

CHARACTERISTICS OF THE MINING PERMISSION REGIME UNDER THE MINING LEGISLATION AND THE MAIN ENVIRONMENTAL CHALLENGES

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Abstract: The mining permission regime, in its technical and legal conception, represents for a significant portion of miners and/or prospectors, a support tool for artisanal mining, as it has a lower level of bureaucracy compared to other existing mechanisms. In the context of its design, there is a need to respect mining and environmental standards, especially in the preparation of projects that will be submitted to the National Mining Agency and the competent environmental bodies, so that they can map the main points of the future enterprise, so that mitigation, recovery and preservation practices, in addition to guaranteeing the safety of the worker included in this, are carried out coherently, in addition to incisive supervision in order to curb predatory and/or irregular practices. Therefore, this work has as main objective to demonstrate the form of the gold mining permission regime in the mining legislation, its operation and the most common impacts. For this purpose, a database on mining legislation was used, through consultations on physical and digital sites, as well as knowledge already disseminated in technical, scientific and academic circles about mine operations and mapping of known environmental impacts. of first order.

Keywords: environmental legislation, mineral legislation, environment, mining and social responsibility.

INTRODUCTION

Mining activity through artisanal extraction and/or gold mining is common and frequent in the most different regions of the country and is inserted in the cultural context of countless locations, being a reference and exponent for economic development, particularizing the mining extractive zones. In states such as Bahia, Pará, Mato Grosso, Rondônia and Roraima, for example, this type of activity is commonplace, either through

legalized occupation, sometimes duly licensed and with environmental and mining projects approved by the competent environmental agencies and the National Mining Agency and they are considered illegal.

It is understood that illicit mining entails not only damage to the treasury, but also gross environmental impacts, since this type of mining is related to extraction with an immediate economic purpose; this way, mineral exploitation will occur without appropriate criteria and techniques, generating numerous effects and environmental damage, which are not reversible in the short term.

It is important to emphasize that, unlike other economic activities, mining itself is not specific and/or free to choose, since mineral occurrences may be located in different areas. In civil construction, for example, there is the possibility of choosing the place where a certain type of work will be carried out. The same can be highlighted for agriculture, whose land where a certain crop or animal breeding will be cultivated, these can be prepared in order to guarantee the success of the activity. Mining, however, as it does not have mobility characteristics, requires structures to be installed for it to exist. The installation of such items can drastically affect the biotic, socioeconomic, cultural environment, among other aspects.

In the meantime, Mechi and Sanches (2010) address that often, the places of occurrence are environmentally sensitive and important for the preservation of biodiversity, water resources, landscape or other natural resources with an environmental function of great importance. Still, according to Mechi and Sanches (2010) mining has a significant impact on the environment, as almost always the development of this activity implies the suppression of vegetation, exposure of the soil to erosion processes with changes in the quantity and quality of surface and

underground water resources, in addition to causing air pollution, among other negative aspects.

This way, mining and its operation regime must be attentive to good practices, so that the means have the least possible impact in contrast to the various risks existing in the activity, whether small, medium or large.

THE GOLD MINING IN THE LEGISLATION

The Federal Constitution in the article 225 § 2 provides that anyone who exploits mineral resources is obliged to recover the degraded environment, in accordance with the technical solution required by the competent public body, pursuant to the law. Still, the Mining Code specifies that the regulation for mining occurs in a legal way for the miner culturally adapted to this practice, initially occurs from the transcript in item I of article 70 of Decree Law number: 227/1967, in which it defines that “mining, the individual work of those who use rudimentary instruments, manual devices or simple and portable machines, in the extraction of precious and semi-precious stones and valuable metallic or non-metallic minerals, in eluvium or alluvium deposits, in the watercourses or on reserved banks, as well as in secondary deposits or plateaus (grupiaras), slopes and hilltops; these deposits generically called minings.”

Subsequently, from Law number 7.805/1989, the prospecting permission regime is created, in which, in its sole paragraph, it states that “the prospecting permission regime is the immediate use of mineral deposits that, by their nature, size, location and economic use, can be mined, regardless of previous research work, according to criteria set by the National Department of Mineral Production.”

