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ABSTRACT

Mining is considered as one of the most vital industrial fields in many developing countries, and Armenia is not an exception. Mining is a risky business, fraught with hurdles. Exploration often comes up empty, investments are large, and commodities are volatile. Moreover, there are large environmental and social risks associated with tailings, dams, and resettlement policies. A risky business does not, however, mean that mining is or should be an irresponsible business. Many of these risks can be mitigated or eliminated. One of the key risks associated with mine operations is the proper evaluation of extracted resources through state inspection and tax authorities to ensure fair share of benefits both for the state and the company. This requires proper policies, laws, regulations, careful implementation, and planning for the whole life-cycle of the mine and when the mine closes – all of this even before the mine opens¹.

Furthermore, it should be stated that for the resources rich countries mining is one of the top measures to fill the state budget, as the taxes and royalties particularly from gold mineral resources occupy a huge part in state budget, which in its turn may be allocated for countries' other needs, as pension, allowance etc.

In comparison with other countries, Armenia is considered as precious metal resources rich country. Among base metal and precious metal deposits located in Armenia, there are 8 copper-molybdenum mines, 3 copper mines, 13 gold and gold-polymetallic mines, 2 poly metal lie mines, 2 iron ore mines, 1 aluminum and 1 magnesium silicate and chromite rock mines². Therefore, it is obvious that inspection of gold mineral resources in Armenia is very crucial and the regulatory framework and oversight mechanisms should be properly designed and effectively enforced to ensure fair conditions and reasonable share of benefits between the state and the companies from resource use.

¹Article published by Jean-Michel Happi ,World Bank's Country Manager of Armenia-<https://blogs.worldbank.org/voices/risky-responsible-business>

²Armenia-Mining and minerals, article published by <https://www.export.gov/article?id=Armenia-mining-sector>

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INTRODUCTION

Gold minerals production is one of the most vital fields in Armenia's economy, due to incomes generated from the extractive sector which later can be converted into social and economic benefits. However, for proper mining operations, it is necessary to possess appropriate legal norms and legal basis, which may duly regulate this field. However, in practice we follow several legal and institutional gaps of state inspection bodies, which negatively influence the continuous operation of mining companies and fair legal actions of the inspectorate. Thus, the primary purpose of this research is to reveal the actual legal and institutional gaps and challenges in the process of inspection and to find out the best feasible solutions for Armenia.

Therefore, the research question of the present paper is formulated as “**Which Are The Main Legal and Institutional Challenges Of The State Inspection of Gold Mineral Resources' Use? How to address the legal and institutional challenges based on international practice review?**”

The main legal document which regulates the mining activities is the Mining Code of RA. The 1st article states: “*Present Code defines principles and order of mining throughout the territory of the Republic of Armenia, governs relations associated with protection of nature and environment from deleterious effects, ensures security of works during mining, as well as protection of rights and legitimate interests of state and individuals during mining.*”

In addition, according to the article 2 of the present Code “1. *Mining legislation of the Republic of Armenia incorporates the respective provisions of the Constitution of the Republic of Armenia, National Security Strategy of the Republic of Armenia, Civil Code of the Republic of Armenia and, the present Code and other legal acts adopted in compliance with it.*

2. *Where international treaties of the Republic of Armenia define norms differing from what present Code, norms of respective international treaties shall prevail.*”³

As it is stated above the Mining Code of RA regulates the main field of mining operations of precious metals, including gold. However, the inspection of mining operations is regulated by a

³ Mining Code of RA- <http://www.arlis.am/>

separate law, which is the Law on Organizing and Carrying Out Inspections in the Organizations on the Territory of the Republic of Armenia⁴. The 1st article of the present law states, that the law regulates the relationships related to organizing and carrying out inspections of the activities of commercial or non-commercial organizations, institutions established thereby, registered in the Republic of Armenia or in foreign countries and carrying out activities in the territory of the Republic of Armenia, as well as defines the uniform procedure for carrying them out. Inspection is a procedure implemented based on law, by which the credibility of the reports provided by companies and the consistency of the actual activities of the latter with the requirements of laws and other legal acts is revealed.

The abovementioned legal acts are the main tools to regulate the inspection of the gold mining companies. However, it is necessary to realize that accurate inspections without violation of the gold mining company's rights may be conducted solely due to valid harmonized enforcement of these acts without any contradictions and exceptions.

By analyzing the Mining Code of RA and other related legal acts, it becomes clear that the field of precious metals mining is extremely specific and has bulks of special features, which should be separately regulated. Particularly, when we analyze the calculations within mining operations, we see that there are several calculations in diverse levels of mining operations, from the 1st extraction of ore from the mine sites to final production of gold ore. Therefore, laws and legal acts on organizing and carrying out inspections shall take into consideration all these conditions and elaborate appropriate mechanisms and techniques to correctly conduct inspections at mining operation companies.

However, the laws regarding organizing and carrying out inspections in Armenia, do not define special clauses for inspection of mining operations. This means, that the state inspection utilizes almost the same mechanisms to implement inspections at banks, financial institutions and at mining operation companies. Moreover, it is also necessary to differentiate the inspection at precious metal mining operations companies from mining of other minerals operations.

⁴ RA Law on Organizing and Carrying Out Inspections in the Organizations on the Territory of the Republic of Armenia-<http://www.arlis.am/>

Thus, the main issue of implementation of state inspection legislation is that it is necessary to differentiate the mining sector from other sectors, as it requires separate approach by the state bodies, particularly the calculation mechanisms of the gold content in the ore, which may not be regulated as other mineral resources.

The main purpose of this paper, is to present some concrete practical issues in the frames of inspection operations at gold mining operation companies, to understand whether it is just the wrongful implementation of obligations of state inspections bodies or there are gaps in relevant legislation. Further, the paper analyzes international best practice examples to provide feasible recommendations for addressing the identified gaps in existing legal and regulatory framework.

