# Queens Mine Valuation Report

**Report Prepared for**

## RS Mines Pvt Ltd

**Report Prepared by**

SRK Consulting (Australasia) Pty Ltd

RMS001

February 2016

# Queens Mine Valuation Report

## RS Mines Pvt Ltd

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**SRK Project Number RMS001**

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# Executive Summary

SRK Consulting (Australasia) Pty Ltd (SRK) was contracted by RS Mines Pvt Ltd (RSM) to provide a valuation opinion on a producing vein graphite mine, located in Matale, Central Sri Lanka.

The site lies in proximity to the government owned Kahatagaha-Kolongaha graphite mine, which produces over 300,000 tonnes of a reported +90% total graphitic carbon content per annum. The Queens Mine is host to vein graphite with grades of up to 99% total graphitic carbon.

## Summary of principal objectives

The purpose of this report is to provide an Independent Valuation Report on a Mining Lease otherwise known as the "Queens Mine".

SRK has reviewed relevant available data and has selected the most appropriate valuation technique for the Asset, based on the development stage of the Asset.

This Report, where possible has been prepared in accordance with the guidelines and principles outlined in VALMIN Code (2005). However, SRK declare this report to be not fully compliant with the VALMIN code (2005) for reasons outlined in the body of this report.

This valuation report has been prepared as a confidential internal report only and is not intended for public release.

The valuation is current as at December 2015.

## Valuation Basis

A "Technical Value" and "Fair Market Value" are defined by the VALMIN Code (2005) under sections D36 and D43 respectively:

D36 of the VALMIN (2005) Code: Technical Value is an assessment of a Mineral or Petroleum Asset's future net economic benefit at the Valuation Date under a set of assumptions deemed most appropriate by an Expert or Specialist, excluding any premium or discount to account for such factors as market or strategic considerations.

D43 of the VALMIN Code (2005): Value is the Fair Market Value of a Mineral or Petroleum Asset or Security. It is the amount of money (or the cash equivalent of some other consideration) determined by the Expert in accordance with the provisions of the VALMIN Code for which the Mineral or Petroleum Asset or Security should change hands on the Valuation Date in an open and unrestricted market between a willing buyer and a willing seller in an "arm's length" transaction, with each party acting knowledgeably, prudently and without compulsion. Value is usually comprised of two components, the underlying or 'Technical Value' of the Mineral or Petroleum Asset or Security, as defined in D36, and a premium or discount relating to market, strategic or other considerations. Value should be selected as the most likely figure from within a range after taking account of Risk and the possible variation in ore grade, metallurgical recovery, capital and operating costs, commodity prices, exchange rates and the like.

SRK has determined a Technical Value as a basis for a Fair Market value as at December 2015.

## Outline of work programme

The following aspects were considered in the writing of this report:

- A technical review of Exploration Technical Reports and supporting documentation supplied by RSM;
- Compilation of comparable market transactions of recent graphite Properties;
- Analysis of transactions;
- Development of a Conceptual cash flow model;
- Valuation; and
- Report Preparation.

## Tenements

SRK has not independently verified ownership and the current standing of the tenements to be valued and is not qualified to make legal representations in this regard. Instead, SRK has relied on information as provided by RSM.

SRK has prepared this Valuation Report on the understanding that the Licence is currently in good standing.

## Queens Mine Asset

Exploitation of graphite within the Queens Mine commenced during British colonial period between the early 1900s and 1948.

RSM recently reopened (2012) the Queens Mine producing approximately 20 tonnes per month. SRK understands that RSM intends to increase production over the next 4 years, ramping up production to a total rate of 3,000 tonnes per annum by 2019.

A VTEM survey over the broader area, undertaken by Bora Bora Resources in 2014 (Bora Bora Resources; 2014) highlights a strong conductivity anomalous response over the Queens Mine comparable with similar response over the State-owned Kahataga Mine in the Mid-Region. This response at Queens Mine is co-incident with the presence of a series exposed graphite veins at surface.

Adits which provide access to the historic workings expose at least six graphite veins over total width of 25 m, veins varying in thickness from 1 mm to 40 cm. Current development work at the mine has extracted 20 tonnes of graphite from the adits (SRK, 2014).

Despite the historical and current production records there is no estimation for the contained graphite Resources. To meet RSM's aspirational targets, RSM plan to develop resource/reserve estimates in accordance with JORC (2012) reporting guidelines in early 2016.

## Valuation

SRK considers on the basis of the lack of JORC Mineral Resources or Reserves the Queens Mine cannot be classified as a Development Project, despite the project being an operating mine. As a consequence and the limited data available, SRK does not recommend the application of Discounted Cash Flow modelling techniques as an appropriate valuation method for this asset.

To reflect the development stage SRK has considered two valuation techniques in this report, namely the Geological Risk Method (GRM) and comparative transactions. In SRK opinion believe that given the development status of the project the GRM method provides a better representation of value. To

support this a conceptual Discounted Cash Flow (DCF) is provided as a supporting method to provide an aspirational 'Target Value' as appropriate to the GRM of valuation.

SRK initially considered the Geological Risk Method (GRM), supported by comparable transactions as a primary valuation method. To provide further support SRK has considered comparable transaction method to benchmark the GRM valuation approach to a market valuation.

**Geological Risk Method**

The GRM, developed by SRK, assessed the geological models for graphite mineralisation using available exploration data. A Target Value based on similar projects by scale and mineralisation was determined. The Target Value then was discounted by the cost and probability of success through the relevant stage/s of the exploration and development process.

The Target Value is derived from a Target size and in this study has been developed by SRK based on an independent critique of the development aspirations outlined for the Mine by RSM and a DCF model developed to derive an aspirational NPV (i.e. the Net Present Value of a project at the commencement of mining under the production plan outlined by the DCF model, which would require underpinning by appropriate exploration and feasibility studies that are yet to be completed). The project is considered to be at the Systematic Drill testing stage of the exploration and development process.

**Applying the GRM of Valuation, the technical value ranges from US$2.9M to a high of US$5.5M with a preferred (or mid-point) value of US$4.2M.**

The GRM valuation methodology has allowed for a discounting of approximately US$2.7M for assumed exploration to drill out to a Measured/Indicated Resource and feasibility stage status.

**Comparable Transactions Method**

SRK initially identified a total of 13 graphite transactions dated between January 2010 and December 2015. Of those transactions SRK identified 9 transactions that were located in Sri Lanka and considered comparable. SRK considered that Sri Lankan Graphite deposits to be generally unique as they typically occur as vein graphite.

Although the Queens Mine has no estimated Resources, it is an operating mine with a licence covering a relatively small area which will determine a relatively low valuation when valued on an area basis..

**SRK recommends that on a comparable transaction basis the Queens Graphite Mine be valued on a 'project basis' rather than a value applied to an area basis. Appropriate transactions applied give a range of US$0.10M to US$8.7M, with a preferred value of US$4.1M.**

In review of the available comparative transactions SRK is of the opinion that the Sakura Graphite Mine partial acquisition by Elcora is most comparable; due to the presence of historical workings and the overall small area defined by the Mining Licence. SRK notes that on a 100% basis the transaction values the Sakura Graphite Mine at US$ 2.75 million when normalised to the December 2015 graphite price. It should also be noted that a 100% and controlling interest would normally constitute a higher price.

SRK notes that the overall valuation range is reasonable reflecting the level of certainty with early to moderately advanced stage of the exploration projects for graphite in Sri Lanka.

In determining a final technical valuation, we note that the GRM Valuation derived for the Queens Mine project is supported by comparable market valuations identified for this study, in addition to the aspiration development plan for the asset.

In summary, SRK has chosen to rely on the GRM method supported by the Comparable Transaction method to derive our preferred Valuation. Table ES-2 presents a summary of the technical Valuation based on the current permit status of Licence.

**Table ES-1: Technical and fair market valuation of the Queens Mine project**

| Project | Low (US$) | Preferred (US$) | High (US$) |
|---|---|---|---|
| Queens Mine | 2.9 | 4.2 | 5.5 |

Based on an exchange rate of AUD/USD $0.75.

**Table ES-2: Technical and fair market valuation of the Queens Mine project**

| Project | Low (AU$) | Preferred (AU$) | High (AU$) |
|---|---|---|---|
| Queens Mine | 3.9 | 5.6 | 7.3 |

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# Disclaimer

The opinions expressed in this Report have been based on the information supplied to SRK Consulting (Australasia) Pty Ltd (SRK) by RS Mines Pvt Ltd (RS Mines). The opinions in this Report are provided in response to a specific request from RS Mines to do so. SRK has exercised all due care in reviewing the supplied information. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this Report apply to the site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which SRK had no prior knowledge nor had the opportunity to evaluate.

# List of Abbreviations

| Abbreviation | Meaning |
|---|---|
| ~ | approximately |
| °C | degrees Celsius |
| < | less than |
| > | greater than |
| % | percent |
| AIG | Australian Institute of Geoscientists |
| ASX | Australian Securities Exchange |
| AusIMM | The Australasian Institute of Mining and Metallurgy |
| C | Cost of Exploration |
| CAPEX | Capital expenditure |
| cm | centimetre |
| DCF | Discounted Cash Flow |
| DD | Diamond Drillhole (drilling technique) |
| E | east |
| EV | Expected Value |
| FOB | Free on Board |
| GRM | Geological Risk Method |
| JORC Code | Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC), December 2004 Edition and 2012 Edition. |
| k | thousand |
| KKGM | Kahatagahar-Kolongaha Government Mine |
| Km | Kilometre |
| Kt | kiloton |
| LOM | Life Of Mine |
| M | Million |
| m | metre |
| Ma | Million annum |
| mm | millimetre |
| Mt | Million tonnes |
| Mtpa | Million tonnes per annum |
| N | north |
| NPV | Net Present Value |
| OPEX | Operating expenditure |
| P | Probability |
| RC | Rotary chip (drilling technique) |
| RoM | Run of Mine |
| RSM | RS Mines Pvt Ltd |
| S | south |

| Abbreviation | Meaning |
|---|---|
| SAMVAL | The South African Code for the Reporting of Mineral Asset Valuation (The SAMVAL Code) |
| SNL | SNL Financial |
| SRK | SRK Consulting (Australasia) Pty Ltd or PT SRK Consulting Indonesia |
| t | tonne |
| t/pa | tonne per annum |
| ToC | Total organic Carbon |
| TV | Target Value |
| US$ | US dollars |
| VALMIN Code | Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports 2005. |
| W | west |

# 1 Introduction and Scope of Report

PT SRK Consulting Indonesia ("SRK") was requested by Mr Sheriozha Anthony Wijekoon of RS Mines Pvt Ltd (RSM) to provide a valuation opinion on a producing vein graphite mine, located in Matale, Central Sri Lanka.

The site lies in proximity to the government owned Kahatagaha-Kolongaha graphite mine, which has extracted over 300,000 tonnes of a reported +90% total graphitic carbon content. The Queens Mine is host to vein graphite with grades of up to 99% total graphitic carbon.

SRK understands that RSM plan to develop resource/reserve estimates in accordance with JORC (2012) reporting guidelines in early 2016.

SRK also note that considerable advancements have been made to test and potentially realise downstream value in graphite derivative products through various RS Mines subsidiary companies. The scope of this valuation and report pertains to the Queens Mine itself. SRK makes no attempt to value the downstream potential or RS Mines, or collective subsidiary companies.

# 2 Programme Objectives and Work Programme

## 2.1 Purpose of the Report

The purpose of this report is to provide an Independent Valuation Report on a Mining Licence, otherwise known as the "Queens Mine".

SRK has selected the most appropriate valuation technique for the asset, based on the development stage of the project and the amount of available information. This SRK Report expresses an opinion regarding the Technical Value and Fair Market Value of the mineral assets as at 15 December 2015. It does not comment on the 'fairness and reasonableness' of any transaction between the project's owners and any other parties.

## 2.2 Reporting standard

The VALMIN Code 2005 (herein, VALMIN) is the code adopted by The Australasian Institute of Mining and Metallurgy (AusIMM) and the Australian Institute of Geoscientists (AIG) and the standard is binding upon all AusIMM and AIG members. The VALMIN Code incorporates the JORC Code for the reporting of Mineral Resources and Ore Reserves.

This Report has been prepared to the standard of, and in part conforms to the principals of the VALMIN Code with respect to Good Practice in the preparation of a Technical Assessment and Valuation Report. However, SRK declare this report to be not fully compliant with the VALMIN code and has been prepared for internal RSM use only.

The depth of assessment of the technical merits of the Asset has not been reviewed in appropriate detail, including a site visit by the expert or specialists as authors of this report. Further, this report does not contain independent disclosure of the tenement status. As such the critical reliance on information provided by the commissioning entity and the material impact of that information to the Valuation approach is deemed non-compliant as a Technical Assessment Report.

Consequently, this Report has been prepared as an internal Report only and has not been prepared for publication. Should a Report in accordance with the VALMIN Code be required for general publication, SRK reserves the right to upgrade this Report to the necessary standards at cost. At this stage, SRK grants no permission to publish this Report. It should be noted that the authors of this

Report are Corporate Members of The AusIMM and/or AIG and, as such, are bound by the VALMIN Code.