In this context, it is observable that the gold miner does not need, for its technical development, the verification of the existence

of cubage of the area in which the extraction will take place. However, § 1 of article 10 of Law n° 7.805/1989 and item III of article 2 of Law n° 11.685/2008 define minerals that can be mined, “gold, diamond, cassiterite, columbite, tantalite and wolframite, in alluvial, eluvial and colluvial forms are considered minable; sheelite, other gems, rutile, quartz, beryl, muscovite, spodumene, lepidolite, feldspar, mica and others, in types of occurrence that may be indicated, at the discretion of the National Department of Production Mineral - DNPM.” This way, although there is a wide mineralogical and/or petrographic variety of substances suitable for the mining permission regime, this contains restrictions on those that culturally make up the mining activity in Brazil. In time, with the enactment of Law n° 11.685/2008, the mining legislation was added to the mining permission regime, the Gold miner Statute, which defines important concepts and assumptions for this type of mining.

Besides, other norms were applied to the mining permission regime, made by the National Mining Agency in order to reduce bureaucracy and improve procedures, in some situations considered outdated or of little rigor, corroborating in a not so distant past in predatory practices and environmentally aggressive.

Among the norms for the gold mining permission, Ordinance n° 178/2004 brought to the technical environment, the main elements of instruction to be required; being subsequently amended by Ordinance No. 267/2008. However, the National Department of Mineral Production, currently the National Mining Agency, as of Ordinance No. 155/2016, consolidated several rules and administrative procedures, in order to establish standardized rules for the existing mining regimes, in a movement to reduce bureaucracy in practices regulations for the mineral sector. In this

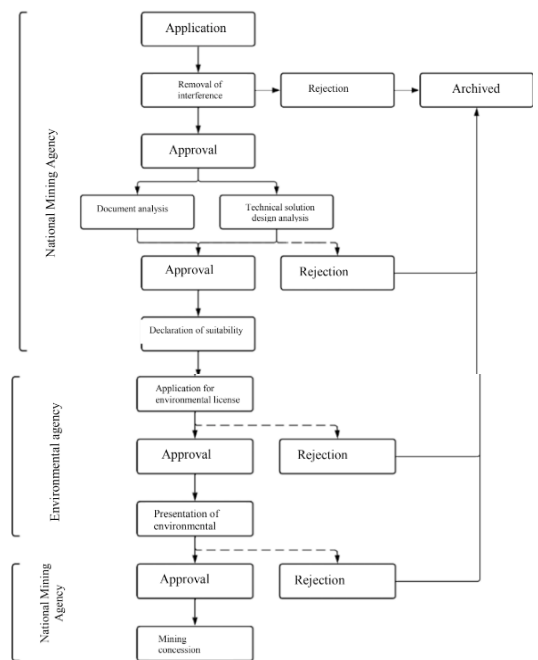
ordinance, in its chapter IV, it disposes, in the form of the prospecting permission, in terms of the technical aspects in terms of projects to be developed, documents necessary for the formation of the process, stage of the environmental licensing, granting and validity of the title, among other explanations. These elements, excluding the need for assent, depending on the location of the application, contain relatively simple elements to be developed, contrasting with the potential for degradation and pollution of the gold miner, which must require the miner, a greater level of detail regarding the requested request.

For many years, given its simplicity, the gold miner, went through numerous prejudices, regarding its effectiveness in implantation as well as being supervised by the National Mining Agency. As of Service Order No. 595/2021, the agency adopted the requirement for a technical solution project for existing and new requirements, as well as for prospecting mines already in operation. Item 1.2 of this regulation suggests the main topics that the project must contain “The Technical Solution Project, prepared by a legally qualified professional and accompanied by the appropriate Technical Responsibility Note - ART, must identify the mining method, list of equipment, improvements, scale of production and expected investment.”

Besides, with the advent of the requirement of the Technical Solution Project for the Mining Permission regime, there is a contextualization of the way in which the operation of this activity will take place, as well as the security measures to be adopted by the mineral entrepreneur. In the past, it was still a matter of viewing the main socio-environmental measures to be applied, given the size of the enterprise and the potential polluting level.

