CERRO DEL GALLO PROJECT

FREQUENTLY ASKED QUESTIONS

INTRODUCTION

The Cerro del Gallo gold project (Cerro del Gallo) is a potential gold mine project located approximately 80 kilometres east of Guanajuato City, in the State of Guanajuato, Mexico.

Cerro del Gallo is owned by Argonaut Gold Inc. (Argonaut), a publicly listed company on the Toronto Stock Exchange (TSX: AR), which has a proven record of developing gold resources into producing operations in Mexico. When developed, Cerro del Gallo would produce around 60,000 to 70,000 ounces of gold and 1.2 Million ounces of silver each year. The capital cost for Cerro del Gallo is currently estimated to be approximately $145 million to construct, after which it would operate for at least 15 years, creating around 400 direct jobs in the center of the country of Mexico.

PROJECT OVERVIEW

What is the Cerro del Gallo project?

The Cerro del Gallo gold project is a potential gold mine located in the municipality of Dolores Hidalgo, in Guanajuato, Mexico. When developed, Cerro del Gallo would produce 60,000 to 70,000 ounces of gold and 1.2 Million ounces of silver each year in gold-silver bullion bars. The Cerro del Gallo development and construction of support infrastructure is currently estimated to cost approximately $145 Million to complete, after which it would operate for at least 15 years, followed by 2 years of closure activities, creating around 400 direct jobs in the State of Guanajuato during that time.
What would the Cerro del Gallo gold project consist of?

Cerro del Gallo would consist of an open pit, three-stage crushing plant, leach pad, waste dump, solution ponds, SART (sulphidization, acidification, recycling, and thickening process) plant, and an ADR (adsorption, desorption and recovery) plant facility with the associated access roads, administration and maintenance buildings to operate the facilities.

When would construction start and when would the operation start?

After approval of the environmental permits for Cerro del Gallo and a construction decision by the company, construction and mine development would take approximately 18 months and operations would commence immediately after that.

How much land would be developed?

Approximately 389 hectares of company-owned land would be used for the placement of infrastructure that is required for the project. Additionally, Argonaut holds mining concession rights on 16,879 hectares and owns 445 hectares of land in the project area.

Will people be relocated or displaced by Cerro del Gallo?

There will not be any people relocated or displaced as a result of Cerro del Gallo. The land required for project development, construction and operations is company owned. On the contrary, once construction and operation starts at Cerro del Gallo there is expected to be a population influx returning to their homelands to take advantage of the job availability.

How will Argonaut inform the community about Cerro del Gallo?

Argonaut maintains a community relations team on site, interacting and engaging with community members through organizing different types of engagement activities and sustainability projects. This permanent contact enables Argonaut to constantly convey project information and develop trust among people residing in the project area of influence. Further information relating to the project can be obtained in the “Sustainability” section of the Argonaut website.

Does the community support the Cerro del Gallo project?

There has been strong support coming from people living the closest to the project site because of their understanding of the economic benefits Cerro del Gallo will bring to the area. On the other hand, opposition and/or indifference increase in direct relation to distance to the project site where the economic impact may not be as decisive.

What benefits has Cerro del Gallo brought to local communities?

Since its arrival, Argonaut has implemented a series of social and community development programs to improve children education through school infrastructure improvements, and to foster economic growth by implementing sustainable projects and supporting entrepreneurial initiatives. It is anticipated social investment will continue to expand as Cerro del Gallo approaches commissioning and through its commercial operations.
What key approvals does Argonaut need to develop the Cerro del Gallo Mine?
In order to develop a project of any type in Mexico, regulations enforce the need to apply for two separate documents – an environmental impact authorization (which may or may not include an environmental risk assessment) and a change of land use authorization. These two documents may be applied for separately at any state representation of SEMARNAT (Mexico’s federal environmental authority) or through a unified process which is carried out exclusively at SEMARNAT’s main office in Mexico City. Argonaut opted for the latter and prepared a comprehensive document called “Unified Technical Document for Change of Land Use” (In Spanish, “Documento Técnico Unificado de Cambio de Uso del Suelo”, or DTU) which includes all aspects of an environmental impact statement, an environmental risk assessment, and a justified technical document for change of land use.

According to the General Act for Ecological Equilibrium and Environmental Protection (LGEEPA), the evaluating process of these documents can take up to 60 business days but can be extended for an additional 60-day period, depending on the complexity of the project. During the different stages of the evaluation and consultation, SEMARNAT can request Argonaut to respond to all relevant submissions and inquiries, before deciding on the proposal.

