Financial Analysis of Mining Investments Employing FAST Modeling Standard

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ABSTRACT

In this study a project model is built to conduct an appraisal and sensitivity analysis of a gold mine. At the same time, the most up to date modeling standard, known as FAST (i.e., Flexible, Appropriate, Structured, and Transparent), is implemented.

The purpose of choosing this standard is to identify the strengths and weaknesses that may result from the implementation of this methodology for the modeling project appraisals. The FAST standard noticeably reduces the rate of error, while the speed of modeling and the appraisal of investment projects increase noticeably. The results of the analysis using FAST also becomes more communicable after implementing this standard.

An important conclusion of the appraisal is that the royalty rates charged by governments on the extraction of gold are found to be too insensitive to the magnitude of the financial surplus generated by a specific mine. In particular, our study suggests that even if the royalty rates are increased up to six times, the project still generates a positive financial net present value for the mine owners. According to this finding it should be a public finance priority to redesign the systems for setting royalty rates in mineral producing countries that would allow host countries to benefit more from high return investments while at the same time not damaging the financial viability of higher cost natural resource extraction projects.

Keywords: Investment Appraisal, Royalty Rates, Gold Mine, FAST Modeling Standard, Financial and Sensitivity Analysis

ÖZ

Bu çalışmada bir altın madeni değerlendirmesi ve duyarlılık analizi yapmak için bir

proje modeli geliştirilmiştir. Aynı zamanda çalışmada FAST (Esnek, Uygun,

Yapısal, ve Şeffaf) olarak bilinen en güncel modelleme standardı kullanılmıştır.

Bu standardın seçilmesindeki maksat bu metodun proje değerlendirme

modellemelerinde uygulanmasından doğabilecek güçlü ve zayıf noktaları tespit

etmektir. FAST standardı modelleme ve proje değerlendirme hızını belirgin ölçüde

artırırken, hata oranını aynı şekilde azaltmaktadır.

Mevcut değerlendirmenin önemli bir sonucu hükümetlerin altın çıkarımından elde

ettikleri telif oranlarının belli bir madenden elde edilen finansal fazla miktarına

gereğinden çok duyarsız olusudur. Calısmamız özellikle belirtmektedir ki telif

oranları altı kata kadar artırılmış olsa bile mevcut projenin maden sahipleri hala daha

artı finansal net bugünkü değer elde etmektedirler. Bu sonuca göre maden üreten

ülkelerde telif oranlarının belirlenme sistemlerinin yeniden tasarlanması bir kamu

maliyesi önceliği haline getirilmelidir ki hem yüksek maliyetli doğal kaynak çıkarım

projelerinin sermaye karlılıkları zarar görmesin hem de ev sahibi ülkeler bu yüksek

gelirli yatırımlardan daha fazla gelir elde edebilsinler.

Anahtar Kelimeler: Yatırım Değerlendirmesi, Telif Oranları, Altın Madeni, FAST

Modelleme Standardı, Finansal ve Duyarlılık Analizi

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To my dearest Mom and Dad

With love and respect

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LIST OF ABBREVIATIONS

FAST Flexible, Appropriate, Structured, and Transparent

LOM Life of Mine

NPV Net Present Value

ADSCR Annual Debt Service Coverage Ratio

LLCR Loan Life Coverage Ratio

IRR Internal Rate of Return

PC Personal Computer

USD United States Dollars

PDC Persian Daric

G&A General and Administrative

HFO Heavy Fuel Oil

PRI Political Risk Insurance

CFS Cash Flow Statement

DSCR Debt Service Coverage Ratio

Chapter 1

INTRODUCTION

1.1 Introduction

It is increasingly expected from mining projects to bring sustainable benefits in developing countries (World Bank, 2011). In growing number of countries, basically low-income and middle-income, mining has become one of the most important economic activities among available alternatives. Meanwhile, compensation payments are attracting more and more attention due to their windfall profits, and this comes from the high mineral prices since the early 2000s.

Mineral sector regulatory has also experienced many reforms around the globe (Otto, 1996). Over 110 nations have changed laws in mining sector and this trend still continues. Hetherington (2000) notes that; a majority of developing countries are implementing new mining acts since 1990.

On the investors' side, the profitability of the project is one of the most important concerns for the investors. Exploration, extraction, and processing of minerals are generally takes place by private sector companies. Companies are facing significant risks. The risk comes from the significant upfront capital investment that usually required in mining sector. Long exploration and pre-production construction while there is no income available for the project, long life of mining projects,

accompanying with volatility of commodity markets, technical and environmental risks keep mining industry leaders worried all the times.

The royalty rate used in this sector is also important. Both sides should financially benefit from such projects. Host countries should gain from the projects to the extent that keeps the project attractive to the foreign investors.

1.2 Aim of the Study

The main aim of this study is to build a reliable financial and risk analysis for natural resources sector in particular gold mines. Having this financial model as a benchmark will help all stakeholders in the sector to understand the different aspects of this sector better than before. Having a financial model of a gold mine with a sensitivity analysis results will also help us to study this sector much easier than before. This will enable us to have further studies on this area (i.e., different royalty and tax systems in natural resource sector).

The subsidiary aim is to increase our knowledge about one of the most important standards in modeling. By implementing FAST¹ modeling standard in building this model it is expected to experience an increase in the flexibility of the model. Having a model with more adaptable characteristics will help users in dealing with the model much easier than it used to be. Now users can add new information easily as they become available through time. Accuracy of the model is also expected to improve. Having a well-structured model will help us to keep model's consistency. This will lower the problems arising from authors who may change through time.

¹ FAST stands for flexible, appropriate, structured, and transparent. More detail about FAST modeling is available in chapter 4.

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After building the model, having a sensitivity analysis done for different outputs, we will be able to find possible different impacts on project's outputs caused by each variable like royalties, fuel, and other main influencers. Finding such valuable information will provide us a better understanding of this sector.

1.3 Methodology Approached in This Study

According to Jenkins et al. (2013), doing an appraisal and risk analysis for projects in advance will help different stakeholders to understand each and every aspects of the project. This plays a significant role for such projects with high level of uncertainty to be successful.

Although financial, economic, stakeholder and risk analyses are all known as different stages of a comprehensive cost-benefit feasibility analysis, financial and its relevant risk analysis was only done in this study due to the aim of the current study.

The financial model of the project was built based on a newly born but widely known standard called FAST modeling. As mentioned earlier, FAST stands for flexible, appropriate, structured and transparent. This standard offers financial modelers a set of initial principles and rules which will be used while building a model.

1.4The Structure

A brief structure of the current research has been explained in this section:

The main focus of the thesis has been introduced in Chapter I.

Chapter II provides a short literature review. This chapter tries to express the main objectives of the financial and risk analysis. The main criteria used to gauge the

financial performance of the project have also been explicated. The possible outcome of the implementation of the FAST modeling standard was explained as well.

Chapter III is dedicated to the methodology used in this study. This chapter explains the methodology used in financial and risk analysis as well as the FAST Modeling Standard.

Chapter IV will exclusively explain the FAST Modeling Standard, how it works and the benefits realized from implementing this standard.

Chapter V reflects the financial analysis of the project. In this chapter, the financial model is explained with the emphasis on the most important sections of the model.

Chapter VI is dedicated to the sensitivity analysis of the project. Outputs of this analysis are available in this chapter followed by the variables used in the analysis.

Conclusion has been provided in chapter VII.

Chapter 2

LITERATURE REVIEW

2.1 Gold Mine Sector

The gold industry is among those high capital intensive industries. According to Gajigo et al. (2012), generally the mines are owned by multinational companies. Mine construction and building production facilities demands a tremendous sum of capital. Heavy expenditures are needed to finance production and exploration in the long-term projects like gold mines. Technology has also played its role and greatly changed the mining industry. Gold is among one of the most popular precious metals for investors. Gold is a commodity, and, as such, the price for gold fluctuates on a daily basis in the commodity markets.

Gold prices are influenced by many variables. Supply and demand, expected inflation, returns on assets and central bank demand. Meanwhile we should mention that gold is strongly pegged to supply-and-demand patterns. In general, low prices result in low production, and high prices result in high production.

Gold that is mined today is mainly used for jewelry, financial backups (individuals and governments), electronics, dentistry, medical, aerospace, and many more.

2.2 Financial Analysis

Financial sustainability of the project is one of the major concerns for different stakeholders. Financial analysis tries to study this issue throughout projects' intended

life. The aim of this analysis is to find different performance indicators of the project. Viability and sustainability through the life of the project should be studied prior to the project. This can be achieved using predicted cash flows. According to Jenkins et al. (2013), calculating expected cash flows may help us to predict the possibility of temporary cash shortfalls in the operating stage. Availability of sufficient funds to the project is also another important issue.

Cost and revenue projections through life of mine (LOM) can also be achieved by a financial analysis. Financial analysis tries to find whether a project is attractive to investors or not. This can be reached by calculating the Net Present Value (NPV) of incremental cash flows. The project will be considered attractive if its NPV is more than zero. The Annual Debt Service Coverage Ratio (ADSCR) and Loan Life Coverage Ratio (LLCR) are also important. They are widely being used as reliable indicators of financial sustainability. These ratios advise investors about the sufficiency of the net cash flow of the projects for servicing the loan payments. Using such indicators will allow bankers to evaluate whether the project has the ability to service its debt during the loan period or not. Only projects with the ability of generating enough during the loan period can end with a good result for such indicators.

As it is expected, business owners in the gold mine sector are basically concern about the financial strength of the new gold mine and its ability to generate enough return in order to compensate their investment. On the other hand, bankers who provide loans for the project are mostly interested in the evaluation of the projects ability for reimbursement of available loans. This can be achieved by studying project yearly cash flows.

2.3 Sensitivity Analysis

According to Smith et al. (2008), the use of sensitivity analysis method goes back to 19th century. This analysis should be applied while the financial part is ready and before the final decision is going to be made. Smith et al. (2008) have remarked about other purposes of sensitivity analysis, for instance, doing a sensitivity analysis will catch unrealistic behaviors of the model. This analysis may also help modelers to detect possible errors. Doing sensitivity analysis will guide modelers to be ascertained about the degree of the required resolution in their data collection.

Sensitivity analysis is very common due to its simplicity. Sensitivity tests are being done in order to appraise the degree of vulnerability of different project outcomes to certain variables. Sensitivity analysis provides better information about specific variables which may affect projects either in a positive or a negative way.

All projects are associated with some degree of uncertainty. These uncertainties may be due to project's own parameters or resulting from macroeconomic factors. Inflation and exchange rate may be good examples of these factors. Projects' risky variables are manageable to some extend although we are not able to govern a considerable proportion of them. Having sensitivity analysis done will give us an extra opportunity to improve the models accuracy and at the same time it gives us a better understanding of the project.

2.4 FAST Modeling Standard

Models should be as user-friendly as possible. Non-modelers should be able to review models with ease. They should be able to understand the models without spending too much time and effort. An ideal model should be adaptable as circumstances change through time.

FAST Modeling Standard is a language for communicating the finances of a business between different model users. In other words, FAST standard can be explained as a different way of spreadsheet coding. FAST stands for four important rules: Flexible, Accurate, Structured, and Transparent. The Flexibility of modeling techniques used and design of the model itself plays an important role. Second letter stands for the Accuracy of the model. The model should reflect important business assumptions accurately and directly. The model should also be structured. Having an organized model is one of the essentials to keep the integrity of the model over time. This will save time during building the model and maintaining it through time. Last letter of FAST stands for Transparency. It is not a necessity for a good model to rely on complicated formulas. Ideal models are also achievable using clear formulas. Simple design will help modelers and non-modelers to understand the model easily and this will enhance the transparency of the whole work.

Conventionally spreadsheets are used for financial modeling and MS Excel™ is the most common software being used. Excel spreadsheets and FAST standard have become unavoidably correlated. FAST standard policy was to improve Excel's weaknesses in modeling while benefiting from its strengths.

Their strategy toward not using the mouse comes from a theory called muscle memory. Detailed explanations have been provided in the next chapter.

We should also mention that academic studies regarding to the implementation of modeling standards in general and FAST in particular are really scarce. We could hardly find some studies about the results of the usage of such standards. This also

motivates us to do an academic study to find the positive and negative results of the usage of the standard in the models used in project appraisals.

Chapter 3

METHODOLOGY

3.1 Introduction

This chapter provides the methodology of the thesis. First, we explain the methodology used in the financial analysis followed by the explanation for each financial indicator. Sensitivity analysis has been explained followed by a detailed explanation about the FAST Modeling Standard and its implications and benefits.

3.2 Financial Analysis

Financial analysis is one of the first and major steps in project appraisal. The main aim of this analysis is to determine the financial viability of the project throughout its deliberate lifetime.

For such a capital intensive projects like the case of a gold mine, in order to increase the probability of accepting profitable projects and reduce the chance of going for bad projects, there is a need to perform cost-benefit analysis to reduce inherent risks existing in this sector.

Financial model of the project will be generated based on the cost-benefit approach described in detail by Jenkins et al. (2013). The investment's cash flow throughout projects life span is produced to compute various performance indicators considering viability and sustainability of the project. In this approach NPV will be mainly used as a major evaluation criterion.

The financial model in this approach consists of an income statement and different cash flow statements built based on different viewpoints. Due to the fact that NPV should be calculated using real values, cash flow statements calculated in nominal terms will be converted into the real ones. Otherwise, NPV results may be untrustworthy and biased. In order to connote costs and benefits realized by different stakeholders in our model, nominal and real cash flow statements are calculated in different viewpoints. Equity (owners) and total investment (banker's) point of views have been studied in the current study. Since cash flows are calculated, next step is to calculate different decision criterion such as NPV, Internal Rate of Return (IRR), Annual Debt Service Coverage Ratio (ADSCR), and LLCR (Loan Life Coverage Ratio).

3.2.1 Price Adjustment

Market prices for project inputs and outputs are always expected to change through the life of the project. These changes may happen in real or nominal terms. Changes in supply and demand will stimulate real term changes while inflation will change the prices in nominal terms.

Unexpected changes in prices may affect the performance of the whole project significantly. In order to minimize negative consequences, price index for each year has been calculated. By multiplying real prices by the price index of the same year, nominal prices are easily calculated.

3.2.2 Time Value of Money

Any investment determination is involved with capital immediately or in advance to its expected profits. Hence, it is necessary to adapt these values to account for factors like risk, uncertainty and timing in order to have a solid judgment regarding the investment.

According to Jenkins et al. (2013), the overall effect of the factors like inflation, current consumption penchant, uncertainty, risk, and investment opportunity on the value of the money are summarized as time value of money. The value of money can be increased or decreased by such factors. In different timings, present or future values of costs and revenues, should be calculated by compounding and discounting methods in order to fix the non-comparability problems.

3.2.3 Discount Rate

The discount rate reflects the opportunity cost of capital. European Commission (2008) defines opportunity cost of capital as a foregone expected return by avoiding other potential investment activities for a given capital.

In other words, using discount rate enables to modify all the existing cost and benefits accrued in different years to their present value.

3.2.4 Financial Evaluation Criteria

In order to appraise projects financially there are many decision criteria available and widely being utilized. According to Allen et al. (2010), NPV and IRR are the most common criterions used in financial project evaluation. ADSCR and LLCR are also used as trustable debt service ratios.

3.2.5 Net Present Value (NPV)

According to Jenkins et al. (2013, p. 101), financial NPV (eq. 1) has been defined as "the algebraic sum of the present values of the expected incremental net cash-flows for a project over the project's anticipated lifetime".

$$NPV^{0} = \sum_{t=0}^{n} \frac{(B_{t} - C_{t})}{(1+r)^{t}}$$
 (1)

According to Jenkins et al. (2013), NPV can be considered as the most trust worthiest decision criteria with no drawbacks in comparing to other available tools.

Positive NPV gives the message that the project's actual rate of return is exceeding the discount rate used for discounting the net cash flow. A positive NPV denotes that the investors will be better off by going for this project. We should keep in mind that NPV calculation will compare the project with other available alternatives with a same level of risk. Reaching a negative value for NPV implies that the project is not able to recover the investment opportunity cost. Ultimately, zero NPV shows that the financial return for this project would be the same as next best alternative with a same level of risk.

3.2.6 Internal Rate of Return (IRR)

IRR evaluates the return of investments. It is anticipated to be higher than the expected return. Although this criterion is widely being used, it has serious pitfalls in giving reliable results. For instance, during the life of the project, it is quite common to experience more than one negative net cash flow for certain years during the life of the project. In this situation IRR criterion will give multiple answers. This shortfall came from the existence of multiple roots of mathematical equation. To name other shortfalls, we may refer to problems caused by the ignorance of IRR to different timing and scale, i.e. comparing different projects with different life spans (Jenkins et al., 2013).

There is an important connection between IRR and NPV. NPV would be equal to zero if and only if discounted with the rate equal to the rate of IRR. So when calculating IRR, if the outcome is exactly equal to expected rate of return used in NPV formula as a discount rate, we should expect the NPV to be equal to zero.

3.2.7 Debt Service Coverage Ratios

Annual Debt Service Capacity Ratio (ADSCR) and Loan Life Coverage Ratio (LLCR) are the most well-known debt service coverage ratios employed by bankers. Both ratios are enabling bankers to clearly understand the actual performance of the project. Bankers will monitor ADSCR's (eq. 2) output in order to understand project's capabilities of servicing their annual debt obligations. ADSCR is the project's annual net cash flow (before financing) over debt service of the same year (Yescombe, 2002).

ADSCR is calculated as follows:

$$ADSCR_{t} = [ANCF_{t}/Annual Debt Repayment_{t}]$$
 (2)

There is no certain value for ADSCR to be assumed as acceptable but here in this study 1.25 has been set as a covenant for ADSCR.

If ADSCR shows that project's cash flows for certain years are not enough to service that year's debt, then banker may use LLCR (eq. 3) to assess project's ability to service its debt.

LLCR is calculated as follows:

$$LLCR_{t} = \frac{PV(ANCF_{t \text{ to end year of debt}})}{PV(Annual Debt Repayment_{t \text{ to end year of debt}})}$$
(3)

There is no particular limit point for this ratio but here in this study bankers expect the ratio to be higher than 1.5 to be considered as capable for bridge-financing.

3.3 Sensitivity Analysis

Risky variables were always a great concern for the viability of projects. Differentiating between risky and non-risky variables can be done using sensitivity analysis. This can be achieved by a Microsoft Excel TM built in function called "what if analysis". Risky variables can be found by recording project outputs while different values are given for certain inputs.

Some project inputs have high chance of variation in their values though there is no significant influence on the main outcome of the project resulting from possible these changes. On the other side, there may be some variables with low possibility of variation in their values but with considerably high impacts on the project outcome if these variations occur. Hence, the possibility of those variations and a degree of their influence on the project's outcome should be considered as the main issue.

In order to assume an input parameter as a risky variable, it should have a substantial impact on the final outcomes while there is an uncertainty on its possible value.

3.4 FAST Modeling Standard

3.4.1 Introduction

FAST is published by the FAST Modeling Alliance. The alliance consists of members from F1F9 (Private Ltd) and Financial Mechanics Ltd. This standard was originally opened up by John Richter and Morten Siersted almost 10 years ago. Since

then more than thousands of modelers and professionals have contributed to this standard. FAST standards organization limited was established in 2011. The main aim was to keep the standard maintained and do the future required developments. The FAST standard was promulgated in March 2010 (FAST 2010).

FAST standard methodology explicates financial spreadsheet model as a way to communicate and collaborate beside the major role which is to be used as a tool for calculation. In this standard readability, ease of understand, and standardization are really crucial.

Based on FAST, all worksheets are following the rule of common column structure. Three tiny columns have been provided at the left side of spreadsheet for assigning section and sub-section headings in the model. This helps users to navigate much easier between different sections and sub-sections. Keyboard will be utilized as a navigation tool.

Here are some samples on input coding and design standards suggested by FAST modeling:

- Consistency in the structure of the model.
- Usage of calculation blocks is strongly suggested.
- Linking should be always to the original source.
- Perform a calculation once and then refer back to that calculation.
- Having a gap between each element in a formula.
- Cell formulas should be kept as short as possible.
- Formulas in each row are expected to be constant in all columns.

- All rows should be labeled and provided with appropriate units.
- Usage of live labeling.

According to FAST (2010), use of keyboard shortcuts is tremendously suggested in the modeling. Part of the advantage comes from the human brain's abilities called "muscle memory". Muscle memory applies when a routine operation is being done. There is no need to think about the process and it will be done automatically. As a real world example, we may name the process of driving a car. As soon as one drives a car for a certain time there is no need to think about each detail of the process. Brain will act in a way that the car is like other organs of the body. There is no need to think about changing the gear or looking at the mirror, all will be done automatically. Same situation will be experienced while keyboard shortcuts are being used. This will allow users to build a model faster and with fewer errors.

Now thanks to muscle memory, there is no need to think on how to use excel for building a model. The only need is to concentrate on the logic of the model. Using keyboard shortcuts will assist users to easily surf through the model and understand the logic behind the calculations and to verify formulas easier than before. Users will be able to go back and forth between different calculations and examine them easily without any distractions. These distractions are basically come from a well-known pointing device called mouse. Usage of this device will bring many inconveniences to the modeling. For instance there is a need to move from keyboard to mouse which costs time. One should concentrate on the screen to find the appropriate tabs to click on. The problem is that tabs and icons are not constant. They are in different places and even the position changes time to time. So there is no chance to gain "muscle memory" while using mouse pointing device.

Calculation blocks (modules of codes) are also widely being used in FAST modeling. Each block holds only one calculation at the very last row. All the inputs required, known as ingredients, are kept on the top rows while they are all linked to the original value on a sheet called inputs. Output of each calculation block can also be found on the bottom row which may be referenced by other cells.

Another major rule is to always do the linking to the original source; this will help to prevent daisy chains. By doing so, unnecessary calculation blocks can be deleted without any risk of breaking the possible links to other parts of the model. Input dependents will be traceable much easier than before. These will all help the user to keep the model editable and easier to maintain.

3.4.2 FAST Modeling Alliance

According to FAST (2010), FAST Modeling Standard is defined as a set of rules on the structure and detailed design of spreadsheet-based models. By using the "common style platform" that FAST (2010) brought up, modelers will now be able to read different models easier than before. Fewer difficulties will be experienced in communication and understanding of the models.

According to FAST (2010), the FAST Modeling Alliance will frequently do the revision on this openly published standard. The standard has been formulated according to industry practitioners' experience. The aim is to replace old habits with simple techniques in order to have models with no logical errors and profound omissions. FAST standard also tries to find a reasonable way to implement some software engineering methods and favorable exercises to the field of spreadsheet modeling in order to improve modeling productivity and solve all known and unknown faults; where in this field the "programmers" are not really programmers!

3.4.3 The FAST Acronym

Here we will explain the FAST acronym.

3.4.3.1 Flexible

One of the main goals of FAST modeling is to build models as flexible as possible in the short term and adaptable in the long-run. Modelers should be able to easily implement scenarios and sensitivities on every model. The model should be structured in a way that allows different users to make adjustments as new information becomes available.

According to FAST (2010), a flexible model is not an all-singing, all-dancing template model with an option switch for every eventuality. Flexibility is born of simplicity.

3.4.3.2 Accurate

Key assumptions of the project should be directly reflected by the model without too much unnecessary details. According to FAST (2010), the modeler should not miss the basic aim of the model. They suggest having a good representation of reality, not the reality itself.

3.4.3.3 Structured

Since always there is a chance that different modelers work on the same model either at the same time or later on, we need to persist in logical integrity of the model over time. Sticking to a consistent approach in building a model, plays an important role in a matter of time saving. Otherwise, building, learning or even maintenance of the model would costs a lot of time.

3.4.3.4 Transparent

Simple and clear formulas should be used in models in order to help modelers and non-modelers to read and understand all aspects of each model. Logic structure lucidity will provide confidence into financial models and heighten transparency and this will add to the model's flexibility in adapting new information over time.

3.4.4 How rules are organized

Although different designs can be found in modeling that are working fine to some extend but, according to FAST (2010), essentially almost all the choices in a design of a model are objectively right or wrong. Therefore, the FAST modeling standard is fundamentally arranged about a set of rules.

Although some rules may be broken time to time but this does not imply that the rule book is ineffective. Rules may be broken consciously with proper later justification. Breaking a rule is like walking on a "thin ice". FAST standard has published a list which explains possible situations where it may be advisable to break those rules.

Imagine a process for writing a book, a skilled author would first decide on different chapters of the book. Latter on he or she will try to work on each chapter structure and at the end sentence structure and word choices. Here are four different steps we should follow to implement FAST modeling rules:

- i. The workbook can be assumed as overall subject of the whole project. Here in this step the subject will be divided into different chapters. Orders of these chapters and how they contribute to each other should be highly considered.
- ii. As we have different chapters in books, here we have different worksheets. In this section our highest concern is the layout design, i.e. column usage.Chapter's subject should also be separated into different sections and paragraphs.

- iii. The line item can also be assumed as a specific sentence. What is the highest concern in this part is to have formulas short, plain, and easy to understand. Clarity of labels is also an important issue which should always be taken care of.
- iv. Microsoft Excel™ is used as a tool to create models. There are many built in features in this program which can be applied during modeling. One of the major aims of FAST modeling is to provide some rules on how to use available features. Based on FAST (2010), some of these features are good for modeling while some are not, therefore, FAST provided users with a guideline on how to use these good and bad features.

3.4.5 Workbook Design Rules

In order to end up with a good model, modelers should begin with a definite and goal-directed structure. The model in a workbook stage should be based on a uniform system of rules. The model should be designed in a way that satisfies both modelers and non-modeler users.

3.4.5.1 General principles for workbook design

Different worksheets should be grouped according to their functions. There are four main functions defined. For instance, inputs, timing flags and indexation factors are assumed to be considered as foundation sheets. Other sheets can be grouped as working, presentation or control. The reason behind this approach is to enable modelers to implement different design priorities as there are different audiences existing for each group function.

One important rule is to assign and keep a uniform structure for each column for the whole sheet. We should do the same thing for time rulers as well although there are some exceptions, i.e. while multiple time resolutions are implemented in the project.

Another important rule is to assign different color codes for different line-item classifications. For instance blue font should be used while that specific line was imported from another sheet or red font for those being exported to another sheet. Black font will be used while the value is neither exported nor imported.

Each calculation should appear once in each workbook. For further usage we should use linking instead of recalculating the same item. Furthermore, while we are linking we should use a direct link to the original calculation instead of linking to previous links. This may look not very critical but has serious negative effects and it is being violated frequently. By complying with this rule, tracking would become much easier. Precedents and dependent can be traced with less difficulty. Recalculation or linking to other links acts very similar to write a same input more than once in the model.

The last convention in this section is to keep all the numbers through the model positive and use labels to show the direction of each value. Positive labels are to designate that the value should be considered as revenue while negative labels indicate the value is an expense for the project.

3.4.5.2 Sheet Organization in workbook

Sheets should be arranged in a way that the order flows from left to the right. Working sheets should be also divided into different sheets. For instance revenues, costs, tax, etc. We should also keep in mind that it would be always better to avoid inter-linking between different sheets.

3.4.5.3 Multiple Workbook Models

Although multiple and inter-linked workbooks are generally hard to deal with, there are some special contexts in modeling which it is advised to use so-called "split models". This usually happens when there are different recipients with different concerns or while confidentiality is the issue. Another issue which we should avoid from is to use external file links. Although there are some exceptions, i.e. while we want to avoid unnecessary back and forth flows between different workbooks.

3.4.6 Worksheet Design Rules

General design of worksheets also plays an important role in reaching a good model. Here we briefly explain some rules given by FAST (2010) to guide modeler.

3.4.6.1 General Principles on Design Layout

According to this standard, there is only one and unique purpose for each column. In other words, each column has its own role and function. This will help each line item to be easily visible and in the specific place. For example column E is always dedicated to line-item name. Column G is for units while column F is a place for non-time dependent value. Time dependent values are expected to start from column J in a row.

Calculations as we previously mentioned should flow from up to the bottom and left to the right while intra-sheet counter flows should be gray shaded. It is good to keep in mind that it is suggested to limit counter-flows as much as possible in order to keep the consistency of the model.

3.4.6.2 Calculation Blocks

All calculations should be constructed in individual blocks of calculations called "calculation blocks". They actually act as paragraphs in worksheet. They each convey a single idea which can be found in a single calculation at the very last row of the calculation block. All precedents to this calculation should be available above this calculation in a same calculation block. All these ingredients should be appearing in the same order as they will appear in the calculation. They should all be directly linked to the main source. Live labeling should be used whenever linking is required. In this specific way of linking, row label will be also linked. By doing so, labels will be updated automatically while source labels are changed. This will help modelers to keep the consistency of labeling all through the model.

Another benefit of the usage of calculation blocks is the ability to replicate them easily for further usages in the model. This helps modelers to save time and to reduce possible mistakes. Using calculation blocks will also help modelers to simplify their calculations. Calculations transparency and understandability will dramatically increase while error rate decreases.

3.4.6.3 Input sheets

Inputs should be grouped according to their nature, i.e. whether they are constant or series, actual values or forecasted. Even they may be grouped based on what they represent, e.g. revenue or cost, financing or capital, etc.

3.4.6.4 Presentation Sheets

One of the main purposes of each model is to have a perfect communication with its users. A model will be useless if it cannot be able to communicate. Each model should be well structured. This will enable the model to explain itself completely with no need of other applications.

3.4.6.5 Control Sheet

Having control sheets within the model will allow users to easily check whether the model or that particular section is working correctly or not. For instance they may implement sensitivity and scenario checks, version controls, and check sheets.

3.4.6.6 The Line Item

Line item is the smallest level of each model structure which should be taken care of. It should be clearly understood and be well classified. Questions like whether it's constant or series, flow or balance should be carefully answered prior to other following steps.

3.4.6.7 Formula Design

Main rule is to keep formulas as consistent as possible. Simplicity of formulas used in the model is also viable for the model. The size of a formula is also important. It should not extend more than a size of a thumb. Rule of thumb suggests that formulas, in the editing panel, should not exceed more than size of a thumb. It suggests breaking them into smaller formulas to make them more understandable. Multi-line formulas are not allowed under any circumstances.

It is always suggested for modelers to simplify their calculations by breaking them in to smaller calculations using calculation blocks. Using of flags are tremendously suggested to reduce over-using of complicated formulas like nested IF function.

3.4.6.8 Formula Clarity

Here we mention some suggestions by FAST (2010) regarding the clarity of formulas:

- Consistency in the usage of formulas.
- Formulas are suggested to be kept short and simple.

- Use of embedded constants should be prevented except when they are universal constants or when deliberately embedded.
- Use of advanced features are not suggested where simpler features could achieve the same result.
- Spaces should be used to increase readability and clearance of formulas.
- Use of unnecessary parenthesis should be prevented.
- Over anchoring is forbidden.

3.4.6.9 Fast Labelling Convention

More and better labelling through model can significantly increase the readability of models. Labels should be provided for all line items. This will improve the clarity of models and prevent wrong assumptions to be made. It is highly suggested for modelers to invest time on labeling. All line items should have specific label and this labelling should be maintained consistent. One should not forget to choose a convention on how labels are capitalized and stick to them for the rest of the specific model.

3.4.7 Modeling Friendly Excel Features

Despite many ExcelTM weaknesses, it has many good features. FAST (2010) provided modelers with guidance on how to use these features.