## 2.3 Work programme

SRK was retained on 6 December 2015 and the project conducted in December 2015, with a review of data provided by RSM and other information sourced by/available to SRK from literature and company websites, the Australian Securities Exchange (ASX) website, as well as subscription databases, such as SNL.

The Asset was not visited as part of this valuation work, as a site visit was conducted as part of the exploration planning undertaken by SRK in 2014 and deemed to be adequate for the purposes of this valuation.

SRK worked through the relevant technical information, completed research on comparable market transactions and graphite pricing to assist the valuation, prepared a valuation and compiled the Report.

## 2.4 Project team

The project team consisted of the following personnel.

Dr Bryce Healy, Principal Consultant (Project Evaluations) at SRK Consulting (Australasia) Pty Ltd, PhD, BSc, MAIG, has compiled this report based on the review of technical reports. Dr Healy assumes the responsibility for the estimates presented here and has the relevant experience to be considered an Expert under the VALMIN guidelines.

The Expert relied on the input from the following Specialists when undertaking this Valuation report:

- Mr Mathew Davies, Senior Consultant (Geology); and
- Mr Anthony Stepcich, Principal Consultant (Project Evaluations).

The Expert found the key inputs and assumptions by these Specialists into this Valuation to be reasonable.

The study was technically supported and peer reviewed by Dr Matthew Greentree, Principal Consultant (Project Evaluation).

All are permanent employees of SRK and members of professional association bound by the VALMIN Code.

## 2.5 Note on tenement status and materials contracts

SRK has not independently verified ownership and the current standing of the tenements as SRK are not qualified to make legal representations in this regard. Instead, SRK has relied on information provided by RSM. All relevant Licence documents have been made available to SRK.

SRK has prepared this Valuation Report on the understanding that the Licence is currently in good standing.

## 2.6 Statement of SRK independence

Neither SRK nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of SRK.

SRK has no prior association with RSM in regard to the mineral assets that are the subject of this Report. SRK has no beneficial interest in the outcome of the technical assessment being capable of affecting its independence.

SRK's fee for completing this Report is approximately US$18k and based on its normal professional daily rates plus reimbursement of incidental expenses. The payment of that professional fee is not contingent upon the outcome of the Report.

## 2.7 Representation

RS Mines has represented in writing to SRK that full disclosure has been made of all material information and that, to the best of its knowledge and understanding, such information is complete, accurate and true.

SRK has reviewed, and assessed the technical merits of the assets and the key documentation is duly referenced as appropriate throughout the report.

## 2.8 Limitations

SRK opinion contained herein is based on information provided to SRK by the Client throughout the course of SRK's investigations as described in this report, which in turn reflect various technical and economic conditions at the time of writing.

SRK notes that the resulting budgets and forecasts have been prepared appropriately and are based on the information available at the time and within the practical constraints and limitations of such budgets and forecasts.

The achievability of budgets and forecasts are neither warranted, nor guaranteed by SRK. Future cash flows and profits derived from such forecasts are inherently uncertain. Consequently, actual results may be significantly more, or less favourable.

This report includes technical information, which requires subsequent calculations to derive subtotals, totals and weighted averages. Such calculations may involve a degree of rounding and consequently introduce an error. Where such errors occur, SRK does not consider them to be material.

As far as SRK has been able to ascertain, the information provided by the Client was complete and not incorrect, misleading or irrelevant in any material aspect.

## 2.9 Reliance on information

SRK believes that its opinion must be considered as a whole and that selecting portions of the analysis or factors considered by it, without considering all factors and analyses together, could create a misleading view of the process underlying the opinions presented in this section of the report. The preparation of such section is a complex process and does not lend itself to partial analysis or summary.

## 2.10 Consents

SRK has not prepared the Report to a standard of a public report does not consent to this report being made Public.

SRK does consent to the use of this report by RS Mines Pty Ltd for internal circulation.

SRK provides this consent on the basis that the technical assessments expressed in the Summary and in the individual sections of this Report are considered with, and not independently of, the information set out in the complete Report and the Cover Letter.

# 3 Valuation Reporting

## 3.1 Valuation basis

"Technical Value" and "Fair Market Value" are defined in the VALMIN Code (2005) as shown below:

D36 of the VALMIN (2005) Code: Technical Value is an assessment of a Mineral or Petroleum Asset's future net economic benefit at the Valuation Date under a set of assumptions deemed most appropriate by an Expert or Specialist, excluding any premium or discount to account for such factors as market or strategic considerations.

D43 of the VALMIN Code (2005): Value is the Fair Market Value of a Mineral or Petroleum Asset or Security. It is the amount of money (or the cash equivalent of some other consideration) determined by the Expert in accordance with the provisions of the VALMIN Code for which the Mineral or Petroleum Asset or Security should change hands on the Valuation Date in an open and unrestricted market between a willing buyer and a willing seller in an "arm's length" transaction, with each party acting knowledgeably, prudently and without compulsion. Value is usually comprised of two components, the underlying or 'Technical Value' of the Mineral or Petroleum Asset or Security, as defined in D36, and a premium or discount relating to market, strategic or other considerations. Value should be selected as the most likely figure from within a range after taking account of Risk and the possible variation in ore grade, metallurgical recovery, capital and operating costs, commodity prices, exchange rates and the like.

SRK has calculated a Technical Value which it has then converted to a Fair Market value. To convert a Technical Value to a Fair Market Value a premium or discount is applied to allow for such factors as market, strategic considerations or special circumstances. In this case SRK has applied a premium/discount of 0% to convert the Technical Value above to a Fair Market Value. Therefore in this case the Technical Value is equivalent to the Fair Market Value.

The valuation estimated below is current at 1 December 2015 and monetary amounts are in US Dollars (US$) as specified throughout the valuation section. The final valuation is also provided in AUS Dollars (AU$) at an exchange rate of AUD/USD of $0.75 at the request of RSM.

## 3.2 Valuation approach

### 3.2.1 Introduction

The following section provides discussion and comment on the valuation approach and methodologies adopted by SRK in determining the value for the asset. Valuation methods in common usage for mineral assets are dependent on numerous factors including but not necessarily limited to:

- The purpose of the valuation undertaken; the development status of the mineral assets; and
- The extent and reliability of available information.

While the VALMIN Code states that decisions as to which valuation methodology is used are the responsibility of the Expert or Specialist, where possible, SRK has considered several valuation methods.

The aim of this approach is to compare the results achieved using different methods to select a preferred value within a valuation range. This reflects the uncertainty in the data and interaction of the various assumptions inherent in the valuation.

An overview of a number of methods traditionally used to value exploration properties includes:

- Multiples of Exploration Expenditure (MEE);
- Joint Venture Terms Method (expenditure-based);
- Geoscience Ratings Methods (e.g. Kilburn – area-based);
- Comparable Market Value Method (real estate-based);
- Rule of Thumb Method (e.g. US$/Resource or production unit, % of an in situ value); and
- In addition, SRK uses the Geological Risk Method (GRM) to value exploration assets.

The valuation of assets relies on the application of a number of different methodologies and the majority of these methods can be classified into three main types; income, cost or market-based (SAMVAL, 2008; Lord et al., 2012):

- The income or cash flow approach estimates the present value of future cash flows over the projected or suitable mine life of the project;
- A cost or exploration expenditure approach estimates the value of the asset based on for example, past and future money spent on the project or on average expenditure cost to find and retain the Asset; and
- A market or real estate approach estimates the value of the asset by reviewing transactions of similar Assets between willing sellers and buyers.

The appropriate of each methodology is linked to the development stage of the asset.

### 3.2.2 Mineral asset – development status

In accordance with VALMIN Code (2005), mineral assets comprise all project including but not limited to real property, intellectual property, mining and exploration tenements held or acquired in connection with the exploration of, the development of and the production from those tenements together with all plant, equipment and infrastructure owned or acquired for the development, extraction and processing of minerals in connection with those tenements.

Most mineral assets can be classified as one of the following:

**Exploration Project**: Properties where mineralisation may or may not have been identified to date, but where a Mineral Resource has not been identified.

**Advanced Exploration Project**: Properties where considerable exploration has been undertaken and specific targets have been identified that warrant further detailed evaluation, usually by drill testing, trenching or some other form of detailed geological sampling. A Mineral Resource estimate may or may not have been made, but sufficient work will have been undertaken on at least one prospect to provide both a good understanding of the type of mineralisation present and encouragement that further work will elevate one or more of the prospects to the Mineral Resource category.

**Pre-Development Project**: Properties where Mineral Resources have been identified and their extent estimated (possibly incompletely) but where a decision to proceed with development has not been made. Properties at the early assessment stage, properties for which a decision has been made not to proceed with development, properties on care and maintenance and properties held on retention titles are included in this category if Mineral Resources have been identified, even if no further Valuation, Technical Assessment, delineation or advanced exploration is being undertaken.

**Development Project**: Properties for which a decision has been made to proceed with construction and/or production, but which are not yet commissioned or are not yet operating at design levels.

**Operating Mines**: Mineral properties, particularly mines and processing plants that have been commissioned and are in production.

### 3.2.3 Pre-development, development and operating project

Mineral assets and or properties which are classified by VALMIN as either a Pre-Development, Development or Operating Project are generally accompanied by Measured and Indicated Mineral Resources and Ore Reserves, specifically where technical studies completed to a minimum of pre-Feasibility Study level demonstrate that extraction is both technically feasible and economically viable. In such instances mining and processing assumptions, operating expenditures and capital expenditures are either known or can be reasonably determined. Accordingly, valuations can be derived with a reasonable degree of confidence by compiling a DCF and determining the NPV.

SRK are aware that engineering and development work is currently underway with initial planned production for 2016. Accordingly, SRK would nominally consider on this basis (and the amount of available information) that the asset can be classified as a Development Project whereby a DCF model resulting in an NPV is the appropriate valuation method for this asset. However, the Queens Mine Project has not estimated Resources or Reserves.

Therefore SRK only deem it appropriate to develop a DCF model for the proposed operation only where the un-risked NPV derived from that Valuation Methodology will be used as a reference point for other adopted, and preferred valuation methodologies.

### 3.2.4 Exploration project and advanced exploration project

Cost and market-based approaches are the more widely adopted methods when valuing exploration assets. However, Lord et al., (2012) note that there is “little consensus on how to approach the valuation of a project that is at the pre-Resource definition stage”. Furthermore, there is concern from technical practitioners that the cost and market-based approaches tend to ignore or “fail to recognise” a number of factors associated with exploration projects including the exploration risk profile of the asset (Lord et al., 2012).

In addition to the more traditionally used techniques identified above, SRK has developed a geological risk method (GRM) to value exploration assets, as presented in Lord et al., 2012; Morley, 2007; SRK, 2006; and Lord et al., 2001. It is based on probabilistic principles and uses an approach to valuing exploration projects that has been applied in the petroleum industry for many years (Lord et al., 2001).

### 3.2.5 Summary

SRK considers on the basis of the information available, that the asset cannot be classified as a Development Project. SRK believe that DCF resulting in an NPV is not an appropriate valuation method for this asset. SRK has considered two other valuation techniques in this report, Geological Risk Method (GRM) and comparative transactions. SRK believe that given the development status of the deposit the GRM method will give the most accurate representation of value in this case and that an NPV is appropriate as a supporting methodology to the GRM by providing an aspirational 'Target Value' as appropriate to the GRM of valuation.

Mr Bryce Healy, Principal Consultant (Project Evaluations) at SRK Consulting (Australasia) Pty Ltd, PhD (Geology), MAIG, has undertaken this valuation based on the review of technical reports. Mr Healy assumes the responsibility for the estimates presented here in and has the relevant experience to be considered an Expert under the VALMIN guidelines. Mr Healy is a Member of the Australasian Institute of Geoscientists, Member No 6132.

SRK believes it has selected the most appropriate valuation technique for the asset, based on the development stage of the project and the amount of available information. This SRK Valuation Report expresses an opinion regarding the Technical Value and Fair Market Value of the mineral assets. It does not comment on the 'fairness and reasonableness' of any transaction between the project's owners and any other parties.

# 4 Project Background Summary

## 4.1 Location

The island of Sri Lanka is pear shaped in form and has a length from north to south of about 450 km and width of up to 220 km. The island has an area of 65,610 $km^2$ and a population of around 21 million. It is a democratic republic governed by both presidential and a parliamentary system, and the provincial capital is Colombo.

Topographically, the island of Sri Lanka consists of relatively low lying coastal plains and mountains in the southern central part (known as the Central Highlands), with a maximum elevation of 2,524 m above sea-level (Figure 4-1).

The climate is tropical humid as a result of ocean trade winds. The mean annual temperature ranges from 28°C to 31°C, but night-time temperatures vary from around 14°C to 18°C. The mean temperature ranges from 17°C in the central highlands region to a maximum of around 33°C in low-lying areas.

Precipitation is influenced by monsoon winds from the Indian Ocean and the Bay of Bengal. The monsoons occur from April to June and September to December. Most precipitation falls in the west and the central highlands receive up to 2,500 mm of rain per month. The eastern side of the country is in the rain shadow of the Central Highlands and the east and southeast coasts receive between 800 to 1,200 mm per annum.