The paper is mainly focused on analyzing calculation methodology for identifying and leveling the samples of high-grade ore minerals used by the mining companies. To better understand the concept of calculation methodology of gold in the ore, it is necessary to provide a short description.

So, to reveal the content of the gold in ore, the geologists execute three calculations in different levels of extraction of gold. Firstly, they take samples of the ore from different points and angles of mine site. The second stage is taking ore samples from already extracted ore. Finally, the third step is taking ore samples from the ore which is delivered to the gold production factory. Then, the results of the third analyze should be compared and the average index of the gold content should be revealed.

The paper also analyzes recent court cases involving metal mining companies, where the state inspectorate presented complaints against companies for using improper calculation methodology and for faulty calculations. Additionally, evidence based analysis is also conducted in the scope of the paper on cases of State Inspectorate for Geological Surveillance⁵ to check calculation results and methodologies of mining companies, for which they are not authorized under Armenian legislation and which is the main function of the tax bodies. This in its turn

⁵ Decision of the RA Government to Create Environment Protection and Geological Surveillance Inspection Body of Ministry of Nature Protection of the RA ministry- <http://www.arlis.am/DocumentView.aspx?docid=113106>

means that State Inspectorate for Geological Surveillance takes the functions of tax bodies and conducts calculations, which is a severe violation of the law.

For these and other reasons, we may uncover the main gaps in conducting of state inspection of gold mining companies and provide recommendations on how to address them based on international best practice examples.

Additionally, to properly achieve the main purpose of the present paper, it is structured as follows:

The ***Introduction***, which reveals the main reasons of selection of the present topic, the importance of finding optimal solutions for complicated issues, which face state inspection bodies and mining operation companies within organization and conducting inspections at mining operation companies and provide the main points on which the research paper will focused.

The Chapter 1. is focused on legal analyses, particularly the main legal acts which regulate the obtaining of mining licenses by the mining operation companies by the state body and organization and conducting state inspection at mining companies, which allows to reveal the scope of rights and obligations of the state bodies within implementation of inspections.

The Chapter 2. the main purpose of the mentioned chapter, is the analyze and review of court cases, resulted from the gaps in mining and inspection legislation regarding calculation methodologies. This chapter, which analyze the justification of the state body and mining operation company over the same issue.

The Chapter 3. Will present the international best practice and is focused mainly on the experience and mining legislation of the Poland, as this country is quite similar to Armenia with social-economic conditions and mining as in Armenia occupied a huge part in economics.

The Chapter 4. is mainly focused on interviews with the professionals from the private and public sectors, the chef geologist of “Geopromining Gold” LLC and the Head of the Legal department of the Mr.Malkhasyan, who will present their considerations regarding the right approach to the present legal gaps concerning calculation methodologies.

Conclusion. Within the last part of the present research paper, will be summarized the analyses conducted in frames of the previous chapter and will be presented the feasible solutions to amend the legislation.

Chapter 1. Gap Analyses of Armenian Legislative and Regulatory Framework Related to State Inspection Mechanisms for Gold Minerals

To properly identify the gaps in Armenian legislation regarding state inspections, it is necessary to analyze applicable legal acts and actual court proceedings, which we may synthesize and finally reveal the issues which companies and state inspectorate face.

The first point to which I am going to dedicate my analysis is the issue and inconsistencies in calculation mechanisms of extraction of gold from ore and some other related consequential issues. This means, that we will analyze the applicable articles of Mining Code of RA and Law on Organization and Conducting Inspections of RA, then analyze court proceedings and follow how the state bodies implement the requirements of the laws within inspections and finally it would be possible to identify the actual gaps in law.

As the focus of the present chapter should be the state inspection over calculation methodology of identifying and leveling the samples of high-grade ore minerals used by the mining companies, it is necessary firstly to identify and find out articles or laws which states the authorization of the state body to check calculation methodology or which law generally defines description or rules for calculation methodology, or which law imposes the company to utilize one or another calculation methodology.

Initially, as it is stated in the article 49 on application for obtaining mining right of the Mining code of RA, a legal person (including foreign commercial company) may apply to authorized body to obtain the mining right from a subsoil allotment of the Republic of Armenia by providing the following documents: in case of legal person, applicable registration documents of the company, expected period of mining, geological description of the subsoil allotment, list of

confirmed minerals, mining plan, mine closure plan, information regarding financial and technical capacities and means, the content and other conditions of which shall be approved by the Government, the waste management plan and the relevant financial guarantee and the receipt of payment of the state duty set for the implementation of the environmental impact assessment.

In addition, according to the article 7 of the same Code, on conducting of expertise in the field of mining and subsoil protection, in the field of mining and subsoil protection there shall be conducted the examinations of mining engineering, of environmental impact and of technical security. Moreover, the Code states that provision of subsoil for the purpose of mining shall be permitted only after engineering examination of accuracy of information regarding reserves contained in it and confirmation of quantity and quality of explored and assessed reserves in the defined manner.

Furthermore, according to the sub-clause 3 of the article 54 on signing mining contract of Mining Code of RA “Mining contract should provide:

- 1) types of minerals, extraction of which is permitted to mining operator,
- 2) allocated mining site coordinates,
- 3) duration of contract according to the project,
- 4) expected periods of industrial and raw materials processing works by phases, and in case of parallel conduction of geological exploration works, their schedule,
- 5) environment management plan,
- 6) information on confirmed reserves of deposit,
- 7) procedure on submission of reports and works supervision provided by present Code and legislation,
- 8) provisions regarding calculation and payment of fee for use of minerals,
- 9) provisions regarding the size and implementation periods of the responsibilities assumed in the field of socio-economic development of community,
- 10) provisions related with mine closure,
- 11) the procedure and conditions for satisfying requirements for financial guarantee.”

Additionally, governmental decree number 437-N, adopted in 22 March 2012 defines the official sample of mining contract, which does not contain any information regarding calculation methodology⁶.