It is suggested to use INDEX function over CHOOSE function due to its flexibility while additional line items are added. This function also can be easily used in calculation blocks. It is more convenient to use INDEX whereas arrays are used instead of pointing for each cell address. Although using CHOOSE function is easier when values are scattered, this advantage becomes useless when implementing calculation blocks.

3.4.8 Spreadsheet Errors

According to Panko (2006), studies shows that on average spreadsheet developers either experienced or not, have 2% to 5% rate of error on their formulas. Interestingly these results are almost the same for programmers while do program coding. Although most computer programmers confess about these possible errors, it is not the case for financial modelers. According to Panko (2006), very few companies do the testing for their spreadsheets or even if they do so, they do it just to check whether results are reasonable or not which, according to Panko (1998), is completely useless.

Although error rates of 2% to 5% for formulas are not significant, it can have a considerable effect on the final results. This effect comes from a large number of formulas in a chain. We should understand the reason behind these errors. Interestingly, it is not related to the programs we use but it comes from people who use the software. Panko (2006) mentioned that studies confirm 2% to 5% error rate for cognitive activities as floor rate caused by human brain. Most errors are caused by planning errors. In other words, error will happen in human's brain. In other words, mistakes are done even before one writes them as a formula on to a spreadsheet cell. Based on Panko (2006), 80% of the errors are caused due to the same reason. Generally when someone is distracted, there will be higher chance of using faulty calculations or formulas comparing to the normal situation.

Since spreadsheet errors are common and effective, and we cannot blame software programs, what is the solution to decrease rate of errors? According to Panko et al. (2008), although such errors are wide spread, companies rarely test for spreadsheet errors. This lack of testing may come from their unrealistic confidence on their

untested spreadsheets. Many studies revealed that inspection approaches especially in groups of 3 to 5 people is among most effective solutions. According to Panko (2006), the rate of error detection rises about 60% to 80% while a group of 3 to 5 people are involved.

3.4.9 Why using FAST Standard

In the literature there are many suggestions about creating a well-defined spreadsheet. According to Grossman and Özlük (2010), there cannot be a one-size-fits-all approach in finding an effective spreadsheet. On the other hand, according to Hermans et al. (2012), in most companies; there is no formalized training on how to build models, basically because of a common response of "everyone knows excel". The following simple example will facilitate the understanding of this issue. It is not possible that because one knows how to use Microsoft WordTM, becomes a good writer. The same situation exists for Microsoft ExcelTM and modeling. Even if someone knows Excel very well it doesn't mean that he or she is a good modeler.

Now with more powerful Personal Computers (PCs) running dangerously freeform spreadsheet software with high flexibility but much unstructured, large and more complex models are built by self-taught personnel and this even worsens the situation. The solution is to have a specific way of writing and all in a consistent way. Having a well-accepted modeling standard is the solution to solve all these persisting difficulties in reading, understanding, changing, and using the model.

Standardization really comes into the picture when reviewing spreadsheets. It's a privilege to have all the people following the same plan. In this case there is no need to think and spend time on the format because everyone already knows it. So the

only need is to focus on individual concepts of the model that one is already working on it.

We should keep in mind that the complexity of model transactions is completely different from the complexity of the model itself. None of the techniques in FAST are complex, but nor are they that obvious. Being consistent is not that much easy.

FAST Standard will bring several benefits models such as having lower rate of error, time savings, and increase in the ability to communicate between different colleagues and users while working or testing for possible errors and many more.

3.4.10 Who can benefit from FAST Standard

If a modeler builds models for his or her own usage or for small business and is the only user of that model, certainly there is no need to implement FAST standard at all. However, if one plans to share the model with his or her colleagues and there is a need to work as a group, implementing FAST or other standards are a must. As we mentioned before, FAST standard is a language, a specific language of modeling. Other than communication purposes, it will provide us with a set of useful do's and don'ts, guiding each modeler to build flexible, more accurate, well-structured, and more transparent models. This will help us to reduce rate of error and save more time.

Chapter 5

FINANCIAL ANALYSIS

4.1 Introduction

In this chapter first we will provide a short project description followed by a summary of inputs and general assumptions of the studied gold mine. Rational expectations of future operating outcomes of this project are also introduced. All the estimates have been done in United States dollars (USD), given that a considerable portion of project transactions are in USDs.

Financial analysis focuses on a degree of attraction that a project may have for investors. This can be mainly achieved by calculating Net Present Value of incremental cash flows. As it is mentioned earlier, this criteria should be positive for projects to make them attractive comparing to other available alternatives with the same level of risk. In this analysis ADSCRs and LLCRs are also assisting investors to assess the financial sustainability of each project. Calculation of ADSCR and LLCR will assist investors in forecasting the volume of expected funds to service projects debt during the loan period.

In other words, a project can be evaluated by investors using financial analysis. The aim is to investigate whether the project is able to use its own generated funds to cover the investment and operation expenses or not. Besides we are also concern about the expected amount of money a project will return.

4.2Project Description

This Gold Mine Project is an open pit mine located far from the capital city and some distance from the principal local town.

Exploration work was done since the mid 1990's and has increasingly resulted in expanding in the resource base to the degree where a pre-feasibility study was finished in a decade later to appraise the viability of possible physical process. The results of this pre-feasibility study were positive which led the organization to commission a full feasibility study.

The continued explorations and investigations brought a better understanding of the project as well as adding to the resource base. An exhaustive assessment brought a better understanding of the nature of the pit slopes, the inherent risks involved, as well as improved the metallurgical operating parameters through an exhaustive assessment brought a great data about this project. The results of all work carried out to date has generalized great data on this project. This information has been compiled and used in this study.

The Project is situated in an area characterized by a poorly developed infrastructure although regional developments, i.e. electricity supply from the hydro-electric scheme at the proposed facility, could bring a substantial improvement in the future. This will bring benefits for both the economics of the project as well as to the surrounding community. Off-site infrastructure such as the development of the nearby road corridor will also could aid regional development. The investment in this project is approved to be financed by private equity and international financial

institutions. This is expected to contribute to the smooth and successful implementation of the project.

4.3 Model Parameters and Assumptions

In this section we will present the main assumptions and parameters used in this financial model.

4.3.1 Project Timing

The Gold Mine Project physical construction will take 2 years to complete followed by 8.5 years of gold production. The project construction is supposed to start in 01-07-2011 and end in 30-06-2013. Production was planned to start in 01-07-2013 and continue till 30-06-2022.

The gold price was assumed to be USD 1,100/Oz in the first year of construction. Average annual production for years 1-3 was estimated to be 205,000 Oz's while the average annual production for rest of the mine life was approximated as 163,000 Oz's.

4.3.2 Inflation and Exchange Rates

Local currency, Persian Daric (PDC)² and USD are two currencies used in this model. Local inflation was assumed to be 5.50% per year. Inflation rate used for USD was 1.95% per year.

Price index calculations and expected exchange rates for each year have been calculated using the table below.

We should note that in all following tables; some years (columns) of the project model have been deducted in order to make the values more readable.

_

² The currency is fictitious because of the confidentiality reasons.

Table 1: Price Index and Exchange Rates

Period Start Date					01-07-2011	01-07-2012	01-07-2013	01-07-2015	01-07-2018	01-07-2021
Period End Date					30-06-2012	30-06-2013	30-06-2014	30-06-2016	30-06-2019	30-06-2022
Construction					1	1	-	-	-	-
Operation					-	-	1	1	1	1
	Constant	Unit	Total							
E INDEX AND EXCHANGE RA	TES									
Local Inflation Sensitivity	-	%								
Foreign Inflation Sensitivity	-	%								
Domestic (PDC) inflation rate	5.50%									
Forecast Period Flag		flag			1	0	0	0	0	0
Domestic (PDC) price index		Index			1.000	1.055	1.113	1.239	1.455	1.708
Foreign (USD) inflation rate	1.95%									
Forecast Period Flag		flag			1	0	0	0	0	0
Foreign (USD) price index		Index			1.000	1.020	1.039	1.080	1.145	1.213
Domestic (PDC) price index	-	Index	-	-	1.00	1.06	1.11	1.24	1.45	1.71
Foreign (USD) price index	-	Index	-	-	1.00	1.02	1.04	1.08	1.14	1.21
Relative Price Index		Index			1.00	1.03	1.07	1.15	1.27	1.41
Relative Price Index	-	Index	-	-	1.00	1.03	1.07	1.15	1.27	1.41
Real Exchange Rate	5				5.000	5.000	5.000	5.000	5.000	5.000
Nominal Exchange Rate					5.000	5.174	5.354	5.734	6.354	7.041

4.3.3 Initial and Sustaining Capital Cost

Project capital costs have been separated into five different sections (i.e. mining, processing plant, infrastructure, management and construction labor). Summarized initial and sustaining capital cost is available in Table 2.

Table 2: Investment Schedule (Real, USD'000s)

Period Start Date				01-07-2014	01-07-2012	01-07-2012	01-07-2016	01-07-2019	01-07-202
Period End Date								30-06-2020	
Construction				1	1	-	-	-	-
Operation				-	-	1	1	1	1
	Constant	Unit	Total						
NVESTMENT SCHEDULE (Real, US	D'000s)								
 Mining									
Mining Capital Cost	-	USD'000s		23,474	7,223	5,417	-	-	-
Pre-Strip Cost	-	USD'000s		-	11,497	-		-	-
Pit-Dewatering Facilities	-	USD'000s USD'000s		-	3,520 888	296	529	-	-
Haul Roads		USD'000s		-	2,840	556			
Mining		USD'000s	59,017	23,474	25,968	6,269	529	-	_
Processing Plant									
Machinery & Equipment	_	USD'000s		8,029	12,558	_	_	_	_
Civils & Earthworks	-	USD'000s		6,583	10,741	-	-	-	-
Structural Steel	-	USD'000s		3,524	5,750	-	-	-	-
Piping	-	USD'000s		618	1,313	-	-	-	-
Electrical & Instrumentation	-	USD'000s		2,852	5,071	- 0.000	-	-	-
Transportation Processing Plant	-	USD'000s USD'000s	70.390	4,940 26,546	6,408 41.841	2,003 2,003	-	-	-
Frocessing Flant		ขอบขบบร	70,390	20,346	41,841	∠,003	-	<u> </u>	<u> </u>
nfrastructure									
Power Plant	_	USD'000s		7,205	12,809	_	_	_	_
Fuel Treatment	<u> </u>	USD'000s		- 7,200	12,003		_		
Tank Farm	-	USD'000s		2,957	5,257	-	-	-	-
Boot Camp	-	USD'000s		202	-	-	-	-	-
Camp	-	USD'000s		4,034	-	-	-	-	-
Local Camp	-	USD'000s		600		-	-	-	-
Infrastructure Buildings etc	-	USD'000s		1,488	2,427	-	-	-	-
In Plant Roads Airstrip	-	USD'000s USD'000s		2,369	121	-	-	-	-
Offsite Imfrastructure		USD'000s		6,281					
Cyanide Safety Equipment	-	USD'000s			565	-	-	-	-
Water Supply	-	USD'000s		1,803	3,070	-	-	-	-
Tailings (Start-up only)	-	USD'000s		-	7,250	3,999	1,698	1,057	-
Pit Water Conveyance	-	USD'000s		-	49	437	131	-	-
Communications Vehicles	-	USD'000s USD'000s		283	526 849	-	-	-	-
Mobile Plant	<u> </u>	USD'000s		457	2,546		-	-	
Infrastructure		USD'000s	77,739	27,744	35,469	4,436	1,829	1,057	-
Management & Other									
nanayement & Other									
Plant First Fills (Reagents & Cons	s -	USD'000s		-	974	-	-	-	-
Spares	-	USD'000s		- 040	2,941	519	-	-	-
Project Insurances Vendor Services	-	USD'000s USD'000s		812	1,443 250	83	-	-	-
Project Management	-	USD'000s		10,656	17,386	- 83		-	-
Management & Other		USD'000s	35,064	11,468	22,994	602	-	-	-
Construction labor									
Local	_	USD'000s		1,242	2,173	34	_	_	_
Expats	-	USD'000s		2,410	4,218	67	-	-	-
Disbursements	-	USD'000s		799	1,243	178	-	-	-
Construction P &G's	-	USD'000s		14,570	-	-	-	-	-
Owner's Preproduction Costs	-	USD'000s		-	4,203	3,438	-	-	-
Working Capital Gold Lock Up Contingency	-	USD'000s USD'000s		-	8,384 20,389	-	-	-	-
Government Signing Bonus	<u> </u>	USD'000s		8,000	3,000	-		-	-
Allowance for ARD storage	-	USD'000s		- 0,000	-	-	-	-	2,724
Mine Closure	-	USD'000s		-	-	-	-	-	2,000
Tailings Closure	-	USD'000s		-	-		-	-	4,946
United reef limited	-	USD'000s	00 010	27 024	42 640	2,000	-	-	0.070
Construction labor		USD'000s	86,018	27,021	43,610	5,717	-	-	9,670
									9,670

4.3.4 Operating Cost

Project operating costs also have been separated into three different categories (i.e. Mining, Plant (Processing), and General and Administrative (G&A)). Summarized project operating cost per ton in real terms is available in Table 3. Operating costs are calculated in Table 4.

Table 3: Operating Cost Schedule (Real, USD/Ton)

Period Start Date					01-07-2013	01-07-2014	01-07-2018	01-07-2021
Period End Date					30-06-2014	30-06-2015	30-06-2019	30-06-2022
Construction					30-00-2014	30-00-2013	30-00-2019	30-00-2022
Operation					1	1	1	
Operation	Constant	Unit	Total		·	•		
PERATING COST SCHEDUL								
li <mark>n</mark> ing								
Mining Labor	-	USD/t	-	-	2.71	2.46	1.68	1.73
Equipment	-	USD/t	-	-	2.40	2.23	2.01	2.1
Diesel Cost	-	USD/t	-	-	5.95	5.74	5.14	4.98
Drilling	-	USD/t	-	-	0.17	0.23	0.16	0.0
Blasting	-	USD/t	-	-	1.17	1.06	0.76	0.3
Other	-	USD/t	-	-	1.04	0.79	1.00	0.73
Total		USD/t	103.66		13.44	12.51	10.75	10.03
lant (Processing)								
Plant (Processing) Labor	-	USD/t	_	-	2.11	2.13	0.58	0.74
Consumables & Reagents	-	USD/t	-	-	3.86	4.62	3.81	5.5
Diesel Cost	-	USD/t	-	-	0.24	0.25	0.25	0.2
Maintenance Supplies	-	USD/t	-	-	0.37	0.37	0.36	0.3
Power cost per ton	-	USD/t	-	-	5.15	5.85	4.95	9.00
Other Labor Costs	-	USD/t	-	-	0.29	0.30	0.09	0.12
Total		USD/t	105.35		11.73	13.21	9.95	15.9
. & A								
G&A Labor	_	USD/t	_	-	1.37	1.38	0.91	1.1
General & Administration	-	USD/t	-	-	1.84	1.85	1.42	1.5
Assay	-	USD/t	-	-	0.63	0.63	0.33	0.4
Total		USD/t	28.18		3.84	3.86	2.66	3.14

Table 4: Operating Cost Schedule (Real, USD)

Operating Co	•••						
Period Start Date				01-07-2013	01-07-2014	01-07-2018	01-07-2021
Period End Date				30-06-2014	30-06-2015	30-06-2019	30-06-2022
Construction				-	-	-	-
Operation				1	1	1	1
	Constant	Unit	Total				
PERATING COST SCHEDUL	E (Real, U	SD)					
Total Ore Processed	-	Ton	23,510,512 -	2,850,470	2,832,672	2,882,357	680,144
Mining							
Mining Labor		USD'00	Os	7,726.0	6,972.9	4,853.0	1,178.4
Equipment		USD'00		6,833.3	6,317.9	5,799.2	1,454.0
Diesel Cost		USD'00		16,968.2	16,258.5	14,809.7	3,388.7
Drilling		USD'00	Os	484.6	651.5	461.2	54.4
Blasting		USD'00	Os	3,335.0	3,002.6	2,190.6	251.7
Other		USD'00		2,964.5	2,237.8	2,882.4	496.5
Mining Cost		USD'000)s	38,311.6	35,441.3	30,996.0	6,823.6
Plant (Processing)							
Dlant (Drangasing) Labor		USD'00	20	6,022.4	6,023.1	1,673.6	506.4
Plant (Processing) Labor Consumables & Reagents		USD'00		6,023.1 10,992.8	13,100.3	10,996.2	3,780.2
Diesel Cost		USD'00		694.1	694.8	706.2	164.6
		USD'00		1.054.7		1.037.6	265.3
Maintenance Supplies Power cost per ton		USD'00		1,054.7	1,048.1 16,565.0	1,037.6	6,122.3
Other Labor Costs				840.6	840.6	263.0	78.9
		USD'00					
Plant (Processing) Cost		USD'000	JS	34,272.7	38,271.9	28,930.4	10,917.8
G & A							
G&A Labor		USD'00	Os	3,895.4	3,895.4	2,623.4	794.4
General & Administration		USD'00	Os	5,254.6	5,254.1	4,092.4	1,035.2
Assay		USD'00	Os	1,795.8	1,784.6	951.2	306.1
G&A Cost		USD'000)s	10,945.8	10,934.1	7,667.1	2,135.7

4.3.5 Power and Fuel

Heavy Fuel Oil (HFO) and diesel are among the main operating costs to this project. HFO is basically used to generate electricity for processing plants of the mine. A significant amount of electricity is used to process mined ore in this section. Table 5 provides a detailed calculation on HFO used and electricity generated as well as the calculated cost of electricity needed per ton of ore milled in real terms. On the other hand, diesel is basically consumed in mining machinery. Detailed information is available in Table 6.

Table 5: LOM Power Costs (Processing) Real

ower and Fue	el						
Period Start Date				01-07-2013	01-07-2014	01-07-2018	01-07-2021
Period End Date				30-06-2014	30-06-2015	30-06-2019	30-06-2022
Construction				-	-	-	-
Operation				1	1	1	1
	Constant	Unit	Total				
HFO Price Sensitivity	-	%					
POWER COSTS (Processing)	REAL						
Combined Tonnage Treated		tpa		2850470	2832672	2882357	680144
Variable Power usage per ton		kWh/t		11.41	14.05	10.73	22.6
Variable Power usage		kWh		32520918	39788754	30936729	1540590
Fixed Power usage		kWh		23655915	23655915	23655915	804301
Combined Power Requirement		kWh		56176833	63444669	54592644	2344891
Combined Power Requirement	per tone	kWh/t		19.71	22.40	18.94	34.4
HFO usage for producing one Ky	wh	L/kWh		0.21	0.21	0.21	0.2
HFO Consumption for power pro	duction	L		11908774	13449463	11572946	497087
HFO Price per littre		USD/L		1.19	1.19	1.19	1.1
HFO Cost		USD		14113353	15939258	13715356	589109
Maintenance Cost per KWh	0.01	USD/kV	Vh	0.01	0.01	0.01	0.0
Maintenance Cost		USD		554030	625707	538406	23125
Total power cost		USD/a		14667383	16564965	14253762	612234
Power cost per KWh		USD/kV	Vh	0.26	0.26	0.26	0.2
Power cost per ton		USD/t		5.15	5.85	4.95	9.0

Table 6: LOM Plant Diesel Costs (Processing/Mining Operation) Real

Period Start Date				01-07-2013	01-07-2014	01-07-2018	01-07-2021
Period End Date				30-06-2014	30-06-2015	30-06-2019	30-06-2022
Construction				-	-	-	-
Operation				1	1	1	1
	Constant	Unit	Total				
Diesel Price Sensitivity	-	%					
OM PLANT DIESEL COST (Proce	ssing) REAL						
Combined Tonnage Treated		tpa		2850470	2832672	2882357	680144
Diesel Consumption		L/t		0.19	0.19	0.19	0.18
Diesel Consumption		L		530110	530647	539355	125728
Delievered Diesel Cost		USD/L		1.31	1.31	1.31	1.3
Diesel Cost		USD/a		694092	694795	706196	164620
Diesel Cost		USD/t		0.24	0.25	0.25	0.24
Diesel Price Sensitivity	-	%					
OM PLANT DIESEL COST (Minin	g Operation)	REAL					
Combined Tonnage Treated		tpa		2850470	2832672	2882357	680144
Diesel Consumption		L/t		4.55	4.38	3.92	3.81
Diesel Consumption		L		12959364	12417335	11310812	2588082
Delievered Diesel Cost		USD/L		1.31	1.31	1.31	1.3
Diesel Cost		USD/a		16968159	16258461	14809651	3388668
Diesel Cost		USD/t		5.95	5.74	5.14	4.98

4.3.6 Production Capacity and Revenue

There are three different ways of processing ores in gold mine sector; oxides, transitions, and sulfides. There are different feed grades and recovery rates and they may change due to different circumstances existing in each section of the available fields. These will easily influence the total gold production of the mine. Table below presents detailed information on total production capacity and expected revenues for this mining project.

Table 7: Production Capacity & Revenue

Period Start Date					01-07-2013	01-07-2017	01-07-2020	01-07-2021
Period End Date					30-06-2014	30-06-2018	30-06-2021	30-06-2022
Construction				L	-	-	-	-
Operation	Constant	Unit	Total/Aver	age	1 e	1	1	1
RODUCTION IN DETAIL				H				
Feed Grade Sensitivity	-	%		H				
Recovery Sensitivity	-	%						
Ore Processed Sensitivity	-	%						
Oxides								
Ore Processed (Oxides)		Ton	15,644,807		2,656,120	1,228,042	810,830	77,462
Feed Grade		Gram/Ton	1.90		2.51	1.95	1.43	2.02
Recovery		%	93.4%		93.8%	93.1%	93.3%	92.1%
Total Gold Produced (Oxide	es)	Grams	27,631,156	H	6,253,516	2,229,448	1,081,801	144,112
Transition								
Ore Processed (Transition)	Ton	4,864,050		126,128	1,390,662	1,173,347	-
Feed Grade		Gram/Ton	1.52		1.15	1.65	1.25	-
Recovery		%	94.0%		95.7%	95.5%	95.7%	0.0%
Total Gold Produced (Trans	sition)	Grams	8,115,328		138,810	2,191,335	1,403,617	-
Sulphides								
Ore Processed (Sulphides))	Ton	3,001,656		68,222	124,185	674,220	602,682
Feed Grade		Gram/Ton	2.57		2.13	1.67	2.09	2.06
Recovery		%	95.8%		96.8%	96.1%	96.3%	96.3%
Total Gold Produced (Sulph	nides)	Grams	6,577,361		140,663	199,302	1,356,982	1,195,588
OTAL ORE PROCESSED								
Ore Breezes of (Ovides)		Ton	45 044 007		0.050.400	4 000 040	040.000	77.400
Ore Processed (Oxides) Ore Processed (Transition	-	Ton	15,644,807 4,864,050		2,656,120 126,128	1,228,042 1,390,662	810,830 1,173,347	77,462
Ore Processed (Sulphides		Ton	3,001,656		68,222	124,185	674,220	602,682
Total Ore Processed		Ton	23,510,512		2,850,470	2,742,889	2,658,397	680,144
OTAL PRODUCTION				H				
Total Gold Produced (Oxid	,	Grams		-	6,253,516	2,229,448	1,081,801	144,112
Total Gold Produced (Tran		Grams		-	138,810	2,191,335	1,403,617	4 405 500
Total Gold Produced (Sulp Total Gold Produced	niaes)	Grams Grams		-	140,663 6,532,988	199,302 4,620,085	1,356,982 3,842,400	1,195,588 1,339,701
					-,,	.,,	-,- :-, :	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Gold Production Sensitivity	-	%						
Grams to Ounces	31	(g/troy oz)						
Total Gold Produced	-	Grams	-	-	6,532,988	4,620,085	3,842,400	1,339,701
Total Gold Produced		Troy Oz		H	210,040	148,539	123,536	43,072
otal Revenue (Real)								
- Interest and (Interest)				Ĺ				
Gold Price Sensitivity	-	%						
Gold Price	1,100	USD/oz						
Total Gold Produced Gold Revenue	-	Troy Oz USD'000s	-	-	210,040 231,044.5	148,539 163,393.1	123,536 135,889.6	43,072 47,379.6
				F			- 1	
otal Revenue (Nominal)				F				
Foreign (USD) price index	-	Index	-	-	1.04	1.12	1.19	1.2
Gold Price Sensitivity	-	%						
Gold Price	1,100	USD/oz			1,143	1,235	1,309	1,334
Gold Price	1,100	USD/oz	_	-	1,143	1,235	1,309	1,334
Total Gold Produced	- 1,100	Troy Oz	-	-	210,040	148,539	123,536	43,072
Total Gold Froduced						,	5,000	,

4.3.7 Hedging

Hedging facility was adopted in order to offset potential losses/gains that may incur for the firm. Hedging was scheduled for the 40% of the total gold production accrue during first two years of production. Related calculations will be presented in the table below.

Table 8: Hedging Schedule (Real)

Period Start Date					01-07-2011	01-07-2012	01-07-2013	01-07-2014	01-07-2015
Period End Date					30-06-2012	30-06-2013	30-06-2014	30-06-2015	30-06-2016
Construction					1	1	-	-	-
Operation					-	-	1	1	1
Hedging					-	-	1	1	-
	Constant	Unit	Total						
IEDGING (REAL)									
Total Gold Produced	-	Troy Oz	-	#	-	-	210,040	203,527	200,726
Scheduled Hedging	40.00%	%			-	-	40.00%	40.00%	-
Hedged Production		Troy Oz		Н	-	-	84,016	81,411	-
Total Gold Produced	-	Troy Oz	_	#	-	-	210,040	203,527	200,726
Hedged Production	-	Troy Oz	-	#	-	-	84,016	81,411	-
Unhedged Production		Troy Oz		Н	-	-	126,024	122,116	200,726
Hedge Price	1.200	USD/oz		Н	1,200	1,200	1,200	1,200	1,200
Hedged Production	1,200	Troy Oz	_	#	1,200	1,200	84,016	81,411	1,200
Total Hedged Revenue		USD'000s			-	-	100,819.4	97,692.8	-
Gold Price Sensitivity	-	%							
Gold Price	1,100	USD/oz			1,100	1,100	1,100	1,100	1,100
Unhedged Production	-	Troy Oz	-	#	-	-	126,024	122,116	200,726
Total Unhedged Revenue		USD'000s			-	-	138,626.7	134,327.6	220,798.1
Total Hedged Revenue	-	USD'000s	-	#	-	-	100,819.4	97,692.8	-
Total Unhedged Revenue	-	USD'000s	-	#	-	-	138,626.7	134,327.6	220,798.1
Total Revenue with Hedgi	ng	USD'000s		Н	-	-	239,446.1	232,020.4	220,798.1
Gold Price Sensitivity	-	%		H					
Gold Price	1,100	USD/oz			1,100	1,100	1,100	1,100	1,100
Total Gold Produced	-	Troy Oz	-	#	-	-	210,040	203,527	200,726
Total Revenue without He	dging	USD'000s			-	-	231,044.5	223,879.3	220,798.1
Total Revenue with Hedgi	ng	USD'000s	-	#	-	-	239,446.1	232,020.4	220,798.1
Total Revenue without He	dging	USD'000s	-	#	-	-	231,044.5	223,879.3	220,798.1
Hedging Gain/(Loss)		USD'000s	16,543		-	_	8,401.6	8,141.1	-

4.3.8 Working Capital

Account receivables are assumed to be approximately 10.45% of sales revenue. Account payable and cash balance are also estimated to be approximately 15.12% and 15.05% of sales revenue respectively (New York University, 2014).

Other than regular working capital which we usually calculate, we have a gold lock up in project's ore processing machinery. This also can be dealt with as a working capital. Locked up gold in the system will be recovered and sold at the end of mine life. This will be possible at the point when the machineries are disassembled. Related calculations for working capital can be found in the table below.

Table 9: Working Capital (Real)

Pe	eriod Start Date					01-07-2011	01-07-2012	01-07-2015	01-07-2018	01-07-2021	01-07-2022
Pe	eriod End Date					30-06-2012	30-06-2013	30-06-2016	30-06-2019	30-06-2022	30-06-2023
Co	onstruction					1	1	-	-	-	
0	peration					-	-	1	1	1	
	C	onstant	Uı	nit	Total						
kir	ng Capital (Real)										
	Gold Revenue		-	USD'000	is ·	.	- -	220,798	170,410	47,380	
+	Accounts Receivable	10.45	%	USD'000	Is			23,067	17,803	4,950	
+	Gold Revenue		-	USD'000	ls ·			220,798	170,410	47,380	
	Accounts Payable	15.12	%	USD'000	IS			33,377	25,760	7,162	
+	Gold Revenue		_	USD'000	ls .		_	220.798	170,410	47,380	
Ŧ	Cash Balance	15.05	%	USD'000	Is	-	-	33,233	25,649	7,131	
	Accounts Receivable	9	0	USD'000	is .	-	-	23,067	17,803	4,950	
+	Change in A/R			USD'000	ls ·	.	-	322	(733)	9,247	4,95
+	Accounts Payable		0	USD'000	is ·			33,377	25,760	7,162	
Ţ	Change in A/P			USD'000	IS			466	(1,061)	13,380	7,16
+	Cash Balance		0	USD'000	ls -	. .		33,233	25,649	7,131	
	Change in C/B			USD'000	Is			(464)	1,056	(13,322)	(7,13
kir	ng Capital Gold Lock	Up (Re	eal)							
W	orking Capital Gold Lo	ock Up	US	SD'000s		-	8,384	-	-	-	
G	old Lock Up Recovery		US	SD'000s	8,384	_	-	-	-	8,384	

4.3.9 Depreciation and Amortization

Depreciation schedule is consisting of four different categories. Construction capital excluding gold lock-up working capital, sustaining capital, exploration costs, and

capitalized financing costs have been depreciated over the life of the mine. Detailed calculations are available in the table below. Values are all in nominal terms.

