Masto of Nevada introduced bipartisan legislation that would “undo the damage of this decision” which [she called](#) “misguided.”

The legislation, titled the “Mining Regulatory Clarity Act”, would make it legal to use part of a mining claim for mining related purposes on land without valuable minerals, including waste rock disposal.

“Senator Cortez Masto will continue to focus on passing her bipartisan legislation to address the misguided Rosemont decision and protect the good-paying jobs the mining industry supports in Nevada and across the U.S,” said Lauren Wodarski, a spokesperson for Cortez Masto Friday.

Hadder, from the Great Basin Resource Watch, criticized the bill saying it has the potential to put “directly affected communities, indigenous communities at enormous risk” by allowing developers to stake claims on public lands without proof of valuable minerals.

“The Rosemont decision is providing clarity as to the proper implementation of the mining law. Basically, these practices that the Cortez Masto is referring to have been illegal for many, many years. We’re getting the record straight,” Hadder said.

No good options

John Lacy, the director of the Global Mining Law Center at the University of Arizona, said he thinks the discussion around the Rosemont decision “is a bit overblown.”

However, Lacy argues the Rosemont decision has exposed gaps in the archaic General Mining Act of 1872, and the need for comprehensive reform of the law to address modern mining challenges.

The General Mining Act of 1872 already allows the use of public lands with no valuable minerals for mining related purposes under the mill site process, argued Lacy.

“One of the problems with mill sites is that they are relatively small, five acres each. You wind up having to stake a vast number of mill sites to be able to use the mill sites for waste disposal and tailings,” Lacy said. “Having to stake 100 mill sites, honestly doesn’t make much sense.”

Mill sites claims are also not valid until they are actually put to use in what Lacy calls a classic “chicken or the egg” type situation.

The General Mining Law also allows land exchanges, but the process requires developers to provide funding to federal land managers so they can buy high conservation or recreation value land in exchange for public land destroyed by mining. A land exchange would also require the developer to go through another federal environmental review process for the mining project changes under the National Environmental Protection Act.

Both options are generally unattractive to developers, said Lacy.

The option of leasing land as proposed by the Biden administration may prove logistically impossible, Lacy said. It would require developers to possibly pay for a land lease indefinitely as the waste rock deposited is not likely to move once the initial lease is over.

“It’s not surprising that a law that dates 150 years is not a law that we should be operating under to address public lands,” Squillance said, who also served as a special assistant for the Solicitor’s Office in 2000. “One way to address

all these problems is to reform the mining law in some significant way that allows Congress and government agencies to address the current problems we have with the way that mining is done on our public lands.”

“It’s just kind of shocking that nothing has happened yet to deal with this issue. It’s long past time to do so.”

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