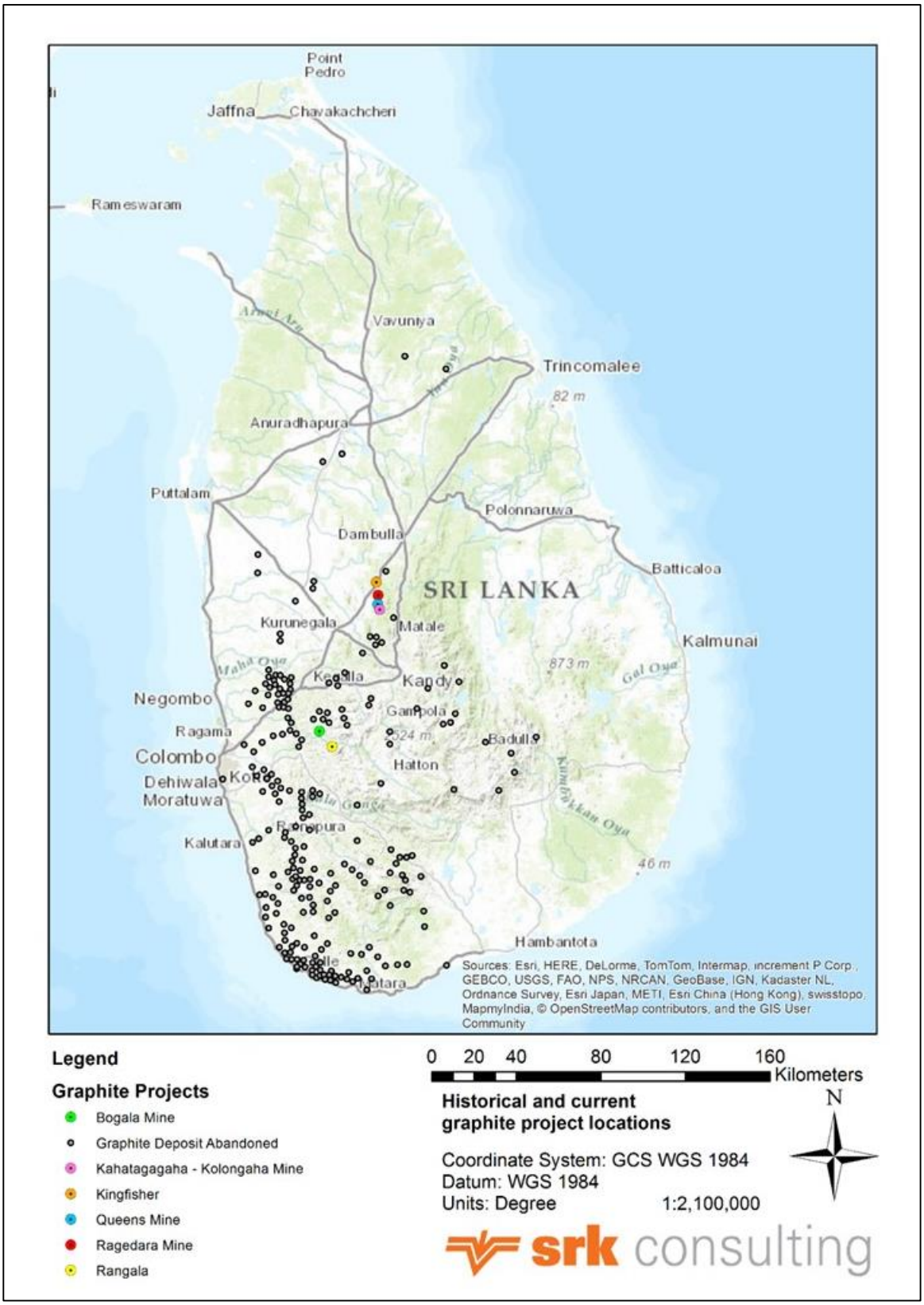


**Figure 4-1: Location map of the Graphite Projects and abandoned workings in Sri Lanka**

# 5 Regional Geology and setting

Much of the geology of Sri Lanka consists of high-grade metamorphic rocks of Precambrian age (over 90% of area) (Figure 5-1). The geology can be sub-divided into 3 major lithotectonic units (Binu-Lal et al., 2003). These are:

- Highland Series (ca. 2,000 Ma);
- Wanni Complex (ca. 1,080 Ma); and
- Vijayan Complex (ca. 1,000 Ma).

Vein graphite occurrences in Sri Lanka occur both within the Wanni and Highland complexes Phanerozoic sequences including limestone and marine sands are restricted to coastal regions.

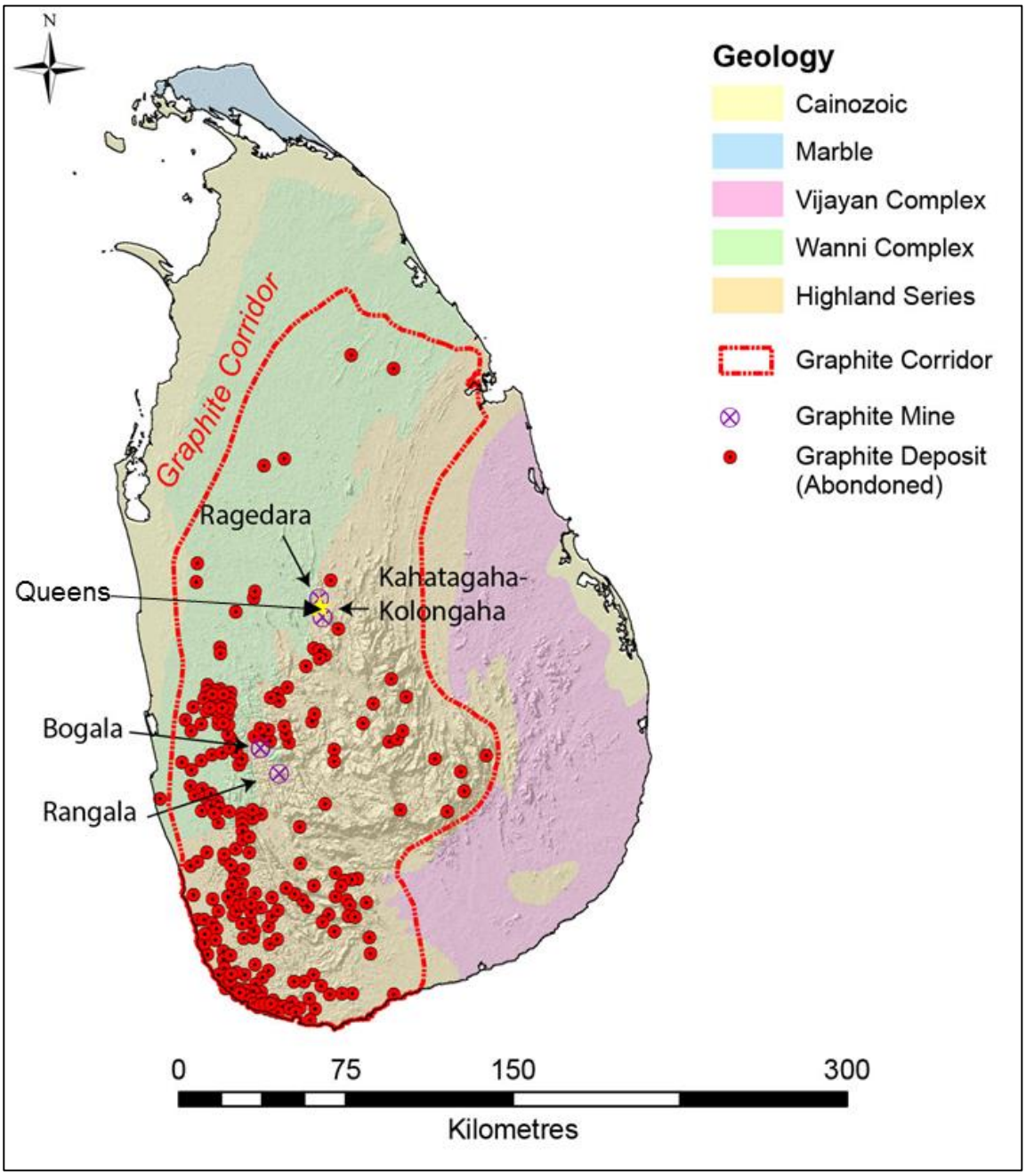


**Figure 5-1: Simplified Geology showing location of known graphite deposits and abandoned deposits**

The most abundant rocks of the Highland Series (aka. Highland Complex) are crystalline gneisses of both light (acid) and dark (basic) varieties. The foliation generally strikes NW-SE and has strongly influenced the current topography with the formation of NW-SE trending valleys and ridges. Joints at right angle to the foliation have resulted in the location of many of the tributary valleys.

The gneisses are nearly pure quartz although contain small quantities of feldspar, garnet and mica. Other observed gneissic facies consist mainly of quartz and orthoclase feldspar with garnet and biotite as accessory phases and zircon, apatite and graphite as rare constituents. Some of the more basic gneisses comprise labradorite feldspar with either pyroxene or hornblende. The gneisses have been intruded by igneous rocks of acid to basic composition.

The Wanni Complex comprises charnockite gneiss and granitoid intrusions. The Vijayan Complex primarily consists of biotite-hornblende gneiss and subordinate bands of metasediments and charnockite gneiss.

## 5.1 Vein graphite deposits

Vein graphite occurrences in Sri Lanka occur both within the Wanni and Highland complexes. The vein deposits are hosted by garnet-rich, orthopyroxene-bearing quartzo-feldspathic rocks and garnet-biotite geneiss. Both types are intruded by quartz-feldspar pegmatoids that are parallel to compositional layering. The lithologies are also interlayered with garnet-rich metabasites and metaquartzites. The host rocks have no disseminated graphite and lithology has not been a factor in controlling the type of vein graphite (Kehelpannala, 1995).

Commercially important deposits are all of vein-type in character, have sharp contacts along fracture planes in the rocks, cutting the gneissic layering at a large angle, and whilst the majority are located in the southwest, they generally are located in a corridor that trends approximately north-northeast–south-southwest (Figure 5-1).

# 6 Mining Activities – Sri Lanka

## 6.1 Historical

The existence of graphite in Sri Lanka was first reported as early as 1681 and trade in graphite for the pencil industry was prevalent at this time. Exploitation did not commence however until around 1820, with the industry attaining commercial importance by 1834.

From around the 1850s to the early 1870s, graphite was established as an important export industry. Growing demand was driven primarily because of the high carbon content and high quality of Sri Lankan graphite, which was required for the crucible industry.

The United Kingdom was the largest importer of Sri Lankan graphite towards the end of the 19$^{th}$ century where it was mostly used in making crucibles for the casting of armaments such as bomb shells and cannon balls. In 1901, the United States of America became the largest importer of Sri Lankan graphite and Germany became the second largest in 1909.

The period 1869 to 1918 is characterised as a period of strong growth and development of the graphite industry in Sri Lanka. This was a period where there was nearly 3,000 graphite pit mines in the southwest and Central Highlands of the island (Figure 5-1). The expansion of the industry at this time was due to large production from shallow pits and hence low mining costs of high-grade graphite that required very little processing due to the high purity.

The industry however went in to decline. Consequently, this was due to a number of factors including: 1) falling graphite prices; and 2) strong competition from other countries such as Madagascar. There were also problems of drainage and ventilation as mines became deeper and primitive mining technologies limited activities to weathered rock only (e.g. absence of blasting methods in fresh rock). The industry experienced a small revival during World War II, but declined again shortly afterwards.

In 1971, the graphite industry was nationalised and the State Graphite Corporation of Ceylon was established. The Kahatagaha, Kolongaha and Walakatahena mines were combined to form the Kahatagaha-Kolongaha government mine (KKGM). The Bogala mine was an amalgamation of a number of small mines that were exploiting the same graphite lodes. These were the only two mines operating under the State Mining and Mineral Development Corporation until the Rangala and Ragedara mines were opened in 1973 and 1976 respectively. These two latter mines however were abandoned after only a few years of operation. The Ragedara mine however was re-opened in 2011(now the Sakura Mine) and has modest production at present.

The KKGM and Bogala mines were privatised in 1989 and 1992 respectively. The KKGM however only operated for a few years and was taken over again by the government in 1996 and has limited production of 600 to 1,000 metric tonnes of graphite per annum. The Bogala mine was taken over by a German company when Bogala Graphite Limited was purchased in 2000 by Graphit Kropfmuehl and reportedly produces about 5,000 metric tonnes per annum.

## 6.2 Current graphite activities

There are 4 main working graphite mines in Sri Lanka at present (Figure 4-1):

1). Kahatagaha-Kolongaha mine which began production in 1872 and is now run by the government;

2). Bogala mine which is run by Bogala Graphite Lanka PLC, but with the major shareholder (89%) being the German company Graphit Kropfmuhl AG, who is also the main customer;

3). Ragedara (Sakura) mine which is operated by Sakura Pvt Ltd. The mine became Sri Lanka's third ranked graphite producer in 2012; and

4). Queens Mine owned by RS Mines is producing small amounts of high-grade graphite as part of the development stage.