Table 10: Depreciation & Amortization (Nominal)

epreciation &	,	O :	u	•						
Period Start Date								01-07-2014		
Period End Date				L			30-06-2014	30-06-2015	30-06-2021	30-06-2022
Construction				H	1	1	-	-	-	-
Operation	_			L	-	-	1	1	1	1
	Constant	Unit	Total							
O-mit-LO-mt		USD'000s			440.050	470 405	40.000	0.575		44.700
Capital Cost	-	0300008	-	#	116,253	173,195	19,698	3,575	-	11,730
Capital Cost	-	USD'000s	-	#	116,253	173,195	19,698	3,575	-	11,730
Construction Capital		USD'000s		L	116,253	173,195	-	-	-	-
Construction Capital	-	USD'000s	-	#	116,253	173,195	-	-	-	-
Working Capital Gold Lock Up	-	USD'000s	-	#	-	8,547	-	-	-	-
Construction Capital (Excluding	y WCgI)	USD'000s	280,900		116,253	164,647	-	-	-	-
Capital Cost		USD'000s	_	#	116,253	173,195	19,698	3,575	-	11,730
Sustaining Capital		USD'000s	46,173		-	-	19,698	3,575	-	11,730
Exploration Cost	67,000	USD'000s	67,000	#	67,000	-	-	-	-	-
T.A. Financing Fee	4.50%	USD'000s	4,500		4,500	-	-	-	-	-
T.B.Financing Fee	4.50%	USD'000s	2,250	#	2,250	-	-	-	-	-
Financing Fees		USD'000s	6,750		6,750	-	-	-	-	-
T.A. Interest Capitalised	-	USD'000s	-	#	-	-	-	-	-	-
T.B. Interest Capitalised	-	USD'000s	-	#	-	-	-	-	-	-
S.D. Interest Capitalised	-	USD'000s	646	#	-	646	-	-	-	-
Interest Capitalised		USD'000s	646	H	-	646	-	-	-	-
T.A. Commitment Fee	0.65%	USD'000s	1,300		650	650	-	-	-	-
T.B. Commitment Fee	0.65%	USD'000s	650	#	325	325	-	-	-	-
Commitment Fees		USD'000s	1,950	H	975	975	-	-	-	-
T.A. PRI Capitalised	-	USD'000s	1,707		-	1,707	-	-	-	-
T.B. PRI Capitalised	-	USD'000s	854		-	854	-	-	-	-
S.D. PRI Capitalised	-	USD'000s	874	#	229	646	-	-	-	-
PRI Capitalised		USD'000s	3,435	H	229	3,207	-	-	-	-
Financing Fees	-	USD'000s	6,750	#	6,750	-	-	-	-	-
Interest Capitalised	-	USD'000s	646		-	646	-	-	-	-
Commitment Fees	-	USD'000s	1,950		975	975	-	-	-	-
PRI Capitalised	-	USD'000s	3,435	#	229	3,207	-	-	-	-
Capitalised Financing Costs		USD'000s	12,781	H	7,954	4,828	-	-	-	-
al Schedule										
Construction Capital (Excluding W		USD'000s	280,900	#	116,253	164,647	_	_	_	_
Sustaining Capital	-	USD'000s	46,173		- 10,200		19,698	3,575	-	11,730
Exploration Cost	67,000	USD'000s	67,000		67,000	-	- 10,000		-	- 11,730
Capitalised Financing Costs	-	USD'000s	12,781		7,954	4,828	-	-	-	-

4.3.10 Labor

Mining industry is a labor intensive activity. In order to reach an accurate financial analysis on a current gold mine, a great amount of time and effort was spent on this section. More information is available in Appendix A of this study. Different labor costs for all sections are available in the next table as well as tax, social securities, and insurance. All prices are in USD per ton of ore mined.

Table 11: Labor Cost (Real)

	abor									
	Period Start Date					01-07-2011	01-07-2012	01-07-2015	01-07-2018	01-07-202
	Period End Date					30-06-2012	30-06-2013	30-06-2016	30-06-2019	30-06-202
4	Construction					1	1	-	-	
+	Operation	Constant	Unit	Total		Labor	- Labor	1	1	
		Constant	Onic	Total		Month	Month	Labor	Labor	Labor
ВС	OR OPERATING COST, CATEGORIZED (USD	, REAL)		İ						
	Total Ore Processed	-	Ton	23,510,512	#	-	-	2,757,104	2,882,357	680,14
AIIN	IING									
1	M		LIOD				4 0 47 500	4 005 005	4 407 044	40547
+	Mining labor COST	-	USD	-	#	-	1,347,538	4,885,325 97.707	4,437,211 88,744	1,054,7
+	Mining labor ACFPE Mining labor OCSS	-	USD	-	#	-	26,951 110,337	294,486	292,844	21,0 90,4
+	Mining labor Ocss Mining labor Health Care Cost	-	USD	-	#		10,337	38,663	34,182	12,0
	Mining Labor	_	USD	_	#	-	1,494,914	5,316,181	4,852,981	1,178,3
1	Media a Labora		LIOD		.,		4 404 044	5.040.404	4.050.004	4 470 0
+	Mining Labor	-	USD	22 510 512	#	-	1,494,914	5,316,181	4,852,981	1,178,3
+	Total Ore Processed Mining Labor	-	USD/t	23,510,512	#	-	-	2,757,104 1.93	2,882,357 1.68	680,1 1.
			LIOD				440.700	4 000 000		
+	Mining labor TAX Total Ore Processed	-	USD	23,510,512	#	-	443,732	1,620,268 2,757,104	1,458,947 2,882,357	338,1 680,1
	Mining Labor Tax		USD/t	20,010,012	"	-	-	0.59	0.51	000,1
112	nt (Processing)									
ıa	in (i rocessing)									
4	Process plant labor COST	_	USD		#		553,391	2,128,303	844,968	253,4
+	Maintenance Labor COST	-	USD	-	#		474,614	3,573,080	639,747	191.9
+	Process plant labor ACFPE	-	USD	-	#		11,068	42,566	16,899	5,0
+	Maintenance Labor ACFPE	-	USD	-	#		9,492	71,462	12,795	3,8
+		-	USD	-	#	-			,	
+	Process plant labor OCSS	-	USD	-			37,372	88,520	86,878	27,0
+	Maintenance Labor OCSS	-	USD	-	#		5,914	67,379	62,687	19,4
+	Process plant labor Health Care Cost	-		-			4,399	18,086	5,253	3,1
+	Maintenance Labor Health Care Cost	-	USD	-	#		4,579	33,719	4,386	2,4
+	Plant (Processing) Labor		USD			-	1,100,829	6,023,115	1,673,613	506,4
4	Plant (Processing) Labor		USD		#		1 100 000	0.000.115	4 670 640	F00.4
+	Plant (Processing) Labor Total Ore Processed	-	Ton	23,510,512		-	1,100,829	6,023,115 2,757,104	1,673,613 2,882,357	506,4 680,1
+	Plant (Processing) Labor	-	USD/t	23,310,312	#			2.18	0.58	0.00, 1
	Figure (Froocooming) Easter		OODA					2.10	0.00	
+	Process plant labor TAX	-	USD	_	#		182,458	703,776	241,776	72,5
	Maintenance Labor TAX	-	USD	-	#	-	165,032	1,238,639	182,639	54,7
1	Plant (Processing) Labor Tax		USD			-	347,490	1,942,415	424,415	127,3
4	Plant (Processing) Labor Tax	-	USD		#	-	347,490	1,942,415	424,415	127,3
4	Total Ore Processed	-	Ton	23,510,512	#	-	-	2,757,104	2,882,357	680,1
+	Plant (Processing) Labor Tax		USD/t			-	-	0.70	0.15	0.
, 0	k A									
4	General & Admin labor COST	-	USD		#	263,932	1,972,482	2,504,616	1,654,616	496,3
4	General Maintenance labor COST	-	USD	-	#	-	110,204	578,207	194,874	58,4
+	Military Security Guards COST	-	USD	-	#		333,032	449,619	449,619	134,8
+	Admin labor ACFPE	-	USD	-	#	5,279	39,450	50,092	33,092	9,9
	General Maintenance labor ACFPE	-	USD	-	#	-	2,204	11,564	3,897	1,1
+	Military Security Guards ACFPE	-	USD	-	#	1.007	6,661	8,992	8,992	2,6
	Admin Johan OCCC	-	USD	-	#	1,007	46,163	140,792	139,620	43,3
	Admin labor OCSS				- #	-	11,888	37,495 85,428	37,026 85,428	11,1 25,6
	G&M labor OCSS	-	USD	-						/n /
	G&M labor OCSS Military Security Guards OCSS	-	USD	-	#	- 2 618	63,276 18 454			
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost	-	USD USD	-	#	2,618	18,454	21,050	12,550	7,0
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost	-	USD USD USD	-	#		18,454 786	21,050 4,914	12,550 1,080	7,0 1,0
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost	-	USD USD	-	#	2,618 -	18,454 786 1,986	21,050	12,550	7,0 1,0 2,6 794,3
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost Military Security Guards Health Care Cost	-	USD USD USD USD	-	#	2,618 - -	18,454 786 1,986	21,050 4,914 2,654	12,550 1,080 2,654	7,0 1,0 2,6
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost Military Security Guards Health Care Cost G&A Labor G&A Labor	-	USD USD USD USD USD	-	# # #	2,618 - - 272,836 272,836	18,454 786 1,986 2,606,586 2,606,586	21,050 4,914 2,654 3,895,424 3,895,424	12,550 1,080 2,654 2,623,449 2,623,449	7,0 1,0 2,6 794,3
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost Military Security Guards Health Care Cost G&A Labor G&A Labor Total Ore Processed	-	USD USD USD USD USD USD USD	-	# # #	2,618 - - 272,836 272,836	18,454 786 1,986 2,606,586 2,606,586	21,050 4,914 2,654 3,895,424 3,895,424 2,757,104	12,550 1,080 2,654 2,623,449 2,623,449 2,882,357	7,0 1,0 2,6 794,0 794,0
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost Military Security Guards Health Care Cost G&A Labor G&A Labor	-	USD USD USD USD USD	-	# # #	2,618 - - 272,836 272,836	18,454 786 1,986 2,606,586 2,606,586	21,050 4,914 2,654 3,895,424 3,895,424	12,550 1,080 2,654 2,623,449 2,623,449	7,0 1,0 2,6 794,0 794,0
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost Military Security Guards Health Care Cost G&A Labor G&A Labor Total Ore Processed G&A Labor	-	USD USD USD USD USD USD USD USD	23,510,512	# # # # #	2,618 - - 272,836 272,836	18,454 786 1,986 2,606,586 2,606,586	21,050 4,914 2,654 3,895,424 3,895,424 2,757,104 1.41	12,550 1,080 2,654 2,623,449 2,623,449 2,882,357 0.91	7,0 1,0 2,6 794,3 794,3 680,1
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost Military Security Guards Health Care Cost G&A Labor G&A Labor Total Ore Processed G&A Labor Admin labor TAX	-	USD USD USD USD USD USD USD USD USD USD	23,510,512	# # # # # #	2,618 - - 272,836 272,836 - - 94,637	18,454 786 1,986 2,606,586 2,606,586 - - - - 667,923	21,050 4,914 2,654 3,895,424 3,895,424 2,757,104 1,41 744,159	12,550 1,080 2,654 2,623,449 2,623,449 2,882,357 0.91	7,0 1,0 2,6 794,3 794,5 1
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost Military Security Guards Health Care Cost G&A Labor G&A Labor Total Ore Processed G&A Labor Admin labor TAX General Maintenance labor TAX	-	USD USD USD USD USD USD USD USD USD USD/t	23,510,512	# # # # # # #	2,618 - - 272,836 272,836 - - 94,637	18,454 786 1,986 2,606,586 2,606,586 - - - 667,923 30,096	21,050 4,914 2,654 3,895,424 3,895,424 2,757,104 1.41 744,159 173,531	12,550 1,080 2,654 2,623,449 2,623,449 2,882,357 0.91 438,159 35,531	7,(1,(2,6 794,3 794,3 131,4 131,4
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost Military Security Guards Health Care Cost G&A Labor G&A Labor Total Ore Processed G&A Labor Admin labor TAX	-	USD USD USD USD USD USD USD USD USD USD	23,510,512	# # # # # #	2,618 - - 272,836 272,836 - - 94,637	18,454 786 1,986 2,606,586 2,606,586 - - - - 667,923	21,050 4,914 2,654 3,895,424 3,895,424 2,757,104 1.41 744,159 173,531 120,005	12,550 1,080 2,654 2,623,449 2,623,449 2,882,357 0.91	7,1 1,1 2,1 794,3 794,3 680,1 131,4 10,6 36,6
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost Military Security Guards Health Care Cost G&A Labor G&A Labor Total Ore Processed G&A Labor Admin labor TAX General Maintenance labor TAX Military Security Guards TAX	-	USD USD USD USD USD USD USD USD USD/t	23,510,512	# # # # # # #	2,618 - - 272,836 272,836 - - - 94,637 -	18,454 786 1,986 2,606,586 2,606,586 - - - - 667,923 30,096 45,118	21,050 4,914 2,654 3,895,424 3,895,424 2,757,104 1.41 744,159 173,531	12,550 1,080 2,654 2,623,449 2,623,449 2,882,357 0.91 438,159 35,531 120,005	7,1 1,1 2,1 794,3 794,3 680,1 131,4 10,6 36,6
	G&M labor OCSS Military Security Guards OCSS Admin labor Health Care Cost General Maintenance labor Health Care Cost Military Security Guards Health Care Cost G&A Labor G&A Labor Total Ore Processed G&A Labor Admin labor TAX General Maintenance labor TAX Military Security Guards TAX	-	USD USD USD USD USD USD USD USD USD/t	23,510,512	#######################################	2,618 - - 272,836 272,836 - - - 94,637 -	18,454 786 1,986 2,606,586 2,606,586 - - - - 667,923 30,096 45,118	21,050 4,914 2,654 3,895,424 3,895,424 2,757,104 1.41 744,159 173,531 120,005	12,550 1,080 2,654 2,623,449 2,623,449 2,882,357 0.91 438,159 35,531 120,005	7,0 1,0 2,6 794,3 794,3 131,4

4.3.11 Mining Reserve Tail

In addition to calculating ADSCRs and LLCRs in order to show the ability of the project in servicing its debts, in this project we are implementing mining reserve tail limit. This limit was set to 25% of the total mine reserves. This will force the project to have a minimum of 25% of its gold reserves while it is still repaying for its debts. Table 12 contains more information is given regarding to the calculation of mining reserve tail for the years of loan repayment.

Table 12: Mining Reserve Tail

Mining Reserve Tail					N/A	N/A	Complied	Complied	Complied	N/A
Reserve Tail Covenant	25.00%	%		L	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
Ratio	-	Ratio	-	-	100.00%	100.00%	84.56%	69.61%	54.86%	43.52%
ı ıay		ı iay			-	-	'	'		
Flag		Flag		H	_	_	1	1	1	
Tranche A&B Repayment		USD'000s	_	ŀ	_	_	51,750	67,069	51,919	
Ratio		Ratio		L	100.00%	100.00%	84.56%	69.61%	54.86%	43.52
Mining Reserve at Effect D	-	Troy Oz	-	-	1,360,743	1,360,743	1,360,743	1,360,743	1,360,743	1,360,74
Remaining Mining Reserve	-	Troy Oz	-	-	1,360,743	1,360,743	1,150,703	947,176	746,451	592,2
Mining Reserve at Effect Da	ite	Troy Oz		H	1,360,743	1,360,743	1,360,743	1,360,743	1,360,743	1,360,7
Total Gold Produced	-	Troy Oz	-	-	-	-	210,040	203,527	200,726	154,24
Remaining Mining Reserve		Troy Oz		H	1,360,743	1,360,743	1,150,703	947,176	746,451	592,20
Total Gold Produced	-	Troy Oz	-	-	-		210,040	203,527	200,726	154,24
ing Reserve Tail (Gold Prod	uction)			H						
				L						
	Constant	Unit	Total/Aver	age	e		·	·	·	
Operation				+	<u> </u>	<u>.</u>	1	1	1	
Construction				H	30-00-2012	30-00-2013	30-00-2014	30-06-2015	30-06-2016	30-00-201
Period Start Date Period End Date				H	01-07-2011 30-06-2012	01-07-2012 30-06-2013	01-07-2013 30-06-2014	01-07-2014 30-06-2015	01-07-2015 30-06-2016	01-07-201 30-06-201
Period Start Date		с		H						
<i>I</i> lining Reser	ve T	ail								

4.3.12 Loan Schedule

There are three loans (provided by international banks) available for this project, two senior bank loans (tranche A and B) and a subordinated loan. Table below provides the schedule for loan disbursements and principal repayments.

Table 13: Loan Payments Schedule

Loan	(USD'000	s, Nomina	I)						
Period Start Date				01-07-2011	01-07-2012	01-07-2013	01-07-2014	01-07-2015	01-07-2016
Period End Date				30-06-2012	30-06-2013	30-06-2014	30-06-2015	30-06-2016	30-06-2017
Construction				1	1	-	-	-	-
Operation				-	-	1	1	1	1
	Constant	Unit	Total						
LOAN DISBURSEMENT SCHEDULE									
Senior Bank Debt - Tranche A		USD'000s	100,000	-	100,000	-	-	-	-
Senior Bank Debt - Tranche B		USD'000s	50,000	-	50,000	-	-	-	-
Subordinated Debt		USD'000s	35,000	7,175	27,825	-	-	-	-
LOAN PRINCIPAL REPAYMENT SCHEI	DULE								
Senior Bank Debt - Tranche A		USD'000s	100,000	-	-	27,500	40,000	32,500	-
Senior Bank Debt - Tranche B		USD'000s	50,000	-	-	13,750	20,000	16,250	-
Subordinated Debt		USD'000s	35,000	-	-	6,927	10,904	15,030	2,139

Following three tables are providing loan schedules for different loan plans. Political Risk Insurance (PRI) is also calculated for each loan. PRI paid during construction years is capitalized and will be depreciated through the life of the mine. Commitment fee is equal to 0.65% of outstanding debt and should be paid to the bank. Financing fee is also calculated as 4.5% of total loan amount.

Table 14: Senior Bank Debt, Tranche A

Loan	(USD'000:	s, Nomina	ıl)						
Period Start Date					01-07-2011	01-07-2012	01-07-2013	01-07-2014	01-07-201
Period End Date					30-06-2012	30-06-2013	30-06-2014	30-06-2015	30-06-201
Construction					1	1	-	-	-
Operation					-	-	1	1	1
	Constant	Unit	Total						
NIOR BANK DEBT - Tranche A	100,000								
Interest Rates									
LIBOR	4.00%			H	4.00%	4.00%	4.00%	4.00%	4.00%
Margin					3.00%	3.00%	2.50%	2.50%	2.50%
Annual Interest Rate					7.00%	7.00%	6.50%	6.50%	6.50%
Loan Schedule									
Annual Interest Rate	-	-	-	-	7.00%	7.00%	6.50%	6.50%	6.50%
Outstanding at the Beginning		USD'000s			-	-	100,000	72,500	32,500
Loan Disbursement		USD'000s			-	100,000	-	-	-
Interest Accrued		USD'000s			-	-	7,000	4,713	2,113
Interest Repayment		USD'000s			-	-	7,000	4,713	2.113
Principal Repayment		USD'000s			-	-	27,500	40,000	32,500
T.A. Total Repayment		USD'000s			-	-	34,500	44,713	34,613
Outstanding at the End		USD'000s			-	100,000	72,500	32,500	-
T.A. Interest Scheduled		USD'000s	13,825	H	-	-	7,000	4,713	2,113
T.A. Interest Capitalised		USD'000s	-		-	-	-	-	
T.A. Interest Expensed		USD'000s	13,825		-	-	7,000	4,713	2,113
T.A. Commitment Fee	0.65%	USD'000s	1,300		650	650	-	-	-
T.A. Financing Fee	4.50%	USD'000s	4,500		4,500	-	-	-	-
PRI									
Outstanding at the Beginning	-	USD'000s	_	-	_	_	100,000	72,500	32,500
Loan Disbursement	-	USD'000s	100,000	-	-	100,000	-	-	_
Beg. of Period Loan Balance (Inc Loan	Dis.)	USD'000s	,		-	100,000	100,000	72,500	32,500
Beg. of Period Loan Balance (Inc Loar	_	USD'000s	_	-	_	100.000	100,000	72,500	32,500
T.A. Interest Scheduled	-	USD'000s	13,825	-	-	-	7,000	4,713	2,113
Interest Estimate		USD'000s	,		-	13,825	13,825	6,825	2,113
Beg. of Period Loan Balance (Inc Loan	-	USD'000s	-	-	-	100,000	100,000	72,500	32,500
Interest Estimate	-	USD'000s	-	-	-	13,825	13,825	6,825	2,113
Insured Amount		USD'000s			-	113,825	113,825	79,325	34,613
Insured Amount	-	USD'000s	-	-	-	113,825	113,825	79,325	34,613
T.A. PRI Scheduled	1.50%	USD'000s	5,124		-	1,707	1,707	1,190	519
T.A. PRI Capitalised		USD'000s	1,707		-	1,707	-	-	-
T.A. PRI Expensed		USD'000s	3,416		-	-	1,707	1,190	519

Table 15: Senior Bank Debt, Tranche B

Loan	(USI	000'	s, Nominal	1)						
Period Start Date						01-07-2011	01-07-2012	01-07-2013	01-07-2014	01-07-201
Period End Date						30-06-2012	30-06-2013	30-06-2014	30-06-2015	30-06-201
Construction						1	1	-	-	-
Operation						-	-	1	1	1
	Con	stant	Unit	Total						
ENIOR BANK DEBT - Trans	che B 50	,000								
Interest Rates										
LIBOR	4.	00%				4.00%	4.00%	4.00%	4.00%	4.00%
Margin						3.00%	3.00%	2.50%	2.50%	2.50%
Annual Interest Rate			%			7.00%	7.00%	6.50%	6.50%	6.50%
Loan Schedule										
Annual Interest Rate		-	%	-	-	7.00%	7.00%	6.50%	6.50%	6.50%
Outstanding at the Begi	nning		USD'000s			-	-	50,000	36,250	16,250
Loan Disbursement			USD'000s			-	50,000	-	-	-
Interest Accrued			USD'000s			-	-	3,500	2,356	1,056
Interest Repayment			USD'000s			-	-	3,500	2,356	1,056
Principal Repayment			USD'000s			-	-	13,750	20,000	16,250
T.B. Total Repayment			USD'000s			_	-	17,250	22,356	17,306
Outstanding at the End			USD'000s			-	50,000	36,250	16,250	-
T.B. Interest Scheduled			USD'000s	6,913		_	_	3,500	2,356	1,056
T.B. Interest Capitalised			USD'000s	-		_	_	-		
T.B. Interest Expensed			USD'000s	6,913		-	-	3,500	2,356	1,056
T.B. Commitment Fee	0.	65%	USD'000s	650		325	325	-	-	-
T.B.Financing Fee	4.	50%	USD'000s	2,250		2,250	_	_	_	_
				,						
PRI										
Outstanding at the Beg	inning	-	USD'000s	-	-	-	-	50,000	36,250	16,250
Loan Disbursement		-	USD'000s	50,000	-	-	50,000	-	-	-
Beg. of Period Loan Ba	alance (Inc Loan Dis.)		USD'000s			-	50,000	50,000	36,250	16,250
Beg. of Period Loan Ba	lance (Inc.) oar	_	USD'000s	_	-	_	50,000	50,000	36,250	16,250
T.B. Interest Scheduled			USD'000s	6,913		_		3,500	2,356	1,056
Interest Estimate	_		USD'000s	0,010		-	6,913	6,913	3,413	1,056
Beg. of Period Loan Ba	lanco (Inc.) con		USD'000s	-	-	_	50,000	50,000	36,250	16,250
Interest Estimate	nance (inc Luai		USD'000s	-	-	-	6,913	6,913	36,250	1,056
Insured Amount		_	USD'000s	-	Ē	-	56,913	56,913	39,663	17,306
la a constant			Heblooc				50.040	50.010	00.000	47.00
Insured Amount		-	USD'000s	- 0.500	-	-	56,913	56,913	39,663	17,306
T.B. PRI Scheduled	1.	50%	USD'000s	2,562		-	854	854	595	260
T.B. PRI Capitalised T.B. PRI Expensed			USD'000s USD'000s	854 1,708		-	854	854	595	260

Table 16: Subordinated Bank Debt

L	oan	(USD'000	s, Nomina	I)						
	Period Start Date				01-07-20	1 01-07-2012	01-07-2013	01-07-2014	01-07-2015	01-07-201
	Period End Date				30-06-20	2 30-06-2013	30-06-2014	30-06-2015	30-06-2016	30-06-201
	Construction					1 1	-	-	-	-
	Operation						1	1	1	1
		Constant	Unit	Total						
UB	ORDINATED BANK DEBT		USD'000s							
Int	erest Rates									
	LIBOR	4.00%			4.009	6 4.00%	4.00%	4.00%	4.00%	4.00%
	Margin				5.009		5.00%	5.00%	5.00%	5.00%
	Annual Interest Rate		%		9.009		9.00%	9.00%	9.00%	9.00%
Lo	an Schedule									
Н	Annual Interest Rate	_	%	-	- 9.009	6 9.00%	9.00%	9.00%	9.00%	9.00%
	Outstanding at the Beginning		USD'000s		0.007	7,175	35,000	28,073	17,169	2.139
	Loan Disbursement		USD'000s		7,17		-	20,070		2,100
	Interest Accrued		USD'000s		7,17	646	3,150	2,527	1,545	193
П	Interest Repayment		USD'000s			- 646	3,150	2,527	1,545	193
	Principal Repayment		USD'000s				6.927	10.904	15,030	2.139
Н	S.D. Total Repayment		USD'000s			- 646	10,077	13,431	16,575	2,332
	Outstanding at the End		USD'000s		7,17		28,073		2,139	2,002
	S.D. Interest Scheduled		USD'000s	8.060		- 646	3,150	2,527	1,545	193
			USD'000s	-,			3,150	2,521	1,545	193
+	S.D. Interest Capitalised		USD'000s	646		- 646	2.450	0.507	4 545	400
Н	S.D. Interest Expensed		USD 0008	7,414		-	3,150	2,527	1,545	193
PR	1									
Н	Outstanding at the Beginning	-	USD'000s	-	-	- 7,175	35,000	28,073	17,169	2,139
	Loan Disbursement	-	USD'000s	35,000	- 7,17	5 27,825	-	-	-	-
	Beg. of Period Loan Balance (Inc Loan	Dis.)	USD'000s		7,17	5 35,000	35,000	28,073	17,169	2,139
+	Beg. of Period Loan Balance (Inc Loan	_	USD'000s	_	- 7,17	5 35,000	35,000	28,073	17,169	2,139
Н	S.D. Interest Scheduled	_	USD'000s			- 646	3,150	2,527	1,545	193
	Interest Estimate		USD'000s	0,000	8,06		7,414	4,264	1,738	193
П	Dec (Decirity of Delever)		LIODIOOS			05.000	05.000	00.0=0	17.400	0.40
+	Beg. of Period Loan Balance (Inc Loan	-	USD'000s	-	- 7,17 - 8.06		35,000	28,073	17,169	2,139
+	Interest Estimate	-	USD'000s USD'000s	-	0,00		7,414		1,738	193
+	Insured Amount		02D,0008		15,23	5 43,060	42,414	32,337	18,907	2,332
	Insured Amount	-	USD'000s	-	- 15,23	5 43,060	42,414	32,337	18,907	2,332
	S.D. PRI Scheduled	1.50%	USD'000s	2,314	22		636	485	284	35
	S.D. PRI Capitalised		USD'000s	874	22	9 646	-	-	-	-
	S.D. PRI Expensed		USD'000s	1,440		. -	636	485	284	35

4.4 Income Statement

Income statement of the gold mine project is given in Table 17. As it is shown in the statement, project is paying 2.3% of its revenues to the host country as a royalty. Other than the royalty charges, income tax is another way of transferring money from project's pocket to the host country. Income tax was set to be 30.00% of taxable income with five years of tax free holidays.

Table 17: Income Statement (Nominal)

Financial An Period Start Date	aiysi	S			01-07-2014			01-07-2018		
Period End Date				30-06-2014	30-06-2015	30-06-2016		30-06-2019	30-06-2021	30-06-202
Construction					-	-	-	-	-	
Operation	Constant	Unit	Total	1	1	1	1	1	1	,
COME STATEMENT (USD'0	00s, NOMI	NAL)								
levenues										
Gold Revenue	-	USD'000s	1,657,280	240,143.1	237,233.3	238,530.7	186,872.8	195,076.9	161,685.6	57,473.0
Hedging Gain/(Loss)	-	USD'000s		8,732.5	8,626.7	-	-	-	-	
Gold Lock Up Recovery	-	USD'000s	10,170	-	-	-	-	-	-	10,170
Total Revenue		USD'000s	1,684,809	248,875.6	245,860.0	238,530.7	186,872.8	195,076.9	161,685.6	67,643.
Costs										
Mining Cost	_	USD'000s	-	40,050.9	37,759.5	34,684.3	35,375.5	35,609.2	39,402.4	8,304.
Plant (Processing) Cost	_	USD'000s		35,821.6	40,757.8	40,834.1	31,632.5	33,144.4	38,715.3	
G&A Cost	-	USD'000s	-	11,460.9	11,672.0	11,882.4	8,476.5	8,813.0	9,178.7	2,602.
Total Site Opex		USD'000s	687,014	87,333.5	90,189.4	87,400.8	75,484.4	77,566.6	87,296.5	
Royalty Sensitivity	_	%								
Government Royalty	2.3%		e of Revenues							
Total Revenue	-		1,684,809	248,875.6	245,860.0	238,530.7	186,872.8	195,076.9	161,685.6	67,643.
Royalties To Government		USD'000s	37,908	5,599.7	5,531.8	5,366.9	4,204.6	4,389.2	3,637.9	1,522.0
Foreign (USD) price index	-	Index	-	1.04	1.06	1.08	1.10	1.14	1.19	1.2
D.f.: O. I	0.5	1100.0		0.70	0.00	7.00	7.40	7.44	7.70	7.0
Refining Cost Total Gold Produced	6.5	USD/Oz Troy Oz	_	6.76	6.89	7.02	7.16 154,247	7.44	7.73 123,536	7.88
Refining Charges	-	USD'000s		210,040 1,419.0	203,527 1,401.8	1,409.5	1,104.2	154,918 1,152.7	955.4	339.0
Iveiling Charges		000 0003	9,193	1,419.0	1,401.0	1,409.5	1,104.2	1,132.7	333.4	333.
Total Site Opex	-	USD'000s	687,014	87,333	90,189	87,401	75,484	77,567	87,296	24,109
Royalties To Government	-	USD'000s		5,600	5,532	5,367	4,205	4,389	3,638	1,52
Refining Charges	-	USD'000s	9,793	1,419	1,402	1,409	1,104	1,153	955	340
Depreciation	-	USD'000s	352,369	38,038	38,395	38,696	38,955	39,389	39,512	40,68
Interest During Operation	-	USD'000s		13,650	9,595	4,714	193	-	-	
PRI During Operation Total Costs	-	USD'000s USD'000s	6,565 1,121,800	3,197 149,237	2,270 147,384	1,062 138,649	35 119,976	122,498	131,402	66,65
			, ,	-, -	,		.,	,		
Total Revenue	-	USD'000s	1,684,809	248,876	245,860	238,531	186,873	195,077	161,686	67,643
Total Costs	-		1,121,800	149,237	147,384	138,649	119,976	122,498	131,402	66,656
Pre-Tax Income		USD'000s	563,009	99,638	98,476	99,881	66,897	72,579	30,283	987
Pre-Tax Income Comulative Loses	-	USD'000s USD'000s	000,000	99,638	98,476	99,881	66,897	72,579	30,283	987
Operation Year		Flag		1	2	3	4	6	8	
Tax Rate	30.0%	%		-	-	-	-	30.00%	30.00%	30.00%
Pre-Tax Income Comulative Loses	-	USD'000s USD'000s	,	99,638	98,476	99,881	66,897	72,579	30,283	98
Taxable Income		USD'000s		99,638	98,476	99,881	66,897	72,579	30,283	98
Tax Rate	30.0%	% USD'000s	- 563 000		98,476	99,881	66 807	30.00%	30.00%	30.00%
Taxable Income Income Tax Owing	_	USD'000s	,	99,638	30,476	99,881	66,897	72,579 21,774	30,283 9,085	98
Income Tax Owing	-	USD'000s	,	-	-	-	-	21,774	9,085	29
Income Tax Payable		USD'000s	41,683	-	-	-	-	-	10,528	9,08
Pre-Tax Income		USD'000s	563,009	99,638	98,476	99,881	66,897	72,579	30,283	98
Income Tax Payable	-	USD'000s	,	99,638	98,476	99,881	66,897	12,519	10,528	9,08
Net Income After Tax	_	USD'000s	,	99,638	98,476	99,881	66,897	72,579	19,755	(8,098

4.5 Development of Cash Flow

Financial analysis of the project is carried out from two different perspectives. Total investment point of view (bankers') and equity owners' view-point.