By analyzing the abovementioned information regarding procedure of obtaining mining permission it is obvious that nor the clauses regarding obtaining of mining permission nor conclusion of mining contract nor the rules concerning expertise defines any requirements or procedure of any clauses regarding calculation methodologies of gold in the ore. This, in its turn means, that the law does not impose the companies which calculation methodology to choose and there is no even any guidelines for companies how to choose the proper calculation methodology.

Therefore, this allows the companies to have discretionary approach to which calculation methodology to choose without possessing any warns of bearing responsibility.

However, this calculation methodology is not determined nor in Armenian legislation nor even in Armenian literature of geological studies. These calculations methodologies are mainly defined in Russian literature, more concrete in Soviet Union literature. There are more than hundreds calculation methodologies.

Why it is important to regulate the calculation methodologies by national legislation and what the difference of using one or another calculation methodology for the mining operation company? It is necessary to mention, that the content of gold in several ore samples may be different. The differences however in general are close to each other. For example, from twenty samples we may have twenty different results, which however maybe close to each other and fluctuation should not exceed 25%. After possessing all these results, the geologists may reveal the average index.

In practice, we have situations when one or two samples' gold content are unusually large or small and fluctuation exceeds 25% even 50%. However, if average index of eighteen samples is "X" and the average index of two samples is "Y", which is considerably different and far from the result "X", it means that by including these two samples in calculations of eighteen samples may result of getting deceptive average index. In this situation, the geologists use methodology

⁶Governmental decree number 437-N, adopted in 22 March 2012-<http://www.arlis.am/>

of identifying and leveling the samples of high-grade ore minerals /hereinafter referred as to calculation methodology/. This calculation methodology supposes to level the high differences between results of the samples and allow obtaining the most feasible results- average index of gold content in the ore.⁷

Besides, the cited legal clauses expressly demonstrate that the law also does not define any procedure or requirements for the companies to notify the Ministry of Energy Infrastructures and Natural Resources of RA regarding alteration of calculation methodology. Thus, from the perspective of the calculation methodology of the content of gold in ore, there is a gap in legislation, which in its turn resulted in several court proceedings. This gap keeps the state bodies and companies in an ambiguous situation, as none of the sides understand which line to take to solve this issue. Thus, in this situation, when the State Inspectorate for Geological Surveillance implements inspections within mining operation company, to check whether the company follows all obligations defined by the law and mining contract, it also checks the reports and analyses of the ore. Therefore, the inspectorate also checks calculations regarding the content of the gold in the ore. However, there is an additional issue, the calculations are made by using divers calculation methodologies, this means that if the company uses “Kogan”⁸ calculation methodology and the Inspectorate utilizes “Histogram” calculation methodology, the results would be different. Besides, before amendment of the RA Law on Environmental and Natural Resources Utilization Payments⁹, the law stated that the mining operation company should pay taxes based on exhausted hard mineral wealth supplies, not from the actual sale of the final product, in our case the gold ore. This in its turn means, that the Inspectorate should initially check how much gold may be extracted from the ore and calculate the payable taxes, which however was not effective, that’s why the law has been changed and the taxes and royalties for mining of precious metals currently calculated based on consumed gold.

⁷ “Calculation of mineral resources”, published in 1960 by State Scientific and Technical Publishing House of Literature on Geology and Conservation of Subsoil. Authors V.M.Borzunov, A.I.Dukov, M.A.Jdanov, V.I.Smirnov: p.90-102, 130-137- <http://www.geokniga.org/books/6430>

⁸ “Kogan ” and “Histogram” types of calculation methodologies for identifying and leveling the samples of high-grade ore minerals- “Deposits, Minerals and Plants”- Julius Rubinstein, Russian Academy of Mining Sciences; Process Engineering Department of the Institute of Solid Fuels Preparation, Moscow, Russia- <http://www.levbarsky.com/pdf/mital8.pdf>

⁹ RA Law on Environmental and Natural Resources Utilization Payments-<http://www.arlis.am/>

Therefore, in this situation the State Inspectorate for Geological Surveillance implements inspections to check whether the mining operation company respects all obligations determined by the law and mining contract and the tax bodies check the final calculations, calculations after consumption of the product. Therefore, the State Inspectorate for Geological Surveillance may check calculations and analyses of the content of gold in the ore, but is not authorized under legislation to draft reports including sanctions based on these calculations.

Thus, it is obvious that if the law does not define any clauses regarding calculation methodologies, therefore the Inspection body may neither check the calculation mechanisms nor selection criteria adopted by the company.

It is necessary also to discuss another related issue which resulted from the abovementioned gap. In the following court cases, we analyze the legality of the actions of the state inspection body and whether there are abuses of authority. It is necessary to review related legislation and make short analysis. Firstly, we will review the main purposes of the inspection and then rights and obligations of state bodies.

Thus, according to the article 3 of the Law On Organizing and Carrying Out Inspections in the Organizations in the Territory of the Republic of Armenia, the purpose of carrying out inspections is to clarify the credibility of the reports published or provided to the state bodies on the basis of law and other legal acts in the field of activities of an economic actor, to implement state oversight over performance of the requirements of the laws and other legal acts of the Republic of Armenia and to protect the property interests of an economic actor. Before commencing an inspection, the head (substituting official) of the respective state body shall issue an order or instruction on performing the inspection, which states the name of the body carrying out inspection, the full name of the economic sector undergoing inspection, the position, the issues of inspection, the time period covered by the inspection, the purpose and period of the inspection, the legal grounds for inspection. ***The official (officials) performing the inspection has (have) no right to go beyond the limits of the purpose stated in the order or instruction on carrying out the inspection.*** Besides, the article 11 of the same law defines the responsibility of

the inspection body in case of violation of the obligations and states that the persons carrying out inspection in violation of the requirements of the law bear liability according to the procedure defined by the legislation of the Republic of Armenia. Within the time limits defined by law the actions of the persons carrying out inspection may be contested in the state body to which the inspecting person (persons) is (are) directly subordinate, or in court. The director of the economic sector or the official substituting him/her may forbid continuation of the inspection until the answer to the complaint is received. In case of a disagreement on the adopted decision the director of the economic sector or the official substituting him/her has the right to appeal to the court.