## 6.3 Queens Graphite Mine

The Queens Graphite Mine was originally opened in the 1900s during colonial occupation by the British; the mine was abandoned in 1948 when British rule ended.

RSM has recently re-commenced production at Queens Mine and is now producing approximately 20 tonnes per month. RSM aspires to increase production over the next 4 years ramping up to achieve a total production rate of 3,000 tonnes per annum by 2019.

A VTEM survey over the broader area, undertaken by Bora Bora Resources in 2014 (Bora Bora Resources; 2014) highlights a strong conductivity anomalous response over the Queens Mine comparable with similar response over the State-owned Kahataga Mine to the south. This response at Queens Mine is co-incident with the presence of a series of poorly exposed graphite veins at surface.

The adit/entrance to the historical workings expose a number of graphite veins (6 veins over 25 m width) which vary in thickness from 1 mm to 40 cm. Current development work at the mine has extracted 20 tonnes of graphite from the adits (SRK, 2014) and RSM aims to be a 3,000 t/pa graphite producer in 4–5 years' time.

Despite the historical and current production there are no estimated Resources or Reserves for the project (current or historical). To meet RSM's aspirational targets, RSM plan to develop resource/reserve estimates in accordance with JORC (2012) reporting guidelines in early 2016.

# 7 DCF Model

SRK has developed a highly conceptual a Discounted Cashflow (DCF) Model to provide guidance regarding the Technical Value for the Queens Mine based on the information provided by RSM (RSM-Financial-Summary-ver-15).

SRK notes that the use of DCF modelling is consistent with the VALMIN or JORC codes as they are based on highly conceptual inputs and assumptions, rather than Mineral Resources or Ore Reserves (as defined by the 2012 JORC Code) which consider appropriately the confidence level of the Mineral Resource or the Modifying Factors. SRK notes that there is insufficient information to provide a reasonable basis for the disclosure of a Production schedule or forecast financial information derived from that Production schedule

The decision to commence development and production at the Queens Mine and RSMs plans for mining operations are based on economic models prepared by RSM in conjunction with the management's knowledge of the property and the prior operating history of the mine. The production decision and operating plan for the extraction and sale of graphite were not based on any preliminary economic assessment, a pre-feasibility study or a feasibility study of mineral Reserves demonstrating economic and technical viability. Accordingly, there is increased uncertainty and economic and technical risks of failure associated with the production decision and operating plan, in particular the risk that mineral quantities and/or grades will be lower than expected, the risk that construction or ongoing mining operations will be more difficult or more expensive than expected, the risk that the company will not be able to transport or sell the mineralized material it produces on the terms it expects, or at all.

On this basis, SRK considers these figures are suitable only for internal purposes and would consider them to be aspirational statements for the purposes of this report.

The un-risked NPV will be used as a value (from successful development), which is discounted by the cost and probability of success, through the various stages of the discovery/development pathway, to the Assets current exploration stage using the Geological Risk Method of Valuation to derive the Technical Value for the asset.

## 7.1 Model inputs

SRK has derived the model inputs from an assessment of the development aspiration set out for the Queens Mine by RSM in addition to a cross-check of the development plan against comparative peer projects. This assessment is summarised in Table 7-1.

**Table 7-1: Summary of discounted cash flow inputs**

| Item | Comments |
|---|---|
| **Spatial characteristics of the Ore deposit Geology** | **Queens Mine**: Up to 6 or more veins mapped in adits striking east-west, dipping steeply to the south and hosted within charnokite gneiss and quartzofeldspathic hornblende biotite gneiss (SRK 2014). Where observed in the adits, veins vary from mm-scale up to 40 cm in width. |
| | **Peer Comparison**: In Bogala, 3 main steeply (65–80°) dipping veins are extracted from mainly metamorphic biotite gneiss host rock. The average vein thickness at Bogala is about 20–40 cm (Dharmaratne et al., 2013).<br>At the Kahatgaha Mine numerous veins, collectively a 'vein swarm' strike east west and cut the gneissic host rock at a high angle. Where observed individual veins vary in thickness from mm to several tens of cm's and strike 10's of meters.<br>Narrow vein thickness along with the irregular nature and behaviour of the veins present the primary geological risk. Where encountered underground at Bogala, veins are noted to split, pinch out and expand into more lucrative pockets of graphite mineralisation (Dharmaratne et al., 2013).<br>At the Sukura Mine (formally Ragedara), historic operations had identified 14 veins, 8 of which were economically viable having widths of 25–40 cm, with some close to 2 m wide. |
| **Mining Method** | **Queens Mine**: The Appropriate Mining Method proposed for extracting narrow vein ore at Queens Mine is an open stopping method (e.g. Kahatgaha and Sakura) or cut-and-fill method (e.g. Bogala). |
| | **Peer Comparison**: Current operations involve deep underground narrow vein extraction. The Bogala Mine has been in operation since ~1847. The veins are accessed by a combination of vertical shafts and horizontal drifts into the vein system. The maximum depth of the shaft at Bogala is ~560 m and the deepest mining level is 503 m (Dharmaratne et al., 2013).<br>The Kahatagaha Mine currently operates at depths of 600 m+ and uses an open stopping method of extraction.<br>The Sakura Mine (Ragadera) currently produces 2,500 t/pa using airleg open stopping extraction methods. |
| **Production** | **Queens Mine**: Currently the Queens Mine produces ~24 t/pa from artisanal mining methods (3-RSM-Financial-Summary-ver-15). RS Mines have provided an aspirational development plan for increasing production over the next 4 years to 3,000 t/pa by 2019. |
| | Currently the Sakura Mine (formerly Ragedara Mine) produces 2,500 t/pa from artisanal mining methods (www.elcoraresources.com./news/release/Nov 8 2015). However, the mine previously sustained a production rate of up to 18,000 t/pa and current operators Elcora have outlined plans to increase production near term to a 10,000 t/pa.<br>MRL Corporation have outlined a conceptual mine development targeting production of 5,000 t/pa at the Warakapola Project.<br>Bogala Mine currently produces ~2,000 tpa (including the Ragala mine re-opened in 2015).<br>Kahatgaha produces ~1,000 tpa.<br>*NB: Production targets are likely contingent on vein widths of the current workings.* |
| **OPEX** | **Queens Mine**: SRK was provided estimates of OPEX by RSM in AUD$. SRK has applied an exchange rate of AUD/USD $0.75 to all costs to derive an estimated cost in US$ (Costs exclude capital costs).<br>Based on the estimated production volumes and the Queens mine will achieve an OPEX of $17,591/t in 2016 dropping to US$1,836/t in 2017, US$784/t in 2018 and $384/t by 2019. |
| | **Peer Comparison**: Operating costs are driven by rock support, mine drainage and labour. At Bogala, Dharmaratne et al., 2013 suggest that 50% of the operating cost is on dewatering. Bogala operating costs are unavailable.<br>MRL Corporation report an estimate operating cost of US$600–650/t (inclusive of corporate overheads) on their proposed 5,000 t/pa operation including processing costs.<br>Kahatagaha US$570/t operating costs.<br>Elcora have quoted the basic cash cost of Sakura's 2,500 t/pa mine (excluding additional exploration and sustaining Capex; exclusive of processing costs) at US$400/t. |

| Item | Comments |
|---|---|
| | (www.elcoraresources.com./news/release/Nov 8 2015). Elcora estimate the processing costs around US$200/t. |
| **CAPEX** | **Queens Mine**: SRK was provided estimates of CAPEX by RSM in AUD$. SRK has applied an exchange rate of AUD/USD $0.75 to all costs to derive an estimated cost in US$.<br>Based on the conceptual development plan for an increase in production from 24 t/pa to 3,000 t/pa total the total capital expenditure is estimated at US$2.3 M and includes the costs of exploration. |
| | **Peer Comparison:** Only relevant to projects currently in development. MRL Corporation has reported AU$4M in capital raising to fund the commencement of graphite production at its 5,000 t/pa Warakapola project.<br>Elcora have outlined plans to develop the Sakura Mine up to a 10,000 t/pa operation at an estimated CAPEX cost of <US$5M, including the development of additional adits and necessary ongoing exploration costs (www.elcoraresources.com./news/release/Nov 5 2015). |
| **Graphite quality** | **Queens Mine:** RSM has undertaken extensive laboratory testing of current ROM tonnes. Graphite is initially sorted into 3 stockpiles;<br>1). Low Grade Graphite – which carries a varying purity from 60–98%. This stockpile is stored for water purification to 99%+C powder – 7 micron.<br>2). 99%+C which is then micronised to 7 micron.<br>3). Needle type graphite – HOPG, presented in small sheets or in lump form.<br>All final products are reported as being 99%+C high crystalline graphite. |
| | **Peer Comparison**: Vein graphite in Bogala is of high purity with 99.9% carbon in-situ in most locations and distribution is noted as being uniform (Dharmaratne et al., 2013), although the carbon grade of the graphite varies from 85% to 99.9%.<br>Vein graphite at Elcora's Sakura Mine is quoted by Elcora as averaging 94% ToC. In November 2015 Elcora commissioned a $750,000 processing plant designed at increasing the grade of the mine product from 94% to 99.9% (www.elcoraresources.com./news/release/Nov 8 2015). |
| **Product pricing** | **Queens Mine:** The product pricing does not include development on the suitability of the high grade graphite samples for downstream processing into higher value products, including but not limited to, premium-priced graphene materials. |
| | **Peer Comparison**: Elcora quote a product pricing of US$1,500/t for the Sakura Mine (www.elcoraresources.com./news/release/Nov 8 2015). (Based on an average 94% ToC product); a higher pricing (quoted as approximately US$3,000/t) is anticipated on the processed ore (99.9% ToC) from the recently completed processing plant. |
| **Corporate Tax** | 28% (Sri Lankan Corporate Tax Rate) |
| **Royalty** | 5% |
| **Export Tax** | US$10/t |

SRK has undertaken discussions with key RSM personnel, in conjunction with a review of the development plan outlined in spreadsheet form (3-RSM-Financial-Summary-ver-15) and a review of publically available information on comparable peer vein graphite projects in Sri Lanka. SRK are satisfied that the assumptions, whilst not always appropriately underpinned on reliable exploration data, are reasonable aspirational targets. They are conceptual in nature and it is uncertain whether further exploration work would define Resources/Reserves that would support them. The assumptions are outlined in more detail below.

### 7.1.1 Production schedule

The production schedule inputs (Table 7-2) for the Queens Graphite Mine were estimated based on comparable deposits in Sri Lanka and aspirational estimates of monthly production provided by RSM. SRK Au considers this to be a reasonable approach in consideration of the similarities in mining methods, products and scale of operation.

SRK Au has not made any attempt to validate or verify the reasonableness of these production tonnes or the proposed schedule and mining method.

**Table 7-2: Production schedule used for DCF model**

| Physicals | Units | Rate /Multiple | Totals (t) LOM | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022-2031 |
|---|---|---|---|---|---|---|---|---|---|---|
| Monthly production rate tonnes | month | 12 | | 2 | 50 | 125 | 250 | 250 | 250 | 250 |
| Graphite Mined tonnes annually | tonnes | | 41,124 | 24 | 600 | 1,500 | 3,000 | 3,000 | 3,000 | 3,000 |
| Development tonnes | tonnes | | 41,124 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Graphite tonnes | tonnes | | 41,124 | 24 | 600 | 1,500 | 3,000 | 3,000 | 3,000 | 3,000 |
| Yield 100% | tonnes | 100% | 41,124 | 24 | 600 | 1,500 | 3,000 | 3,000 | 3,000 | 3,000 |
| Marketable Graphite | tonnes | | 41,124 | 24 | 600 | 1,500 | 3,000 | 3,000 | 3,000 | 3,000 |

### 7.1.2 OPEX

## Operating costs

The Queens Graphite Mine is currently operating producing 2 tonnes per month. Estimated operating cost inputs for the project (Table 7-3) were provided based on the costings provided by RSM in the spreadsheet, RSM-Financial-Summary-ver-15. Currently these costs are calculated on a total Operating cost per year basis and has not been verified by SRK.

SRK notes that the royalty on Graphite in Sri Lanka is based on a 7% tax of the FOB $/t and therefore cannot be limited to a set $/t cost. SRK Au has calculated and applied these costs without inflation.

**Table 7-3: Estimated operating cost inputs**

| OPEX | Unit | Rate/ Multiple | Total ($) LOM |
|---|---|---|---|
| Mining | Total ($) LOM | | |
| Operating cost per tonne | USD/t | | |
| Total Annual Operating Cost | USD/t | | 17,653,592.04 |
| **Sub-Total Mining + inflation** | **USD/t** | | **22,446,917.25** |
| Royalty (Export) | % of FOB | 7.0% | 8,060,304.00 |
| **Grand Total OPEX + (inflation to 2015 prices)** | **USD /t** | **741.83** | **30,507,221.25** |

### 7.1.3 CAPEX

#### Sunk capital

The sunk operating costs inputs for the Queens Mine to date are estimated at $150,000 (Table 7-4). SRK Au has included these costs in the depreciation schedule assuming a start date of 2015 due to a lack of expenditure information.