According to Jenkins et al. (2013), each stakeholder has its own considerations which should be taken in to account while generating Cash Flow Statement (CFS) for different viewpoints. Not all financial items should be included into the cash flow statements for each specific point of view.

4.5.1 Total Investment (Bankers') Perspective

As previously explained, bankers are implementing ADSCR and LLCR criteria to judge the ability of a project to service its debt. The major difference between bankers' and owners' perspective is how they look at the loan. Banks are only interested in whether the project has the financial capability to pay back the initial debt and related interest or not. Hence, the bankers neither want to see the loan disbursements and proceed of the loan nor NPV and IRR. In order to satisfy them, the ADSCR and LLCR have been calculated using nominal cash flows statement. Nominal cash flow statement is presented in Table 18.

Table 18: Cash Flow Statement, Bankers' Point of View (Nominal)

Financial An Period Start Date	<i>j</i>			01-07-2013	01-07-2014	01-07-2018	01-07-2021	01-07-2022
Period End Date				30-06-2014	30-06-2015		30-06-2022	
Construction				-	-	-	-	-
Operation				1	1	1	1	-
	Constant	Unit	Total					
ASH FLOW STATEMENT, BA	NKER'S P	OINT OF	VIEW (USD	000s, NOMI	NAL)			
nflows								
Gold Revenue	-		1,657,280	240,143	237,233	195,077	57,473	-
Hedging Gain/(Loss)	-	USD'000s	17,359	8,732	8,627	-	-	-
Gold Lock Up Recovery	-	USD'000s	10,170	-	-	-	10,170	-
Change in A/R	-	USD'000s	-	(25,088)	304	(1,213)	10,887	6,004
Total Inflows		USD'000s	1,684,809	223,787	246,164	193,864	78,530	6,004
Outflows								
Investments (Initial & Susta	ining Cap	ital Costs						
		LIODIOGO						
Mining	-	USD'000s	60,070	6,516	1,325	343	-	-
Processing Plant	-	USD'000s	71,285	2,082	<u>-</u>	-	-	-
Infrastructure	-	USD'000s	79,655	4,611	2,251	1,697	-	-
Management & Other	-	USD'000s	35,536	626	-	-	-	-
Construction labor	-	USD'000s	89,075	5,863	-	-	11,730	-
Operating Costs								
Mining Cost	_	USD'000s	_	40,051	37,760	35,609	8,304	
Plant (Processing) Cost	_	USD'000s	_	35,822	40,758	33,144	13,203	_
G&A Cost	-	USD'000s	-	11,461	11,672	8,813	2,602	-
Royalties								
Royalties To Government	-	USD'000s	37,908	5,600	5,532	4,389	1,522	-
Refining								
Refining Charges	-	USD'000s	9,793	1,419	1,402	1,153	340	-
Tax								
Income Tax Payable	-	USD'000s	41,683	-	-	-	9,085	296
Working Capital								
				,				
Change in A/P	-	USD'000s	-	(36,302)		(1,755)		8,688
Change in C/B	-	USD'000s	-	36,145	(438)	1,747	(15,685)	(8,650
Total Outflows		USD'000s	1,112,019	113,893	100,700	85,141	46,854	334
Total Inflows	_	USD'000s	1,684,809	223,787	246,164	193,864	78,530	6,004
Total Outflows	-		1,112,019	113,893	100,700	85,141	46,854	334
Net Cash Flow	-	USD'000s	572,790	109,895	145,464	108,723	31,677	5,671

ADSCR and LLCR have been calculated for senior bank debt, tranche A and B as well as subordinated debt. As it is shown in Table 19, ADSCR ratios are showing the capability of the gold mine project in covering its annual debt obligations. The minimum ADSCR is 2.12 while the average of ADSCR for three years of debt

repayments is 2.34. As it can be seen in the model (Table 19), DSCR covenant requested by the bank is equal to 1.25 which has been totally complied.

Although ADSCR ratios where quite satisfactory, LLCR was calculated due to the request of the bank. The minimum of 1.50 was requested for LLCR ratio. As it is shown in Table 19, the minimum amount for LLCR is 2.32 while the project average for LLCRs is 2.48.

Both criteria show that the project is not expected to face any anticipated difficulty regarding the payment of its debt to the bank. As a result bankers are expected to be interested in paying the loan to this project.

Table 19: ADSCR, LLCR for Senior Bank Debt (Tranche A&B), Nominal

Tranche A&B LLCR Cov	enant	Flag		N/A	N/A	Complied	Complied	Complied	N/A
LLCR Covenant	1.50	Ratio		1.50	1.50	1.50	1.50	1.50	1.5
Tranche A&B LLCR		Ratio	-	-	_	2.32	2.40	2.72	
Tranche A&B LLCR		Ratio		-	-	2.32	2.40	2.72	
Discounted PV of Tranche	A&B Repa		-	-	-	164,241	116,991	51,919	
Discounted PV of Net Cas		USD'000s	-	-	-	380,326	281,249	141,217	
Discounted PV of Tranche		USD'000s			-	164,241	116,991	51,919	
Tranche A&B Repayment		USD'000s	170,738	-	-	51.750	67.069	51,919	
LIBOR	4.00%	%							
Discounted PV of Net Cas	II FIOW	USD'000s		-	-	380,326	281,249	141,217	
Net Cash Flow During loar			396,575	-	-	109,895	145,464	141,217	
LIBOR	4.00%	% USD'000s	200 575			100.005	145 404	444.047	
LIDOD	4.0007	%							
Net Cash Flow During loar	ו	USD'000s	396,575	-		109,895	145,464	141,217	
Net Cash Flow	-	USD'000s	572,790	(116,253)	(173,195)	109,895	145,464	141,217	108,8
		Flag		-	-	1	1	1	
	Julia	5		.47.	. 477.	Joniphou	Joniphou	Joniphou	
Tranche A&B ADSCR Co		Flag		N/A	N/A			Complied	
DSCR Covenant	1.25	Ratio		1.25	1.25	1.25	1.25	1.25	1.
Tranche A&B ADSCR		Ratio	_	_	_	2.12	2.17	2.72	
Tranche A&B ADSCR		Ratio		-	-	2.12	2.17	2.72	
Tranche A&B Repayment		USD'000s	-	-	-	51,750	67,069	51,919	
Net Cash Flow	-	USD'000s	572,790	(116,253)	(173,195)	109,895	145,464	141,217	108,8
Tranche A&B Repayment		USD'000s		-	-	51,750	67,069	51,919	
T.B. Total Repayment	-	USD'000s	-	-	-	17,250	22,356	17,306	
T.A. Total Repayment	-	USD'000s	-	-	-	34,500	44,713	34,613	
Tranche A&B									
ENIOR BANK DEBT									
BT SERVICE RATIOS									
	Constant	Unit	Total						
Operation				-	-	1	1	1	
Construction				1	1	-	-	-	
Period End Date					30-06-2013		30-06-2015	30-06-2016	
Period Start Date					01-07-2012	01-07-2013	01-07-2014	01-07-2015	U1-U/-ZL

As we mentioned before, there are two loans available for this project. Second loan is the subordinated one. Detailed information regarding to this loan and the calculated ADSCR and LLCR ratios are available in Table 20.

Table 20: ADSCR, LLCR for Subordinated Bank Debt, Nominal

Financial An Period Start Date	aly Ol			01-07-2011	01-07-2012	01-07-2013	01-07-2014	01-07-2015	01-07-2016
Period End Date					30-06-2013		30-06-2015	30-06-2016	
Construction				1	1	30-00-2014	30-00-2013	30-00-2010	30-00-2017
Operation				-	-	1	1	1	1
Operation	Constant	Unit	Total						
JBORDINATED BANK DEB									
S.D. Total Repayment	_	USD'000s	_	_	646	10,077	13,431	16,575	2,332
Tranche A&B Repayment	-	USD'000s	-	-	-	51.750	67,069	51,919	-
Total Repayment		USD'000s	213,798	-	646	61,827	80,499	68,494	2,332
Net Cash Flow		USD'000s	213,798	(116,253)	(173,195)	109,895	145,464	141,217	108,845
Total Repayment	-	USD'000s	213,798		646	61,827	80,499	68,494	2,332
S.D. ADSCR		USD'000s	,	-	-	1.78	1.81	2.06	46.68
S.D. ADSCR		USD'000s	-	-	-	1.78	1.81	2.06	46.68
DSCR Covenant	1.25	Ratio		1.25	1.25	1.25	1.25	1.25	1.25
S.D. ADSCR Covenant		Flag		N/A	N/A	Complied	Complied	Complied	Complied
		Flag				1	1	1	1
Net Cash Flow	_	USD'000s	213,798	(116,253)	(173,195)	109.895	145.464	141,217	108,845
Net Cash Flow During loan	_	USD'000s	505,420	(116,253)	(173,195)	109,895	145,464	141,217	108,845
Net Casiff low During loar		000 0003	303,420		_	109,093	143,404	141,217	100,043
LIBOR	4.00%	%							
Net Cash Flow During loan	1	USD'000s	505,420	-	-	109,895	145,464	141,217	108,845
Discounted PV of Net Cas	h Flow	USD'000s		-	-	477,089	381,883	245,876	108,845
LIBOR	4.00%	%							
Total Repayment	-	USD'000s	213,798	-	646	61,827	80,499	68,494	2,332
Discounted PV of total Rep	payment	USD'000s		-	-	204,629	148,515	70,736	2,332
Discounted PV of Net Cas	h Flow	USD'000s	-	-	-	477,089	381,883	245,876	108,845
Discounted PV of total Rep	payment	USD'000s	-	-	-	204,629	148,515	70,736	2,332
S.D. LLCR		Ratio		-	-	2.33	2.57	3.48	46.68
S.D. LLCR		Ratio	-	-	-	2.33	2.57	3.48	46.68
LLCR Covenant	1.50	Ratio		1.50	1.50	1.50	1.50	1.50	1.50
S.D. LLCR Covenant		Flag		N/A	N/A	Complied	Complied	Complied	Complied

As it is shown in table above (Table 20), ADSCR has been calculated for subordinated debt. As it is expected they are assumed to be acceptable to the requested ratio by the bank, i.e. 1.25 as a DSCR covenant. The minimum is equal to 1.78 with the average of 1.88 for the first three years of loan repayment. ADSCR for the period of 2016-2017 is relatively very high due to the small loan left for repayment in the very last year.

Almost the same situation exists with LLCR ratios. Minimum LLCR is 2.33 while the average for the first three years is equal to 2.79. The bank's minimum requested LLCR ratio was 1.50 which is quite complied during the loan life.

According to above results, the bank should be eager to provide the requested subordinated loan to the project.

4.5.2 Equity Owners' Perspective

In order to appraise the project from the view point of equity holders, a more comprehensive cash flow statement is required. The owner is interested in all the existing inflows to the project as well as outflows. For instance, here we do care about the loan disbursements as a source of income as well as loan proceeds as a cost to the project. After taking all the details in to the account, net cash flow after financing is constructed.

In order to understand the project better, first we deployed a cash flow statement in nominal terms from equity holders' point of view. Then after converting it to real terms, it's now ready to calculate NPV and IRR to reach a better and more comprehensive assessment about the profitability of the project. Required rate of return on equity for this field was assumed to be 25.00%. This demonstrates the existing opportunity cost of equity funds to the owner. NPV was calculated and shows a positive NPV of USD 76.2 Million in comparing to the other alternative investment opportunities with a similar level of risk (refer to Table 21). This implies that the equity holder will be able to recover the initial capital as well as gaining an extra amount of USD 76.2 Million comparing to the other alternative investment opportunities available with the same level of risk. Hence, the project assumes to be commercially viable.

Although NPV is the most reliable criterion, IRR was also calculated. IRR for this project was obtained as almost 41%. This is much higher than what is required as a rate of return for this project, i.e. 25.00%.

Table 21: Cash Flow Statement, Equity Owners' Point of View (Real)

Financia	Financial Analysis								
Period Start Da	ate			01-07-2011	01-07-2012	01-07-2015	01-07-2018	01-07-2021	01-07-2022
Period End Da	te			30-06-2012	30-06-2013	30-06-2016	30-06-2019	30-06-2022	30-06-2023
Construction				1	1	-	-	-	-
Operation				-	-	1	1	1	-
	Constant	Unit	Total						

FNPV Discount Rate NPV	25.00%	USD'000s		76,239					
ENDV Discount Pate	25 000/								
Net Cash Flow After Fina	ncing	USD'000s	480,033	(109,078)	3,908	68,162	95,465	26,381	4,67
Total Loan Repayment Rea		USD'000s	-	-	633	63,402		-	
Total Loan Disbursement F		USD'000s	-	7,175	174,424	-	-	-	.,0
Net Cash Flow Before Fina	ncing	USD'000s	500,039	(116 253)	(169,882)	131,564	95,465	26,381	4,6
Total Loan Repayment Rea		USD'000s	-	-	633	63,402	-	-	
Total Loan Disbursement F	Real	USD'000s	-	7,175	174,424	-	-	-	
Net Cash Flow Before Fi	nancing	USD'000s	500,039	(116,253)	(169,882)	131,564	95,465	26,381	4,6
Total Outflows	- nancina	USD'000s USD'000s	,- ,	116,253	169,882	89,556	74,212	38,629	4.6
Total Inflows	-		1,521,744	-	-	221,120	169,677	65,011	4,9
Total Outflows		USD'000s	1,021,705	116,253	169,882	89,556	74,212	38,629	2
						()	.,000	(-, 5==)	(*)
Change in C/B	-	USD'000s	-	-	-	(464)	1,056	(13,322)	(7,
Change in A/P		USD'000s		_		466	(1,061)	13,380	7,1
Working Capital									
Income Tax Payable	-	USD'000s	41,683	-	-	-	-	7,490	2
haran Tan S		LICDIOOC	44.000					7 400	
Tax									
Refining Charges	-	USD'000s	9,793	-	-	1,305	1,007	280	
								6	
Refining									
Royalties To Government	-	USD'000s	37,908	-	-	4,968	3,834	1,255	
Royalties									
G&A Cost	-	USD'000s	-	-	-	10,918	7,667	2,136	
Plant (Processing) Cost	-	USD'000s	-	-	-	37,607	28,930	10,918	
Mining Cost	-	USD'000s	-	-	-	31,977	30,996	6,824	
operating costs									
Operating Costs									
Construction labor	-	USD'000s	86,018	27,021	43,610	-	-	9,670	
Management & Other	-	USD'000s	35,064	11,468	22,994	-,		-	
Infrastructure	-	USD'000s	77,739	27,744	35,469	2,245	1,482	-	
Mining Processing Plant	-	USD'000s	59,017 70,390	23,474 26,546	25,968 41,841	534	300	-	
Mining		USD'000s	E0 047	22.474	25.000	F0.4	200	_	
Investments (Initial & Susta	ining Cap	ital Costs)						
Outflows									
Change in A/R Total Inflows	-		1,521,744	-	-	221,120	(733) 169,677	9,247 65,011	4,9 4,9
Gold Lock Up Recovery	-	USD'000s USD'000s	8,384	-	-	322	(722)	8,384	4.0
Hedging Gain/(Loss)	-	USD'000s	16,543	-	-	-	-	-	
Gold Revenue	-	USD'000s	-	-	-	220,798	170,410	47,380	
lilows									
nflows									
Foreign (USD) price index	-	Index	-	1.00	1.02	1.08	1.14	1.21	1.

Chapter 6

SENSITIVITY ANALYSIS

5.1 Introduction

In this chapter once again we will briefly explain the logic of sensitivity analysis followed by a presentation of the results and their interpretation.

5.2 Sensitivity Analysis

Although sensitivity analysis has its own shortcomings, for instance only one variable can be changed at a time, but it is still being used as a useful strategy in capturing the risky variables and also to study possible influences that may have on the main outcomes of projects. Risky variables are capable to bring great changes in the outcome results of the projects even sometimes with their small deviations. The extent of their influence and the likeliest of them to happen are one of the major concerns that should be studied. Project managers try to identify and understand these critical parameters prior to going for any further steps.

Here we try to choose those particular parameters, especially the ones who are suspected to be a risky variable. To name, gold price, price of diesel and HFO, cost overrun factor, percentage of a royalty to the government, total gold revenue, cost of a labor, and foreign inflation was chosen for the study. Their values were changed using a realistic range of possible values and the model was recalculated and final results were recorded. The following section is allocated to the discussion about the results of this analysis.

5.3 Results

Table 22 shows the sensitivity results to the changes in the gold price. According to the table below, this variable is assumed to be risky since even small changes, which are quite possible, have great effects on the NPV and IRR results. Ten percent (10%) decrease in gold selling price will almost make the NPV half of its previous value. A gold price of USD 885 (almost 19.6% decrease in gold price from USD 1,100 base case) will make NPV equal to zero.

Although we reached a break even at a gold price of USD 885, but we should keep in mind that the used discount rate is also relatively high, i.e. 25%. Discount rate was assumed to be high due to the high level of risk.

Regarding to the possible influence on ADSCRs, senior debt looks secured and there is no serious problem regarding to debt service although subordinated debt may face some difficulties especially when it reaches to the breakeven point of USD 885.

Table 22: Financial Sensitivity Results to Gold Price

GOLD PRICE										
Gold Price Sensitivity	_	%								
					Trar	che A&B A	DSCR	,	S.D ADSC	R
			NPV	IRR	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
			76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	770	-30%	(41,463.87)	14.1%	1.45	1.55	1.37	1.22	1.29	1.04
	885	-19.6%	(0.00)	25.0%	1.69	1.76	1.84	1.41	1.47	1.40
	990	-10%	37,292.90	33.3%	1.90	1.96	2.27	1.59	1.63	1.72
	1,045	-5%	56,776.26	37.3%	2.01	2.06	2.50	1.68	1.72	1.89
	1,100	-	76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	1,210	10%	115,088.71	47.9%	2.35	2.38	3.17	1.96	1.98	2.40
	1,265	15%	134,513.54	51.2%	2.46	2.48	3.39	2.06	2.07	2.57
	1,320	20%	153,938.37	54.3%	2.57	2.58	3.62	2.15	2.15	2.74
	1,430	30%	192,788.03	60.2%	2.80	2.79	4.07	2.34	2.33	3.08

Table 23 and 24 are respectively looking at the effects of possible changes in diesel and HFO prices on the project's outcomes. As it can be seen in the following tables, increase in price of diesel and HFO will have negative effects on project outcomes.

Although project will remain quite profitable even with 50% increase in diesel price or HFO price, we should keep in mind that the price of diesel and HFO are usually change together and are expected to increase or decrease simultaneously.

Table 23: Financial Sensitivity Results to Diesel Price

DIESEL PRICE										
Diesel Price Sensitivity		%								
					Tran	che A&B A	DSCR		S.D ADSC	R
			NPV	IRR	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
			76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	1.05	-20%	84,821.00	42.6%	2.19	2.22	2.79	1.84	1.85	2.11
	1.18	-10%	80,530.03	41.8%	2.16	2.20	2.75	1.81	1.83	2.09
	1.24	-5%	78,384.54	41.4%	2.14	2.18	2.74	1.79	1.82	2.07
	1.31	-	76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	1.44	10%	71,948.08	40.2%	2.09	2.14	2.69	1.75	1.78	2.04
	1.57	20%	67,657.11	39.3%	2.05	2.12	2.65	1.72	1.76	2.01
	1.70	30%	63,359.77	38.5%	2.02	2.09	2.62	1.69	1.74	1.99
	1.96	50%	54,759.86	36.8%	1.95	2.03	2.55	1.63	1.70	1.94
	2.29	75%	44,009.98	34.6%	1.86	1.97	2.47	1.55	1.64	1.87

Table 24: Financial Sensitivity Results to HFO Price

HFO PRICE										
HFO Price Sensitivity	-	%								
					Tran	che A&B A	DSCR		S.D ADSC	R
			NPV	IRR	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
			76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	0.95	-20%	83,835.15	42.4%	2.18	2.22	2.79	1.82	1.85	2.11
	1.07	-10%	80,037.10	41.7%	2.15	2.19	2.75	1.80	1.83	2.09
	1.13	-5%	78,138.08	41.4%	2.14	2.18	2.74	1.79	1.82	2.07
	1.19	-	76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	1.30	10%	72,441.01	40.3%	2.10	2.14	2.69	1.75	1.79	2.04
	1.42	20%	68,633.75	39.5%	2.07	2.12	2.65	1.73	1.77	2.01
	1.54	30%	64,820.81	38.8%	2.04	2.09	2.62	1.71	1.74	1.99
	1.78	50%	57,194.94	37.3%	1.98	2.04	2.56	1.66	1.70	1.94
	2.07	75%	47,662.59	35.3%	1.91	1.98	2.47	1.60	1.65	1.87

Investment cost overruns happen in many projects. They are assumed to be an inevitable part of each and every project. This can reduce the performance of the project and jeopardizes the expected profitability. Investment cost overrun was assumed to vary from -10% to +50%. Project's NPV becomes zero if the project faces 28.7% cost overrun. At this point NPV becomes zero and IRR will be equal to 25%. There will be no problem regarding to debt servicing since project still has enough cash flows to pay back its debt.

Table 25: Financial Sensitivity Results to Investment Cost Overrun

INVESTMENT COST OVERRU	JN								
Cost Overrun Factor -	%								
				Tran	che A&B A	DSCR	,	S.D ADSC	R
		NPV	IRR	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
		76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	-10%	102,787.70	49.9%	2.16	2.17	2.73	1.81	1.81	2.07
	-5%	89,513.38	45.1%	2.14	2.17	2.72	1.79	1.81	2.06
	-	76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	5%	62,961.58	37.4%	2.10	2.17	2.72	1.76	1.80	2.06
	10%	49,663.54	34.2%	2.09	2.16	2.71	1.75	1.80	2.06
	15%	36,365.50	31.4%	2.07	2.16	2.71	1.73	1.80	2.06
	25%	9,769.41	26.5%	2.03	2.16	2.71	1.70	1.80	2.05
	28.7%	(0.00)	25.0%	2.01	2.15	2.70	1.69	1.79	2.05
	50.0%	(56,720.80)	17.8%	1.93	2.14	2.69	1.62	1.78	2.04

In many mineral producing countries, royalties are among the main source of revenues for their governments. Although gold mines are generally known as high-yield projects the percentage used as a royalty rate is relatively too low (i.e. 2% to 5% in many cases).

The main goal of doing a sensitivity analysis to royalties (presented in Table 26) is to see the possible negative effects that it may cause on this project as a sample. We want to see what would be the effect if royalty level goes higher. As it is obvious in Table 26, our study suggests that even if the royalty rates are increased up to six times, the project still generates positive financial NPV. According to our finding, having the royalty rate increased in this specific gold project will not damage financial viability of the project and will allow the host country to benefit more from the gold extraction.

Since there are generally many foreign companies who are extracting from similar natural resources, this extra flow of money may, of course with a good financial management, help the undeveloped but mineral reach countries to build their economy and reduce their poverty.

Table 26: Financial Sensitivity Results to Royalty

				-						
ROYALTY										
Royalty Sensitivity	-	%								
					Tran	che A&B A	DSCR		S.D ADSC	R
			NPV	IRR	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
			76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	1.69%	-25%	79,186.51	41.6%	2.15	2.19	2.75	1.80	1.82	2.08
	2.25%	-	76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	2.81%	25%	73,291.60	40.4%	2.10	2.15	2.69	1.75	1.79	2.04
	3.38%	50%	70,344.15	39.8%	2.07	2.13	2.67	1.73	1.77	2.02
	4.50%	100%	64,438.10	38.6%	2.02	2.09	2.62	1.69	1.74	1.98
	7.88%	250%	46,705.82	35.0%	1.85	1.96	2.46	1.55	1.64	1.87
	11.25%	400%	28,973.53	31.3%	1.69	1.84	2.31	1.42	1.53	1.75
	13.50%	500%	17,152.01	28.7%	1.58	1.76	2.20	1.32	1.46	1.67
	16.76%	645%	(0.00)	25.0%	1.43	1.64	2.05	1.19	1.36	1.56

The changes in total gold production also have a tremendous effect on the financial viability of the project. The possible changes in the gold production may result from the recovery rate of the gold or the feed grade of that specific mine pit.

Although the possibility of errors in such estimations are low due to the technological improvements in mining sector and usage of different available high tech equipment, the high negative effect brings up the importance of such a studies which are being done prior to the start of the project. According to the Table 27, 15.3% decrease in the total amount of gold production will bring down the NPV to zero. This reveals the importance of this variable.

In order to assume this variable as a risky one, we need to study and find the possibility of above circumstances that will affect the total volume of the gold production and eventually the project's revenue.

Table 27: Financial Sensitivity Results to Total Gold Production

TOTAL GOLD PROD	DUCTION									
Gold Production Sensitivity		%								
Cold i Toddellori Gerisilivity		70			Tran	che A&B A	DSCR		S.D ADSC	R
			NPV	IRR	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
			76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	1,152,617	-15.3%	(0.00)	25.0%	1.48	1.62	2.04	1.24	1.35	1.54
	1,156,632	-15.0%	1,471.09	25.3%	1.49	1.63	2.05	1.25	1.36	1.55
	1,224,669	-10.0%	26,400.60	30.8%	1.70	1.81	2.27	1.43	1.51	1.72
	1,258,687	-7.5%	38,865.36	33.4%	1.81	1.90	2.39	1.51	1.58	1.81
	1,292,706	-5.0%	51,330.11	36.0%	1.91	1.99	2.50	1.60	1.66	1.89
	1,326,725	-2.5%	63,794.87	38.5%	2.02	2.08	2.61	1.69	1.73	1.98
	1,360,743	-	76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	1,428,780	5.0%	101,110.39	45.8%	2.33	2.35	2.94	1.95	1.96	2.23
	1,496,818	10.0%	125,981.72	50.5%	2.54	2.53	3.17	2.13	2.10	2.40

As it can be seen in the table below, USD inflation is assumed to be 1.95% as a base-case. We assumed that it may vary from 0.98% as a lowest to 3.41% as a highest. We monitored the financial criteria for any changes. Since there is no sign of significant changes in projects' financial criteria, this variable should not be assumed as a risky variable for this project.

Table 28: Financial Sensitivity Results to Foreign (USD) Inflation

FOREIGN (USD) IN	FLATION									
Foreign Inflation Sensitivity	_	%								
Foreign initiation Sensitivity	-	70			Tran	che A&B A	ADSCR		S.D ADSC	R
			NPV	IRR	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
			76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	0.98%	-50.0%	74,918.51	40.8%	2.08	2.11	2.62	1.74	1.76	1.99
	1.17%	-40.0%	75,191.69	40.8%	2.09	2.12	2.64	1.75	1.77	2.00
	1.46%	-25.0%	75,596.79	40.9%	2.10	2.14	2.67	1.76	1.78	2.02
	1.76%	-10.0%	75,990.64	40.9%	2.12	2.16	2.70	1.77	1.80	2.05
	1.95%	-	76,239.05	41.0%	2.12	2.17	2.72	1.78	1.81	2.06
	2.15%	10.0%	76,485.39	41.0%	2.13	2.18	2.74	1.78	1.82	2.08
	2.44%	25.0%	76,851.02	41.1%	2.14	2.20	2.77	1.79	1.83	2.10
	2.93%	50.0%	77,450.14	41.2%	2.17	2.23	2.82	1.81	1.86	2.14
	3.41%	75.0%	78,036.57	41.3%	2.19	2.26	2.87	1.83	1.88	2.18

Chapter 7

CONCLUSION

6.1 Introduction

Here in this final chapter we summaries our findings in this study. We briefly discuss about the project itself as well as FAST modeling standard and the advantages that we realized while we were implementing it in the model. We will also explain our study findings including royalties.

6.2 Conclusion

Financial analysis was done on an open pit gold mine project as a sample. Cash flows from two different viewpoints, Bankers' and Equity holders', were constructed in order to appraise the project in financial terms, and study the ability of the project in servicing its debt. Sensitivity analysis was also done in order to find the risky variables to the project.

The project was found quite feasible with the positive NPV of USD 76.7 Million. IRR was also found to be 41.12% which is very satisfying. Bankers are also expected to be interested for lending money to this project since ADSCR and LLCR ratios are all meeting bankers' requirements.

Sensitivity analysis brought some important points about different parameters affecting this project. Gold price was assumed to be a risky variable since it is able to have a great influence on the viability of the project. Cost overrun was accepted as a

risky parameter to the project due to the existence of a high possibility in facing some cost and time overruns. According to the documents for this project, the accuracy level for the capital cost estimations was assumed to be 10% to 15% of the overall project costs and this may put the project's financial viability in to the great danger. Total gold production was also found to be risky. This shows the importance of the pre-feasibility studies since the gold production may vary due to different gold feed grades and gold recovery rates. It is always worth to spend money in order to have accurate information about the quality of the available ore in mine pits.

Another important finding was about the royalties. Royalty rate in gold mine projects in many countries are usually set from 2% to 5% of the total project revenue. Existing tax revenues are the only channel for the host country government to benefit from these extractions. Since mining projects are usually provided with tax free holidays, royalties will become the largest source of revenue for host country governments out of this sector.

Using What-if AnalysisTM feature in Microsoft ExcelTM, we found that even with 13.5% as a rate of royalty, interestingly the project would be still feasible and able to pay for its debt. This can increase the revenue of host country and make the deal closer to a fair one.

Due to the implementation of one of the latest modeling standards, FAST Standard, in the building of this model, a significant positive difference was experienced. FAST standard noticeably reduced the rate of error while on the other hand increased the speed of modeling. Although this model was not built in a group of modelers, the

increase in its commutability was obvious. It was much easier to communicate with other modelers or non-modelers while presenting this model.