This way, the Technical Solution Project, roughly speaking, brings ordering and

responsibility to the miner, considering that mining cannot be carried out randomly and neither in the way that is best convenient. However, it is commendable that from this type of requirement to the miner through the mining regime addressed here, that the regulation, inspection and determination of technical procedures, is now also a responsibility covered by the National Mining Agency. Based on these references regarding the way in which the gold mining permit regime is given and its respective procedural procedure, flowchart 1 is a graphic construction element of the process itself.



Presentation of environmental license
Flowchart 1: Form of analysis of the request
for the granting of the gold miner

Source: The author (2022)

With the collection of more detailed technical elements, the mining regulatory agency in Brazil becomes the protagonist in the regulation with more criteria of the elements necessary for the granting of gold mining, thus minimizing the burden on environmental agencies, in any sphere of power. Within these technical items, the need for a Mine

Closure Plan must also be highlighted, which was required with the publication of ANM Resolution Number 68/2021.

In this resolution and in its subsequent rectifications, the definition regarding the mandatory presentation of a technical document, with the wording “Art. 3. Mining enterprises with mining permits in force and in operation must submit, within a period of 12 (twelve) months from the publication of this Resolution, an updated PFM, pursuant to Chapter II of this Resolution.” This way, the Mining Permission regime, as it is a mining title of extraction, has the full obligation to present PFM, according to the regulation of this resolution.

Section I of Chapter II of ANM Resolution No. 68/2021 clarifies the elements that must be included in the PFM, in addition to the title requirements for mining and those already granted, must also present the project in its conception. However, as a mechanism to help the miner, if the protocol does not occur, demands on the same may occur within the scope of the processing of mining processes related to mining.

In addition to other obligatory obligations related to the PFM, the regulation brings elements about the update that must occur every 05 years. It is also up to the miner to prove the execution of the items addressed and conceptualized in the project delivered to the National Mining Agency.

The mining operation involves practices already widely disseminated in the technical field, in terms of mining methodology, processing, containment of tailings, overburden; as well as the measures to reduce environmental impacts that, associated with control measures, must be the horizon for the sustainable use in the exploitation of mineral resources, which ends up being challenging for those involved.

ENVIRONMENTAL IMPACTS

Leite et al (2017) apud Silva (2001) describes that the impacts generated by mining cover several areas, causing geomorphological, biological, water and atmospheric changes, such as: removal of vegetation cover, pollution and contamination of soil and water resources by substances used, increased erosion, sedimentation and silting of rivers, air pollution, waste generation, animal mortality, migration of animals in the area and noise pollution.

Prospecting mining, as well as other mining activities, generate impacts that require bold measures to minimize them.

Thus, Leite et al (2017) state that the impacts caused by activities that compromise the environment, which consist of: employee training, implementation of solid waste management, effluent treatment, inspection of machinery, constant monitoring of neighboring areas, waterproofing of soils so as not to be contaminated with oils and hazardous substances used, preservation and maintenance of Permanent Preservation Areas (APPs) close to the site, recovery of degraded areas and monitoring of water resources.

In turn, Milanez (2017) corroborates with the following elucidation on the responsibility for the sector, where the socio-environmental impacts of mining are neither simple nor spatially limited, much less temporally restricted. In fact, many of them are ecologically complex, spatially wide and, because they are irreversible, temporally permanent.

However, although the list of minerals is extensive, with various complements within the scope of mining and environmental legislation, there is still, nowadays, extraction and commercialization taking place clandestinely, largely because non-mining activities are located in reserve areas. sustainable and/or permanent use

environments, blockade areas, indigenous lands, among others; which licensing is not allowed by constitutional restrictions as well as by the vast environmental impacts that, depending on the size of the enterprise, can cause long-term damage, with high polluting potential and in some cases irreversible.

These extractions, in a generic way, have been characterized as mining by the various media existing in Brazil. However, it is observable that mining is an activity foreseen in the Brazilian mining legislation and the use of the nomenclature to characterize subsoil usurpation, brings harm to those who work daily in favor of the development of balanced actions for this niche of mining in the country.

Therefore, one must not confuse prospecting and/or prospecting with illegal extraction and/or subsoil usurpation. The occurrence of such assumptions of defrauding the Brazilian people's heritage is up to the police bodies, forest management bodies, environmental agents and given the level of risk, the addition of the armed forces.