**Table 7-4: CAPEX estimate**

| CAPEX | Unit | Rate/ Multiple | Total ($) LOM |
|---|---|---|---|
| Sunk Capital | USD | | 150,000.00 |
| Sunk Sustaining Capital | USD | | 0.00 |
| Mine Construction | USD | | 1,316,885.25 |
| Sustaining Capital | % of capex spent | 5.00% | 1,918,210.58 |
| Closure Cost | USD | | 0.00 |
| Extra Contingency | 0% | | 0.00 |
| Total Estimated Capital (to Valuation) | USD | | 3,235,095.83 |
| Total Estimated Capital (Excl. WC + Inc Sunk) to Dep | USD | | 3,385,095.83 |
| Depreciation | USD | | 3,385,095.83 |

#### Sustaining capital

SRK Au has not been provided with an estimate for sustaining capital for future investments. In line with international practice SRK has adopted 5% of the cumulative year on year total capital costs as sustaining capital. SRK has also included the costs of Exploration Drilling, Feasibility Studies and compilation of a JORC report estimated by RSM.

#### Depreciation

SRK Au has not been provided with or sighted a depreciation schedule. As per standard international practice SRK has implemented a 10 year depreciation schedule at 10% per year.

### 7.1.4 Commodity price

SRK Au has considered the product as reported by RSM and considers it to be consistent with other Sri Lankan Vein Graphite products. Consequently SRK has applied a conservative price forecast of US$2,800/t in line with current reported prices for vein graphite reported by Industrial Minerals with 0% discount.

## 7.2 Valuation model outputs

The DCF analysis is highly conceptual in nature and the following graphs and figures are for internal consideration only and are not for release in the public domain. SRK do not consider this analysis to be in accordance with either VALMIN or JORC Codes and SRK has not made an attempt to verify the reasonableness of the assumption provided by RSM.

### 7.2.1 Mine production

Figure 7-1 shows the proposed material movement schedule for the Queens Graphite Mine.

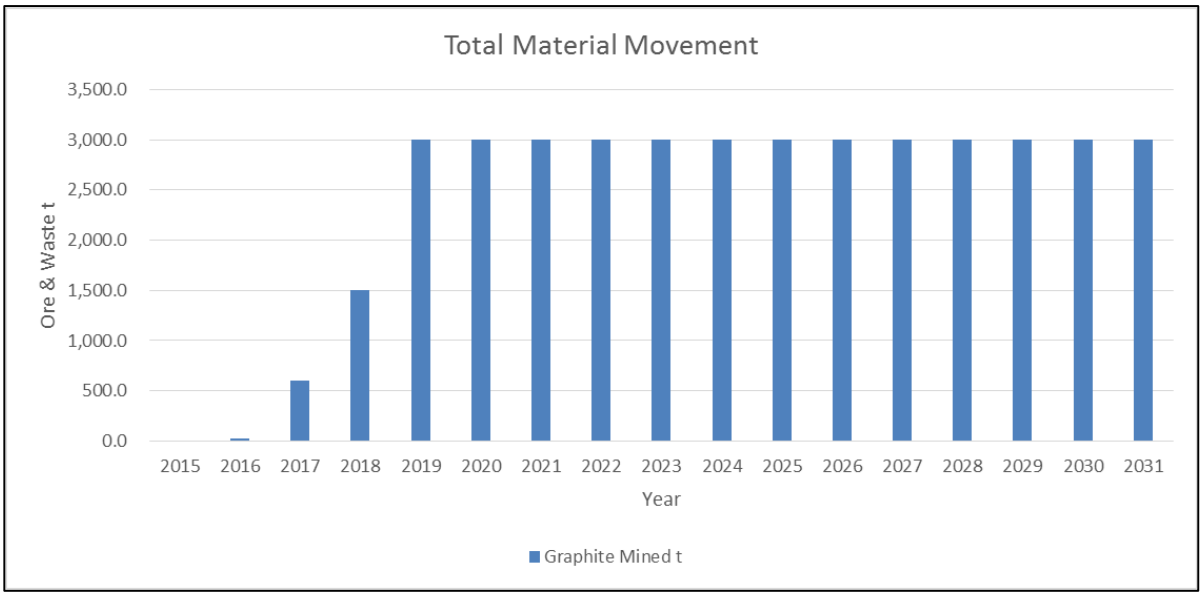


**Figure 7-1: Total material movement**

SRK notes that the Queens Graphite Mine is not proposing to conduct any significant processing of the Graphite, SRK understands that the ROM tonnes are considered as suitable as a marketable product or direct sale (Figure 7-2).

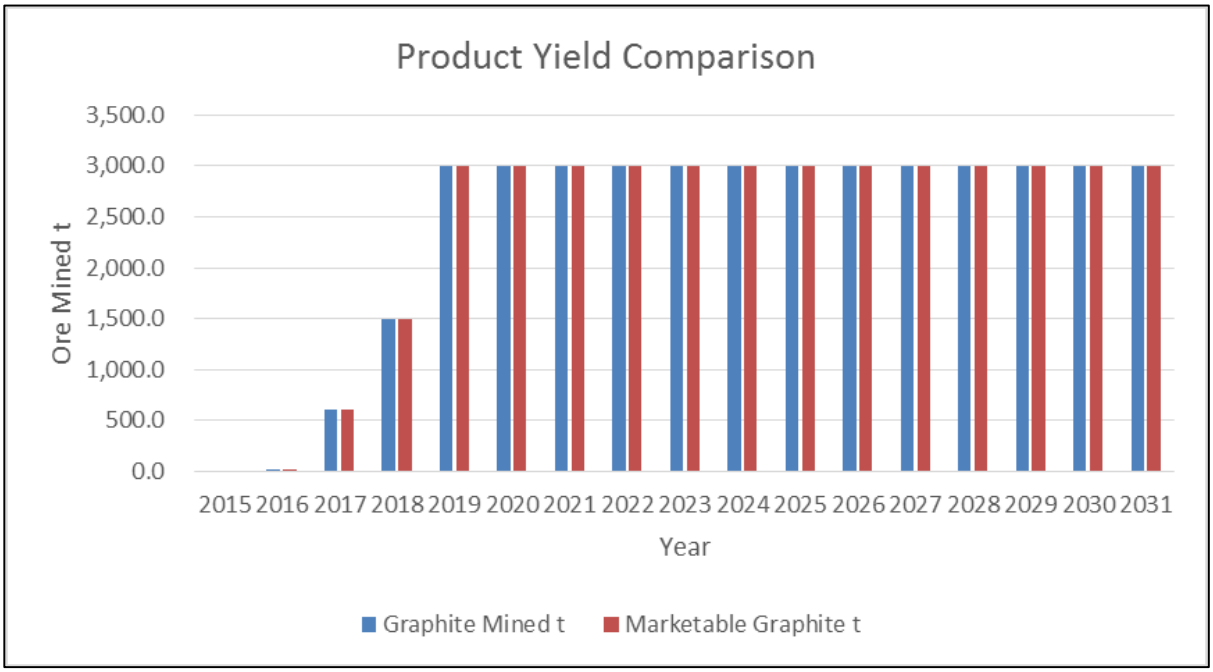


**Figure 7-2: Total yield comparison**

### 7.2.2 Operating costs

Figure 7-3 below shows the forecast annual operating costs for the Queens Graphite Mine.

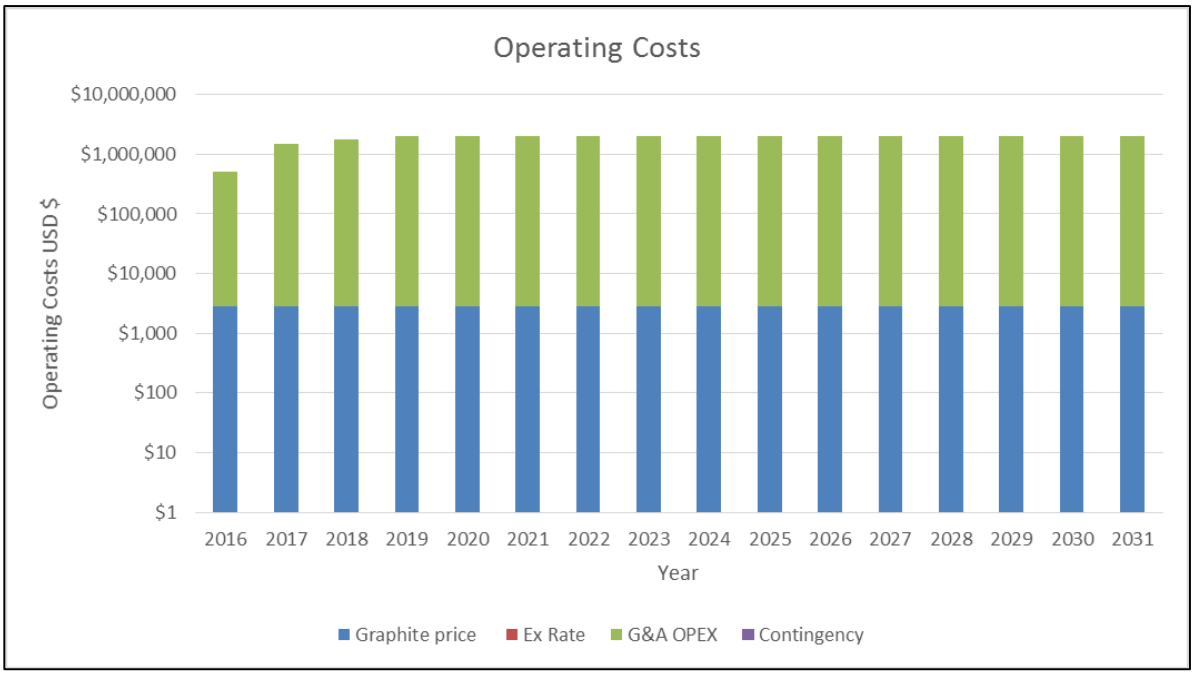


**Figure 7-3: Operating costs**

### 7.2.3 Capital costs

Figure 7-4 below shows the forecast capital costs of the Queens Graphite Mine.

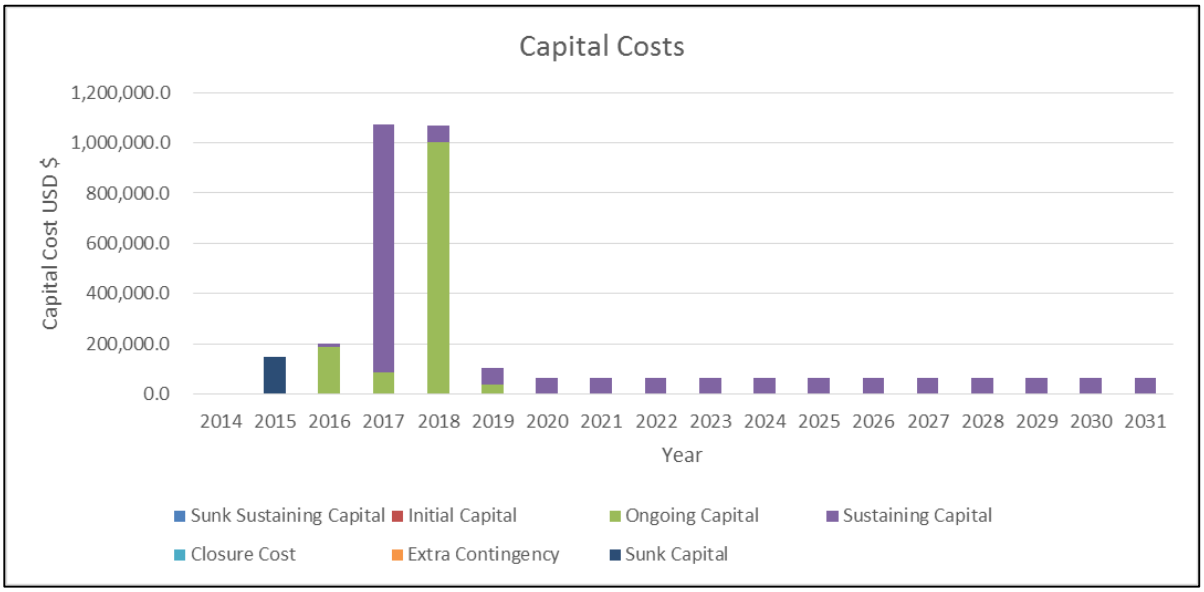


**Figure 7-4: Capital costs**

### 7.2.4 Revenue

Figure 7-5 below shows the graphite Price Forecasts used in the valuation of the Queens Graphite Mine. SRK has not sought consensus forecast pricing.