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APPENDIX

Appendix: Labor

L	abor															
П	Period Start Date				01-07-2011	01-07-2012	01-07-2013	01-07-2014	01-07-2015	01-07-2016	01-07-2017	01-07-2018	01-07-2019	01-07-2020	01-07-2021	01-07-202
	Period End Date				30-06-2012	30-06-2013	30-06-2014	30-06-2015	30-06-2016	30-06-2017	30-06-2018	30-06-2019	30-06-2020	30-06-2021	30-06-2022	30-06-202
	Construction				1	1	-	-	-	-	-	-	-	-	-	
	Operation				-	-	1	1	1	1	1	1	1	1	1	
		Constant	Unit	Total	Labor Month	Labor Month	Labor	Labor	Labor	Labor	Labor	Labor	Labor	Labor	Labor	
FL	ATION AND EXCHANGE RATES															
Н	Local Inflation Sensitivity	-	%													
П	Foreign Inflation Sensitivity	-	%													
Н	Domestic (PDC) inflation rate	5.50%														
	Forecast Period Flag		flag			1 0	0	0	0	0	0	0	0	0	0	1
Н	Domestic (PDC) price index		Index		1.000	1.055	1.113	1.174	1.239	1.307	1.379	1.455	1.535	1.619	1.708	
Н	Foreign (USD) inflation rate	1.95%														
	Forecast Period Flag		flag			1 0	0	0	0	0	0	0	0	0	0	
	Foreign (USD) price index		Index		1.000	1.020	1.039	1.060	1.080	1.101	1.123	1.145	1.167	1.190	1.213	
Н	Domestic (PDC) price index	-	Index	-	# 1.000	1.055	1.113	1.174	1.239	1.307	1.379	1.455	1.535	1.619	1.708	
	Foreign (USD) price index	-	Index	-	# 1.000	1.020	1.039	1.060	1.080	1.101	1.123	1.145	1.167	1.190	1.213	
П	Relative Price Index		Index		1.000	1.035	1.071	1.108	1.147	1.187	1.228	1.271	1.315	1.361	1.408	
Н	Relative Price Index	-	Index	-	# 1.000	1.035	1.071	1.108	1.147	1.187	1.228	1.271	1.315	1.361	1.408	
	Real Exchange Rate	5.00			5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	
	Nominal Exchange Rate				5.000	5.174	5.354	5.541	5.734	5.933	6.140	6.354	6.575	6.804	7.041	

JM	IBER OF LABORS												
Mir	ning labor												
	Local Category L	#	-	92	16	16	16	16	16	16	16	16	16
	Local Category R	#	-	588	119	119	119	119	119	119	119	119	119
	Local Category H1	#	-	228	54	54	54	54	54	54	54	54	54
	Local Category H2	#	-	-	8	8	8	8	8	8	8	8	8
	Expats	#	-	82	38	33	22	15	15	15	15	15	10
	VAS	#	-	-	15	15	15	15	15	15	15	15	15
	TOTAL	#		990	250	245	234	227	227	227	227	227	222
Pro	ocess plant labor												
	Local Category L	#	-	60	24	24	24	24	24	24	24	24	24
	Local Category R	#	-	88	25	25	25	25	25	25	25	25	25
П	Local Category H1	#		160	14	14	14	14	14	14	14	14	14
\Box	Local Category H2	#	-	-	5	5	5	5	5	5	5	5	5
\Box	Expats	#	-	40	8	8	8	1	1	1	1	1	1
\forall	VAS	#	-	-	5	5	5	5	5	5	5	5	5
\forall	TOTAL	#	-	348	81	81	81	74	74	74	74	74	74
\Box													
Ma	nintenance Labor												
···a	Local Category L	#	-	46	23	23	23	23	23	23	23	23	23
Н	Local Category R	#	-	8	8	8	8	8	8	8	8	8	8
\Box	Local Category H1	#		1	15	15	15	15	15	15	15	15	15
Н	Local Category H2	#		1	3	3	3	3	3	3	3	3	3
+	Expats	#	-	52	21	21	21	1	1	1	1	1	1
Н	VAS	#		52	4		4	4	4	4	4	4	4
-		#	-			4	74	54	54	54	54	54	54
+	TOTAL	#	-	108	74	74	74	54	54	54	54	54	54
	eneral & Admin labor												
Ge		#		070			440	440	440	440	440	440	440
\vdash	Local Category L		2	372	110	110	110	110	110	110	110	110	110
Н	Local Category H1	#	4	134	23	23	23	23	23	23	23	23	23
Н	Local Category H2	#	-	29	6	6	6	6	6	6	6	6	6
ш	Expats	#	16	128	8	8	8	3	3	3	3	3	3
Ш	VAS	#	-	-	12	12	12	12	12	12	12	12	12
\square	TOTAL	#	22	663	159	159	159	154	154	154	154	154	154
Ge	eneral Maintenance labor												
	Local Category L	#	-	70	22	22	22	22	22	22	22	22	22
+	Local Category R	#	-	24	4	4	4	4	4	4	4	4	4
+	Local Category H1	#		24	6	6	6	6	6	6	6	6	6
+	Expats	#		6	2	2	2	-	-	-	-	-	-
+	VAS	#	-	- 6	3	3	3	3	3	3	3	3	3
+	TOTAL	#		124	37	37	37	35	35	35	35	35	35
H	TOTAL	#	-	124	31	31	31	30	30	30	30	30	35
Mil	litary Security Guards												
	Local Category L	#	-	696	78	78	78	78	78	78	78	78	78
	Local Category H1	#	-	76	8	8	8	8	8	8	8	8	8
	TOTAL	#	-	772	86	86	86	86	86	86	86	86	86
\Box													
	TAL	#	22	3,005	687	682	671	630	630	630	630	630	625

os	T PER LABOR / LABOR MONTH (REAL)												
Ш													
Mir	ning labor												
	Local Category L	PDC	-	1,914	22,849	22,849	22,849	22,849	22,849	22,849	22,849	22,849	6,855
	Local Category R	PDC	-	3,109	35,136	35,136	35,136	35,136	35,136	35,136	35,136	35,136	10,541
	Local Category H1	PDC	-	3,759	45,038	45,038	45,038	45,038	45,038	45,038	45,038	45,038	13,511
	Local Category H2	PDC	-	-	100,270	100,270	100,270	100,270	100,270	100,270	100,270	100,270	30,081
	Expats	USD	-	9,454	146,000	146,000	146,000	184,259	184,259	184,259	184,259	184,259	55,278
	VAS	PDC	-	-	39,043	39,043	39,043	39,043	39,043	39,043	39,043	39,043	11,713
Pro	cess plant labor												
	Local Category L	PDC	-	2,170	24,254	24,254	24,254	24,254	24,254	24,254	24,254	24,254	7,276
	Local Category R	PDC	-	3,127	35,494	35,494	35,494	35,494	35,494	35,494	35,494	35,494	10,648
	Local Category H1	PDC	-	3,495	44,215	44,215	44,215	44,215	44,215	44,215	44,215	44,215	13,265
	Local Category H2	PDC	-	-	95,123	95,123	95,123	95,123	95,123	95,123	95,123	95,123	28,537
	Expats	USD	-	9,020	197,917	197,917	197,917	300,000	300,000	300,000	300,000	300,000	90,000
Ш	VAS	PDC	-	-	32,153	32,153	32,153	32,153	32,153	32,153	32,153	32,153	9,646
Mai	intenance Labor												
III	Local Category L	PDC	-	2,154	23,241	23,241	23,241	23,241	23,241	23,241	23,241	23,241	6,972
\Box	Local Category R	PDC	_	3,210	35,494	35,494	35,494	35,494	35,494	35,494	35,494	35,494	10,648
Н	Local Category H1	PDC	_	3.580	46.426	46,426	46.426	46.426	46.426	46,426	46.426	46,426	13.928
Н	Local Category H2	PDC	_	27,085	66,255	66,255	66,255	66,255	66,255	66,255	66,255	66,255	19,877
\Box	Expats	USD	_	8,529	152,778	152,778	152,778	275,000	275,000	275,000	275,000	275,000	82,500
Н	VAS	PDC	_	- 0,020	27,524	27,524	27,524	27,524	27,524	27,524	27,524	27,524	8,257
$^{+}$	V/ 10	1.20			27,021	27,021	27,021	27,021	27,021	27,021	21,021	27,021	0,207
Ge	neral & Admin labor												
	Local Category L	PDC	1,985	1.767	20.380	20.380	20.380	20.380	20.380	20.380	20,380	20,380	6,114
Н	Local Category H1	PDC	3,575	3,558	42,593	42,593	42,593	42,593	42,593	42,593	42,593	42,593	12,778
\Box	Local Category H2	PDC	- 0,070	6,523	118,313	118,313	118,313	118,313	118,313	118,313	118,313	118,313	35,494
\Box	Expats	USD	16,267	13,342	204,864	204,864	204,864	262,971	262,971	262,971	262,971	262,971	78,891
+	VAS	PDC	-	-	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	9,931
Ħ					30,.32	35,132	33,.32	33,.32	33,.32	35,.32	55,.52	33,.32	0,001
Ge	neral Maintenance labor												
	Local Category L	PDC	-	2,093	23,136	23,136	23,136	23,136	23,136	23,136	23,136	23,136	6,941
	Local Category R	PDC	-	3,210	35,494	35,494	35,494	35,494	35,494	35,494	35,494	35,494	10,648
	Local Category H1	PDC	-	3,593	43,184	43,184	43,184	43,184	43,184	43,184	43,184	43,184	12,955
	Expats	USD	-	8,042	191,667	191,667	191,667	-	-	-	-	-	-
П	VAS	PDC	-	-	21,437	21,437	21,437	21,437	21,437	21,437	21,437	21,437	6,431
NA.	itamu Saassuitu Caanda												
Will	itary Security Guards	220		4.000	4 === :	4 ====	4 ====	4 === =	4 ====	4 ====	4 777	4 776	1 101
+	Local Category L	PDC	-	1,968	4,770	4,770	4,770	4,770	4,770	4,770	4,770	4,770	1,431
	Local Category H1	PDC	-	3,886	234,509	234,509	234,509	234,509	234,509	234,509	234,509	234,509	70,353

ABOF	R COST (REAL)												
	Labor Cost Sensitivity	- %											
Mini	ng labor												
10111111	Local Category L	PDC	_	176.120	365.586	365,586	365.586	365.586	365.586	365,586	365.586	365.586	109.676
	Local Category R	PDC	-	1,828,320	4,181,173	4,181,173	4,181,173	4,181,173	4,181,173	4,181,173	4,181,173	4,181,173	1,254,352
	Local Category H1	PDC		856,980	2.432.037	2,432,037	2,432,037	2,432,037	2,432,037	2,432,037	2,432,037	2.432.037	729.611
	Local Category H2	PDC		030,300	802.160	802.160	802.160	802.160	802.160	802.160	802.160	802.160	240.648
	Expats	USD		775.254	5.548.008	4.818.007	3,212,004	2,763,890	2,763,890	2,763,890	2,763,890	2.763.890	552.778
	VAS	PDC		773,234	585,648	585,648	585,648	585,648	585,648	585,648	585,648	585.648	175.694
	VAC	1 00			303,040	303,040	303,040	303,040	303,040	300,040	303,040	303,040	170,004
Proc	ess plant labor												
	Local Category L	PDC	_	130,200	582,099	582,099	582,099	582,099	582,099	582,099	582,099	582,099	174,630
	Local Category R	PDC	-	275,160	887,346	887,346	887,346	887,346	887,346	887,346	887,346	887,346	266,204
	Local Category H1	PDC	-	557,525	619,012	619,012	619,012	619,012	619,012	619,012	619,012	619,012	185,704
	Local Category H2	PDC	-	-	475,617	475,617	475,617	475,617	475,617	475,617	475,617	475,617	142,685
	Expats	USD	-	360,814	1,583,335	1,583,335	1,583,335	300,000	300,000	300,000	300,000	300,000	90,000
	VAS	PDC	-	-	160,765	160,765	160,765	160,765	160,765	160,765	160,765	160,765	48,230
Main	tenance Labor												
	Local Category L	PDC	-	99,100	534,537	534,537	534,537	534,537	534,537	534,537	534,537	534,537	160,361
	Local Category R	PDC	-	25,680	283,951	283,951	283,951	283,951	283,951	283,951	283,951	283,951	85,185
	Local Category H1	PDC	-	3,580	696,389	696,389	696,389	696,389	696,389	696,389	696,389	696,389	208,917
	Local Category H2	PDC	-	27,085	198,765	198,765	198,765	198,765	198,765	198,765	198,765	198,765	59,630
	Expats	USD	-	443,525	3,208,333	3,208,333	3,208,333	275,000	275,000	275,000	275,000	275,000	82,500
	VAS	PDC	-	-	110,095	110,095	110,095	110,095	110,095	110,095	110,095	110,095	33,029
Admi	n labor												
	Local Category L	PDC	3,970	657,300	2,241,790	2,241,790	2,241,790	2,241,790	2,241,790	2,241,790	2,241,790	2,241,790	672,537
	Local Category H1	PDC	14,300		979,630	979,630	979,630	979,630	979,630	979,630	979,630	979,630	293,889
	Local Category H2	PDC	-	189,180	709,877	709,877	709,877	709,877	709,877	709,877	709,877	709,877	212,963
	Expats	USD	260,278	1,707,834	1,638,912	1,638,912	1,638,912	788,912	788,912	788,912	788,912	788,912	236,674
+	VAS	PDC	-	-	397,224	397,224	397,224	397,224	397,224	397,224	397,224	397,224	119,167
Gene	eral Maintenance labor												
John	Local Category L	PDC	_	146,500	508,981	508,981	508,981	508,981	508,981	508,981	508,981	508,981	152,694
	Local Category R	PDC		77.040	141.975	141.975	141.975	141.975	141.975	141,975	141.975	141.975	42.593
	Local Category H1	PDC	_	86,220	259,105	259,105	259,105	259,105	259,105	259,105	259,105	259,105	77,731
	Expats	USD	_	48.252	383.333	383.333	383.333	200,100	200,100	200,100	200,100	200,100	
	VAS	PDC	-		64,310	64,310	64,310	64,310	64,310	64,310	64,310	64,310	19,293
					,	. ,	. ,	. ,	. ,	. ,	. ,	. ,	.,
Milita	ary Security Guards												
	Local Category L	PDC	-	1,369,800	372,025	372,025	372,025	372,025	372,025	372,025	372,025	372,025	111,608
	Local Category H1	PDC		295,360	1,876,070	1,876,070	1,876,070	1,876,070	1,876,070	1,876,070	1,876,070	1,876,070	562,821

ABOR TAX (REAL)													
Mining labor													
Local Category L		PDC	-	17,612	36,559	36,559	36,559	36,559	36,559	36,559	36,559	36,559	10,968
Local Category F		PDC	-	548,496	1,254,352	1,254,352	1,254,352	1,254,352	1,254,352	1,254,352	1,254,352	1,254,352	376,306
Local Category F	1	PDC	-	257,094	729,611	729,611	729,611	729,611	729,611	729,611	729,611	729,611	218,883
Local Category F	2	PDC	-	-	240,648	240,648	240,648	240,648	240,648	240,648	240,648	240,648	72,194
Expats		USD	-	279,091	1,997,283	1,734,482	1,156,322	995,000	995,000	995,000	995,000	995,000	199,000
VAS		PDC	-	-	58,565	58,565	58,565	58,565	58,565	58,565	58,565	58,565	17,569
Process plant labor													
Local Category L		PDC		13,020	58,210	58,210	58,210	58,210	58,210	58,210	58,210	58,210	17,463
Local Category F		PDC	- 1	82,548	266,204	266,204	266,204	266,204	266,204	266,204	266,204	266,204	79,861
Local Category F	1	PDC		167,258	185,704	185,704	185,704	185,704	185,704	185,704	185,704	185,704	55,711
Local Category F	2	PDC	- 1	-	142,685	142,685	142,685	142,685	142,685	142,685	142,685	142,685	42,806
Expats		USD	-	129,893	570,001	570,001	570,001	108,000	108,000	108,000	108,000	108,000	32,400
VAS		PDC	-		16,077	16,077	16,077	16,077	16,077	16,077	16,077	16,077	4,823
Maintenance Labor													
Local Category L		PDC	-	9.910	53,454	53.454	53,454	53.454	53.454	53,454	53,454	53,454	16.036
Local Category F		PDC	-	7,704	85,185	85,185	85,185	85,185	85,185	85,185	85,185	85,185	25.556
Local Category F	1	PDC	-	1.074	208,917	208,917	208,917	208,917	208,917	208,917	208,917	208,917	62,675
Local Category F		PDC	-	8,126	59.630	59.630	59,630	59,630	59,630	59,630	59,630	59,630	17,889
Expats		USD	-	159,669	1.155,000	1.155.000	1.155.000	99.000	99.000	99.000	99.000	99,000	29,700
VAS		PDC	-	-	11,010	11,010	11,010	11,010	11,010	11,010	11,010	11,010	3,303
					,	,	,	,	,	,	,	,	0,000
Admin labor													
Local Category L		PDC	397	65.730	224,179	224,179	224,179	224,179	224,179	224,179	224,179	224,179	67,254
Local Category F	1	PDC	4.290	143,028	293,889	293,889	293,889	293,889	293,889	293,889	293.889	293,889	88.167
Local Category F		PDC	- 1,200	56,754	212,963	212,963	212,963	212,963	212,963	212,963	212,963	212,963	63,889
Expats		USD	93,700	614.820	590,008	590,008	590.008	284.008	284,008	284,008	284.008	284.008	85,202
VAS		PDC		-	39,722	39,722	39,722	39,722	39,722	39,722	39,722	39,722	11,917
									90,1		00,1.	54,	,
General Maintenance	labor												
Local Category L		PDC	-	14,650	50.898	50.898	50,898	50,898	50,898	50,898	50,898	50,898	15,269
Local Category F		PDC	-	23,112	42,593	42.593	42.593	42.593	42.593	42.593	42,593	42,593	12.778
Local Category F	1	PDC	_	25,866	77,731	77,731	77,731	77,731	77,731	77,731	77,731	77,731	23,319
Expats		USD	-	17.371	138,000	138,000	138,000						-
VAS		PDC	_	- 17,571	6,431	6,431	6,431	6,431	6.431	6,431	6.431	6.431	1.929
VAC		1 50			0,-101	0,-101	0,-101	0,-01	0,701	0,701	0,701	0,-101	1,020
Military Security Guar	de												
Local Category L		PDC	_	136,980	37,203	37,203	37,203	37,203	37,203	37,203	37,203	37,203	11,161
Local Category E	1	PDC		88.608	562.821	562.821	562.821	562.821	562.821	562.821	562.821	562.821	168.846
Local Calegory F	ı .	1 50		00,000	302,021	302,02 I	302,021	302,021	302,021	302,02 I	302,021	302,021	100,040

CFPE	COST (REAL)												
Mini	ng labor												
14111111	Local Category L	PDC	-	3.522	7.312	7.312	7.312	7.312	7.312	7.312	7.312	7.312	2.194
	Local Category R	PDC	-	36,566	83,623	83,623	83,623	83,623	83,623	83,623	83,623	83,623	25,087
	Local Category H1	PDC	_	17,140	48,641	48.641	48.641	48,641	48,641	48,641	48,641	48,641	14,592
	Local Category H2	PDC	-	-	16,043	16,043	16.043	16,043	16,043	16,043	16,043	16,043	4,813
	Expats	USD	_	15.505	110,960	96.360	64.240	55.278	55,278	55,278	55,278	55,278	11.056
	VAS	PDC		-	11,713	11,713	11,713	11,713	11,713	11,713	11,713	11,713	3,514
	VAG	1 00	-	-	11,713	11,713	11,713	11,715	11,713	11,713	11,713	11,713	3,314
Proc	ess plant labor												
	Local Category L	PDC	-	2,604	11,642	11,642	11,642	11,642	11,642	11,642	11,642	11,642	3,493
	Local Category R	PDC	-	5,503	17,747	17,747	17,747	17,747	17,747	17,747	17,747	17,747	5,324
	Local Category H1	PDC	-	11,151	12,380	12,380	12,380	12,380	12,380	12,380	12,380	12,380	3,714
	Local Category H2	PDC	-	-	9,512	9,512	9,512	9,512	9,512	9,512	9,512	9,512	2,854
	Expats	USD	-	7,216	31,667	31,667	31,667	6,000	6,000	6,000	6,000	6,000	1,800
	VAS	PDC	-	-	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	965
Main	tenance Labor												
	Local Category L	PDC	-	1,982	10,691	10,691	10,691	10,691	10,691	10,691	10,691	10,691	3,207
	Local Category R	PDC	-	514	5,679	5,679	5,679	5,679	5,679	5,679	5,679	5,679	1,704
	Local Category H1	PDC	-	72	13,928	13,928	13,928	13,928	13,928	13,928	13,928	13,928	4,178
	Local Category H2	PDC	-	542	3,975	3,975	3,975	3,975	3,975	3,975	3,975	3,975	1,193
	Expats	USD	-	8,871	64,167	64,167	64,167	5,500	5,500	5,500	5,500	5,500	1,650
	VAS	PDC	-	-	2,202	2,202	2,202	2,202	2,202	2,202	2,202	2,202	661
Admi	in labor												
	Local Category L	PDC	79	13,146	44,836	44.836	44.836	44,836	44,836	44,836	44,836	44,836	13,451
	Local Category H1	PDC	286	9,535	19,593	19,593	19,593	19,593	19,593	19,593	19,593	19,593	5,878
	Local Category H2	PDC	-	3,784	14,198	14,198	14,198	14,198	14,198	14,198	14,198	14,198	4,259
	Expats	USD	5,206	34,157	32,778	32,778	32,778	15,778	15,778	15,778	15,778	15,778	4,733
	VAS	PDC	-	-	7,944	7,944	7,944	7,944	7,944	7,944	7,944	7,944	2,383
Gen	eral Maintenance labor												
	Local Category L	PDC	-	2,930	10,180	10,180	10,180	10,180	10,180	10,180	10,180	10,180	3,054
	Local Category R	PDC	-	1,541	2,840	2,840	2,840	2,840	2,840	2,840	2,840	2,840	852
	Local Category H1	PDC	-	1,724	5,182	5,182	5,182	5,182	5,182	5,182	5,182	5,182	1,555
	Expats	USD	-	965	7,667	7,667	7,667	-	-	-	-	-	-
	VAS	PDC	-	-	1,286	1,286	1,286	1,286	1,286	1,286	1,286	1,286	386
NATIO:													
Willita	ary Security Guards	PDC		07.000	7 444	7 444	7 4 4 4	7.441	7 444	7 444	7 444	7.441	0.000
	Local Category L Local Category H1	PDC	-	27,396 5,907	7,441 37,521	7,441 37,521	7,441 37,521	7,441 37,521	7,441 37,521	7,441 37,521	7,441 37,521	7,441 37,521	2,232 11,256

CSS COST (REAL)												
Mining labor												
Local Category L	PDC		33.463	69.461	69.461	69.461	69.461	69.461	69.461	69.461	69.461	20.838
Local Category R	PDC	-	347,381	794,423	794.423	794,423	794,423	794,423	794,423	794,423	794,423	238,327
Local Category H1	PDC	-	162,826	462,087	462,087	462,087	462,087	462,087	462,087	462,087	462,087	138,626
Local Category H2	PDC	-	102,020	9,383	9,383	9,383	9,383	9,383	9,383	9,383	9,383	9,383
Expats	PDC	-	8.014	44.568	38.704	25.802	17.593	17.593	17,593	17.593	17.593	11,728
VAS	PDC		8,014	111,273	111,273	111,273	111,273	111,273	111,273	111,273	111,273	33,382
VAS	PDC	-	-	111,273	111,273	111,273	111,273	111,273	111,273	111,273	111,273	33,382
Process plant labor												
	PDC		04.700	110.599	110.599	110.599	440.500	440.500	440.500	440.500	440.500	00.400
Local Category L		-	24,738	-,	-,	-,	110,599	110,599	110,599	110,599	110,599	33,180
Local Category R	PDC	-	52,280	168,596	168,596	168,596	168,596	168,596	168,596	168,596	168,596	50,579
Local Category H1	PDC	-	105,930	117,612	117,612	117,612	117,612	117,612	117,612	117,612	117,612	35,284
Local Category H2	PDC	-	-	5,864	5,864	5,864	5,864	5,864	5,864	5,864	5,864	5,864
Expats	PDC	-	3,909	9,383	9,383	9,383	1,173	1,173	1,173	1,173	1,173	1,173
VAS	PDC	-	-	30,545	30,545	30,545	30,545	30,545	30,545	30,545	30,545	9,164
Maintenance Labor												
Local Category L	PDC	-	18,829	101,562	101,562	101,562	101,562	101,562	101,562	101,562	101,562	30,469
Local Category R	PDC	-	4,879	53,951	53,951	53,951	53,951	53,951	53,951	53,951	53,951	16,185
Local Category H1	PDC	-	680	132,314	132,314	132,314	132,314	132,314	132,314	132,314	132,314	39,694
Local Category H2	PDC	-	98	3,519	3,519	3,519	3,519	3,519	3,519	3,519	3,519	3,519
Expats	PDC	-	5,082	24,630	24,630	24,630	1,173	1,173	1,173	1,173	1,173	1,173
VAS	PDC	-	-	20,918	20,918	20,918	20,918	20,918	20,918	20,918	20,918	6,275
Admin labor												
Local Category L	PDC	754	124,887	425,940	425,940	425,940	425,940	425,940	425,940	425,940	425,940	127,782
Local Category H1	PDC	2,717	90,584	186,130	186,130	186,130	186,130	186,130	186,130	186,130	186,130	55,839
Local Category H2	PDC	- 1	2,834	7,037	7,037	7,037	7,037	7,037	7,037	7,037	7,037	7,037
Expats	PDC	1,564	12,510	9,383	9,383	9,383	3,519	3,519	3,519	3,519	3,519	3,519
VAS	PDC		-	75,473	75,473	75,473	75,473	75,473	75,473	75,473	75,473	22,642
General Maintenance labor												
Local Category L	PDC	-	27,835	96,706	96,706	96,706	96,706	96,706	96,706	96,706	96,706	29,012
Local Category R	PDC	-	14,638	26,975	26,975	26,975	26,975	26,975	26,975	26,975	26,975	8,093
Local Category H1	PDC	-	16,382	49,230	49,230	49,230	49,230	49,230	49,230	49,230	49,230	14,769
Expats	PDC	-	586	2,346	2,346	2,346	-	-	-	-	-	,
VAS	PDC	-	-	12,219	12,219	12,219	12,219	12,219	12,219	12,219	12,219	3,666
Military Security Guards												
Local Category L	PDC	-	260,262	70,685	70,685	70,685	70,685	70,685	70,685	70,685	70,685	21,205
Local Category H1	PDC	-	56,118	356,453	356,453	356,453	356,453	356,453	356,453	356,453	356,453	106,936

Mining labor												
Local Category L	PDC	-	1.183	2.469	2.469	2.469	2.469	2.469	2.469	2.469	2.469	2.469
Local Category R	PDC	-	7,562	18,364	18,364	18,364	18,364	18,364	18,364	18,364	18,364	18,364
Local Category H1	PDC		2,932	8,333	8,333	8,333	8,333	8,333	8,333	8,333	8,333	8,333
Local Category H2	PDC		-	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235
Expats	USD	-	38,763	277,400	240,900	160,600	138,195	138,195	138,195	138,195	138,195	27,639
VAS	PDC	-	-	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315
Process plant labor												
Local Category L	PDC		772	3,704	3,704	3,704	3,704	3,704	3,704	3,704	3,704	3,704
Local Category R	PDC	-	1,132	3,858	3,858	3,858	3,858	3,858	3,858	3,858	3,858	3,858
Local Category H1	PDC		2,051	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160
Local Category H2	PDC		- 1	772	772	772	772	772	772	772	772	772
Expats	USD		18,041	79,167	79,167	79,167	15,000	15,000	15,000	15,000	15,000	4,500
VAS	PDC	-	-	772	772	772	772	772	772	772	772	772
Maintenance Labor												
Local Category L	PDC		592	3,549	3,549	3,549	3,549	3,549	3,549	3,549	3,549	3,549
Local Category R	PDC	-	103	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235
Local Category H1	PDC	-	13	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315	2,315
Local Category H2	PDC	-	13	463	463	463	463	463	463	463	463	463
Expats	USD	- 1	22,176	160,417	160,417	160,417	13,750	13,750	13,750	13,750	13,750	4,125
VAS	PDC	-	-	617	617	617	617	617	617	617	617	617
Admin labor												
Local Category L	PDC	26	4,784	16,975	16,975	16,975	16,975	16,975	16,975	16,975	16,975	16,975
Local Category H1	PDC	51	1,723	3,549	3,549	3,549	3,549	3,549	3,549	3,549	3,549	3,549
Local Category H2	PDC	-	373	926	926	926	926	926	926	926	926	926
Expats	USD	13,014	85,392	81,946	81,946	81,946	39,446	39,446	39,446	39,446	39,446	11,834
VAS	PDC	-	-	1,852	1,852	1,852	1,852	1,852	1,852	1,852	1,852	1,852
General Maintenance labor												
Local Category L	PDC	-	900	3,395	3,395	3,395	3,395	3,395	3,395	3,395	3,395	3,395
Local Category R	PDC	-	309	617	617	617	617	617	617	617	617	617
Local Category H1	PDC	-	309	926	926	926	926	926	926	926	926	926
Expats	USD	- [2,413	19,167	19,167	19,167	- "	- [- "	- ľ	- 1	-
VAS	PDC	-	-	463	463	463	463	463	463	463	463	463
Military Security Guards												
Local Category L	PDC	-	8,951	12,037	12,037	12,037	12,037	12,037	12,037	12,037	12,037	12,037
Local Category H1	PDC	-	977	1.235	1.235	1.235	1,235	1.235	1.235	1.235	1.235	1.235

ni N	ning labor												
	Local Category L	USD		383	4,570	4,570	4,570	4,570	4,570	4,570	4,570	4,570	1,371
	Local Category R	USD	-	622	7,027	7,027	7,027	7,027	7,027	7,027	7,027	7,027	2,108
	Local Category H1	USD		752	9,008	9,008	9,008	9,008	9,008	9,008	9,008	9,008	2,702
	Local Category H2	USD	-	-	20,054	20,054	20,054	20,054	20,054	20,054	20,054	20,054	6,016
	Expats	USD	-	9,454	146,000	146,000	146,000	184,259	184,259	184,259	184,259	184,259	55,278
П	VAS	USD	-	-	7.809	7.809	7.809	7.809	7,809	7.809	7.809	7.809	2.343
					,	,	,	,	,	,	,	,	,
rc	ocess plant labor												
	Local Category L	USD	-	434	4,851	4,851	4,851	4,851	4,851	4,851	4,851	4,851	1,455
	Local Category R	USD	-	625	7.099	7,099	7,099	7,099	7,099	7,099	7,099	7,099	2,130
	Local Category H1	USD	-	699	8,843	8,843	8,843	8,843	8,843	8,843	8,843	8,843	2,653
	Local Category H2	USD	-	-	19,025	19,025	19,025	19,025	19,025	19,025	19,025	19,025	5,707
	Expats	USD	-	9,020	197,917	197,917	197,917	300,000	300,000	300,000	300,000	300,000	90,000
П	VAS	USD	-	-	6,431	6,431	6,431	6,431	6,431	6,431	6,431	6,431	1,929
П					-,	-,	-,	-,	-,	-,	-,	-,	,
VIа	intenance Labor												
	Local Category L	USD	-	431	4,648	4,648	4,648	4,648	4,648	4,648	4,648	4,648	1,394
	Local Category R	USD	-	642	7,099	7,099	7,099	7,099	7,099	7,099	7,099	7,099	2,130
	Local Category H1	USD	-	716	9,285	9,285	9,285	9,285	9,285	9,285	9,285	9,285	2,786
	Local Category H2	USD		5,417	13,251	13,251	13,251	13,251	13,251	13,251	13,251	13,251	3,975
	Expats	USD	-	8,529	152,778	152,778	152,778	275,000	275,000	275,000	275,000	275,000	82,500
	VAS	USD		-	5,505	5,505	5,505	5,505	5,505	5,505	5,505	5,505	1,651
Ge	neral & Admin labor												
	Local Category L	USD	397	353	4,076	4,076	4,076	4,076	4,076	4,076	4,076	4,076	1,223
	Local Category H1	USD	715	712	8,519	8,519	8,519	8,519	8,519	8,519	8,519	8,519	2,556
	Local Category H2	USD	-	1,305	23,663	23,663	23,663	23,663	23,663	23,663	23,663	23,663	7,099
	Expats	USD	16,267	13,342	204,864	204,864	204,864	262,971	262,971	262,971	262,971	262,971	78,891
	VAS	USD	-	-	6,620	6,620	6,620	6,620	6,620	6,620	6,620	6,620	1,986
Ge	neral Maintenance labor												
	Local Category L	USD	-	419	4,627	4,627	4,627	4,627	4,627	4,627	4,627	4,627	1,388
	Local Category R	USD	-	642	7,099	7,099	7,099	7,099	7,099	7,099	7,099	7,099	2,130
	Local Category H1	USD	-	719	8,637	8,637	8,637	8,637	8,637	8,637	8,637	8,637	2,591
	Expats	USD	- 1	8,042	191,667	191,667	191,667	- 1	- "	- "	- r	- r	-
	VAS	USD	-	-	4,287	4,287	4,287	4,287	4,287	4,287	4,287	4,287	1,286
Mil	itary Security Guards												
	Local Category L	USD	-	394	954	954	954	954	954	954	954	954	286
	Local Category H1	USD	-	777	46,902	46,902	46,902	46,902	46,902	46,902	46,902	46,902	14,071