As the usurpation has immediate action, the environmental damages are innumerable, generating a distant cadence, some of these losses, such as the scaring away of the local fauna, loss of plant specimens, erosion of riverbeds, silting of rivers, contamination of water sheets and/or water basins and hydrographic, respectively, within other items; are not reversible in the short term. In most cases the degraded areas, after exhausting the ore of interest to the aggressors, are abandoned, maximizing the existing environmental problems.

METHODOLOGY

The methodology used in this work was the bibliographic research in the collection available on the digital platforms of the National Mining Agency and in official legislation accessible on Brazilian government

websites.

The theme of the proposal was directed to subjects related to gold mining in Brazilian legislation, not allowing a deep discussion about the different impacts caused by subsoil usurpation, only mentions in a comparative context.

FINAL CONSIDERATIONS

The prospecting permission regime is a tool of great interest for the development of mining through mechanisms provided for in the mining legislation. Just as family farming has a significant share in the socioeconomic success of regions dependent on this activity, mining can also be representative in the locations where it is inserted.

The application of correct mineral exploration techniques, associated with efficient methodologies for mitigating environmental damage, in addition to the consistent practice of education and environmental awareness, are of great value for the activity to take place in compliance with the regulations in force in the country.

The gold miner, therefore, needs standards similar to that of conventional mining, which makes it a de facto one, and its operational risk cannot be minimized, whether these are involved or directly affected. As an insertion tool, it makes it possible, based on the existence of a mineral substance, whose technical-economic viability is notorious, making it possible for native Brazilians and cooperatives to enjoy the legal means for exploration to take place.

Once the essential items have been verified and approved in accordance with the legislation, the gold mining enterprise will have a connotation and social and economic participation in the location of insertion. This will be characterized by the demand for inputs and products that can be purchased; hiring skilled or unskilled labor, direct or

outsourced; generation of municipal, state and federal taxes; in addition to the application of various socio-environmental programs, considered essential and that can generate, during the operation, awareness of people close to the enterprise, tendency to identify and associate with the expressed concerns of the entrepreneur, among other items described in the sequence of this project.

The gold miner is already an important tool for economic development in many regions of Brazil, and in some of these, the only tangible references to the local population about what mining is. In the past, given its

importance, the endorsement of inspection by public agents and regulators was summarily necessary to guarantee the execution of the proposed projects, in terms of mining and the environment.

Finally, the Brazilian legislation for gold mining is relatively simplistic, in which the purpose observed for this initially was to favor those who need it for their survival. Over time, erroneous application for different purposes was observed, in general, illegalities, which contrarily harm those who act within the current rules.

REFERENCES

_____. Constituição (1988). Constituição da República Federativa do Brasil. Brasília: 1988. Disponível em: <https://www.planalto.gov.br/ccivil_03/constituicao/constituicao.htm>. Acessado em 30 de setembro de 2022.

_____. Decreto - Lei nº 227, de 28 de fevereiro de 1967. Dá nova redação ao Decreto-lei nº 1.985, de 29 de janeiro de 1940. (Código de Minas). Brasília, DF. Disponível em: <http://www.planalto.gov.br/ccivil_03/Decreto-Lei/Del0227.htm>. Acessado em 01 de outubro de 2022.

_____. Lei nº 7.805, de 18 de julho de 1989. Altera o Decreto-Lei nº 227, de 28 de fevereiro de 1967, cria o regime de permissão de lavra garimpeira, extingue o regime de matrícula, e dá outras providências. Brasília, DF. Disponível em: <http://www.planalto.gov.br/ccivil_03/leis/l7805.htm>. Acessado em 01 de outubro de 2022.

_____. Lei nº 11.685, de 02 de junho de 2008. Institui o Estatuto do Garimpeiro e dá outras providências. Brasília, DF. Disponível em: <https://www.planalto.gov.br/ccivil_03/_ato2007-2010/2008/lei/l11685.htm#:~:text=LEI%20N%C2%BA%2011.685%2C%20DE%20,Garimpeiro%20e%20d%C3%A1%20outras%20provid%C3%A2ncias.&text=Art.,e%20deveres%20assegurados%20aos%20garimpeiros.>. Acessado em 01 de outubro de 2022.