Where can I find more information about the environmental evaluation done on Cerro del Gallo?
During the evaluation process, copies of the entire DTU can be reviewed by any interested party under File No. 09/MB-0242/04/19 at the office of SEMARNAT in Mexico City and its state representation office in Guanajuato City. Once it is approved, the DTU and the corresponding authorization can be reviewed online through the SEMARNAT website.

Does the site layout plan in the DTU match exactly what Cerro del Gallo would look like?
The site layout plan in the DTU reflects Argonaut’s understanding of how the project will look, based on comprehensive site investigations and exploration. Each structure and installation will be authorized to be built at a specific location, and any modification would require prior approval by the regulating authority. Argonaut expects any changes to be minor, and for the overall concept to remain the same. Any modification to the project layout would have to be approved by SEMARNAT prior to implementation.

How big would the open pit mine be?
The open pit mine would be approximately 700 metres by 800 metres (approximately 55 hectares) in area and would reach a depth of approximately 250 metres.

To put this in perspective, the federal area occupied by the El Bajío International Airport (BJX) at Silao servicing León and Guanajuato City is about 400 hectares. That is about seven times the Cerro del Gallo open pit area.

How many tons of ore would Cerro del Gallo process and how much gold would it produce every year?
Cerro del Gallo would process around 6 million tons of ore per year and would produce between 60,000 and 70,000 ounces (between 1.8 and 2.2 metric tons) of gold per year.

How long would Cerro del Gallo be in production?
There would be three main phases; construction and mine development lasting for approximately 2 years, mining and processing operations lasting for approximately 15 years (assuming no additional ore is discovered) and rehabilitation lasting for approximately 2 more years.

If further ore is discovered around Cerro del Gallo, would the life of the mine be extended?
Yes, life of mine may be extended if additional ore were to be identified in the local region, subject to appropriate approvals by SEMARNAT.

Would Cerro del Gallo operate 24 hours per day?
Cerro del Gallo would operate 24 hours per day, seven days per week, in a similar manner to most other mining or manufacturing operations.

Would explosives be used?
Yes, controlled blasting is a standard practice in mining operations worldwide. Controlled blasting is the use of explosives to break rock for excavation and transportation. Noise from the blast may be heard potentially with a minute vibration, depending on distance from the blast. The design of each blast would aim to minimize these impacts by orientating the blast direction and applying highly accurate detonating delays within the blast pattern.
How would Argonaut recover the gold?
Cerro del Gallo would use a process known as heap leaching. In this process, the mined ore is crushed into small chunks and heaped on an impermeable plastic and clay lined leach pad where it is irrigated with a leaching solution to dissolve the gold and silver. While sprinklers are occasionally used for irrigation, more often operations use drip irrigation to minimize evaporation, provide more uniform distribution of the leach solution, and avoid damaging the exposed mineral. The solution then percolates through the heap and leaches the target minerals. This process, called the “leach cycle,” generally takes several months. The leach solution containing the dissolved minerals is then collected, treated in a process plant to recover the target mineral and then recycled to the heap after reagent levels are adjusted.

At Cerro del Gallo a portion of the contained copper will also be leached along with the gold and silver. A SART (Sulphidization, Acidification, Recycling and Thickening) plant will be used as the first recovery step to precipitate the copper and silver from solution. The SART process is a cyanide recovery technology currently installed in different gold cyanidation plants around the world. As the copper and silver are precipitated, the process releases the attached cyanide, which greatly reduces the amount of cyanide used by the operation. After the SART plant the solution with Gold values is sent to the ADR plant which consists of activated carbon columns that remove the gold from the solution. Then a process of desorption of the carbon is used to obtain a precipitate by means of electrolysis. This precipitate is sent to a melting furnace and dore bars are obtained. All the solution that passes through the ADR plant is reconditioned with fresh reagent. Sun light contributes to the dissociation of free cyanide and other metal-cyanide complexes into stable cyanide species which can precipitate and stay in the heap. Microorganisms can convert free and WAD (week acid dissociable) cyanide into ammonia and nitrates which become nutrients to plants.