Thus, taking into account the articles from the abovementioned law, it is clear that the inspection body should organize and conduct its actions in compliance with the legislation of RA and in order provided by the Authorized body regarding conducting inspections at particular company. The law defines in detail the scope and the particular subject of inspection. This means, the inspection body may not in any way check the calculation methodologies of the mining operation company and further to base its inspection conclusion on that. Moreover, it is no doubt, that the State Inspectorate for Geological Surveillance may not conduct any calculation of the gold content in the ore. Besides, it also may not check the calculation after consumption of the gold, as it is the function of the tax bodies. Thus, the authorized bodies for inspection and calculation of extracted and consumed gold are tax bodies.

The point is that until 01.01.2012, the utilization fees for solid minerals were calculated on the basis of the exhausted hard mineral wealth supplies in the reporting period. On 28.11.2011 the RA Law "On Making Amendments and Additions to the Law of the Republic of Armenia" On Nature Protection and Nature Utilization Payments was adopted. The mentioned law has been completely changed for metallic minerals. In particular, according to Article 9, paragraph 7, of the current edition of the RA Law on Environmental and Natural Resources Use Payments, the law shall apply to non-metallic mineral resources. According to Chapter 21 of the same Law, in the case of metal minerals, royalties shall be applied, which shall be calculated from the actual sales income of gold minerals. That is to say, the current calculation of the content of the gold in ore, is not pursuing any purpose and does not affect any kind of change in the actual amount of

tax, the payment base, the object of the payment. This in its turn, means that it is necessary to make amendments in the law on organizing and conducting inspection and define clauses specially adapted to metal minerals sector, as this field is extremely specific and the Mining Code can be too detailed in terms of formal aspects of inspection of precious metal mineral operation.

Chapter 2. Court Case Analysis and a Description the Contra-Arguments between State Inspection Bodies and the Mining Company

To understand more profoundly the legislative and enforcement gaps in the field of state inspection at precious metal mining companies, applicable court proceedings have been reviewed and analyzed in this chapter. The focus of this analysis is to highlight practical enforcement issues which resulted from the gap in the legislation. Thus, the first case study is dedicated to the administrative court proceeding number VD/0354/05/17¹⁰. In the frames of the mentioned case, according to the RA Ministry of Energy Infrastructures and Natural Resources's Resolution No. 000002 dated 04.08.2016, the Chief State Inspector of the State Inspectorate for Geological Surveillance of the Ministry of Energy Infrastructures and Natural Resources of the Republic of Armenia (hereinafter referred to as "Inspection"), from 12.08.2016 to 01.09.2016 performed an inspection to check the compliance of mine operations executed by "GeoProMining Gold" LLC (hereinafter referred to as to "Company") with RA legislation and the documents certifying the mining right of the Company.

As a result of inspection, the draft of Act No. 900002 has been drawn up, including the fact that according to the reports submitted to the Authorized Body by the Company, the Company has extracted 1019511 tonnes of ore, and 4064.46 kg of gold, and according to the daily registrar of the Company 1015139 tonnes of ore and 4017.95 kg gold. However, according to the inspection's recalculation the Company had to extract 1067704 tonnes ore and 4617.36 kg of gold.

The plaintiff (Geopromining Gold LLC) reported that objections to the draft were presented, which however have been rejected by the RA Ministry of Energy Infrastructures and Natural

¹⁰ "Geopromining Gold" LLC v. RA Ministry of Energy Infrastructures and Natural Resources VD/0354/05/17-
http://datalex.am/?app=AppCaseSearch&case_id=38562071809900146

Resources to admit, without any justification according to the Minister's decree No 126-A of 15.12.2016 and those objections have not been even attached to the subsequent act as an inseparable part of the act.

In paragraph 6 (b) of the Act, it is noted that the Company has applied an undesired calculation methodology to compute the content of the gold in ore. **However, no any legal act specifies a methodology applicable to the calculation of gold content.** The act is not attached to any professional conclusion that would explain or otherwise set the estimates of the inspection team. The Company's objections were not attached to the act.

In the mining contract concluded between the Company and the Ministry of Energy Infrastructures and Natural Resources, there is no indication of any mandatory method in the work plan or any criteria imposing the Company to use one or another calculation methodology.

In addition, there is no reference to clear legal norms. The act and the order merely indicate that the Company has violated Article 59, paragraphs 1 and 4 of the Mining Code of RA, which states that "*A person authorized to extract mineral resources is obliged to carry out the works in accordance with the terms of the mining contract and the terms of the project submitted to the authorized state body, to ensure the fulfillment of the requirements of the mining project.*" Moreover, this also cannot be considered as justification for the legal act and there is no direct reference to the applicable legal norm which supposed to be violated by the Company. The Act and the order have to specify the terms of the mining contract or legal norm which has been directly violated. Therefore, the Act and the Decree, in the formulation of credibility, should be viewed as a document containing unreasonable justification stated by the inspection body.

According to the plaintiff's position, the law or any other legal acts of the Republic of Armenia do not specify any methodology for calculating the retained earnings and guidelines for implementing that calculation. That is to say, every mining company, including the Company, has the right to choose any calculation methodology for computing gold content in the ore,

therefore there is no rule requiring the mining Company to present its formal justification to the state body and the state body cannot impose unfavorable consequences for that choice.

During the discussions, before bringing the case to the court, between the Company and the RA Ministry of Energy Infrastructures and Natural Resources, the representatives of the Company repeatedly demanded from the Inspectorate to mention a legal act, which would define the Calculation Methodology of the exhausted resources, the procedure of choosing, coordinating such methodology, and alteration the methodology. No such legal act has been cited. That is to say, the choice of any methodology is not a legal problem, but rather a debate on theoretical geological concepts that do not have any legal force and do not cause negative legal consequences.