_____. Ordem de Serviço nº 595, de 13 de outubro de 2021. Retifica a Ordem de Serviço 528/21 e dispõe sobre diretrizes de fiscalização do requerimento e do título de Permissão de Lavra Garimpeira (PLG), até elaboração de resolução específica para o referido regime de aproveitamento, em linha com as instruções e recomendações dos órgãos de controle. Agência Nacional de Mineração. Brasília, DF. Disponível em: <https://anmlegis.datalegis.inf.br/action/ActionDatalegis.php?acao=abrirTextoAto&link=S&tipo=OSV&numeroAto=00000595&seqAto=INT&valorAno=2021&orgao=ANM/MME&cod_modulo=351&cod_menu=8041>. Acessado em 05 de outubro de 2022.

_____. Portaria nº 267, de 10 de julho de 2008. Altera a Portaria nº 178, de 12 de abril de 2004, que dispõe sobre a permissão de lavra garimpeira. Departamento Nacional de Produção Mineral. Brasília, DF. Disponível em: <https://anmlegis.datalegis.inf.br/action/ActionDatalegis.php?acao=detalharAtosArvore&link=S&tipo=POR&numeroAto=00000267&seqAto=000&valorAno=2008&orgao=DNPM/MME&codTipo=&desItem=&desItemFim=&nomeTitulo=&cod_modulo=351&cod_menu=7909>. Acessado em 02 de outubro de 2022.

_____. Portaria nº 155, de 12 de maio de 2016. Aprova a Consolidação Normativa do DNPM e revoga os atos normativos consolidados. Departamento Nacional de Produção Mineral. Brasília, DF. Disponível em: <https://anmlegis.datalegis.inf.br/action/ActionDatalegis.php?acao=abrirTextoAto&link=S&tipo=POR&numeroAto=00000155&seqAto=000&valorAno=2016&orgao=DNPM/MME&codTipo=&desItem=&desItemFim=&cod_modulo=351&cod_menu=7909>. Acessado em 02 de outubro de 2022.

_____. Resolução ANM nº 68, de 30 de abril de 2021. Dispõe sobre as regras referentes ao Plano de Fechamento de Mina - PFM e revoga as Normas Reguladoras da Mineração nº 20.4 e nº 20.5, aprovadas pela Portaria DNPM nº 237, de 18 de outubro de 2001. Agência Nacional de Mineração. Brasília, DF. Disponível em: <https://anmlegis.datalegis.inf.br/action/ActionDatalegis.php?acao=abrirTextoAto&link=S&tipo=RES&numeroAto=00000068&seqAto=000&valorAno=2021&orgao=ANM/MME&cod_modulo=414&cod_menu=7348>. Acessado em 05 de maio de 2023.

LEITE, Amália Lima; FREITAS, Ivna Gomes de; OLIVEIR, Estephano Bessa de; MARINHO, Márcia Thelma R. D. Atividade mineradora e impactos ambientais em uma empresa cearense. XVII Simpósio Brasileiro de Geografia Física Aplicada e I Congresso Nacional de Geografia Física. Campinas: Instituto de Geociências - Unicamp, 2017.

MECHI, Andrea; SANCHES, Djalma Luiz. Impactos ambientais da mineração no Estado de São Paulo. São Paulo: Scielo, 2010. Disponível em: <<https://www.scielo.br/j/ea/a/TNzjZ3HD8K6rCvSSWPtsZgC/#:~:text=De%20modo%20geral%2C%20a%20minera%C3%A7%C3%A3o,de%20causar%20polui%C3%A7%C3%A3o%20do%20ar%2C>>. Acessado em 25 de agosto de 2022.

MILANEZ, Bruno. Mineração, ambientes e sociedade: impactos complexos e simplificação da legislação. Brasília: IPEA, 2017. Disponível em: <<https://www.ufjf.br/poemas/files/2014/07/Milanez-2017-Minera%C3%A7%C3%A3o-ambiente-e-sociedade.pdf>>. Acessado em 26 de agosto de 2022.