L	abor Cost Sensitivity	- %											
	•												
Mining	labor												
L	ocal Category L	USD	-	35,224	73.117	73.117	73.117	73.117	73.117	73.117	73.117	73.117	21.935
	ocal Category R	USD	-	365,664	836,235	836,235	836,235	836,235	836,235	836,235	836,235	836,235	250,870
	ocal Category H1	USD	-	171.396	486,407	486,407	486,407	486,407	486,407	486,407	486,407	486,407	145,922
	ocal Category H2	USD	-	-	160,432	160,432	160,432	160,432	160,432	160,432	160,432	160,432	48,130
	xpats	USD	-	775.254	5.548,008	4.818.007	3.212.004	2.763.890	2.763.890	2.763.890	2.763.890	2.763.890	552,778
	'AS	USD	-	-	117,130	117,130	117,130	117,130	117,130	117,130	117,130	117,130	35,139
N	/lining labor COST	USD	-	1,347,538	7,221,329	6,491,328	4,885,325	4,437,211	4,437,211	4,437,211	4,437,211	4,437,211	1,054,774
	<u> </u>			/- /	, ,-	-, - ,	,,.		, - ,	, - ,		, - ,	, ,
Proces	s plant labor												
	ocal Category L	USD	-	26.040	116,420	116.420	116.420	116.420	116.420	116.420	116.420	116.420	34.926
	ocal Category R	USD	-	55,032	177,469	177,469	177,469	177,469	177,469	177,469	177,469	177,469	53.241
	ocal Category H1	USD	_	111,505	123,802	123,802	123,802	123,802	123,802	123,802	123,802	123,802	37,141
	ocal Category H2	USD	_	-	95.123	95,123	95,123	95,123	95,123	95,123	95,123	95,123	28,537
	expats	USD		360,814	1,583,335	1,583,335	1,583,335	300,000	300,000	300,000	300,000	300,000	90,000
	/AS	USD	-	-	32.153	32.153	32.153	32.153	32,153	32,153	32,153	32,153	9.646
	Process plant labor COST	USD	_	553.391	2.128.303	2.128.303	2,128,303	844,968	844,968	844,968	844,968	844,968	253,490
					, 2, 2 50	,, . 50	,, .	2,230	2,230	2,2 50	2,250	2,250	
Mainte	nance Labor												
	ocal Category L	USD	_	19,820	106.907	106.907	106.907	106.907	106.907	106,907	106.907	106,907	32.072
	ocal Category R	USD	-	5,136	56,790	56,790	56,790	56,790	56,790	56,790	56,790	56,790	17.037
	ocal Category H1	USD	_	716	139,278	139,278	139,278	139,278	139,278	139,278	139,278	139,278	41.783
	ocal Category H2	USD	_	5.417	39,753	39.753	39,753	39.753	39.753	39.753	39,753	39,753	11.926
	xpats	USD	_	443,525	3,208,333	3,208,333	3,208,333	275,000	275,000	275,000	275,000	275,000	82,500
	/AS	USD		- 10,020	22.019	22.019	22,019	22,019	22,019	22,019	22,019	22,019	6,606
	/aintenance Labor COST	USD	_	474.614		3,573,080	3,573,080	639,747	639,747	639,747	639,747	639,747	191,924
				,	-,-:-,	-,-:-,	-,-:-,				000,1		,
Genera	al & Admin labor												
	ocal Category L	USD	794	131,460	448,358	448,358	448,358	448,358	448,358	448,358	448,358	448,358	134,507
	ocal Category H1	USD	2,860	95,352	195,926	195,926	195.926	195,926	195,926	195,926	195,926	195,926	58,778
	ocal Category H2	USD	- 2,000	37.836	141.975	141.975	141.975	141.975	141,975	141,975	141,975	141,975	42,593
	expats	USD	260.278	1.707.834	1,638,912	1,638,912	1,638,912	788,912	788,912	788,912	788,912	788,912	236,674
	/AS	USD	- 200,210	- ,,, 0.,,004	79,445	79.445	79.445	79,445	79,445	79,445	79,445	79,445	23,833
	General & Admin labor COST	USD	263.932	1,972,482	2,504,616	2,504,616	2,504,616	1,654,616	1,654,616	1,654,616	1,654,616	1,654,616	496,385
		1 222	200,002	.,,	_,== .,= .0	_,,	_,,	.,,	.,,	.,,	.,,	.,,	,000
Genera	al Maintenance labor												
	ocal Category L	USD	-	29.300	101,796	101.796	101.796	101.796	101.796	101,796	101,796	101.796	30.539
	ocal Category R	USD	-	15,408	28,395	28.395	28,395	28.395	28.395	28,395	28,395	28,395	8,519
	ocal Category H1	USD	-	17,244	51,821	51,821	51,821	51,821	51,821	51,821	51,821	51,821	15,546
	Expats	USD	-	48,252	383,333	383,333	383,333						
	/AS	USD	-	- 10,202	12.862	12.862	12.862	12.862	12.862	12.862	12.862	12.862	3.859
	Seneral Maintenance labor COST	USD	-	110.204	578,207	578,207	578,207	194,874	194,874	194,874	194,874	194,874	58.462
	The state of the s	1 222		,204	3.3,231	0.0,201	0.0,207	.0.,0.7	.0.,0.7	,	,	,	33, .52
Military	/ Security Guards												
	ocal Category L	USD	_	273,960	74,405	74,405	74,405	74,405	74,405	74,405	74,405	74,405	22,322
	ocal Category H1	USD	_	59,072	375,214	375,214	375,214	375,214	375,214	375,214	375,214	375,214	112,564
	filitary Security Guards COST	USD	_	333.032	449.619	449.619	449.619	449.619	449,619	449,619	449,619	449.619	134.886

win	ing labor												
	Local Category L	USD	-	3,522	7,312	7,312	7,312	7,312	7,312	7,312	7,312	7,312	2,194
	Local Category R	USD	-	109,699	250,870	250,870	250,870	250,870	250,870	250,870	250,870	250,870	75,261
	Local Category H1	USD	-	51,419	145,922	145,922	145,922	145,922	145,922	145,922	145,922	145,922	43,777
	Local Category H2	USD	-	-	48,130	48,130	48,130	48,130	48,130	48,130	48,130	48,130	14,439
	Expats	USD	-	279,091	1,997,283	1,734,482	1,156,322	995,000	995,000	995,000	995,000	995,000	199,000
	VAS	USD	-	-	11,713	11,713	11,713	11,713	11,713	11,713	11,713	11,713	3,514
Н	Mining labor TAX	USD	-	443,732	2,461,230	2,198,429	1,620,268	1,458,947	1,458,947	1,458,947	1,458,947	1,458,947	338,184
Pro	cess plant labor												
	Local Category L	USD		2.604	11,642	11,642	11,642	11,642	11,642	11,642	11,642	11,642	3,493
\Box	Local Category R	USD	-	16.510	53,241	53.241	53.241	53,241	53,241	53,241	53,241	53,241	15,972
††	Local Category H1	USD	-	33.452	37,141	37,141	37,141	37,141	37,141	37,141	37,141	37,141	11,142
\forall	Local Category H2	USD	-	-	28.537	28.537	28,537	28.537	28,537	28,537	28.537	28,537	8,561
\forall	Expats	USD	-	129,893	570,001	570,001	570,001	108,000	108,000	108,000	108,000	108,000	32,400
\forall	VAS	USD	-	-	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	965
Ħ	Process plant labor TAX	USD	-	182,458	703,776	703,776	703,776	241,776	241,776	241,776	241,776	241,776	72,533
Mai	intenance Labor												
widi		USD	_	1,982	10.604	10.604	10.604	10.604	10,691	10,691	10,691	10,691	3,207
+	Local Category L Local Category R	USD	-	1,982	10,691 17.037	10,691 17.037	10,691 17.037	10,691 17.037	17.037	17.037	17.037		5,207
Н	3 7	USD	-	, -	,	,	,	,	,	,	,	17,037	12,535
+	Local Category H1	USD		215	41,783	41,783	41,783	41,783	41,783	41,783	41,783	41,783	
H	Local Category H2	USD		1,625	11,926	11,926	11,926	11,926	11,926	11,926	11,926	11,926	3,578
-	Expats		-	159,669	1,155,000	1,155,000	1,155,000	99,000	99,000	99,000	99,000	99,000	29,700
	VAS	USD	-	405.000	2,202	2,202	2,202	2,202	2,202	2,202	2,202	2,202	661
+	Maintenance Labor TAX	USD	-	165,032	1,238,639	1,238,639	1,238,639	182,639	182,639	182,639	182,639	182,639	54,792
Adn	nin labor												
	Local Category L	USD	79	13,146	44,836	44,836	44,836	44,836	44,836	44,836	44,836	44,836	13,451
	Local Category H1	USD	858	28,606	58,778	58,778	58,778	58,778	58,778	58,778	58,778	58,778	17,633
	Local Category H2	USD		11,351	42,593	42,593	42,593	42,593	42,593	42,593	42,593	42,593	12,778
	Expats	USD	93,700	614,820	590,008	590,008	590,008	284,008	284,008	284,008	284,008	284,008	85,202
	VAS	USD	-	-	7,944	7,944	7,944	7,944	7,944	7,944	7,944	7,944	2,383
П	Admin labor TAX	USD	94,637	667,923	744,159	744,159	744,159	438,159	438,159	438,159	438,159	438,159	131,448
Ger	neral Maintenance labor												
ŤŤ.	Local Category L	USD	-	2,930	10,180	10,180	10,180	10,180	10,180	10,180	10,180	10,180	3,054
\forall	Local Category R	USD	-	4,622	8,519	8,519	8,519	8,519	8,519	8,519	8,519	8,519	2,556
\forall	Local Category H1	USD	-	5,173	15.546	15,546	15.546	15.546	15,546	15,546	15,546	15,546	4,664
\forall	Expats	USD	-	17,371	138,000	138,000	138,000	-	-	-	-	-	.,554
+	VAS	USD	-		1,286	1,286	1,286	1,286	1,286	1,286	1,286	1,286	386
П	General Maintenance labor TAX	USD	-	30,096	173,531	173,531	173,531	35,531	35,531	35,531	35,531	35,531	10,659
Щ	toru Socuritu Cuardo												
	tary Security Guards												
Mili	Land Orthografi	LICD											
Mill	Local Category L Local Category H1	USD		27,396 17,722	7,441 112,564	7,441 112,564	7,441 112,564	7,441 112,564	7,441 112,564	7,441 112,564	7,441 112,564	7,441 112,564	2,232 33,769

	COST (REAL)												
Mining	labor												
	ocal Category L	USD	-	704	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	439
	ocal Category R	USD	-	7.313	16,725	16.725	16.725	16.725	16.725	16.725	16,725	16,725	5.017
	ocal Category H1	USD	-	3.428	9,728	9,728	9.728	9.728	9.728	9,728	9,728	9,728	2,918
	ocal Category H2	USD	-	3,420	3,209	3,209	3.209	3.209	3.209	3,209	3,209	3,209	963
	expats	USD	-	15,505	110,960	96,360	64,240	55,278	55,278	55,278	55,278	55,278	11,056
	'AS	USD	-	15,505	2,343	2,343	2,343	2,343	2,343	2,343	2,343	2,343	703
	fining labor ACFPE	USD	-	26.951	144.427	129.827	97.707	88.744	88.744	88.744	88.744	88.744	21.095
IV	ining labor ACFPE	USD	-	20,951	144,427	129,027	97,707	00,744	00,744	00,744	00,744	00,744	21,095
Proces	s plant labor												
	ocal Category L	USD	-	521	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328	699
	ocal Category R	USD	-	1.101	3.549	3.549	3.549	3.549	3.549	3.549	3.549	3.549	1.065
	ocal Category H1	USD	-	2,230	2,476	2,476	2.476	2,476	2,476	2,476	2,476	2,476	743
	ocal Category H2	USD	-		1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	571
	expats	USD	-	7,216	31,667	31,667	31,667	6,000	6,000	6,000	6,000	6,000	1,800
	'AS	USD	-	- ,2.13	643	643	643	643	643	643	643	643	193
	Process plant labor ACFPE	USD	-	11.068	42.566	42.566	42.566	16.899	16.899	16.899	16,899	16,899	5,070
	plant labor / lot 1 L	-552		,000	,000	,000	,000	. 5,555	. 5,555	. 5,555	. 0,000	. 5,555	5,010
Mainte	nance Labor												
	ocal Category L	USD	-	396	2,138	2,138	2,138	2,138	2,138	2,138	2,138	2,138	641
	ocal Category R	USD	_	103	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136	341
	ocal Category H1	USD	_	14	2,786	2,786	2,786	2,786	2,786	2,786	2,786	2,786	836
	ocal Category H2	USD	-	108	795	795	795	795	795	795	795	795	239
	expats	USD	-	8,871	64,167	64,167	64,167	5,500	5,500	5,500	5,500	5,500	1,650
	'AS	USD	_		440	440	440	440	440	440	440	440	132
	Agintenance Labor ACFPE	USD	_	9,492	71,462	71,462	71,462	12,795	12,795	12,795	12,795	12,795	3,838
10	idiliterianee Eabor Aori E	002		3,432	71,402	71,402	71,402	12,733	12,755	12,733	12,733	12,755	3,030
Admin I	labor												
Le	ocal Category L	USD	16	2,629	8,967	8.967	8.967	8.967	8.967	8.967	8,967	8,967	2.690
	ocal Category H1	USD	57	1,907	3,919	3,919	3,919	3,919	3,919	3,919	3,919	3,919	1,176
	ocal Category H2	USD	-	757	2,840	2,840	2.840	2,840	2,840	2,840	2,840	2,840	852
	expats	USD	5.206	34.157	32.778	32,778	32.778	15.778	15.778	15.778	15,778	15,778	4.733
	'AS	USD	- 3,200	-	1,589	1,589	1.589	1.589	1,589	1,589	1,589	1,589	477
	dmin labor ACFPE	USD	5,279	39.450	50.092	50,092	50,092	33,092	33,092	33,092	33,092	33,092	9,928
1111			5,210	30, .00	00,002	30,002	50,552	00,002	00,002	00,002	30,002	00,002	0,020
Genera	al Maintenance labor												
Lo	ocal Category L	USD	-	586	2,036	2,036	2,036	2,036	2,036	2,036	2,036	2,036	611
	ocal Category R	USD	-	308	568	568	568	568	568	568	568	568	170
Lo	ocal Category H1	USD	-	345	1,036	1,036	1,036	1,036	1,036	1,036	1,036	1,036	311
E	xpats	USD	-	965	7,667	7,667	7,667	-	-	-	-	-	-
	'AS	USD	-	-	257	257	257	257	257	257	257	257	77
G	General Maintenance labor ACFPE	USD	-	2,204	11,564	11,564	11,564	3,897	3,897	3,897	3,897	3,897	1,169
	/ Security Guards												
Lo	ocal Category L	USD	-	5,479	1,488	1,488	1,488	1,488	1,488	1,488	1,488	1,488	446
	ocal Category H1	USD		1,181	7,504	7,504	7,504	7,504	7,504	7,504	7,504	7,504	2,251
N/	filitary Security Guards ACFPE	USD		6,661	8.992	8.992	8.992	8.992	8.992	8.992	8,992	8.992	2.698

	OST (ALL IN USD, REAL)												
Mining	lahor												
	ocal Category L	USD	-	6.693	13.892	13.892	13.892	13.892	13.892	13.892	13.892	13.892	4.168
	ocal Category E	USD	-	69,476	158,885	158,885	158,885	158,885	158,885	158,885	158,885	158,885	47,665
	ocal Category H1	USD	-	32,565	92,417	92,417	92,417	92,417	92,417	92,417	92,417	92,417	27,725
	ocal Category H2	USD	-	32,303	1.877	1,877	1,877	1,877	1,877	1,877	1,877	1,877	1,877
	9 7	USD	-	4 000									
	xpats AS	USD		1,603	8,914 22,255	7,741 22,255	5,160 22,255	3,519 22,255	3,519 22,255	3,519 22,255	3,519 22,255	3,519 22,255	2,346
			-	440.007									6,676
IM	ining labor OCSS	USD	-	110,337	298,239	297,066	294,486	292,844	292,844	292,844	292,844	292,844	90,457
Proces	s plant labor												
	ocal Category L	USD	-	4,948	22,120	22,120	22,120	22,120	22,120	22,120	22,120	22,120	6,636
Lo	ocal Category R	USD	-	10,456	33,719	33,719	33,719	33,719	33,719	33,719	33,719	33,719	10,116
Lo	ocal Category H1	USD	-	21,186	23,522	23,522	23,522	23,522	23,522	23,522	23,522	23,522	7,057
	ocal Category H2	USD	-	-	1,173	1,173	1,173	1,173	1,173	1,173	1,173	1,173	1,173
	xpats	USD	-	782	1,877	1,877	1,877	235	235	235	235	235	235
	AS	USD	-	-	6,109	6,109	6,109	6,109	6,109	6,109	6,109	6,109	1,833
Pı	rocess plant labor OCSS	USD	-	37,372	88,520	88,520	88,520	86,878	86,878	86,878	86,878	86,878	27,049
				Ĺ				,		,	,		
	nance Labor												
	ocal Category L	USD	-	3,766	20,312	20,312	20,312	20,312	20,312	20,312	20,312	20,312	6,094
Lo	ocal Category R	USD	-	976	10,790	10,790	10,790	10,790	10,790	10,790	10,790	10,790	3,237
Lo	ocal Category H1	USD	-	136	26,463	26,463	26,463	26,463	26,463	26,463	26,463	26,463	7,939
Lo	ocal Category H2	USD	-	20	704	704	704	704	704	704	704	704	704
E	xpats	USD	-	1,016	4,926	4,926	4,926	235	235	235	235	235	235
V	AS	USD	-	-	4,184	4,184	4,184	4,184	4,184	4,184	4,184	4,184	1,255
M	aintenance Labor OCSS	USD	-	5,914	67,379	67,379	67,379	62,687	62,687	62,687	62,687	62,687	19,463
Admin I													
	ocal Category L	USD	151	24,977	85,188	85,188	85,188	85,188	85,188	85,188	85,188	85,188	25,556
	ocal Category H1	USD	543	18,117	37,226	37,226	37,226	37,226	37,226	37,226	37,226	37,226	11,168
	ocal Category H2	USD	-	567	1,407	1,407	1,407	1,407	1,407	1,407	1,407	1,407	1,407
	xpats	USD	313	2,502	1,877	1,877	1,877	704	704	704	704	704	704
	AS	USD	-	-	15,095	15,095	15,095	15,095	15,095	15,095	15,095	15,095	4,528
Ad	dmin labor OCSS	USD	1,007	46,163	140,792	140,792	140,792	139,620	139,620	139,620	139,620	139,620	43,364
Genera	Il Maintenance labor												
	ocal Category L	USD	-	5,567	19,341	19,341	19,341	19,341	19,341	19,341	19,341	19,341	5,802
	ocal Category R	USD	-	2,928	5,395	5,395	5,395	5,395	5,395	5,395	5,395	5,395	1,619
	ocal Category H1	USD	-	3,276	9,846	9,846	9,846	9,846	9,846	9,846	9,846	9,846	2,954
	xpats	USD	-	117	469	469	469	-	-	-	-		,
	AS	USD	-		2.444	2,444	2,444	2,444	2,444	2.444	2,444	2,444	733
	&M labor OCSS	USD	-	11,888	37,495	37,495	37,495	37,026	37,026	37,026	37,026	37,026	11,108
		332		11,000	07,100	01,100	01,100	01,020	01,020	01,020	07,020	01,020	11,100
Military	Security Guards												
Lo	ocal Category L	USD	-	52,052	14,137	14,137	14,137	14,137	14,137	14,137	14,137	14,137	4,241
	ocal Category H1	USD	-	11,224	71,291	71,291	71,291	71,291	71,291	71,291	71,291	71,291	21,387
	ilitary Security Guards OCSS	USD	-	63,276	85,428	85,428	85,428	85,428	85,428	85,428	85,428	85,428	25,628

	an laban												
Wilni	ng labor				40.4								
	Local Category L	USD	-	237	494	494	494	494	494	494	494	494	494
-	Local Category R	USD	-	1,512	3,673	3,673	3,673	3,673	3,673	3,673	3,673	3,673	3,673
	Local Category H1	USD	-	586	1,667	1,667	1,667	1,667	1,667	1,667	1,667	1,667	1,667
-	Local Category H2	USD	-	-	247	247	247	247	247	247	247	247	247
	Expats	USD	-	7,753	55,480	48,180	32,120	27,639	27,639	27,639	27,639	27,639	5,528
	VAS	USD	-	-	463	463	463	463	463	463	463	463	463
	Mining labor Health Care Cost	USD	-	10,088	62,023	54,723	38,663	34,182	34,182	34,182	34,182	34,182	12,071
Proc	ess plant labor												
	Local Category L	USD	-	154	741	741	741	741	741	741	741	741	741
	Local Category R	USD	-	226	772	772	772	772	772	772	772	772	772
	Local Category H1	USD	-	410	432	432	432	432	432	432	432	432	432
	Local Category H2	USD	-	-	154	154	154	154	154	154	154	154	154
	Expats	USD	-	3,608	15,833	15,833	15,833	3,000	3,000	3,000	3,000	3,000	900
	VAS	USD	-	-	154	154	154	154	154	154	154	154	154
	Process plant labor Health Care Cost	USD	-	4,399	18,086	18,086	18,086	5,253	5,253	5,253	5,253	5,253	3,153
Main	tenance Labor												
Viaii	Local Category L	USD	-	118	710	710	710	710	710	710	710	710	710
	Local Category R	USD		21	247	247	247	247	247	247	247	247	247
	Local Category H1	USD		3	463	463	463	463	463	463	463	463	463
	Local Category H2	USD		3	93	93	93	93	93	93	93	93	93
		USD	-	4.435	32,083	32,083	32,083	2,750	2,750	2,750	2,750	2,750	825
	Expats VAS	USD		4,435	123	123	123	123		123	123	123	123
-	Maintenance Labor Health Care Cost	USD		4 570	33.719	33.719	33.719	4.386	123 4.386	4.386	4.386	4.386	2,461
Н	iviaintenance Labor Health Care Cost	050	-	4,579	33,719	33,719	33,719	4,386	4,386	4,386	4,386	4,386	2,461
Admi	in labor												
	Local Category L	USD	5	957	3,395	3,395	3,395	3,395	3,395	3,395	3,395	3,395	3,395
	Local Category H1	USD	10	345	710	710	710	710	710	710	710	710	710
	Local Category H2	USD	-	75	185	185	185	185	185	185	185	185	185
	Expats	USD	2,603	17,078	16,389	16,389	16,389	7,889	7,889	7,889	7,889	7,889	2,367
	VAS	USD	-	-	370	370	370	370	370	370	370	370	370
	Admin labor Health Care Cost	USD	2,618	18,454	21,050	21,050	21,050	12,550	12,550	12,550	12,550	12,550	7,027
Gen	eral Maintenance labor												
	Local Category L	USD	-	180	679	679	679	679	679	679	679	679	679
+	Local Category R	USD	-	62	123	123	123	123	123	123	123	123	123
	Local Category H1	USD	-	62	185	185	185	185	185	185	185	185	185
	Expats	USD	_	483	3,833	3,833	3,833	-	-	-	.00	-	-
+	VAS	USD		-	93	93	93	93	93	93	93	93	93
	General Maintenance labor Health Care Cost	USD	-	786	4,914	4,914	4,914	1,080	1,080	1,080	1,080	1,080	1,080
Milit	ary Security Guards			1 705	0.40=			0.10=			0.40=	0.40=	0.40=
	Local Category L Local Category H1	USD		1,790 195	2,407 247	2,407 247	2,407 247	2,407 247	2,407 247	2,407 247	2,407 247	2,407 247	2,407 247

			_												
H	Total Ore Processed	-	Ton	23,510,512 #	-	-	2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
IN	NING														
T															
	Mining labor COST	-	USD	- #	-	1,347,538	7,221,329	6,491,328	4,885,325	4,437,211	4,437,211	4,437,211	4,437,211	4,437,211	1,054,774
	Mining labor ACFPE	-	USD	- #	-	26,951	144,427	129,827	97,707	88,744	88,744	88,744	88,744	88,744	21,095
	Mining labor OCSS	-	USD	- #	-	110,337	298,239	297,066	294,486	292,844	292,844	292,844	292,844	292,844	90,457
	Mining labor Health Care Cost	-	USD	- #	-	10,088	62,023	54,723	38,663	34,182	34,182	34,182	34,182	34,182	12,071
Н	Mining Labor		USD		-	1,494,914	7,726,017	6,972,944	5,316,181	4,852,981	4,852,981	4,852,981	4,852,981	4,852,981	1,178,398
	Mining Labor		USD	- #		1.494.914	7.726.017	6,972,944	5.316.181	4.852.981	4.852.981	4.852.981	4,852,981	4.852.981	1.178.398
	Total Ore Processed	_	Ton	23,510,512 #	_	-	2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
	Mining Labor		USD/t	,,-	-	-	2.71	2.46	1.93	1.62	1.77	1.68	1.56	1.83	1.73
+	Mining labor TAY		USD	- #		443.732	2.461.230	2.198.429	1,620,268	1,458,947	1,458,947	1,458,947	1.458.947	1.458.947	338.184
+	Mining labor TAX Total Ore Processed	-	Ton	23,510,512 #	-	443,132	2,461,230	2,198,429	2,757,104	1,458,947 2,994,019	1,458,947 2,742,889	1,458,947 2,882,357	3,112,460	1,458,947 2,658,397	680,144
+	Mining Labor Tax	-	USD/t	23,510,512 #	_		0.86	0.78	0.59	2,994,019	0.53	0.51	3,112,460	0.55	0.50
+	IVIII III III LADOI TAA		JJD/1		-	_	0.00	0.76	0.39	0.49	0.33	0.51	0.47	0.55	0.50
Plai	int (Processing)														
	Process plant labor COST	-	USD	- #		553,391	2,128,303	2,128,303	2,128,303	844,968	844,968	844,968	844,968	844,968	253,490
	Maintenance Labor COST	-		- #		474,614	3,573,080	3,573,080	3,573,080	639,747	639,747	639,747	639,747	639,747	191,924
	Process plant labor ACFPE	-	005	- #		11,068	42,566	42,566	42,566	16,899	16,899	16,899	16,899	16,899	5,070
4	Maintenance Labor ACFPE	-		- #	-	9,492	71,462	71,462	71,462	12,795	12,795	12,795	12,795	12,795	3,838
4	Process plant labor OCSS	-		- #	-	37,372	88,520	88,520	88,520	86,878	86,878	86,878	86,878	86,878	27,049
4	Maintenance Labor OCSS	-	000	- #		5,914	67,379	67,379	67,379	62,687	62,687	62,687	62,687	62,687	19,463
4	Process plant labor Health Care Cost		USD	- #		4,399	18,086	18,086	18,086	5,253	5,253	5,253	5,253	5,253	3,153
+	Maintenance Labor Health Care Cost	-	USD	- #	-	4,579	33,719	33,719	33,719	4,386	4,386	4,386	4,386	4,386	2,461
	Plant (Processing) Labor		USD		-	1,100,829	6,023,115	6,023,115	6,023,115	1,673,613	1,673,613	1,673,613	1,673,613	1,673,613	506,448
+	Plant (Processing) Labor	-	USD	- #	-	1,100,829	6,023,115	6,023,115	6,023,115	1,673,613	1,673,613	1,673,613	1,673,613	1,673,613	506,448
	Total Ore Processed	-	Ton	23,510,512 #	-	-	2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
	Plant (Processing) Labor		USD/t		-	-	2.11	2.13	2.18	0.56	0.61	0.58	0.54	0.63	0.74
	Process plant labor TAX		USD	- #		182,458	703,776	703,776	703,776	241,776	241,776	241,776	241,776	241,776	72,533
	Maintenance Labor TAX	-	USD	- #	-	165,032	1,238,639	1,238,639	1,238,639	182,639	182,639	182,639	182,639	182,639	54,792
	Plant (Processing) Labor Tax		USD		-	347,490	1,942,415	1,942,415	1,942,415	424,415	424,415	424,415	424,415	424,415	127,324
	Plant (Processing) Labor Tax	-	005	- #	-	347,490	1,942,415	1,942,415	1,942,415	424,415	424,415	424,415	424,415	424,415	127,324
Ш	Total Ore Processed	-	Ton	23,510,512 #	-	-	2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
	Plant (Processing) Labor Tax		USD/t		-	-	0.68	0.69	0.70	0.14	0.15	0.15	0.14	0.16	0.19