Moreover, the Minister issued a decree to reject the Company's complaint, which stated that *"the lack of justification of the choice of the calculation methodology mentioned in the Company's claim is the basis for rejection of the objection"*. In other words, the minister actually stated that there is no legal act that will define any compulsory method for calculation, however, the Company should justify the choice of one or another calculation methodology. This is a grave violation of the provisions of the RA Constitution and the Law "On Legal Acts"¹¹. The State Authority does not justify the company's obligation, but it also notes that the Company should justify the choice of a non-legally binding behavior.

As an example of such a norm, the Inspectorate notes that the company has violated Article 65 § 1 of Part 3 of the Mining Code, according to which "Main requirements of subsoil protection are: ensuring accurate registration of mineral reserves flow.", however, this clause does not impose any liability for the Company for choosing any calculation methodology, nor does it describe the logic of applying that method.

Additionally, the inspection body from 01.01.2014 as to 01.01.2015 also conducted a check for that period, as a result of which the act No. 900002 of 11.03.2015 was drawn up. Although the company used the same "Kogan" calculation methodology, the Inspectorate did not have any

¹¹ RA Law on Legal Acts- <http://www.arlis.am/>

remarks with it. This fact also indicates that the choice of calculation methodology is not a legal issue and different specialists and geologist have different approaches.

Furthermore, the article 7 of the RA Law On Fundamentals of Administrative Action and Administrative proceedings states the principle of prohibition of arbitrariness and imposes the Inspection body to apply the same approach to the same situations or facts, which means it should accept the current chosen calculation methodology which the Company used during the previous inspection period and no violation of this calculation methodology selection has been observed.

Regarding this allegation, the RA Ministry of Energy Infrastructures and Natural Resources presented its counterarguments regarding the claims of the Company.

Firstly, the Ministry stated that in some areas of the open pit the height, length and width of the mine sites, as well as the angle of inclination of the mine, provided by the mining project, have not been met. The Company did not conducted expertise and inspection to verify the quality of the minerals, the gold contained in the ore. According to the reports submitted to the authorized body 1019511 tonnes of ore and 4064.46 kg of gold have been extracted, and according to the daily registrar, 1015139 tons of ore and 4017.95 kg gold (the difference is 552,9 tons of gold). This means that the Company did not report the extracted 552,9 kg gold to the Inspection.

This justification was the sole and the closest argument dedicated to the claim regarding calculation methodologies, as the defendant did not express any view or counterargument which may challenge Company's argument, that the inspection body could not base the act on the selection of the wrongful calculation methodology.

The court, taking into consideration the arguments of both sides, stated, that according to the article 9 paragraph 4, Part 2 of the RA Law on Legal Acts. "4. restrictions and freedoms of individuals and legal entities, their responsibilities, as well as the types of liability, the size of the liability, enforcement procedures, taxes, duties and other mandatory payments to be paid by natural and legal persons, types, size, payment order solely may be defined by the laws of the Republic of Armenia." According to the Act, there has been a violation regarding selection of calculation methodology of calculation of the gold content in the ore.

It should be noted that any law or regulation of the Republic of Armenia does not define any methodology for calculation of retained earnings or guidelines for the implementation of that calculation. Under such circumstances, each mining company, including the Company, has the right to choose any calculation methodology of exhausted reserves, as there is no provision requiring the mining company to present its formal justification. Therefore, the administrative court of first instance satisfied the claim of the Company and recognized invalid the Act composed and adopted by the RA Ministry of Energy Infrastructures and Natural Resources.

The judgment has been appealed to the Administrative court of appeal. However the court, came to the same conclusion as the administrative court of first instance and stated that there is no any legal act which somehow defines criteria for the company to choose one or another calculation methodology, obligation of the mining operation company to justify why it chooses the specific calculation methodology, obligation of the mining operation company to report which calculation methodology it utilizes within its work to the RA Ministry of Energy Infrastructures and Natural Recourses.

To continue the case study, it is also necessary to analyze the court case N S-1205 dated 03.07.2007, between “Ararat gold mining enterprise” LLC and RA Ministry of Nature Protection. According to the RA Ministry of Nature Protection's Resolution No. 010163, the Chief State Inspector of the State Inspectorate of Nature Protection (hereinafter referred to as "Inspection"), from 11.05.2006 to 08.06.2006 performed an inspection to check the compliance of mine operations executed by “Ararat gold mining enterprise” LLC (hereinafter referred to as to "Company") with RA legislation and the documents certifying the mining right of the Company.

As a result of inspection, the draft of Act No. 01005 has been drawn up, including the reports and comparative chart regarding calculation of the exhausted reserves and appropriate nature utilization payments paid by the Company. The first part of the chart included information regarding volume of exhausted reserves of gold and silver based on 5 EH report, the second part of the chart involved information regarding exhausted reserves based on nature utilization

payment paid by the Company. The report 5EH is a report concerning the volumes of the reserves based on which the Company pay Nature utilization payments according by the RA Law on Nature Protection and Nature Utilization Payment.¹²

According to the comparative chart, the difference of the volumes of exhausted reserves' between calculations involved in the report 5EH and reports of payment of nature utilization fee was 56.028kg /which is the difference of 366.6kg and 310.572kg/. This means that, the Company did not implement its obligation to pay nature utilization fee for 56.028kg gold.

During the present case, the chief geologist of the Company stated, that the composed act by inspection body is wrong. In the process of inspection, the inspection bodies did not mention that there were any faults, they just implemented their calculations, and stated that if estimations of the Company are not the same as the inspection bodies got through computing, thus, the estimations of the Company are wrong. However, the chef geologist added, that there are bulks of divers calculation methodologies in practice and the choice of calculation methodology mostly depends of the nature of the mine. Additionally, there is no any general calculation methodology defined by any legal act. Therefore, this is the reason of conflicts between the calculations of the Company and Inspection body.