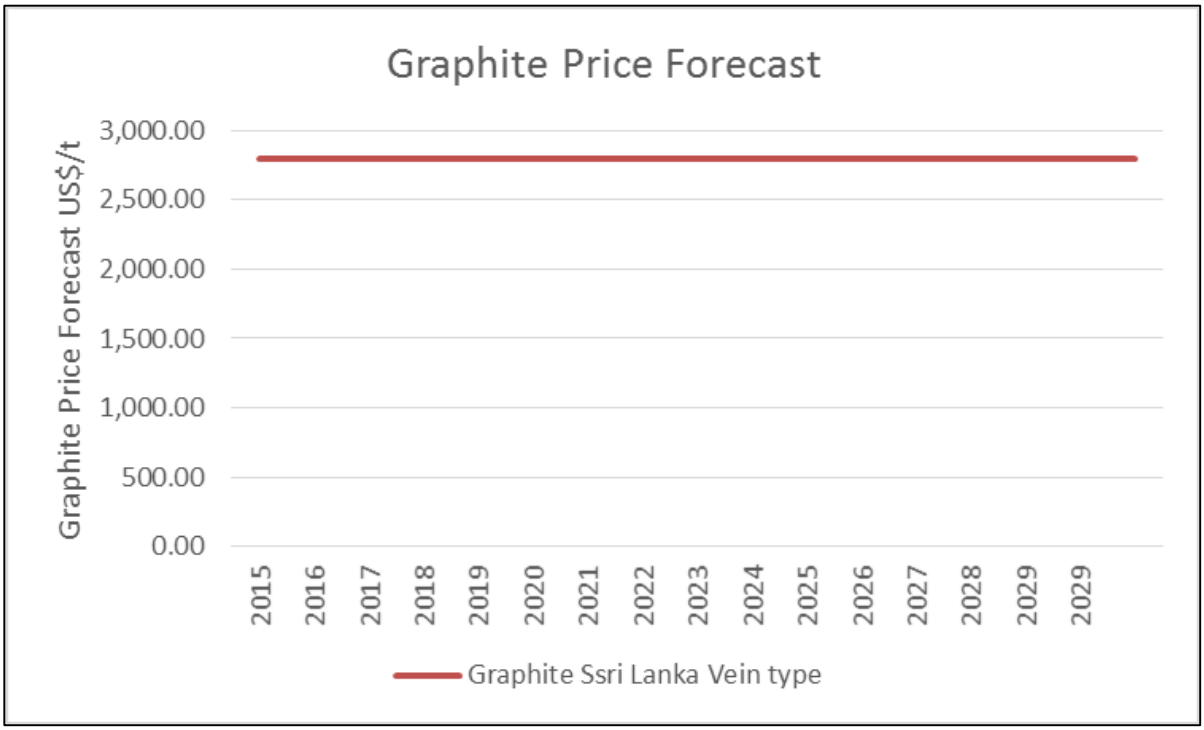


**Figure 7-5: Graphite price forecast**

Figure 7-6 shows the targeted annual revenue for the Queens Graphite Mine.

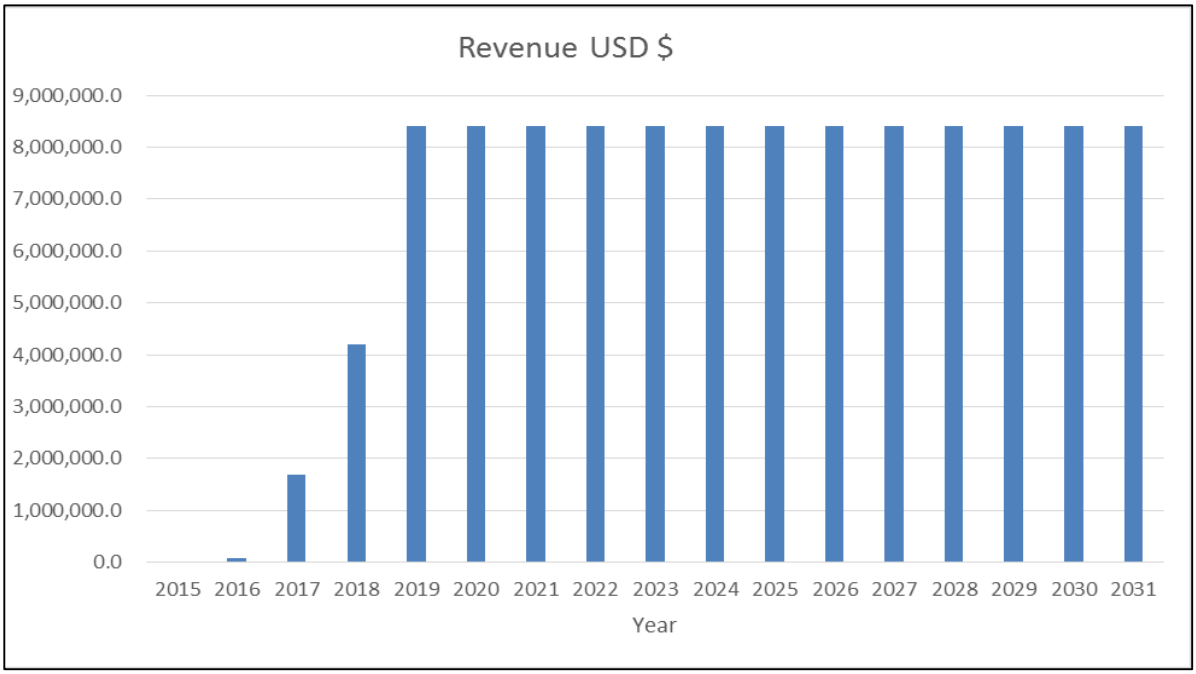


**Figure 7-6: Targeted forecast revenue**

### 7.2.5 Discount Rate

SRK has calculated the Discount Rate from first principles, as shown in Table 7-5 below.

**Table 7-5: Discount rate calculation**

| Discount Rate Calculation | Rate/Multiple |
|---|---|
| Sri Lanka Central Bank Rate | 7.50% |
| Market Risk Premium | 9.81% |
| Beta | 1.5 |
| Cost of Equity | 22.22% |
| Debt Margin | 3.00% |
| Cost of Debt | 10.50% |
| Project Tax Rate | 28.00% |
| Post-tax cost of debt | 7.56% |
| Target Debt Equity Ratio [D/(D+E)] | 20.00% |
| WACC- Nominal | 19.28400% |
| Sri Lanka Inflation Rate | 5.39% |
| WACC in Real terms | 13.18% |

### 7.2.6 Potential profits

Figure 7-7 shows the targeted forecast Net Profit after Tax for the Queens Graphite Mine.

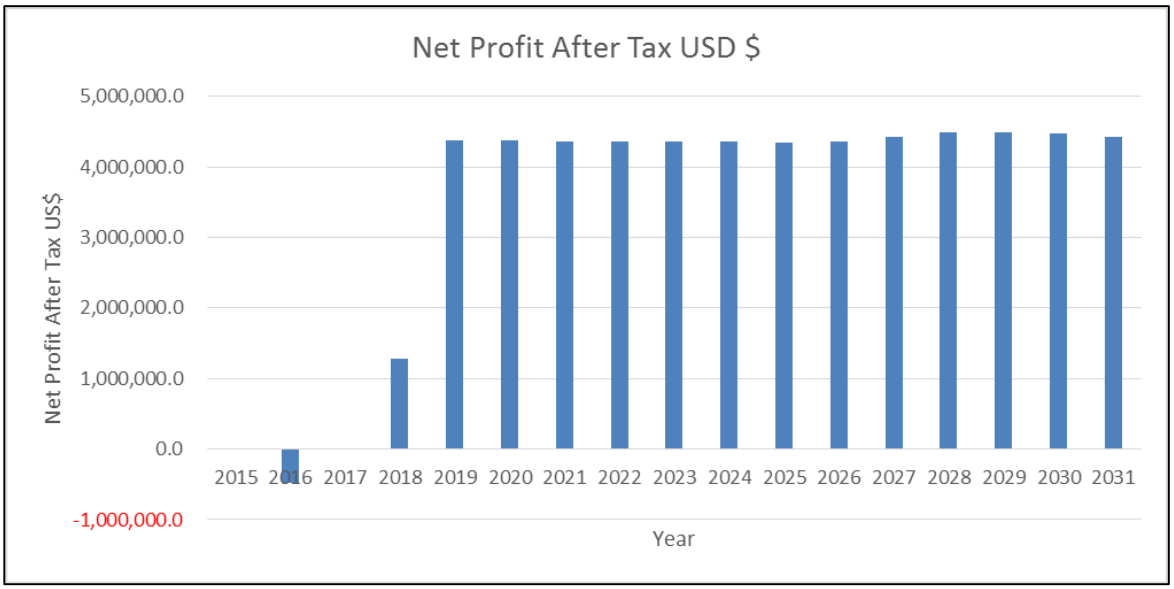


**Figure 7-7: Forecast Net Profit After Tax**

Figure 7-8 below shows the targeted forecast After Tax Cash Flow for the Queens Graphite Mine.

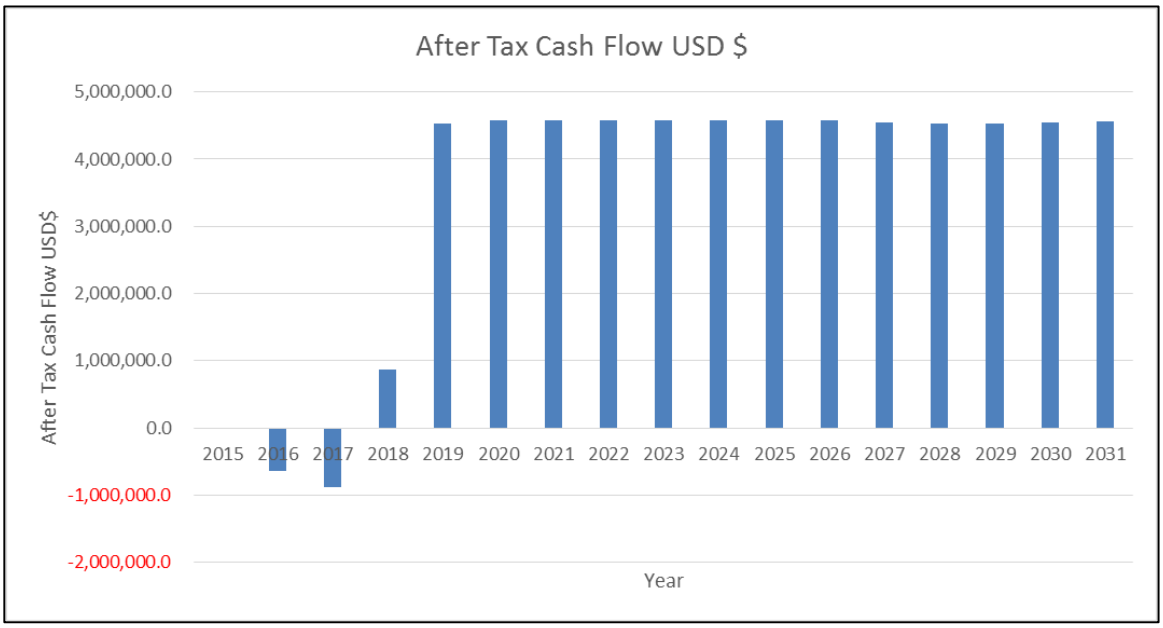


**Figure 7-8: Targeted forecast after tax cash flow**

### 7.2.7 Sensitivity Analysis

SRK has conducted a Sensitivity Analysis on the Queens Graphite Mine, the results of which are shown in Figure 7-9 and Table 7-6 below. SRK has found the project to be most sensitive to changes in Graphite Price and OPEX.