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General & Admin labor COST		USD	_	#	263.932	1.972.482	2,504,616	2,504,616	2,504,616	1,654,616	1.654.616	1,654,616	1.654.616	1.654.616	496.385
General Maintenance labor COST		USD	-		200,302	110.204	578.207	578.207	578.207	194.874	194.874	194.874	194.874	194.874	58.462
Military Security Guards COST	-	USD		#	-	333,032	449.619	449.619	449.619	449.619	449,619	449,619	449,619	449,619	134,886
Admin labor ACFPE		USD		#	5.279	39,450	50.092	50.092	50.092	33.092	33,092	33,092	33,092	33,092	9,928
General Maintenance labor ACEPE		USD		#	5,219	2.204	11.564	11.564	11.564	3.897	3.897	3.897	3.897	3.897	1.169
Military Security Guards ACFPE		USD		#		6.661	8.992	8,992	8.992	8.992	8,992	8,992	8,992	8,992	2,698
Admin labor OCSS		USD	-		1.007	46.163	140,792	140.792	140,792	139.620	139.620	139,620	139,620	139,620	43.364
G&M labor OCSS		USD	-		1,007	11.888	37.495	37.495	37.495	37.026	37.026	37.026	37.026	37.026	11.108
Military Security Guards OCSS	_	USD		#		63.276	85.428	85.428	85.428	85.428	85.428	85.428	85.428	85.428	25.628
Admin labor Health Care Cost		USD	-		2.618	18.454	21.050	21.050	21.050	12.550	12.550	12.550	12.550	12.550	7.027
General Maintenance labor Health Care Cost		USD	-		2,010	786	4.914	4.914	4.914	1.080	1.080	1.080	1.080	1.080	1.080
Military Security Guards Health Care Cost		USD		#		1.986	2.654	2.654	2.654	2.654	2.654	2.654	2.654	2.654	2.654
G&A Labor		USD		TT .	272.836	2.606.586	3.895.424	3.895.424	3.895.424	2.623.449	2.623.449	2.623.449	2.623.449	2.623.449	794.389
				Н											
G&A Labor	-	USD	-	#	272,836	2,606,586	3,895,424	3,895,424	3,895,424	2,623,449	2,623,449	2,623,449	2,623,449	2,623,449	794,389
Total Ore Processed	-	Ton	23,510,512	#	-	-	2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
G&A Labor		USD/t			-	-	1.37	1.38	1.41	0.88	0.96	0.91	0.84	0.99	1.17
Admin labor TAX		USD	_	#	94.637	667,923	744.159	744,159	744,159	438.159	438,159	438,159	438,159	438,159	131.448
General Maintenance labor TAX	_	USD	-			30,096	173,531	173,531	173,531	35,531	35,531	35,531	35,531	35,531	10,659
Military Security Guards TAX	_	USD		#	_	45,118	120.005	120.005	120.005	120.005	120,005	120,005	120,005	120,005	36,001
G&A Labor Tax		USD		Ï	94,637	743,137	1,037,694	1,037,694	1,037,694	593,694	593,694	593,694	593,694	593,694	178,108
G&A Labor Tax	-	USD		#	94,637	743,137	1,037,694	1,037,694	1,037,694	593,694	593,694	593,694	593,694	593,694	178,108
Total Ore Processed	-	Ton	23,510,512	#	-	-	2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
G&A Labor Tax		USD/t			-	-	0.36	0.37	0.38	0.20	0.22	0.21	0.19	0.22	0.26

OSI PER L	ABOR / LABOR MONTH (NOMINAL												
Mining labo	or												
	Category L	PDC	-	2.020	25.432	26.830	28.306	29.863	31,505	33,238	35,066	36,995	11.709
	Category R	PDC	-	3.280	39.107	41.258	43,527	45.921	48,447	51,111	53,923	56,888	18,005
	Category H1	PDC		3.965	50,128	52,885	55,794	58,863	62,100	65,515	69,119	72,920	23,079
	Category H2	PDC	-	-	111,603	117,741	124,217	131,049	138,257	145,861	153,883	162,347	51,383
Expats		USD	· . ·	9.639	151.750	154,709	157,726	202,939	206.896	210.931	215.044	219.237	67.054
VAS		PDC	-	-	43,456	45,846	48,368	51,028	53,834	56,795	59,919	63,215	20,007
17.10					.0, .00	.0,0.0	.0,000	0.,020	00,001	00,700	00,0.0	00,2.0	20,001
Process pla	ant labor												
	Category L	PDC	-	2.289	26.995	28.480	30.047	31,699	33,443	35,282	37,222	39,270	12.429
	Category R	PDC	-	3.299	39.506	41.678	43.971	46.389	48,940	51,632	54,472	57,468	18.189
	Category H1	PDC	-	3.688	49,213	51,919	54,775	57,787	60,966	64,319	67,856	71,589	22,658
	Category H2	PDC	-		105.875	111.698	117.841	124,323	131,160	138,374	145,985	154,014	48.745
Expats	5 7	USD	- r	9.196	205,711	209,722	213,812	330,413	336,856	343,425	350,122	356,949	109,173
VAS		PDC	-	-	35.787	37.755	39.832	42.023	44.334	46,772	49.345	52.059	16,477
						,	,	,	,	- '	-,-	,,,,,,,	
Maintenanc	e Labor												
Local	Category L	PDC	-	2.273	25.868	27.290	28.791	30,375	32.045	33.808	35.667	37.629	11.910
	Category R	PDC	-	3.387	39.506	41.678	43.971	46.389	48,940	51,632	54,472	57,468	18,189
	Category H1	PDC	-	3.777	51.673	54.515	57.514	60,677	64,014	67,535	71,249	75.168	23,791
	Category H2	PDC	-	28,575	73,744	77.800	82.079	86,593	91,355	96,380	101,681	107,273	33,952
Expats		USD	- '	8.696	158,794	161.891	165.048	302.879	308,785	314,806	320.945	327,203	100,075
VAS		PDC	-	-	30,635	32,320	34,097	35,972	37,951	40,038	42,240	44,564	14,104
					00,000	0_,0_0	2.,00	00,01	0.,00	,	,	.,,	,
General & A	Admin labor												
Local	Category L	PDC	1,985	1,864	22.683	23.931	25,247	26,636	28,101	29,646	31,277	32,997	10,444
	Category H1	PDC	3,575	3,754	47,407	50.014	52,765	55,667	58,728	61,959	65,366	68,961	21.826
	Category H2	PDC	- ' -	6,882	131,685	138,928	146,569	154,630	163,135	172,107	181,573	191,560	60,629
Expats		USD	16,267	13,603	212,932	217,084	221,317	289,630	295,278	301,036	306,906	312,891	95,698
VAS		PDC	-	-	36,843	38,870	41,008	43,263	45,642	48,153	50,801	53,595	16,963
												,	
General Ma	intenance labor												
Local	Category L	PDC	-	2,208	25,750	27,167	28,661	30,237	31,900	33,655	35,506	37,459	11,856
Local	Category R	PDC	- 1	3,387	39,506	41,678	43,971	46,389	48,940	51,632	54,472	57,468	18,189
	Category H1	PDC	-	3,790	48,065	50,709	53,498	56,440	59,544	62,819	66,274	69,919	22,129
Expats		USD	- 1	8,199	199,214	203,099	207,059	- 1	- 1	- 1	- 1	-	-
VAS		PDC	-	-	23,860	25,172	26,556	28,017	29,558	31,183	32,899	34,708	10,985
						·						,	, i
Military Sec	curity Guards												
Local	Category L	PDC	-	2,076	5,309	5,601	5,909	6,234	6,576	6,938	7,320	7,722	2,444
	Category H1	PDC	-	4.100	261.014	275,370	290,515	306,494	323,351	341,135	359.897	379.692	120,172

ABOR COST (NOMINAL)												
Mining labor												
Local Category L	PDC	-	185,807	406,907	429,287	452,897	477,807	504,086	531,811	561,061	591,919	187,342
Local Category R	PDC	-	1,928,878	4,653,750	4,909,706	5,179,740	5,464,626	5,765,180	6,082,265	6,416,790	6,769,713	2,142,614
Local Category H1	PDC	-	904,114	2,706,918	2,855,799	3,012,867	3,178,575	3,353,397	3,537,834	3,732,414	3,937,697	1,246,281
Local Category H2	PDC	-	-	892,825	941,930	993,736	1,048,392	1,106,053	1,166,886	1,231,065	1,298,773	411,062
Expats	USD	-	790,371	5,766,490	5,105,392	3,469,965	3,044,086	3,103,446	3,163,963	3,225,660	3,288,560	670,537
VAS	PDC	-	-	651,841	687,692	725,515	765,419	807,517	851,930	898,786	948,220	300,111
Process plant labor												
Local Category L	PDC	-	137,361	647,890	683,524	721,118	760,780	802,623	846,767	893,339	942,473	298,293
Local Category R	PDC	-	290,294	987,638	1,041,958	1,099,266	1,159,725	1,223,510	1,290,803	1,361,797	1,436,696	454,714
Local Category H1	PDC	-	588,189	688,976	726,870	766,848	809,024	853,521	900,464	949,990	1,002,239	317,209
Local Category H2	PDC	-	-	529,374	558,489	589,206	621,613	655,801	691,871	729,923	770,069	243,727
Expats	USD	-	367,850	1,645,687	1,677,778	1,710,495	330,413	336,856	343,425	350,122	356,949	109,173
VAS	PDC	-	-	178,935	188,777	199,160	210,113	221,670	233,861	246,724	260,294	82,383
Maintenance Labor												
Local Category L	PDC	-	104.551	594.953	627.676	662.198	698.619	737,043	777,580	820,347	865.466	273.920
Local Category R	PDC	-	27,092	316,044	333,427	351,765	371,112	391,523	413,057	435,775	459,743	145,509
Local Category H1	PDC	-	3.777	775.098	817.729	862,704	910,152	960,211	1,013,022	1,068,739	1.127.519	356.860
Local Category H2	PDC	-	28,575	221,231	233,399	246,236	259,778	274,066	289,140	305,043	321.820	101,856
Expats	USD	-	452,174	3,334,678	3,399,704	3,465,998	302,879	308,785	314,806	320,945	327,203	100,075
VAS	PDC	-	_	122,538	129,278	136,388	143,890	151,804	160,153	168,961	178,254	56,417
				,	,	,	-,	,,,,,	,		-, -	,
Admin labor												
Local Category L	PDC	3,970	693,452	2,495,168	2,632,403	2,777,185	2,929,930	3,091,076	3,261,085	3,440,445	3,629,670	1,148,790
Local Category H1	PDC	14,300	502,982	1,090,352	1,150,322	1,213,589	1,280,337	1,350,755	1,425,047	1,503,424	1.586.113	502.005
Local Category H2	PDC	-	199,585	790,110	833,566	879,413	927,780	978,808	1,032,643	1,089,438	1,149,357	363,772
Expats	USD	260,278	1,741,137	1,703,453	1,736,670	1,770,535	868,890	885,833	903,107	920,718	938,672	287,093
VAS	PDC	-		442,121	466,437	492,091	519,156	547,710	577,834	609,615	643,144	203,555
				,	,	,	,	,		,	,	
General Maintenance labor												
Local Category L	PDC	-	154.558	566.509	597.667	630,539	665,218	701,805	740,405	781,127	824.089	260.824
Local Category R	PDC	-	81,277	158,022	166,713	175.883	185,556	195,762	206.529	217.888	229.871	72.754
Local Category H1	PDC	-	90,962	288,390	304,252	320,986	338,640	357,265	376,915	397,645	419,515	132,777
Expats	USD	- ·	49.193	398,429	406,198	414,119	-	-	-	-	-	-
VAS	PDC	-		71,579	75,515	79,669	84.051	88.673	93.550	98.696	104,124	32,955
				,570	. 5,510	. 5,550	0.,001	55,576	55,550	55,550	,	52,555
Military Security Guards												
Local Category L	PDC	-	1,445,139	414,073	436.847	460.874	486.222	512,964	541.177	570,942	602.344	190,642
Local Category H1	PDC	_	311.605	2.088.113	2.202.959	2.324.122	2.451.948	2.586.806	2.729.080	2.879.179	3.037.534	961.380

ABOR TAX	K (NOMINAL)												
Mining lal	bor												
	al Category L	PDC	-	18,581	40,691	42,929	45,290	47,781	50,409	53,181	56,106	59,192	18,734
Loca	al Category R	PDC	-	578,663	1,396,125	1,472,912	1,553,922	1,639,388	1,729,554	1,824,679	1,925,037	2,030,914	642,784
Loca	al Category H1	PDC	-	271,234	812,075	856,740	903,860	953,573	1,006,019	1,061,350	1,119,724	1,181,309	373,884
Loca	al Category H2	PDC	-	-	267,847	282,579	298,121	314,518	331,816	350,066	369,319	389,632	123,319
Exp	ats	USD	- [284,534	2,075,936	1,837,941	1,249,187	1,095,871	1,117,240	1,139,027	1,161,238	1,183,882	241,393
VAS	;	PDC	-	-	65,184	68,769	72,552	76,542	80,752	85,193	89,879	94,822	30,011
Process p	plant labor												
Loca	al Category L	PDC	-	13,736	64,789	68,352	72,112	76,078	80,262	84,677	89,334	94,247	29,829
Loca	al Category R	PDC	-	87,088	296,291	312,587	329,780	347,918	367,053	387,241	408,539	431,009	136,414
Loca	al Category H1	PDC	-	176,457	206,693	218,061	230,054	242,707	256,056	270,139	284,997	300,672	95,163
Loca	al Category H2	PDC	- 1	-	158,812	167,547	176,762	186,484	196,740	207,561	218,977	231,021	73,118
Exp	ats	USD	- 1	132,426	592,447	604,000	615,778	118,949	121,268	123,633	126,044	128,502	39,302
VAS		PDC	- 1	-	17,894	18,878	19,916	21,011	22,167	23,386	24,672	26,029	8,238
Maintena	nce Labor												
Loca	al Category L	PDC	-	10,455	59,495	62,768	66,220	69,862	73,704	77,758	82,035	86,547	27,392
Loca	al Category R	PDC	- 1	8,128	94,813	100,028	105,530	111,334	117,457	123,917	130,733	137,923	43,653
Loca	al Category H1	PDC	-	1,133	232,529	245,319	258,811	273,046	288,063	303,907	320,622	338,256	107,058
Loca	al Category H2	PDC		8,572	66,369	70,020	73,871	77,934	82,220	86,742	91,513	96,546	30,557
Exp	ats	USD	- 1	162,783	1,200,484	1,223,894	1,247,759	109,036	111,163	113,330	115,540	117,793	36,027
VAS		PDC	-	-	12,254	12,928	13,639	14,389	15,180	16,015	16,896	17,825	5,642
Admin lab	or												
Loca	al Category L	PDC	397	69.345	249.517	263,240	277.718	292,993	309,108	326,109	344,045	362.967	114,879
	al Category H1	PDC	4.290	150,895	327,106	345,096	364,077	384,101	405,227	427,514	451,027	475.834	150.601
	al Category H2	PDC	- 1	59,875	237,033	250,070	263,824	278,334	293,642	309,793	326,831	344,807	109,131
Exp		USD	93,700	626,809	613,243	625,201	637,393	312,800	318,900	325,118	331,458	337,922	103,353
VAS		PDC	- 1	-	44,212	46,644	49,209	51,916	54,771	57,783	60,961	64,314	20,355
					,	·	,	,		,	,		
General N	Maintenance labor												
Loca	al Category L	PDC	-	15.456	56.651	59.767	63,054	66,522	70,181	74,040	78,113	82.409	26.082
	al Category R	PDC	-	24.383	47,407	50.014	52,765	55.667	58,728	61,959	65,366	68.961	21.826
	al Category H1	PDC	-	27,289	86,517	91,276	96,296	101,592	107,179	113,074	119,293	125,855	39,833
Exp		USD	- 1	17,709	143,434	146,231	149,083	-	-	-	-	-	-
VAS		PDC	-	-	7,158	7,552	7,967	8,405	8.867	9.355	9.870	10,412	3.296
1111					.,.50	.,.02	.,	2, 100	2,23.	2,230	2,270	,	-,
Military S	ecurity Guards												
	al Category L	PDC	-	144,514	41.407	43,685	46,087	48,622	51,296	54,118	57,094	60,234	19.064
	al Category H1	PDC		93.481	626.434	660.888	697.237	735.585	776.042	818.724	863,754	911.260	288.414

CFPE COST (NOMIN	AL)												
Mining labor													
Local Category	I	PDC	-	3.716	8.138	8.586	9.058	9.556	10.082	10.636	11,221	11.838	3.747
Local Category		PDC	-	38,578	93,075	98,194	103,595	109,293	115,304	121,645	128,336	135,394	42,852
Local Category		PDC	-	18,082	54,138	57,116	60,257	63.572	67,068	70,757	74,648	78,754	24,926
Local Category		PDC	-		17,856	18,839	19,875	20,968	22,121	23,338	24,621	25,975	8,221
Expats		USD		15.807	115,330	102,108	69.399	60,882	62.069	63,279	64.513	65,771	13.411
VAS		PDC	-	-	13,037	13,754	14,510	15,308	16,150	17,039	17,976	18,964	6,002
Process plant labor													
Local Category	I	PDC	_	2,747	12,958	13,670	14,422	15,216	16,052	16,935	17,867	18,849	5,966
Local Category		PDC	-	5,806	19,753	20,839	21,985	23,195	24,470	25,816	27,236	28,734	9,094
Local Category		PDC	-	11,764	13,780	14,537	15,337	16,180	17,070	18.009	19,000	20,734	6.344
Local Category		PDC	_	- 11,701	10,587	11,170	11,784	12,432	13,116	13,837	14,598	15,401	4,875
Expats	1 14-	USD		7,357	32,914	33,556	34,210	6,608	6,737	6,868	7,002	7,139	2,183
VAS		PDC	-	7,557	3.579	3.776	3.983	4.202	4.433	4.677	4,934	5,206	1.648
VAO		120			0,013	5,770	0,000	7,202	7,700	7,011	7,004	0,200	1,040
Maintenance Labor													
Local Category		PDC	-	2,091	11,899	12,554	13,244	13,972	14,741	15,552	16,407	17,309	5,478
Local Category		PDC	-	542	6,321	6,669	7,035	7,422	7,830	8,261	8,716	9,195	2,910
Local Category		PDC	-	76	15,502	16,355	17,254	18,203	19,204	20,260	21,375	22,550	7,137
Local Category	H2	PDC	-	571	4,425	4,668	4,925	5,196	5,481	5,783	6,101	6,436	2,037
Expats		USD	-	9,043	66,694	67,994	69,320	6,058	6,176	6,296	6,419	6,544	2,002
VAS		PDC	-	-	2,451	2,586	2,728	2,878	3,036	3,203	3,379	3,565	1,128
Admin labor													
Local Category	L	PDC	79	13,869	49,903	52,648	55,544	58,599	61,822	65,222	68,809	72,593	22,976
Local Category		PDC	286	10,060	21,807	23,006	24,272	25,607	27,015	28,501	30,068	31,722	10,040
Local Category		PDC	-	3,992	15,802	16,671	17,588	18,556	19,576	20,653	21,789	22,987	7,275
Expats		USD	5,206	34,823	34,069	34,733	35,411	17,378	17,717	18,062	18,414	18,773	5,742
VAS		PDC		-	8,842	9,329	9,842	10,383	10,954	11,557	12,192	12,863	4,071
General Maintenand	e labor												
Local Category		PDC	-	3,091	11,330	11,953	12,611	13,304	14,036	14,808	15,623	16,482	5,216
Local Category		PDC	-	1,626	3,160	3,334	3,518	3,711	3,915	4,131	4,358	4,597	1,455
Local Category		PDC	-	1,819	5,768	6.085	6,420	6,773	7,145	7,538	7,953	8,390	2,656
Expats	•••	USD	- r	984	7,969	8,124	8,282		7,140	7,000	- 7,555	- 0,000	2,000
VAS		PDC	-	-	1,432	1,510	1,593	1,681	1,773	1,871	1,974	2,082	659
Military Occupity													
Military Security Gua				00.005	0.004	0.70-	0.04=	0.70:	40.055	40.00:	11.115	10.04=	0.045
Local Category		PDC	-	28,903	8,281	8,737	9,217	9,724	10,259	10,824	11,419	12,047	3,813
Local Category	H1	PDC	-	6,232	41,762	44,059	46,482	49,039	51,736	54,582	57,584	60,751	19,228

CSS COST (NOMINAL)												
Mining labor												
Local Category L	PDC	-	35,303	77,312	81,564	86,051	90,783	95,776	101,044	106,602	112,465	35,595
Local Category R	PDC	-	366,487	884,212	932,844	984,151	1,038,279	1,095,384	1,155,630	1,219,190	1,286,245	407,097
Local Category H1	PDC	-	171,782	514,314	542,602	572,445	603,929	637,145	672,188	709,159	748,162	236,793
Local Category H2	PDC	-	-	10,443	11,018	11,624	12,263	12,937	13,649	14,400	15,192	16,027
Expats	PDC	-	8,455	49,605	45,447	31,965	22,993	24,257	25,592	26,999	28,484	20,034
VAS	PDC	-	-	123,850	130,662	137,848	145,430	153,428	161,867	170,769	180,162	57,021
Process plant labor												
Local Category L	PDC	-	26,099	123,099	129,870	137,012	144,548	152,498	160,886	169,734	179,070	56,676
Local Category R	PDC	-	55,156	187,651	197,972	208,860	220,348	232,467	245,253	258,742	272,972	86,396
Local Category H1	PDC	-	111,756	130,905	138,105	145,701	153,715	162,169	171,088	180,498	190,425	60,270
Local Category H2	PDC	-	-	6,527	6,886	7,265	7,664	8,086	8,531	9,000	9,495	10,017
Expats	PDC	-	4,124	10,443	11,018	11,624	1,533	1,617	1,706	1,800	1,899	2,003
VAS	PDC	-	-	33,998	35,868	37,840	39,922	42,117	44,434	46,878	49,456	15,653
National Parameters												
Maintenance Labor	550		40.005	440.044	440.050	105.010	400 700	440.000	4 47 7 40	455.000	101 100	50.045
Local Category L	PDC	-	19,865	113,041	119,258	125,818	132,738	140,038	147,740	155,866	164,439	52,045
Local Category R	PDC	-	5,148	60,048	63,351	66,835	70,511	74,389	78,481	82,797	87,351	27,647
Local Category H1	PDC	-	718	147,269	155,368	163,914	172,929	182,440	192,474	203,060	214,229	67,803
Local Category H2	PDC	-	103	3,916	4,132	4,359	4,599	4,851	5,118	5,400	5,697	6,010
Expats	PDC	-	5,362	27,413	28,921	30,512	1,533	1,617	1,706	1,800	1,899	2,003
VAS	PDC	-	-	23,282	24,563	25,914	27,339	28,843	30,429	32,103	33,868	10,719
Admin labor												
Local Category L	PDC	754	131,756	474,082	500,157	527,665	556,687	587,304	619,606	653,685	689,637	218,270
Local Category H1	PDC	2,717	95,567	207,167	218,561	230,582	243,264	256,644	270,759	285,651	301,361	95,381
Local Category H2	PDC		2,990	7,832	8,263	8,718	9,197	9,703	10,237	10,800	11,394	12.020
Expats	PDC	1.564	13.198	10,443	11.018	11.624	4.599	4.851	5.118	5.400	5.697	6.010
VAS	PDC	- 1,001	-	84,003	88,623	93,497	98,640	104,065	109,788	115,827	122,197	38,675
				0 1,000	00,020	00, 101	00,010	101,000	100,700	110,021	122,101	00,070
General Maintenance labor												
Local Category L	PDC	-	29,366	107,637	113,557	119,802	126,392	133,343	140,677	148,414	156,577	49,557
Local Category R	PDC	-	15,443	30,024	31,676	33,418	35,256	37,195	39,240	41,399	43,676	13,823
Local Category H1	PDC	-	17,283	54,794	57,808	60,987	64,342	67,880	71,614	75,553	79,708	25,228
Expats	PDC	-	619	2,611	2,754	2,906	-	-	-	-	-	-
VAS	PDC	-	-	13,600	14,348	15,137	15,970	16,848	17,775	18,752	19,784	6,261
Military Consulty Cynnydd												
Military Security Guards	222		074.575	70.07	00.00:	07.55	00.05-	07.465	100.05:	100 4==	4444-	00.000
Local Category L	PDC	-	274,576	78,674	83,001	87,566	92,382	97,463	102,824	108,479	114,445	36,222
Local Category H1	PDC	-	59,205	396,741	418,562	441,583	465,870	491,493	518,525	547,044	577,131	182,662

B # 1 1	In a lab an												
Wilni	ing labor	200		4.040	0.740	0.000	0.050	0.007	0.405	0.500	0.700	0.000	1010
-	Local Category L	PDC	-	1,248	2,748	2,899	3,059	3,227	3,405	3,592	3,789	3,998	4,218
	Local Category R	PDC	-	7,978	20,440	21,564	22,750	24,001	25,321	26,714	28,183	29,733	31,369
	Local Category H1	PDC	-	3,093	9,275	9,785	10,324	10,891	11,490	12,122	12,789	13,492	14,235
	Local Category H2	PDC	-		1,374	1,450	1,529	1,614	1,702	1,796	1,895	1,999	2,109
	Expats	USD	-	39,519	288,324	255,270	173,498	152,204	155,172	158,198	161,283	164,428	33,527
-	VAS	PDC	-	-	2,576	2,718	2,868	3,025	3,192	3,367	3,553	3,748	3,954
Prod	cess plant labor												
	Local Category L	PDC	-	814	4,122	4,349	4,588	4,841	5,107	5,388	5,684	5,997	6,326
	Local Category R	PDC		1,194	4,294	4,530	4,779	5,042	5,320	5,612	5,921	6,247	6,590
	Local Category H1	PDC	-	2,164	2,405	2,537	2,676	2,824	2,979	3,143	3,316	3,498	3,690
	Local Category H2	PDC	-	-	859	906	956	1,008	1,064	1,122	1,184	1,249	1,318
	Expats	USD	- r	18,392	82,284	83,889	85,525	16,521	16,843	17,171	17,506	17,847	5,459
П	VAS	PDC	-	- '	859	906	956	1,008	1,064	1,122	1,184	1,249	1,318
Mair	ntenance Labor												
wian	Local Category L	PDC	-	624	3,951	4,168	4,397	4,639	4,894	5,163	5,447	5,747	6,063
	Local Category R	PDC	-	109	1.374	1.450	1.529	1.614	1.702	1.796	1.895	1.999	2.109
-	Local Category H1	PDC		109	2,576	2,718	2,868	3,025	3,192	3,367	3,553	3,748	3,954
	Local Category H2	PDC	-	14	515	544	574	605	638	673	711	750	791
	Expats	USD		22.609	166,734	169,985	173,300	15,144	15,439	15.740	16.047	16.360	5.004
	VAS	PDC	-	22,609	687	725				-, -	947	999	1,054
++	VAS	PDC	-	-	687	725	765	807	851	898	947	999	1,054
Adm	nin labor												
	Local Category L	PDC	26	5,047	18,894	19,933	21,029	22,186	23,406	24,694	26,052	27,485	28,996
	Local Category H1	PDC	51	1,818	3,951	4,168	4,397	4,639	4,894	5,163	5,447	5,747	6,063
	Local Category H2	PDC	-	393	1,031	1,087	1,147	1,210	1,277	1,347	1,421	1,499	1,582
	Expats	USD	13,014	87,057	85,173	86,834	88,527	43,444	44,292	45,155	46,036	46,934	14,355
+	VAS	PDC	-	-	2,061	2,175	2,294	2,420	2,553	2,694	2,842	2,998	3,163
Gen	neral Maintenance labor												
	Local Category L	PDC	-	950	3,779	3,987	4,206	4,437	4,681	4,939	5,210	5,497	5,799
	Local Category R	PDC	-	326	687	725	765	807	851	898	947	999	1,054
	Local Category H1	PDC	-	326	1,031	1.087	1.147	1,210	1,277	1,347	1,421	1,499	1,582
	Expats	USD		2,460	19,921	20,310	20,706	- 1		- '	- 1, 121	- 1,100	- ,
П	VAS	PDC	-		515	544	574	605	638	673	711	750	791
Milia	tary Security Guards												
IVIIIIT	Local Category L	PDC		0.442	13,398	14,134	14,912	15,732	16,597	17,510	18,473	19,489	20,561
	Local Category L Local Category H1	PDC	-	9,443 1,031	13,398	1,450	1,529	1,614	1,702	1,796	1,895	1,999	2,109

Иi	ning labor												
	Local Category L	USD		390	4,750	4,842	4,937	5,033	5,131	5,231	5,333	5,437	1,663
	Local Category R	USD		634	7,304	7,446	7,592	7,740	7,891	8,044	8,201	8,361	2,557
	Local Category H1	USD		766	9,362	9,545	9,731	9,921	10,114	10,311	10,512	10,717	3,278
	Local Category H2	USD	-	-	20,844	21,250	21,665	22,087	22,518	22,957	23,404	23,861	7,298
	Expats	USD	-	9,639	151,750	154,709	157,726	202,939	206,896	210,931	215,044	219,237	67,054
	VAS	USD	-	-	8,116	8,274	8,436	8,600	8,768	8,939	9,113	9,291	2,842
					- ,	-,	,	-,	-,	-,	- /	- /	,-
Pro	ocess plant labor												
	Local Category L	USD	-	442	5,042	5,140	5,240	5,343	5,447	5,553	5,661	5,772	1,765
	Local Category R	USD	-	638	7,378	7,522	7,669	7,818	7,971	8,126	8,285	8,446	2,583
	Local Category H1	USD	-	713	9,191	9,371	9,553	9,740	9,929	10,123	10,320	10,522	3,218
	Local Category H2	USD	-	-	19,774	20,159	20,553	20,953	21,362	21,779	22,203	22,636	6,923
П	Expats	USD	-	9,196	205,711	209,722	213,812	330,413	336,856	343,425	350,122	356,949	109,173
П	VAS	USD	-	-	6,684	6,814	6,947	7,083	7,221	7,361	7,505	7,651	2,340
П					-,	-,-	-,-	,	, .	,	,	,	,- ,-
Ma	intenance Labor												
	Local Category L	USD	-	439	4,831	4,925	5,021	5,119	5,219	5,321	5,425	5,531	1,692
	Local Category R	USD	-	655	7,378	7,522	7,669	7,818	7,971	8,126	8,285	8,446	2,583
	Local Category H1	USD		730	9,651	9,839	10,031	10,226	10,426	10,629	10,836	11,048	3,379
	Local Category H2	USD		5,523	13,773	14,041	14,315	14,594	14,879	15,169	15,465	15,766	4,822
	Expats	USD	-	8,696	158,794	161,891	165,048	302,879	308,785	314,806	320,945	327,203	100,075
	VAS	USD		-	5,722	5,833	5,947	6,063	6,181	6,302	6,424	6,550	2,003
Ge	neral & Admin labor												
	Local Category L	USD	397	360	4,236	4,319	4,403	4,489	4,577	4,666	4,757	4,850	1,483
	Local Category H1	USD	715	725	8,854	9,027	9,203	9,382	9,565	9,752	9,942	10,136	3,100
	Local Category H2	USD	-	1,330	24,594	25,074	25,563	26,061	26,570	27,088	27,616	28,154	8,611
	Expats	USD	16,267	13,603	212,932	217,084	221,317	289,630	295,278	301,036	306,906	312,891	95,698
	VAS	USD	-	-	6,881	7,015	7,152	7,292	7,434	7,579	7,726	7,877	2,409
Ge	neral Maintenance labor												
	Local Category L	USD	-	427	4,809	4,903	4,999	5,096	5,196	5,297	5,400	5,505	1,684
	Local Category R	USD	-	655	7,378	7,522	7,669	7,818	7,971	8,126	8,285	8,446	2,583
	Local Category H1	USD	-	733	8,977	9,152	9,330	9,512	9,698	9,887	10,080	10,276	3,143
	Expats	USD	- r	8,199	199,214	203,099	207,059	- 1	- /	- 1	- r	-	-
	VAS	USD	-	-	4,456	4,543	4,632	4,722	4,814	4,908	5,004	5,101	1,560
Mil	litary Security Guards												
	Local Category L	USD	-	401	991	1,011	1,031	1,051	1,071	1,092	1,113	1,135	347
	Local Category H1	USD		792	48,749	49,699	50,668	51,657	52,664	53,691	54,738	55,805	17,068