Why is it necessary to use cyanide to recover the gold?
Gold cyanidation (also known as the MacArthur-Forrest process) is a technique for extracting gold from low-grade ore by converting the gold to a water-soluble chemical compound. It is the most commonly used leaching process for gold extraction. Cyanide is a very efficient lixiviant because it is highly selective for gold and silver and much less so for other elements that are not desired. This greatly reduces the amount of chemicals required for the leaching and reduces the leaching of other heavy metals.

What is cyanide?
Cyanide is a chemical compound that contains the group C=N. This group, known as the cyano group, consists of a carbon atom triple-bonded to a nitrogen atom. It may be produced naturally in the environment by various bacteria, fungi and numerous species of plants. Incomplete combustion during bush fires is believed to be a major environmental source of cyanide. Once released in the environment, the reactivity of cyanide provides numerous pathways for its rapid degradation.

How would the cyanide be transported and stored on site?
The most likely source of cyanide for Cerro del Gallo is solid sodium cyanide in the form of small briquettes (or pellets), which will be transported by road in purpose-built isotainers (alternatively supersacks could be used). The cyanide is removed from the isotainer or supersack on site at a specially designed and built cyanide storage facility.

How often would cyanide be delivered to site?
Cyanide would be transported to site in isotainers or supersacks, once per week.

How is cyanide used on site?
Cyanide leaching occurs after the physical processes of crushing and piling the ore into a heap. The pH of the solution is raised to between 10 and 11 by adding lime and cement to the heap prior to the leaching process to ensure that cyanide ions are available for gold leaching. The solid cyanide briquets are dissolved in solution which is then metered into the general leach solution as necessary to maintain the desired concentration for the process.

What happens to the cyanide after the gold is recovered?
The cyanide is recycled to the heap in a closed-loop system to leach additional gold and silver. During the leach and recovery processes some of the cyanide degenerates due to environmentally driven physical, chemical and biological processes and must be replaced with fresh reagent. Sun light contributes to the dissociation of free cyanide and other metal-cyanide complexes into stable cyanide species which can precipitate and stay in the heap. Microorganisms can convert free and WAD (week acid dissociable) cyanide into ammonia and nitrates which become nutrients to plants.

Would Cerro del Gallo processing personnel be trained in the safe use of cyanide?
All personnel at any Argonaut site who are required to work with cyanide are trained in its safe use. This training includes instruction on what forms of cyanide are potentially hazardous to them, and what measures are put in place during the transport, storage and distribution of cyanide to ensure its safe use.
Cerro del Gallo does not contemplate milling for ore processing, thus there will not be tailings. Ore will be crushed to produce coarse material for stacking into large piles, or heaps, prior to irrigation with cyanide solution. Following the leaching process the heaps will be detoxified by rinsing and then recontoured and revegetated prior to closure of the project.

What are tailings and how are they stored?
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How big is the leach pad?
The leach pad will have a surface area of approximately 52 hectares. Using the same analogy as before, the area of the BJX International Airport is also about 7 times larger than the Cerro del Gallo leach pad.

How would Cerro del Gallo ensure that the leach pad does not fail?
All of Cerro del Gallo structures have been designed by top mine engineering firms considering geotechnical and site investigation data which meets international standards and criteria for safe construction and operation. During construction and operation, there will be a rigorous quality control program implemented to assure the leach pad is built properly according to the design and specifications.

How much water and power does Cerro del Gallo need?
Cerro del Gallo would use 628 to 900 thousand cubic metres per year of water and would require a power supply of approximately 10 megawatts.

Where would the water required for Cerro del Gallo come from?
Water required at Cerro del Gallo will come from underground sources near the project site. Argonaut already owns water extraction rights in excess of 1.4 million cubic metres per year which is enough to meet the needs for the project.

Where would the power required for Cerro del Gallo come from?
The power required to operate Cerro del Gallo would be delivered by government-owned utility company CFE through the national grid. A substation would have to be built on site and interconnected to the existing infrastructure.

Where would the road access to Cerro del Gallo be?
Cerro del Gallo is located near the town of San Anton de la Minas, in the municipality of Dolores Hidalgo, Guanajuato State. Cerro del Gallo can be accessed from Guanajuato City through State Road 67 East, exit at Juventino Rosas towards the city of Dolores Hidalgo. A detour at Cieneguilla leads through a dirt road to the town of San Anton de las Minas and the project site.

Would the infrastructure at Cerro del Gallo be designed to withstand seismic events?
All structures at Cerro del Gallo have been designed to withstand seismic events.
What impacts would the mine have on near neighbours?
Cerro del Gallo will generate an economic benefit of US$55-60 M per year and 400 direct jobs bringing prosperity to the municipality of Dolores Hidalgo and the El Bajío region.