Furthermore, there are several measures for estimations. In mining, we have the concept of reserves' category, which classified reserves according to the level of reliability. The orders regarding internal and external control and guidelines how to choose proper calculation methodology were existed in the period of Soviet Union. The guidelines regarding choosing calculation methodology were established through literature in that time.

However, currently there is no any legal act which fixes this kind of control. This also means that this is the sole discretion of the Company to choose calculation methodology, without getting any permission by state body.

¹² Decision of the Statistical Council of RA "Formation of the Number 5 EH Statistical Report Form and Application"- <http://www.arlis.am/DocumentView.aspx?docid=16231>

By analyzing all the facts attached to the court proceeding, the court expressed the following viewpoint: As there is no any legal act which states guidelines or binding criteria for choosing calculation methodology, this allows the mining operation companies to choose any calculation methodology. By taking into account this justification, the court had decided to recognize invalid the act composed by the RA Ministry of Nature Protection.

By analyzing case studies mentioned above, the legislation of the Republic of Armenia does not define any requirements or guidelines for the mining operation companies to choose calculation methodology, which means that this choice is under the sole discretion of each mining operation company. Therefore, we may consider this, as a gap in legislation, which resulted in several court cases, which would be possible to avoid if legislation determine concretely the guidelines or criteria, or determine that each mining operation company is allowed to choose solely any calculation methodology.

Chapter 3. Review and Comparative Analysis of International Best Practices Feasible in the Local Context

To address the legislative and institutional gaps identified in the chapters above, it is necessary to review and analyze international best practice and compare it with national legislation. For this purpose Poland's experience, have been analyzed given the similarity of the socio-economic context with Armenia as well as its rapid reforms and growth in the mining sector recently. Poland has quickly made a name for itself as one of the top European destinations for commercial mining companies.

Naturally, Poland has been a prominent space for coal and copper mining as it has some of the largest deposits of these materials in the world. Gold has also been found in several locations throughout the country. Gold has been a part of the mining industry for generations and continues to thrive. The industry is strong and features plenty of active mines today. There are

certain areas where prospectors can casually look for gold, but most miners in Poland are being employed by one of the country's many commercial mining companies.¹³

By reviewing the laws on inspections and mining of Poland, it becomes clear that the mining industry has been fundamentally developed and there have been bulks of legal reforms to boost that. Moreover, legislation differentiates the sphere of inspections at mining operation entities and defines special features and clauses for conducting inspections. The mining law in Poland is regulated primarily by the Geological and Mining law of June 9, 2011 and Ordonnance of the Council of Ministers of 10 January 2012¹⁴ on the tender for the establishment of a mining usufruct. The Geological and Mining Law sets out the rules and conditions for undertaking, pursuing, and concluding, geological works, extraction of minerals from deposits and other mining and environmental aspects.

Thus, to profoundly understand the practice of Inspections at mining operation companies in Poland, it is necessary to make research among related legal acts. Therefore, firstly it is necessary to review the applicable articles of Geological and Mining law. According to the article 1 *“The Act defines the terms and conditions for undertaking, execution and completion of activities in the scope of: 1) rules for exploration works; 2) rules for mining operations; 3) rules for extraction; 4) rules for underground storage of substances, including waste and carbon dioxide; 5) protection of environment (underground water, mineral resources reserves, etc.); 6) control/supervision over the activities covered by this act”*.

According to the legislation of Poland, Ministry of Environment and Ministry of Energy are responsible for the mining inspection in Poland. According to the new government structure, the Ministry of Energy is now responsible for the oversight over the State Mining Authority, which before was the responsibility of the Ministry of Environment. Apart from this, according to the Polish legislation on administration units, the "management of mineral resources" is now assigned to the Ministry of Energy. This means a responsibility shift from the Ministry of Environment to the Ministry of Energy.

¹³Gold Mines in Poland- <http://raregoldnuggets.com/?p=1393>

¹⁴ Ordonnance of the Council of Ministers of 10 January 2012- <https://iclg.com/practice-areas/mining-laws-and-regulations/poland#chaptercontent11>

What is peculiar in Poland's example, is that all ministries and public bodies involved in some aspects of mineral resource policy (Ministry of Environment, Ministry of Energy, Ministry of Economic Development, Ministry of Foreign Affairs, Ministry of Science and Higher Education, Ministry of Finance, Central Statistical Office, Polish Geological Institute-National Research Institute, Ministry of Infrastructure and Construction, State Treasury, Ministry of Family, Employment and Social Policy). This means, that all ministries are involved in inspections and control over those companies.

Moreover, the Geological and Mining law states, that Supervision and inspection over the activities of geological survey services with regard to surveying and other activities conducted for the mining plant shall be exercised by the competent mining supervision authorities. While exercising supervision and inspection, the employees of the geological administration authorities shall have the right to access to all the places where geological works are carried out, and also the right to access to the mining plants, if supervision and inspection are exercised with respect to the performance by an entrepreneur of his rights under the concession. They may also demand access to necessary information, documents as well as explanations.

In exercising inspection, the geological administration authority 1) shall order an activity to be stopped or specific measures to be taken in order to restore the environment to its proper state, if it finds that the activity is conducted without a required concession, without an approved geological work programme, or not in compliance with the concession or the approved geological work programme, 2) may prohibit the performance of specific activities by the persons, for a period not exceeding two years, if it finds that these persons demonstrated flagrant neglect or flagrant violation of the law in carrying out these activities. 2. The authority competent in the matters shall be, respectively, the authority competent for granting a concession, for approving geological work programmes or ascertaining the qualifications of the persons who perform, supervise or direct geological works. 3. The lodging of an appeal against a decision issued pursuant to paragraph 1 shall not suspend its execution.¹⁵

¹⁵ Geological and Mining Law of Poland-
https://www.mos.gov.pl/g2/big/2012_06/e1fd8f256cbc5cefb421364232bf09dc.pdf

Unless a specific provision states otherwise, the mining supervision authorities exercise supervision and inspection over mining plant operations, and in particular over: 1) work safety and health, and fire safety, 2) mine rescue, 3) management of mineral deposits during their exploitation, 4) environmental protection, including damage prevention, 5) mining plant construction and closing down, including land reclamation and development of post-mining areas. The mining supervision authorities shall monitor carrying out by the entrepreneurs the obligations related with the environment protection, stipulated by the legal regulations on the environment protection and by the decision determining the conditions for environment usage in relation to the mining plant operation. 2. Mining supervision authorities shall grant, by way of an administrative decision, authorizations for: 1) setting in operation of particular facilities, machinery and equipment in a mining plant as set out in the regulations issued pursuant to Art. 78, paragraph 1, 2) the usage of blasting agents in the mining plants, 3) storage and use of blasting equipment in mining plants.