Mining labo													
	Category L	USD	-	35,911	75,997	77,479	78,989	80,530	82,100	83,701	85,333	86,997	26,608
	Category R	USD	-	372,794	869,166	886,114	903,394	921,010	938,970	957,279	975,946	994,977	304,314
	Category H1	USD	-	174,738	505,562	515,421	525,471	535,718	546,165	556,815	567,673	578,742	177,008
	Category H2	USD	-	-	166,750	170,002	173,317	176,696	180,142	183,655	187,236	190,887	58,383
Expats	S	USD	-	790,371	5,766,490	5,105,392	3,469,965	3,044,086	3,103,446	3,163,963	3,225,660	3,288,560	670,537
VAS		USD	-	-	121,742	124,116	126,536	129,004	131,520	134,084	136,699	139,364	42,625
Mining	labor COST	USD	-	1,373,815	7,505,706	6,878,523	5,277,672	4,887,044	4,982,341	5,079,497	5,178,547	5,279,529	1,279,475
Process pla	ant labor												
Local	Category L	USD	-	26,548	121,004	123,364	125,770	128,222	130,722	133,271	135,870	138,520	42,366
	Category R	USD	-	56,105	184,458	188.055	191,722	195,460	199,272	203,158	207,119	211,158	64.583
	Category H1	USD	-	113,679	128,678	131,187	133,745	136,353	139,012	141,723	144,486	147,304	45,053
	Category H2	USD	-	-	98,869	100,797	102,763	104,767	106,810	108,893	111,016	113,181	34,616
Expats	8 3	USD	-	367,850	1,645,687	1,677,778	1,710,495	330,413	336,856	343,425	350,122	356,949	109,173
VAS		USD	-	-	33,419	34.071	34.735	35,413	36,103	36.807	37.525	38.257	11,701
	ss plant labor COST	USD	-	564,182	2,212,116	2,255,252	2,299,230	930,628	948,776	967,277	986,139	1,005,368	307,492
Maintenanc	e Lahor												
	Category L	USD		20.206	111.117	113.284	115.493	117.745	120.041	122.382	124.769	127.202	38.905
	Category E	USD	<u> </u>	5.236	59.027	60.178	61.351	62.547	63.767	65.010	66,278	67,571	20.666
	Category H1	USD		730	144.763	147.585	150,463	153,397	156,389	159,438	162,547	165.717	50.685
	Category H2	USD		5.523	41.319	42.124	42.946	43.783	44.637	45.507	46,395	47,299	14,467
Expats		USD		452.174	3.334.678	3.399.704	3.465.998	302.879	308.785	314.806	320.945	327,203	100.075
VAS	5	USD		452,174	22.886	23,332	23,787	24,251	24,724	25,206	25,698	26,199	8,013
	enance Labor COST	USD		483.869	3,713,789	3,786,208	3.860.039	704.603	718.343	732.351	746.632	761.191	232.810
Ivante	enance Labor COST	030	-	403,009	3,713,769	3,700,200	3,000,039	704,003	110,343	732,331	740,032	761,191	232,010
General & A	Admin labor												
Local (Category L	USD	794	134,023	466,014	475,102	484,366	493,811	503,441	513,258	523,266	533,470	163,162
Local	Category H1	USD	2,860	97,211	203,642	207,613	211,661	215,788	219,996	224,286	228,660	233,119	71,299
Local (Category H2	USD	-	38,574	147,566	150,444	153,378	156,368	159,418	162,526	165,695	168,927	51,666
Expats	S	USD	260,278	1,741,137	1,703,453	1,736,670	1,770,535	868,890	885,833	903,107	920,718	938,672	287,093
VAS		USD	-	-	82,573	84,184	85,825	87,499	89,205	90,945	92,718	94,526	28,911
Genera	al & Admin labor COST	USD	263,932	2,010,945	2,603,249	2,654,012	2,705,765	1,822,357	1,857,893	1,894,122	1,931,057	1,968,713	602,131
General Ma	aintenance labor												
Local (Category L	USD	-	29,871	105,805	107,868	109,972	112,116	114,302	116,531	118,804	121,120	37,045
	Category R	USD	-	15,708	29,513	30,089	30,676	31,274	31,884	32,505	33,139	33,785	10,333
	Category H1	USD	-	17,580	53,862	54,912	55,983	57,074	58,187	59,322	60,479	61,658	18,858
Expats	<u> </u>	USD	r -	49,193	398,429	406,198	414,119	-	-	-	-	-	-
VAS		USD	-		13,369	13,629	13,895	14,166	14,442	14,724	15,011	15,304	4,681
Genera	ral Maintenance labor COST	USD	-	112,353	600,977	612,696	624,644	214,630	218,815	223,082	227,432	231,867	70,917
Military Sec	curity Guards												
	Category L	USD	<u> </u>	279.302	77.335	78.843	80.381	81.948	83.546	85.175	86.836	88.529	27.077
	Category L Category H1	USD		60,224	389,990	397,595	405,348	413,252	421,311	429,526	437,902	446,441	136,544
	y Security Guards COST	USD		339.526	467.325	476.438	485.728	495,200	504.857	514.701	524.738	534.970	163.621

vlini													
	ing labor												
-	Local Category L	USD	-	3,591	7,600	7,748	7,899	8,053	8,210	8,370	8,533	8,700	2,661
-	Local Category R	USD	-	111,838	260,750	265,834	271,018	276,303	281,691	287,184	292,784	298,493	91,294
-	Local Category H1	USD	-	52,421	151,669	154,626	157,641	160,715	163,849	167,044	170,302	173,623	53,103
-	Local Category H2	USD	-	<u>-</u>	50,025	51,000	51,995	53,009	54,043	55,096	56,171	57,266	17,515
	Expats	USD		284,534	2,075,936	1,837,941	1,249,187	1,095,871	1,117,240	1,139,027	1,161,238	1,183,882	241,393
	VAS	USD	-	-	12,174	12,412	12,654	12,900	13,152	13,408	13,670	13,936	4,262
	Mining labor TAX	USD	-	452,385	2,558,153	2,329,562	1,750,394	1,606,852	1,638,185	1,670,130	1,702,697	1,735,900	410,228
Proc	cess plant labor												
ΠÌ	Local Category L	USD	-	2,655	12,100	12,336	12,577	12,822	13,072	13,327	13,587	13,852	4,237
	Local Category R	USD		16.832	55.337	56.416	57.517	58.638	59.782	60,947	62,136	63,347	19,375
	Local Category H1	USD	_	34,104	38,603	39,356	40,124	40,906	41,704	42,517	43,346	44,191	13,516
	Local Category H2	USD		-	29.661	30.239	30.829	31,430	32.043	32.668	33,305	33,954	10,385
	Expats	USD	-	132,426	592,447	604,000	615,778	118,949	121,268	123,633	126,044	128,502	39,302
	VAS	USD	_	-	3.342	3,407	3,474	3.541	3.610	3.681	3.752	3,826	1,170
	Process plant labor TAX	USD		186,016	731,491	745,755	760,298	266,286	271,479	276,773	282,170	287,672	87,985
Ш				,	,		,		, 0	,	,	,	2.,220
Mair	ntenance Labor Local Category L	USD	-	2.021	11.112	11.328	11.549	11.775	12.004	12.238	12.477	12.720	3.890
+	0 ,	USD		, -		11,328	,	, -	,	,		, -	6,200
-	Local Category R	USD	-	1,571	17,708	-,	18,405	18,764	19,130	19,503	19,883	20,271	-,
	Local Category H1	USD	-	219	43,429	44,276	45,139	46,019	46,917	47,831	48,764	49,715	15,205
-	Local Category H2	USD	-	1,657	12,396	12,637	12,884	13,135	13,391	13,652	13,918	14,190	4,340
-	Expats		-	162,783	1,200,484	1,223,894	1,247,759	109,036	111,163	113,330	115,540	117,793	36,027
	VAS	USD		400.050	2,289	2,333	2,379	2,425	2,472	2,521	2,570	2,620	801
	Maintenance Labor TAX	USD	-	168,250	1,287,417	1,312,521	1,338,116	201,154	205,077	209,076	213,153	217,309	66,464
Adm	nin labor												
	Local Category L	USD	79	13,402	46,601	47,510	48,437	49,381	50,344	51,326	52,327	53,347	16,316
	Local Category H1	USD	858	29,163	61.092	62.284	63.498	64.737	65,999	67,286	68,598	69.936	21.390
	Local Category H2	USD	-	11,572	44,270	45,133	46,013	46,911	47,825	48,758	49,709	50,678	15,500
	Expats	USD	93,700	626,809	613,243	625,201	637,393	312,800	318,900	325,118	331,458	337,922	103,353
	VAS	USD		-	8,257	8,418	8,583	8,750	8,921	9,094	9,272	9,453	2,891
	Admin labor TAX	USD	94,637	680,947	773,464	788,547	803,923	482,578	491,989	501,582	511,363	521,335	159,450
Gen	neral Maintenance labor												
3011	Local Category L	USD	_	2.987	10,581	10.787	10.997	11,212	11.430	11.653	11.880	12,112	3.704
	Local Category R	USD		4,713	8,854	9,027	9,203	9,382	9,565	9,752	9,942	10,136	3,100
	Local Category H1	USD		5.274	16.159	16.474	16.795	17,122	17.456	17,797	18.144	18,497	5,657
	Expats	USD		17,709	143,434	146,231	149.083	- 17,122	- 17,430	- 17,737	-	10,437	3,037
	VAS	USD		-	1.337	1.363	1,389	1.417	1.444	1.472	1.501	1.530	468
	General Maintenance labor TAX	USD		30,683	180,364	183,881	187,467	39,133	39,896	40.674	41,467	42,275	12,930
	General Ivaline lance labor 1 AA	000	-	30,003	100,304	100,001	107,407	J3, IJJ	33,030	40,074	41,407	42,213	12,930
Milit	tary Security Guards												
	Local Category L	USD	-	27,930	7,734	7,884	8,038	8,195	8,355	8,518	8,684	8,853	2,708
	Local Category H1	USD	_	18,067	116,997	119,278	121,604	123,976	126,393	128,858	131,371	133,932	40,963

Min	ing labor												
	Local Category L	USD	-	718	1,520	1,550	1,580	1,611	1,642	1,674	1,707	1,740	532
	Local Category R	USD	-	7,456	17,383	17,722	18,068	18,420	18,779	19,146	19,519	19,900	6,086
	Local Category H1	USD	-	3,495	10,111	10,308	10,509	10,714	10,923	11,136	11,353	11,575	3,540
	Local Category H2	USD	-	-	3,335	3,400	3,466	3,534	3,603	3,673	3,745	3,818	1,168
	Expats	USD	[- [15,807	115,330	102,108	69,399	60,882	62,069	63,279	64,513	65,771	13,411
	VAS	USD	-	-	2,435	2,482	2,531	2,580	2,630	2,682	2,734	2,787	852
	Mining labor ACFPE	USD	-	27,476	150,114	137,570	105,553	97,741	99,647	101,590	103,571	105,591	25,590
Pro	cess plant labor												
	Local Category L	USD	-	531	2,420	2,467	2,515	2,564	2,614	2,665	2,717	2,770	847
	Local Category R	USD		1,122	3,689	3,761	3,834	3,909	3,985	4,063	4,142	4,223	1,292
	Local Category H1	USD		2,274	2,574	2,624	2,675	2,727	2,780	2,834	2,890	2,946	901
	Local Category H2	USD	-	-	1,977	2,016	2,055	2,095	2,136	2,178	2,220	2,264	692
	Expats	USD	- 1	7,357	32,914	33,556	34,210	6,608	6,737	6,868	7,002	7,139	2,183
\Box	VAS	USD	-	-	668	681	695	708	722	736	750	765	234
	Process plant labor ACFPE	USD	-	11,284	44,242	45,105	45,985	18,613	18,976	19,346	19,723	20,107	6,150
Mai	intenance Labor												
	Local Category L	USD		404	2,222	2,266	2,310	2,355	2,401	2,448	2,495	2,544	778
	Local Category R	USD	-	105	1,181	1,204	1,227	1,251	1,275	1,300	1,326	1,351	413
	Local Category H1	USD	-	15	2,895	2,952	3,009	3,068	3,128	3,189	3,251	3,314	1,014
	Local Category H2	USD	-	110	826	842	859	876	893	910	928	946	289
	Expats	USD	-	9,043	66,694	67,994	69,320	6,058	6,176	6,296	6,419	6,544	2,002
	VAS	USD	-	-	458	467	476	485	494	504	514	524	160
	Maintenance Labor ACFPE	USD	-	9.677	74,276	75,724	77,201	14.092	14,367	14.647	14,933	15.224	4.656
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Adn	nin labor												
	Local Category L	USD	16	2.680	9.320	9.502	9.687	9.876	10.069	10.265	10.465	10.669	3,263
	Local Category H1	USD	57	1.944	4.073	4.152	4.233	4.316	4.400	4.486	4.573	4.662	1,426
\Box	Local Category H2	USD	-	771	2,951	3,009	3,068	3,127	3,188	3,251	3,314	3,379	1,033
\top	Expats	USD	5,206	34,823	34,069	34,733	35.411	17,378	17,717	18,062	18,414	18,773	5,742
\forall	VAS	USD			1,651	1,684	1,717	1,750	1,784	1,819	1,854	1,891	578
\forall	Admin labor ACFPE	USD	5,279	40,219	52,065	53,080	54,115	36,447	37,158	37,882	38,621	39,374	12,043
\forall			2,2.0	- ,=	. ,	,	. ,	,	. ,	. ,	,	,	,
Ger	neral Maintenance labor												
	Local Category L	USD	-	597	2,116	2,157	2,199	2,242	2,286	2,331	2,376	2,422	741
\Box	Local Category R	USD	-	314	590	602	614	625	638	650	663	676	207
\top	Local Category H1	USD	-	352	1,077	1,098	1,120	1,141	1,164	1,186	1,210	1,233	377
\Box	Expats	USD	- 1	984	7,969	8,124	8,282	- 1	- 1	- 1	- 1	-	-
\Box	VAS	USD	-	-	267	273	278	283	289	294	300	306	94
\top	General Maintenance labor ACFPE	USD	-	2,247	12,020	12,254	12,493	4,293	4,376	4,462	4,549	4,637	1,418
					,						,		, -
Mili	tary Security Guards												
	Local Category L	USD	-	5,586	1,547	1,577	1,608	1,639	1,671	1,704	1,737	1,771	542
\top	Local Category H1	USD	-	1,204	7,800	7,952	8,107	8,265	8,426	8,591	8,758	8,929	2,731
	Military Security Guards ACFPE	USD		6,791	9.347	9.529	9.715	9.904	10.097	10,294	10.495	10.699	3,272

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Mining labor													
	Category L	USD	-	6,823	14,439	14,721	15,008	15,301	15,599	15,903	16,213	16,529	5,056
	Category R	USD	-	70,831	165,141	168,362	171,645	174,992	178,404	181,883	185,430	189,046	57,820
	Category H1	USD	-	33,200	96,057	97,930	99,840	101,786	103,771	105,795	107,858	109,961	33,632
	Category H2	USD	-	-	1,950	1,988	2,027	2,067	2,107	2,148	2,190	2,233	2,276
Expats		USD	-	1,634	9,265	8,202	5,575	3,875	3,951	4,028	4,106	4,186	2,845
VAS		USD	-	-	23,131	23,582	24,042	24,511	24,989	25,476	25,973	26,479	8,099
Mining I	labor OCSS	USD	-	112,488	309,984	314,786	318,136	322,532	328,821	335,233	341,770	348,435	109,727
Process plan	nt labor												
	Category L	USD	-	5,044	22,991	23,439	23,896	24,362	24,837	25,322	25,815	26,319	8,050
	Category R	USD	-	10.660	35.047	35.730	36,427	37,137	37,862	38,600	39,353	40,120	12,271
	Category H1	USD	-	21,599	24,449	24,926	25,412	25,907	26,412	26,927	27,452	27,988	8,560
	Category H2	USD	-		1,219	1.243	1.267	1,292	1,317	1,343	1,369	1,395	1,423
Expats	6 3	USD	-	797	1,950	1,988	2,027	258	263	269	274	279	285
VAS		USD	_	-	6.350	6.473	6.600	6.728	6.860	6.993	7.130	7.269	2.223
	ss plant labor OCSS	USD	-	38,100	92,006	93,800	95,629	95,685	97,551	99,453	101,393	103,370	32,811
	·			,	. ,	,	,	,	. ,==:	,	. ,	,	. ,
Maintenance		LIOD		0.000	04.440	04.504	04.044	00.070	00.000	00.050	00.700	04.400	7.000
	Category L	USD	-	3,839	21,112	21,524	21,944	22,372	22,808	23,253	23,706	24,168	7,392
	Category R	USD	-	995	11,215	11,434	11,657	11,884	12,116	12,352	12,593	12,838	3,927
	Category H1	USD	-	139	27,505	28,041	28,588	29,146	29,714	30,293	30,884	31,486	9,630
	Category H2	USD	-	20	731	746	760	775	790	806	821	837	854
Expats		USD	-	1,036	5,120	5,220	5,322	258	263	269	274	279	285
VAS		USD	-		4,348	4,433	4,520	4,608	4,698	4,789	4,883	4,978	1,522
Mainten	nance Labor OCSS	USD	-	6,029	70,032	71,398	72,790	69,042	70,389	71,761	73,160	74,587	23,609
Admin labor													
Local C	Category L	USD	151	25,464	88.543	90.269	92.030	93.824	95.654	97.519	99.421	101,359	31,001
	Category H1	USD	543	18,470	38.692	39,446	40,216	41,000	41,799	42.614	43,445	44,293	13.547
	Category H2	USD	-	578	1.463	1.491	1,520	1,550	1,580	1,611	1.643	1,675	1,707
Expats		USD	313	2,551	1,950	1,988	2,027	775	790	806	821	837	854
VAS		USD	-	-	15.689	15.995	16.307	16.625	16.949	17,279	17,616	17,960	5.493
	labor OCSS	USD	1,007	47,063	146,337	149,190	152,100	153,774	156,772	159,830	162,946	166,124	52,602
Conoral Mair	intononos lobor												
	intenance labor	USD		F 070	20.402	20.405	20.005	04.000	04.747	00.444	00.570	00.040	7.000
	Category L		-	5,676	20,103	20,495	20,895	21,302	21,717	22,141	22,573	23,013	7,038
	Category R	USD	-	2,985	5,608	5,717	5,828	5,942	6,058	6,176	6,296	6,419	1,963
	Category H1	USD	-	3,340	10,234	10,433	10,637	10,844	11,056	11,271	11,491	11,715	3,583
Expats		USD	-	120	488	497	507	-			- 0.050	- 0.000	-
VAS		USD	-		2,540	2,590	2,640	2,692	2,744	2,798	2,852	2,908	889
G&M la	abor OCSS	USD	-	12,120	38,972	39,732	40,507	40,780	41,575	42,386	43,212	44,055	13,474
Military Secu	urity Guards												
Local C	Category L	USD	-	53,067	14,694	14,980	15,272	15,570	15,874	16,183	16,499	16,821	5,145
	Category H1	USD	-	11,443	74,098	75,543	77,016	78,518	80,049	81,610	83,201	84,824	25,943
	Security Guards OCSS	USD	_	64.510	88.792	90.523	92.288	94.088	95.923	97,793	99.700	101.644	31.088

Mining labor												
Local Category L	USD	-	241	513	523	533	544	554	565	576	588	599
Local Category R	USD	-	1,542	3,817	3,892	3,968	4,045	4,124	4,204	4,286	4,370	4,455
Local Category H1	USD	-	598	1,732	1,766	1,801	1,836	1,871	1,908	1,945	1,983	2,022
Local Category H2	USD	-	-	257	262	267	272	277	283	288	294	300
Expats	USD	-	39,519	288,324	255,270	173,498	152,204	155,172	158,198	161,283	164,428	33,527
VAS	USD	-	-	481	491	500	510	520	530	540	551	562
Mining labor Health Care Cost	USD	-	41,900	295,125	262,203	180,567	159,411	162,519	165,688	168,919	172,213	41,464
Process plant labor												
Local Category L	USD	-	157	770	785	800	816	832	848	864	881	899
Local Category R	USD	-	231	802	818	834	850	866	883	901	918	936
Local Category H1	USD	-	418	449	458	467	476	485	495	504	514	524
Local Category H2	USD	-	-	160	164	167	170	173	177	180	184	187
Expats	USD	-	18,392	82,284	83,889	85,525	16,521	16,843	17,171	17,506	17,847	5,459
VAS	USD	-	-	160	164	167	170	173	177	180	184	187
Process plant labor Health Care Cost	USD	-	19,199	84,626	86,276	87,959	19,002	19,373	19,750	20,136	20,528	8,192
Maintenance Labor												
Local Category L	USD	-	121	738	752	767	782	797	813	828	845	861
Local Category R	USD	-	21	257	262	267	272	277	283	288	294	300
Local Category H1	USD	-	3	481	491	500	510	520	530	540	551	562
Local Category H2	USD	-	3	96	98	100	102	104	106	108	110	112
Expats	USD	-	22.609	166,734	169.985	173.300	15.144	15.439	15.740	16.047	16,360	5.004
VAS	USD	-	-	128	131	133	136	139	141	144	147	150
Maintenance Labor Health Care Cost	USD	-	22,756	168,434	171,719	175,067	16,946	17,276	17,613	17,956	18,306	6,988
dmin labor												
Local Category L	USD	5	975	3,529	3,598	3.668	3.739	3.812	3.886	3,962	4.040	4.118
Local Category H1	USD	10	351	738	752	767	782	797	813	828	845	861
Local Category H2	USD		76	192	196	200	204	208	212	216	220	225
Expats	USD	13.014	87.057	85.173	86.834	88.527	43,444	44.292	45.155	46.036	46.934	14.355
VAS	USD	-	-	385	392	400	408	416	424	432	441	449
Admin labor Health Care Cost	USD	13,029	88,460	90,017	91,772	93,562	48,577	49,525	50,490	51,475	52,479	20,008
General Maintenance labor												
Local Category L	USD	-	184	706	720	734	748	762	777	792	808	824
Local Category R	USD	-	63	128	131	133	136	139	141	144	147	150
Local Category H1	USD	-	63	192	196	200	204	208	212	216	220	225
Expats	USD	_ r	2,460	19,921	20,310	20.706		- '	- /	- /		-
VAS	USD	-		96	98	100	102	104	106	108	110	112
General Maintenance labor Health Care Cost	USD	-	2,769	21,044	21,455	21,873	1,190	1,213	1,237	1,261	1,285	1,310
Military Security Guards												
Local Category L	USD	-	1,825	2,502	2,551	2.601	2.651	2.703	2.756	2.810	2.864	2.920
Local Category H1	USD	-	199	257	262	267	272	277	283	288	294	300
Military Security Guards Health Care Cost	USD	-	2.024	2.759	2.813	2.867	2.923	2.980	3,039	3,098	3,158	3.220

Т															
\pm															
Н	Total Ore Processed		Ton	23.510.512	#		2.850.470	2.832.672	2.757.104	2.994.019	2,742,889	2.882.357	3.112.460	2.658.397	680.144
Н	Total Ore Flocesseu	-	1011	23,310,312	#		2,050,470	2,032,072	2,737,104	2,994,019	2,742,009	2,002,337	3,112,400	2,000,091	000, 144
MIN	VING														
IVIII	NING														
-	Nr. II COOT		LIOD			4 070 045	7 505 700	0.070.500	- o o	4 007 044	4 000 044	5 070 407	- 470 - 47	5 0 7 0 5 00	4 070 475
-	Mining labor COST	-	USD		#	- 1,373,815	7,505,706	6,878,523	5,277,672	4,887,044	4,982,341	5,079,497	5,178,547	5,279,529	1,279,475
	Mining labor ACFPE	-	USD		#	- 27,476	150,114	137,570	105,553	97,741	99,647	101,590	103,571	105,591	25,590
-	Mining labor OCSS	-	USD		#	- 112,488	309,984	314,786	318,136	322,532	328,821	335,233	341,770	348,435	109,727
	Mining labor Health Care Cost	-	USD	-	#	- 41,900	295,125	262,203	180,567	159,411	162,519	165,688	168,919	172,213	41,464
-	Mining Labor		USD			- 1,555,679	8,260,930	7,593,083	5,881,929	5,466,727	5,573,328	5,682,008	5,792,807	5,905,767	1,456,256
ш															
+	Mining Labor	-	USD		#	- 1,555,679	8,260,930	7,593,083	5,881,929	5,466,727	5,573,328	5,682,008	5,792,807	5,905,767	1,456,256
Ш	Total Ore Processed	-	Ton	23,510,512	#		2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
Ш	Mining Labor		USD/t				2.90	2.68	2.13	1.83	2.03	1.97	1.86	2.22	2.14
\perp															
\perp	Mining labor TAX	-	USD		#	- 452,385	2,558,153	2,329,562	1,750,394	1,606,852	1,638,185	1,670,130	1,702,697	1,735,900	410,228
Ш	Total Ore Processed	-	Ton	23,510,512	#		2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
Ш	Mining labor TAX		USD/t				0.90	0.82	0.63	0.54	0.60	0.58	0.55	0.65	0.60
Н															
Pla	nt (Processing)														
+	Process plant labor COST	_	USD	_	#	- 564.182	2.212.116	2.255.252	2.299.230	930.628	948,776	967,277	986,139	1,005,368	307.492
Н	Maintenance Labor COST	1	USD		#	- 483,869	3,713,789	3,786,208	3,860,039	704,603	718,343	732,351	746,632	761,191	232,810
+	Process plant labor ACFPE		USD		#	- 11.284	44.242	45.105	45.985	18.613	18.976	19.346	19.723	20.107	6.150
-	Maintenance Labor ACFPE	-	USD		#	- 9.677	74,242	75.724	77.201	14.092	14.367	14.647	14.933	15.224	4.656
+	Process plant labor OCSS	-	USD			- 38.100	92.006	93.800	95.629	95.685	97.551	99.453	101,393	103,370	32.811
+	Maintenance Labor OCSS	-	USD		#	- 6,029	70.032	71,398	72,790	69.042	- ,	71,761	73,160	74,587	23,609
Н		-	USD		#	- 19,199	84.626	86.276	87.959	19.002	70,389 19.373	19.750	20,136	20,528	8.192
	Process plant labor Health Care Cost		USD		#		- /	,	. ,	-,	-,	-,			-, -
-	Maintenance Labor Health Care Cost	-	USD	-	#	22,700	168,434	171,719	175,067	16,946	17,276	17,613	17,956	18,306	6,988
	Plant (Processing) Labor		050			- 1,155,096	6,459,521	6,585,482	6,713,899	1,868,612	1,905,050	1,942,198	1,980,071	2,018,682	622,708
\mathbb{H}	Plant (Processing) Labor	-	USD	-	#	- 1,155,096	6,459,521	6,585,482	6,713,899	1,868,612	1,905,050	1,942,198	1,980,071	2,018,682	622,708
	Total Ore Processed	-	Ton	23,510,512	#		2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
H	Plant (Processing) Labor		USD/t	.,,,,,			2.27	2.32	2.44	0.62	0.69	0.67	0.64	0.76	0.92
\parallel	Decease plant labor TAV		LICD		ш	400.040	704 404	745 755	700 000	200 200	074 470	070 770	202.472	207.070	07.005
\vdash	Process plant labor TAX	-	USD		#	- 186,016	731,491	745,755	760,298	266,286	271,479	276,773	282,170	287,672	87,985
\vdash	Maintenance Labor TAX	-	USD	-	#	- 168,250	1,287,417	1,312,521	1,338,116	201,154	205,077	209,076	213,153	217,309	66,464
	Plant (Processing) Labor Tax		USD			- 354,266	2,018,908	2,058,277	2,098,413	467,441	476,556	485,849	495,323	504,982	154,449
H	Plant (Processing) Labor Tax	-	USD	-	#	- 354.266	2.018.908	2,058,277	2,098,413	467,441	476,556	485,849	495,323	504.982	154,449
\forall	Total Ore Processed	_	Ton	23,510,512			2.850.470	2.832.672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
+	Plant (Processing) Labor Tax		USD/t	25,010,012	i"		0.71	0.73	0.76	0.16	0.17	0.17	0.16	0.19	0.23

3 & A															
General & Admin labor COST		USD	_	#	263.932	2.010.945	2,603,249	2,654,012	2,705,765	1,822,357	1.857.893	1,894,122	1,931,057	1.968.713	602.131
General Maintenance labor COST		USD	-		200,002	112.353	600.977	612.696	624.644	214.630	218.815	223.082	227,432	231.867	70.917
Military Security Guards COST		USD		#		339,526	467,325	476,438	485,728	495,200	504,857	514,701	524,738	534,970	163,621
Admin labor ACFPE		USD		#	5.279	40,219	52.065	53.080	54.115	36.447	37.158	37.882	38,621	39,374	12,043
General Maintenance labor ACEPE		USD		#	5,213	2.247	12.020	12.254	12.493	4.293	4.376	4.462	4.549	4.637	1.418
Military Security Guards ACFPE	_	USD		#	_	6,791	9.347	9.529	9.715	9,904	10,097	10,294	10,495	10,699	3,272
Admin labor OCSS		USD	_	**	1.007	47.063	146.337	149,190	152.100	153.774	156,772	159,830	162,946	166,124	52.602
G&M labor OCSS		USD	-		1,007	12.120	38.972	39.732	40.507	40.780	41.575	42.386	43.212	44.055	13.474
Military Security Guards OCSS		USD		#		64.510	88.792	90.523	92.288	94.088	95.923	97.793	99.700	101,644	31,088
Admin labor Health Care Cost	_	USD	-		13.029	88.460	90.017	91.772	93,562	48.577	49.525	50,490	51,475	52.479	20,008
General Maintenance labor Health Care Cost	_	USD	_		10,020	2.769	21.044	21,455	21.873	1.190	1.213	1.237	1.261	1.285	1.310
Military Security Guards Health Care Cost		USD		#	_	2.024	2.759	2.813	2.867	2.923	2.980	3.039	3.098	3.158	3.220
G&A Labor		USD		"	283,247	2,729,027	4,132,902	4,213,494	4,295,657	2,924,163	2,981,184	3,039,317	3,098,584	3,159,007	975,103
G&A Labor	-	USD	-	#	283,247	2,729,027	4,132,902	4,213,494	4,295,657	2,924,163	2,981,184	3,039,317	3,098,584	3,159,007	975,103
Total Ore Processed	-	Ton	23,510,512	#	-	-	2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
G&A Labor		USD/t			-	-	1.45	1.49	1.56	0.98	1.09	1.05	1.00	1.19	1.43
		1100			04.00=	000 047	770 404	700 5 47	202.202	100 570	404.000	504 500	544.000	504.005	150 150
Admin labor TAX	-	USD		#	94,637	680,947	773,464	788,547	803,923	482,578	491,989	501,582	511,363	521,335	159,450
General Maintenance labor TAX	-	USD	-		-	30,683	180,364	183,881	187,467	39,133	39,896	40,674	41,467	42,275	12,930
Military Security Guards TAX	-	USD	-	#	-	45,997	124,731	127,163	129,642	132,170	134,748	137,375	140,054	142,785	43,671
G&A Labor Tax		USD			94,637	757,628	1,078,559	1,099,591	1,121,033	653,881	666,632	679,632	692,884	706,396	216,051
G&A Labor Tax	-	USD	-	#	94,637	757,628	1,078,559	1,099,591	1,121,033	653,881	666,632	679,632	692,884	706,396	216,051
Total Ore Processed	-	Ton	23,510,512	#	-	-	2,850,470	2,832,672	2,757,104	2,994,019	2,742,889	2,882,357	3,112,460	2,658,397	680,144
G&A Labor Tax		USD/t			-	-	0.38	0.39	0.41	0.22	0.24	0.24	0.22	0.27	0.32