**Table 7-6: Sensitivity analysis**

| OPEX | 21.50 | CAPEX | 21.50 | Graphite Price | 21.50 |
|---|---|---|---|---|---|
| 25% | 16.38 | 25% | 18.14 | 25% | 25.06 |
| 20% | 16.79 | 20% | 18.20 | 20% | 23.74 |
| 15% | 17.21 | 15% | 18.26 | 15% | 22.41 |
| 10% | 17.62 | 10% | 18.32 | 10% | 21.09 |
| 5% | 18.04 | 5% | 18.39 | 5% | 19.77 |
| 0% | 18.45 | 0% | 18.45 | 0% | 18.45 |
| -5% | 18.86 | -5% | 18.52 | -5% | 17.13 |
| -10% | 19.28 | -10% | 18.59 | -10% | 15.81 |
| -15% | 19.69 | -15% | 18.66 | -15% | 14.49 |
| -20% | 20.11 | -20% | 18.73 | -20% | 13.16 |
| -25% | 20.52 | -25% | 18.80 | -25% | 11.84 |

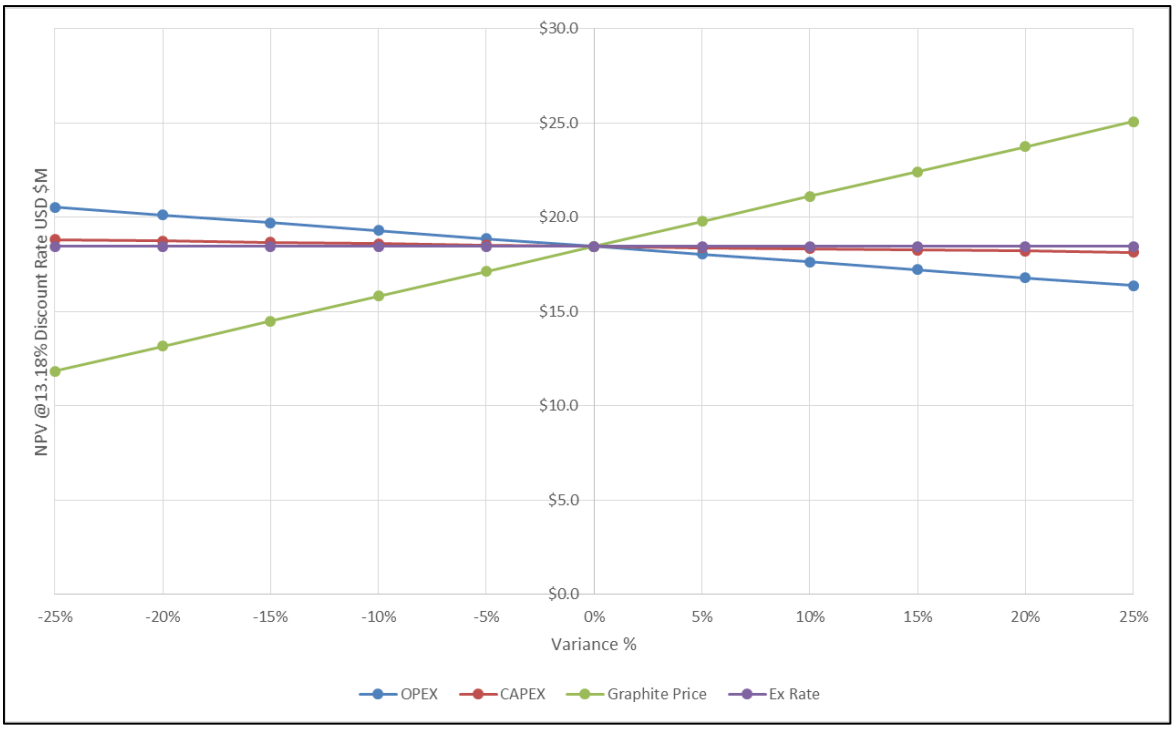


**Figure 7-9: Sensitivity analysis**

Figure 7-10 shows the sensitivity of the Target NPV (US$M) to Changes in Discount Rate for the Queens Graphite Mine. At a discount rate of 13.18% the internal rate of return is 115.1%.

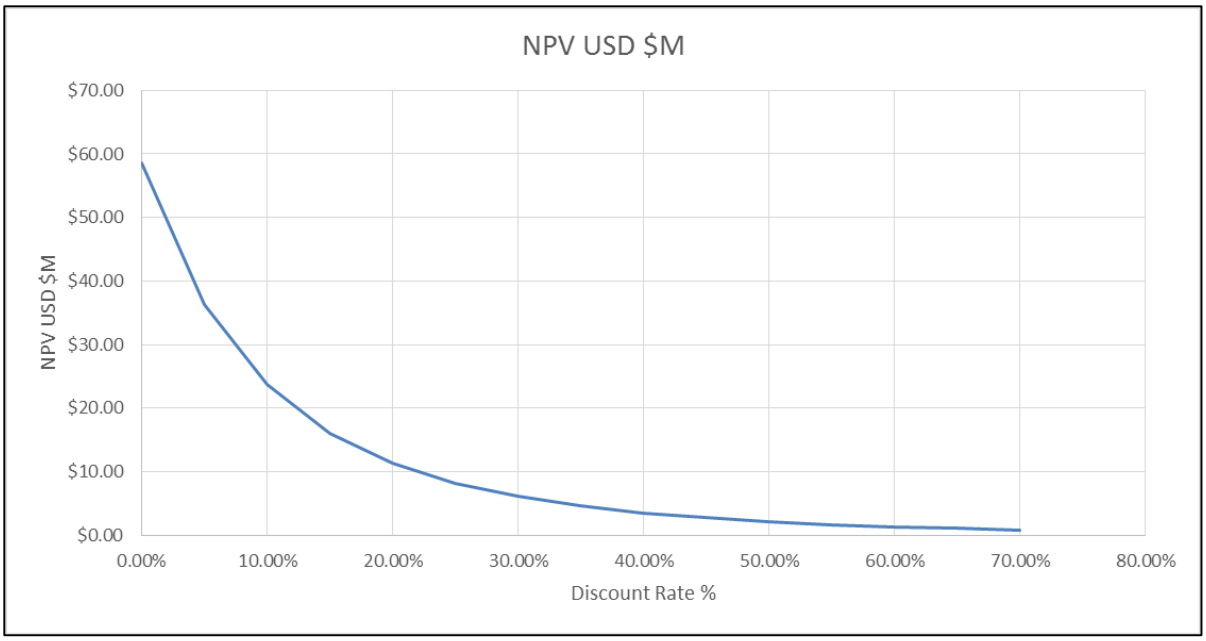


**Figure 7-10: Discount rate sensitivity**

## 7.3 Discounted cash flow summary

SRK has constructed a conceptual DCF model to estimate an aspirational Technical Value for the Queens Graphite Mine. The target NPV has not been further discounted to account for project risk.

SRK notes these figures are not compliant with the VALMIN Code 2005 and are based on a number of inputs and assumptions which are unlikely to accurately reflect this project if it should go into development. SRK considers these figures are suitable only for internal purposes only.

**Based on the model inputs the Queens Graphite Mine aspirational or target NPV ranges from US$15.89M to $21.55M, with a preferred NPV of $18.5M (at a Discount Rate of 13.18%).**

**Table 7-7: Target net present valuation summary**

| Target NPV | High | Preferred | Low |
|---|---|---|---|
| Discount Rate % | 11.8% | 13.18% | 15.18% |
| Net Present Value USD M | 21.55 | 18.45 | 15.89 |
| Internal Rate of Return % | | 115.1% | |

# 8 Geological Risk Method Valuation

## 8.1 Geological risk method

The GRM is SRK's preferred exploration permit valuation method for assets with reported or definable Exploration Targets and Resources without published Ore Reserves, as it relies on:

- An assessment of the exploration stage of the project, i.e. where the project is on the discovery/development pathway;
- The development or understanding of geological models for mineralisation, including an appraisal of the critical geological processes that must be present for a mineral deposit to form and a critical review of exploration data available for the Asset in support of this model. From this appraisal, a probability of the project proceeding to the next exploration stage can be established;
- An understanding of the cost of the exploration cost proceeding to the next exploration stage or stages; and
- On identifying a threshold value of the exploration target, which would have reasonable prospects of recovery, based on for example a consideration of market value of comparable projects (Lord et al., 2012).

From this starting threshold value (from successful development), the value can be discounted by the cost and probability of success, through the various stages of the discovery/development pathway, to the Assets current exploration stage. As a variation to this, the GRM can also be used by applying the threshold or market value of a Resource and discount this value back to the stage at which the exploration asset currently sits.

In order to determine the relative exploration stage of the Asset, the following guidelines are used, as described in Lord et al., (2012) and Lord et al., (2001):

- Stage A – Generative-Ground acquisition, project generation;
- Stage B – Reconnaissance-Prospect Definition (Mapping and Geochemistry, initial drill testing);
- Stage C – Systematic Drill Testing – (RC, DD);
- Stage D – Resource Delineation;
- Stage E – Feasibility; and
- Mine.

As noted above, the foundation of the GRM is the assessment of the probability that the project will advance to the next stage of development. The geological risk of each project is quantified by assessing data that supports the presence of critical geological processes in order for the mineral deposit to form, i.e. success factors

For each of relative stage of development, a relative probability value between 0.0–1.0 is assigned. Key features that can or may indicate the presence of favourable conditions are given probability risk weightings between 0.5 and 1.0 whereas a relative probability <0.5 indicates the absence of favourable conditions. The absence of data or knowledge is represented by a value of 0.5 (Table 8-1; see also Lord et al., 2001; Lord et al., 2012).

**Table 8-1: Definition of exploration stages (Lord et al., 2001)**

| Exploration stage | Goals |
|---|---|
| Stage A – ground acquisition, project/ target generation. | To build an expert team for the commodity and basin. |
| | To have knowledge, knowledge management and data/information availability for the belt. |
| | To acquire ground in well-endowed belts, considering availability, political/environmental risks. |
| **Probabilities/risks associated with progressing from Stage A to Stage B, i.e. P(A-B)** | |
| Probability that the ground acquisition will result in the acquisition of high quality, well-endowed and available ground that is worthy of further work. | |
| Stage B – prospect definition (mapping and geochemistry). | To define drillable targets. |
| | To build area knowledge, quality data management systems, suitable geological models. |
| | To use efficient exploration methods, geological skills of exploration team. |
| | To define prospect risks and target ranking tools, exploration audit process. |
| | To test presence of mineralising system. |
| **Probabilities/risks associated with progressing from Stage B to Stage C, i.e. P(B-C)** | |
| Probability that this process will define drillable targets (features that meet criteria of the geological model and knowledge of the area). | |
| Stage C – drill testing (systematic RC, DD). | To test geological models, accuracy of mapping and sampling. |
| | To test geological information gathered during prospect definition. |
| | To test presence of mineralising system. |
| **Probabilities/risks associated with progressing from Stage C to Stage D, i.e. P(C-D)** | |
| Probability that the drill testing phase will result in one or more ‘economic drill intersections ‘that would be further drill tested. | |
| The decision to continue would be supported by other geological information that would give some initial confidence in the continuity of mineralisation. | |
| Stage D – resource delineation. | To have confidence in size and grade potential, continuity of grade and geological setting. |
| | To understand controls on grade distribution (low cost curve position). |
| **Probabilities/ risks associated with progressing from Stage D to Stage E, i.e. P(D-E)** | |
| Probability that a ‘drill-out’ will result in the definition of a preliminary resource that is sufficiently robust at present prices to warrant proceeding to feasibility. | |
| Stage E – feasibility. | To determine metallurgy, metal prices, mineability, cost, prices, mineral balance sheet. |
| | To result in decision to mine, asset with defined **net present value**. |

The value can be illustrated in the following equation:

$$\boldsymbol{EV} = (\boldsymbol{P} \times \boldsymbol{TV}) - \boldsymbol{C}$$

Where EV = Expected Value; TV = Target Value; P = Probability of advancing exploration project; and C = Cost of advancing exploration project.

This valuation method generates an Expected Value for each project (or prospect) at each of the main exploration stages or decision points, by working back from a project’s target value. This process is illustrated schematically in Figure 8-1.

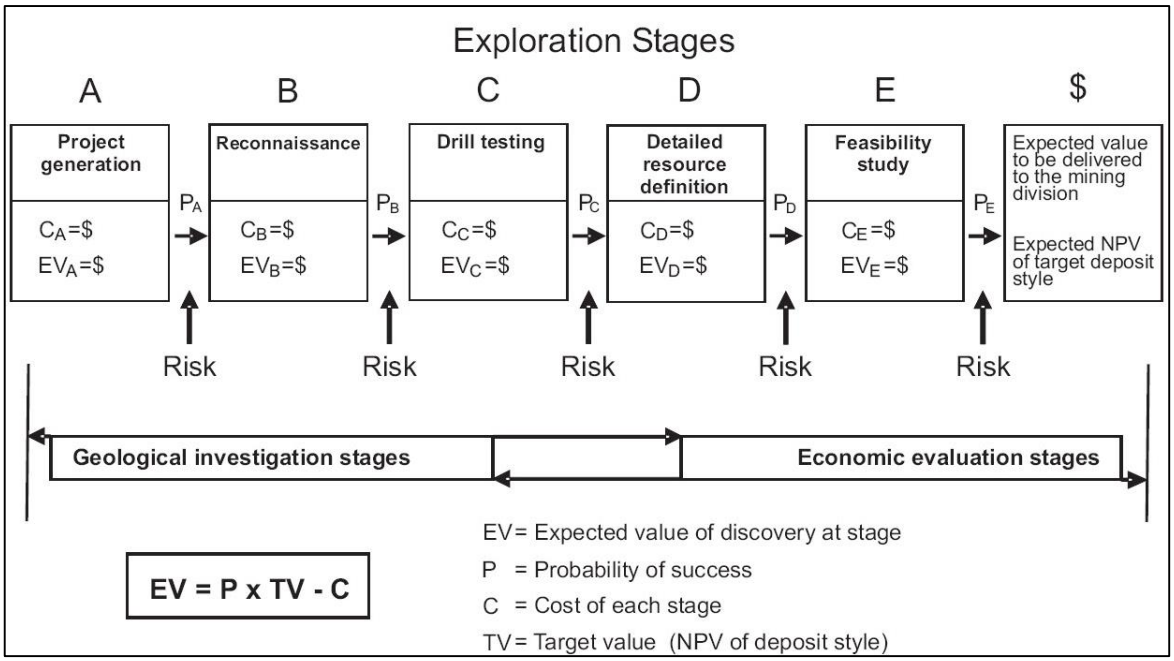


**Figure 8-1: Schematic diagram of the geological risk method**

Source: Morley, 2007.

A project's target value can be based on an expected NPV from a reasonably constrained DCF model, or from a reasonable approximation of the value of a defined resource, in which case the target value will be the value at the beginning of Stage E, as opposed to the value at the end of Stage E.