Is the material safe to stockpile?
The material from the open pit mine at Cerro del Gallo has been characterized to identify potential risks in order to implement measures to prevent negative impacts to the environment and the population. At closure, the stockpiled material will be rinsed, recontoured and revegetated for chemical and physical stabilization.

How would Argonaut monitor dust (air quality)?
Argonaut will monitor dust levels during the entire mine life at Cerro del Gallo to ensure minimal impact to air quality which could have effects in the surrounding environment and to prevent health issues to the employees and neighbours.

How would Argonaut minimize dust?
The proposed mitigation measures as well as the Environmental Monitoring Program under development contain details of how the dust that could potentially be generated in the operation of the mine will be minimized. In general, roads and working areas will be sprayed to prevent the aerial dispersion of dust. Likewise the crushing and stacking systems will include enclosures and spray systems to prevent dust generation. The heap is irrigated as part of the normal recovery process which will prevent dust generation.

RECLAMATION

How would Argonaut rehabilitate the areas that they impact?
Before any mining or construction takes place, all impacted areas are stripped of the topsoil, which is then stockpiled in designated areas for future use in reclamation. Once an area is no longer going to be impacted, it is stabilized chemically by rinsing with fresh water to eliminate remaining cyanide, and physically by contouring to mirror as best as is practicable the surrounding landform before the stockpiled topsoil is replaced and seeded to complete the rehabilitation process.

What guarantee exists that rehabilitation will be completed?
Prior to any mining activity taking place, an assessment of the reclamation cost, including the cost of all compliance measures that are required during the mine life, is presented to SEMARNAT. Every year Argonaut must submit a bond for the adjusted cost of site rehabilitation to guarantee the work gets done, even if Argonaut does not fulfil its obligations.

What happens when mining is completed at Cerro del Gallo?
A “closure plan” is required to be developed once the environmental authorization is granted by SEMARNAT. This would involve rehabilitating all the waste rock emplacements, leach pad, processing plant site and any other impacted areas. Except for the open pit mine, which would remain as a void, all other areas are returned to a landform not dissimilar to what is currently there. It is anticipated this reclamation process would take several years after the mine has closed.
How many people would be employed at Cerro del Gallo?
When the development of Cerro del Gallo is approved, there would be approximately 700 direct jobs during the construction phase, which is expected to take around 18 months, and approximately 400 direct jobs in the operations phase, which would last around 15 years, or longer if additional commercially viable gold ore was found in the area. In addition to this, it is anticipated that approximately 750 indirect jobs will be created in the State of Guanajuato and the El Bajío region as a result of Cerro del Gallo.

Where would the employees for Cerro del Gallo live?
It is proposed that around 90% of the workforce would be employed locally and transported daily to site. The remaining 10% may require skillsets potentially not available locally at the time. These people would still need to live in the area and so there may be a small demand for additional housing at communities surrounding the project site in the Dolores Hidalgo municipality.

ABOUT ARGONAUT GOLD INC.
Argonaut Gold Inc. (TSX: AR) is a publicly listed gold production and exploration company based in Reno, Nevada, with a proven management team that has a successful track record of developing gold resources into safe, environmentally responsible gold operations in Mexico. The company owns and operates the La Colorada mine in Sonora, and the El Castillo and San Agustin mines in Durango, which produce approximately 160,000 ounces of gold per year. Besides Cerro del Gallo, the company also owns the San Antonio project in Baja California Sur and the Magino project in Ontario, Canada.

Why is Argonaut the right company to develop Cerro del Gallo?
Argonaut management team have a wealth of experience in developing gold projects in Mexico and internationally. Argonaut management are committed to maintaining high safety standards and effective environmental management of all its activities and will continue to maintain a high level of community and stakeholder engagement.

How long has Argonaut owned Cerro del Gallo?
Argonaut acquired Cerro del Gallo from Primero Mining in late 2017. Since acquiring the project, Argonaut has completed extensive environmental baseline assessments of the project area and drilling programs to confirm the integrity of the gold resource. In 2019 Argonaut completed a prefeasibility study of Cerro del Gallo to determine the best way to develop the resource in a safe, environmentally responsible, and economic manner.

Have more questions about the Cerro del Gallo Project?
Email us at: info@argonautgold.com

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