In case of the competence of other authorities of supervision and inspection coinciding with the competence of the mining supervision authorities, subject to the provision of paragraph 2, the issue of a decision regarding a mining plant shall require consent of the competent authority of the state mining supervision. 2. With regard to the maritime areas of the Republic of Poland, Art. 105 shall apply, respectively.

By analyzing the abovementioned information, it can be concluded that in Poland's experience, the state inspectorate is not authorized to conduct inspections over calculations or calculation methodologies in metal mining operations, as it is not under its obligation. The inspections over financial information and calculations are authorized to be implemented by tax bodies. Therefore, by comparing the legislation of RA and Polish legislation related to inspection at mining operation companies, the differences are not that fundamental and minor changes in Armenian legislation regarding the scope of inspections will have considerably positive impact on the process of inspections.

Chapter 4. Assessment of Stakeholders' Concerns on Domestic Legal and Institutional Challenges

The following chapter assesses institutional and legal challenges of state inspectorate of RA and mining companies based on stakeholders' concerns identified through interviews. For that reason, in the scope of the following research, interviews have been conducted with Mr. Makich Mkrtyan, the chief geologist of “Geopromining Gold” LLC, which currently possesses the biggest gold mines in Armenia¹⁶ and with Mr. Hovhannes Malkhasyan, head of the Legal Department of the State Inspectorate for Geological Surveillance of the Ministry of Energy Infrastructures and Natural Resources of the Republic of Armenia. The interviews were conducted based on initially prepared questionnaires, attached to the present master paper as Appendix .1

Through these interviews it was possible to reveal the viewpoints of public sector and private sector about the same issue. Therefore, the main questions and discussions were focused on the calculation methodology, whether there are concerns among both sides on this issues given that the law does not define specific provisions on this, whether the current Armenian inspection legislation differentiates the mining sector from other sectors, whether there are enough tools and resources, including institutional capacities to properly execute inspections at mining companies.

The first interviewer is Mr. Makich Mkrtyan who is the chief geologist of “Geopromining Gold” LLC. Firstly, he was asked to comment the absence of calculation methodology in Armenian legislation and refer sources how they choose which calculation methodology to use. The main source for them is the literature of Soviet Union authored by V.I.Smirnov. In his interview, Mr.Mkrtyan told that there is more than 100s types of calculation methodologies and choosing one of them depends from the quantity of the samples and analyzes and surely from the type of the ore. Moreover, from the viewpoint of the geologist, it is entirely meaningless to determine any criteria or guidelines for choosing calculation methodology, as the calculation technologies developing over time, therefore everyone just may create a new calculation methodology or mix some calculation methodologies to get the new one and utilize the results. In addition, the calculation methodology is a science and as mathematics or other sciences may not be defined by legal norms.

¹⁶ Official website “Geopromining Gold” LLC and “Geopromining” Ltd- <http://www.geopromining.com/en/>
Armenian database- <https://adb.am/listings/geo-pro-mining-gold/>

The point is that, it is meaningless to embody clauses regarding definition and description of calculation methodologies, as state inspectorate and tax bodies may check solely estimations based on actual sale of the gold.

Therefore, the advance proximate calculations have been submitted to the RA Ministry of Energy Infrastructures and Natural Resources before getting license for mining operation activities, then this is the risk of the mining operation company how much gold mineral resources they may extract.

Regarding the qualification of the inspection bodies, the geologist said, that there is a huge issue that inspection bodies often analyze the problems theoretically, not practically, which comes up with other problems. Moreover, within discussions before bringing the case to the court, the inspection bodies including lawyers are not well specialized in mining, that's why the cases occurred in 2007 and in 2016 were needed to bring before to court to prove the wrongfulness of the acts composed by the state bodies.

The next interview was conducted with Mr. Hovhannes Malkhasyan, the Head of Legal department of the State Inspectorate for Geological Surveillance of the Ministry of Energy Infrastructures and Natural Resources of the Republic of Armenia. During the interview Mr. Malkhasyan stated that the legislation of RA surely should be changed over time, as currently the technology of gold mining are fundamentally amended and actual mechanisms required for implementation of inspections are not enough.

One of the crucial amendments in institutional structure of the RA Government, is the creation of the Environment Protection and Geological Inspection body of the RA Ministry of Nature Protection the functions of which functions are more in detail and properly than it was before. Moreover, the template of questionnaire check-lists which are used within inspection are in the process amendments as the current template is quite scarce and the questions included there are not enough to create the comprehensive image of the inspection results. According to Mr. Malkhasyan, the current legislation and regulations regarding inspections at gold mining operation companies, are not enough for achieving the purpose defined by the law.

Regarding intuitional gaps in the state inspection body, Mr. Malkhasyan stated the qualification of the inspection bodies are quite high, the sole issue is the scarcity of financial means for hiring employees, that's why the burden of the work is enormously high but the compensation is very low.

In addition, within discussion more thorough the issue regarding calculation methodology, Mr.Malkhasyan mentioned that within the administrative court proceeding between the Republic of Armenia within administrative court proceeding with "Geopromining Gold" LLC in 2016, he was the representative of the State Inspectorate for Geological Surveillance of the Ministry of Energy Infrastructures and Natural Resources of the Republic of Armenia, who drafted and presented the arguments on behalf of the Ministry.

Additionally, regarding the question whether it is necessary to define calculation methodologies by the legal acts, he express the same viewpoint as the Chef Geologist of "Geopromining Gold" LLC Mr.Mkrtchyan, that it is entirely meaningless to define calculation methodologies by the law or state criteria which calculation methodology the mining operation company should use or any guidelines, or uniform requirement of using calculation methodology. Calculation methodology is a science, which may not be in any way depicted in the law or in other legal acts. He mentioned, that in case of imposing the mining operation companies to utilize one or another calculation methodology will be seen as restriction of dynamic development of the mining companies.

In the case of court proceeding with "Geopromining Gold" LLC, he stated from the legal perspective the justification of the Company was right, that the state inspection body is not authorized to compose act based calculation methodology, which is not determined by the law. However, from the geological side the view is quite different.

Firstly, according to the Mining Code of RA, the mining operation company is liable to submit credible information defined by the law. Then, the company requests from the RA Ministry of Energy Infrastructures and Natural Resources to obtain appropriate mining license, the company submit appropriate calculations to show the content and volumes of the gold in ore, within for example in 1 ton of ore. By this calculations, the company also shows the proximate volumes of the gold and the duration within which the company will extract mineral resources. Based on this

information and other required documents stated by the law RA Ministry of Energy Infrastructures and Natural Resources provide appropriate mining licenses. However, it is necessary to mention that the company by submitting computes also provide calculation methodology which is not required by the law, but this aids to accelerate the checking process executed by the state body.

Thus, the mining operation company gets all necessary licenses and permissions. Then, the company is obliged to submit reports to the state body every three months. The company obliged to keep the reliability of the calculations reports of the company which should be submitted to the Ministry. This means, that for keeping this process possibly reliable, it is necessary to keep the same calculation methodology within the whole process of mining operation.

Additionally, the Mr.Mkrtchyan and H.Malkhasyan mentioned that computing the same ore with Kogan and with Histogram, there will be fluctuation between 2 calculations proximately 20%. Therefore, then the company commences to compute the gold content in the ore by using Histogram calculation methodology then changes into Kogan, the company may not keep the reliability of the calculation of the exhausted reserves.

Therefore, it is impossible to say which viewpoint is completely right. However, both parties, Mr.Mkrtchyan and Mr.Malkhasyan expressed the same viewpoint that currently there is an huge gap in legislation, which results in several issues which state inspection body and mining operation companies face. There is no any proper legal act which defines the criteria for selection of calculation methodology and there is nothing about the cases when inspection body however check these calculations. However, by analyzing the interviews of both parties, it comes to clear, that both parties are against to define the calculation methodologies by the law or create any criteria for mining companies which calculation methodology to utilize. The parties agree that instead of setting calculation methodologies or criteria by the law, it is necessary to define the obligation of the company to report the calculation methodology which it uses and in case of alteration of calculation methodology the mining operation company should be obliged to report about it to the authorized body.

CONCLUSION

Given what has been outlined in the present paper in terms of Legal and Institutional Challenges of State Inspection of Gold Mineral Resources' Use, we could reveal some complicated issues, which mining operation companies and the state inspection bodies face currently. The main issue however remains the gap in Armenian legislation regarding calculation methodologies, which resulted in several court proceedings, which surely waste of time and financial means for the companies and state bodies.

Additionally, we also reviewed the practice of Poland, which have detailly regulated inspection legislation, which define the concretely the scope of each inspection body. Moreover, it stated that inspection body of geological surveillance is not authorized to check any calculations or related fields, including calculation methodologies. This means, that Poland solve the issue regarding inconsistencies in functions of inspection bodies by detailly regulation the right and obligation of each state body.

The other issues, regarding institutional gaps, is the scarcity of financial means, which are not enough to hire enough specialists who may properly conduct their functions. The problem is that, the specialist must take several functions which should be divided between several specialists, but because of financial problems, all that functions bearing few employees. This in its turn means, that the specialist may not concentrate on one function and execute its obligation ideally. However, we already see that RA is in the process of fundamental legal reformations, which would positively influence the work of state inspection bodies, the vital one is the creation of uniform inspection body which is currently under control of the RA Ministry of Nature Protection.

Therefore, taking into account the aforementioned information and applicable analyses.

Albeit that fact, that nor the Inspection body of RA neither the company of the private sector could not provide exact possible solution regarding calculation methodologies, it is however necessary to make alterations in Armenian legislation and firstly to define that all mining operation companies are obliged formally provide the calculation methodology which they use to reveal necessary contents of precious metals in the ore. Moreover, the company should be free to change their calculation methodologies any time, by reporting about it to the state bodies and present appropriate justification, why the new calculation methodology would be

better and how would be fluctuation of the results in comparison with the previous results of computing.

In this case, the law leaves the mining operation companies free to develop their calculation methodologies to apply and create new methodologies which would provide more correct information, and which may allow to facilitate the process of detecting the right places from which the companies may extract mineral resources. This solution is the most optimal solution, as from the legal perspective, they do not violate any other laws and further amendments in other legal acts would not be necessary. Furthermore, if we see practically, this amendment will not fundamentally influence the companies and state bodies but instead will clarify the ambiguous situation for mining companies and inspection bodies. Finally, both specialists from the public and private sectors consentaneously agree with this recommendation.

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APPENDIX 1

Questionnaire

1. Whether the mining operation companies are obliged by the law to submit within its mining project the calculation methodologies for identifying and leveling the samples of high-grade ore minerals?
2. Whether the inspection bodies are authorized to check calculation methodologies for identifying and leveling the samples of high-grade ore minerals?
3. Whether there are any legal acts which regulates the selection of calculation methodologies by mining operation companies? If no, is it necessary to define.
4. Please mention the current legal and institutional gaps within inspection at mining operation companies.