## 8.2 Geological risk method valuation

The basis of the Geological Risk Method Valuation approach is the need for commercial definition of exploration through an expected net present value (NPV) that is to be delivered to the mining division – a threshold or range of NPV that meets the company's minimum financial criteria (Lord, Etheridge and Uttley, 2001). Once established, the Geological Risk Method works back from the NPV value.

A nominal NPV value for the target size, i.e. the value of the Company's Resource target is determined from exploration plans, internal exploration reports, along with known/documented development trends for comparable, albeit more advanced, projects with the region. An NPV calculation is applied to the Resource target, including parameters such as expected mine life, based on a reasonable production rate, product quality and marketability, saleable price and discounted cash flow parameters.

The risk weighted probability used in the GRM valuation process is intimately linked to the NPV, in other words, if the end NPV changes (more or less conservative), then the probabilities of reaching that NPV should all also change, thereby in theory guarding the NPV from manipulation. The magnitude of the NPV must be justifiable, therefore the NPV is compared with recent and historical data, converted to the current dollar value and cross-checked against recent comparable transaction data of similar commodities and regionally relevant as a method in order to determine its reasonableness.

### 8.2.1 GRM valuation of Queens Mine

A threshold NPV or Target Value that meets the company's minimum financial criteria were assessed using a crude DCF approach using a number of fundamental attributes, in line with the development model for the asset.

The Target Value was based on the NPV of $18.5M assessed using a conceptual DCF valuation approach using a number of fundamental attributes, in line with the development model for the asset. The key inputs used to derive the NPV are documented in Section 8.

Following the guidelines outlined by the GRM (Lord 2012), the relative exploration stage of the project has been assessed and presumed to be at the Resource Drill testing Stage (Stage C), where the Resources are yet to be defined and are considered low to increasing in confidence. The Target for this project assumes advancing the Project to an operating Mine (i.e. the end of Stage E; Feasibility).

To estimate the Stage E Target Value for the project with a preferred Target Size containing a published Mineral Resource, the end of Stage E value has been discounted back (by multiplying the Stage E Value by the calculated prospectivity factor) and then subtracting the estimated exploration cost to advance the project from Stage D to Stage E. The formula for the calculation is summarised below:

$$\boldsymbol{EV} = (\boldsymbol{P} \times \boldsymbol{TV}) - \boldsymbol{C}$$

Where EV = Expected Value; TV = Target Value; P = Probability of advancing exploration project; and C = Cost of advancing exploration project.

- The discount back step is then repeated for the step to advance the project from Stage C to Stage D;

The costs for proceeding from Stage C to Stage E were based on anticipated exploration costs provided from the development plans outlined by RSM. The costs for proceeding beyond Stage E are based on an estimate of appropriate feasibility study costs in line with the development plan provided by RSM.

Probabilities for proceeding from Stages C to D and D to E were assessed based on current exploration knowledge of the project determined by reviewing the geological, geophysical and/or geochemical data are summarised in Table 8-2 below.

**Table 8-2: Probability assumptions for the Queens Mine Project**

| Probability | Assumptions/comments |
|---|---|
| **P (Stage C to D)** | The current position of the exploration program has adequately identified one or more 'economic intersections' in the historical adits. SRK has applied a moderate Probability (**0.5**) of successful transition from a project demonstrating the presence of mineralisation through to the stage of having confidence in the continuity, size and grade (i.e. Resource Delineation) of the graphite that demonstrates reasonable prospects for economic extraction as defined by the JORC Code (2012).<br>Key considerations in applying a probability of 0.5 were the presence of the VTEM anomaly supporting the potential to reflect graphite mineralisation in combination with the mapped graphite veins in the historical workings and the demonstrated quality (grade) potential of the graphite mineralisation.<br>Other considerations in discounting the Probability Value include the lack of demonstrated continuity of the veins at depth or along strike, the discontinuous and narrow uneconomic width (<15 cm) of most veins which may fail reasonable prospects tests. Variability in vein quality. |
| **P (Stage D to E)** | SRK has applied a high Probability (**0.8**) of successful transition from a project demonstrating resources that satisfy reasonable prospects tests through an assessment of further modifying factors and positive feasibility (in line with the proposed development plan outlined by RSM).<br>Key considerations in applying a high probability include the current development of the asset under an existing mining licence, and the current relevant mine site infrastructure in place to be producing small quantities of saleable graphite product to a number of current buyers. A detailed assessment of modifying factors undertaken which is likely to guide the 'reasonable |

| Probability | Assumptions/comments |
|---|---|
| | prospects test' at the Resource Estimation stage. The modest nature of the aspiration development plan, including low LOM tonnes of graphite, likely low CAPEX and OPEX requirements.<br>Other considerations in discounting the Probability Value include the likelihood that the Resource delineated will not demonstrate positive results across all modifying factors in relation to the position, orientation and continuity of the Resource or will be based on less favourable economic conditions. |
| **P (Stage E to Mine)** | SRK has applied a high Probability (**0.8**) of successful transition from a project demonstrating feasibility through to a decision to mine (in line with the proposed development plan outlined by RSM).<br>Key considerations in applying a high probability include the current development of the asset under an existing mining licence, and the current relevant mine site infrastructure in place to be producing small quantities of saleable graphite product to a number of current buyers.<br>Other considerations in discounting the Probability Value include the current lack of funding relative to the development plan and CAPEX requirements, the risk of achieving the required offtake for the proposed product tonnes; and the inherent risk that the decision to mine will be based on less favourable economic conditions than the TV is derived from. |

**Table 8-3: Geological risk valuation of prospects on the Queens Mine property (100% basis)**

| Probability of advancing to next stage Default value | | Stage C – Systematic testing 0.58 | | | Stage D – Resource Delineation 0.87 | | | Stage E – Feasibility 0.9 | | | Mine |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Prospect** | **Current Stage** | **Value at beginning of Stage C** | **Probability of proceeding to Stage D** | **Cost to proceed to Stage D** | **Value at beginning of Stage D** | **Probability of proceeding to Stage E** | **Cost to proceed to Stage E** | **Value at beginning of Stage E** | **Probability of proceeding to Mine** | **Cost to proceed to Mine** | **NPV (US$M)** |
| Queens Mine | C | **$4,200,000** | 0.5 | $800,000 | $10,000,000 | 0.8 | $1,600,000 | $14,500,000 | 0.8 | $300,000 | $18,500,000 |

Table 8-4 presents the valuation ranges for the Project using the GRM. The Preferred Values are assigned an uncertainty margin of 30% to define the 'Low' and 'High' values respectively, consistent with the level of uncertainty implied for the project. The probabilities reflect the high risk of a lack of sufficient Reserves to support a feasible project and the high sensitivity to graphite price.

**Table 8-4: Geological risk valuation for the Queens Mine**

| Low (US$M) | Preferred (US$M) | High (US$M) |
|---|---|---|
| $2.9M | $4.2M | $5.5M |

**Applying the GRM, the technical value for 100% of the Queens Mine is within a range from a low of US$2.9M to a high of US$5.5M and a preferred (or mid-point) value of US$4.2M.**

# 9 Comparative Transaction Method Valuation

## 9.1 Commodity price trends

The variation of the Graphite price in US dollars, for the period April 2003 to November 2015 is shown in Figure 9-1.

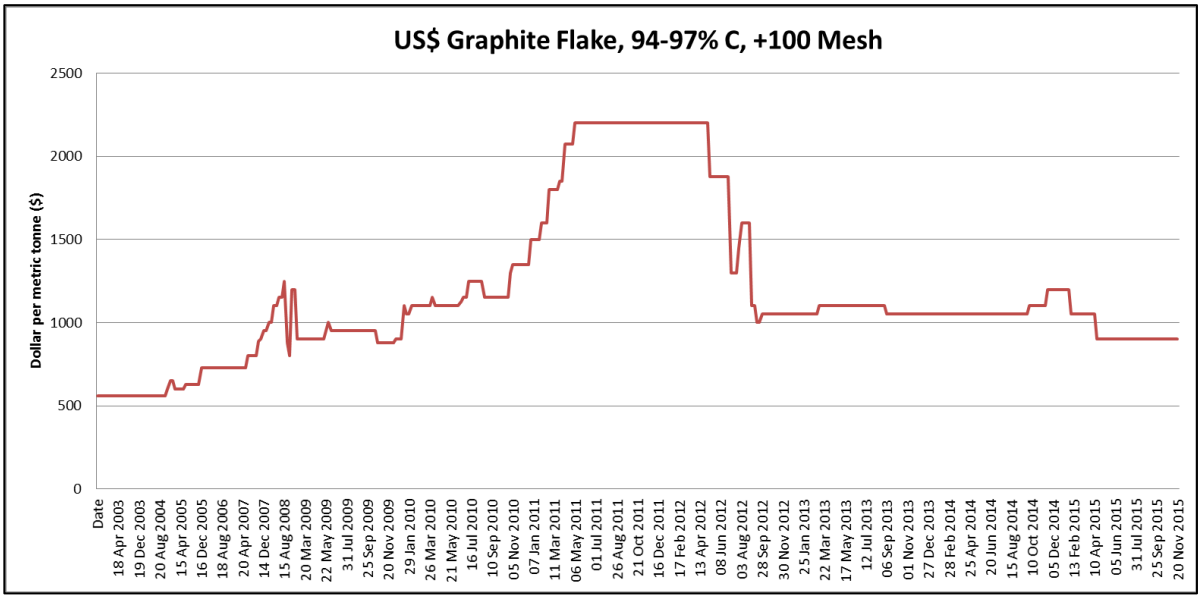


**Figure 9-1: Graphite commodity price ~10 year price trend**

SRK has reviewed historical price trends for graphite products over the past 10 years. SRK notes that the price for Sri Lankan vein graphite is only available from April 2013–December 2015 and has not changed at all during that period. SRK considers that it may not be representative of the general market perception of graphite from 2010–2015 within which time period SRK has found comparative transactions. Therefore SRK has reviewed the pricing for European Flake Graphite at 94–97% C at +100 Mesh (Figure 9-1 for which prices are available over a longer period and potentially representative of market sentiment.

SRK notes the only significant anomaly or peak in graphite price occurred between early 2010 and late 2012 compared to the generally consistent pricing between 2003 and 2015. SRK notes that a number of deals occurred during this peak period which could be considered to have transacted at a premium.

**Importantly, in the absence of pricing trends between 2010 and 2015 for vein graphite, the flake graphite price variations were used as a proxy to calculate the ratio with which to normalise the all transactions to the December 2015 price. The flake graphite price is not used or applied directly.**

SRK has therefore chosen to normalise all transactions using a factor derived from the ratio between the current graphite price November 2015 (US$ 900) and the price at the time of the transaction.

# 10 Comparative Transactions Valuation

SRK has researched and examined a range of comparative transactions sourced from public resources occurring within the last 5–6 years.

### 10.1.1 Comparative transaction valuation approach

The valuation of the Queens Graphite Mine asset and comparatives was assessed according to Pre-development and/or Advanced Exploration Stage Categories (Page 21 of the VALMIN Code 2005). Those being:

- ***Pre-Development Projects*** *– Properties where Mineral or Petroleum Resources have been identified and their extent estimated (possibly incompletely) but where a decision to proceed with development has not been made. Properties at the early assessment stage, properties for which a decision has been made not to proceed with development, properties on care and maintenance and properties held on retention titles are included in this category if Mineral or Petroleum Resources have been identified, even if no further Valuation, Technical Assessment, delineation or advanced exploration is being undertaken.*

  ***Advanced Exploration Project*** *– Properties where considerable exploration has been undertaken and specific targets have been identified that warrant further detailed evaluation, usually by drill testing, trenching or some other form of detailed geological sampling. A Mineral Resource estimate may or may not have been made, but sufficient work will have been undertaken on at least one prospect to provide both a good understanding of the type of mineralisation present and encouragement that further work will elevate one or more of the prospects to the Mineral Resource category.*

SRK initially identified a total of 13 graphite transactions dated between January 2010 and December 2015. Of those transactions SRK identified only 9 transactions that were located in Sri Lanka which are anticipated to be most comparable as Sri Lankan Graphite is generally unique occurring as vein graphite (Table 10-1).

**Table 10-1: Graphite transactions**

| Date of transaction | Project or Company Name | Country | Synopsis | Percentage Acquired | Price Paid (US$M) | Raw Price paid @100% basis (US$M) | Royalty Component (%) | Product Type | Project Area (km²) | Graphite Price at time of transaction (US$/t) | Normalisation Factor | Normalised 100% acquisition basis (US$M) | Normalised area based (US$/km²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mar-14 | Sakura Graphite Mine | Sri Lanka | In March 2014, the partial 40% acquisition of the Sakura Graphite Mine by Elcora Resources Corporation from Sakura graphite Ltd. The deal consisted of a share issue for total a consideration of US $1.28 M. | 40 | 1.28 | 3.2 | | Vein | 4 | 1050 | 1.17 | 2.7 | 1,712,018 |
| Jun-14 | Tamboli (Mekongga) Graphite Project | Indonesia | In June 2014, WMN acquired options to purchase up to 75% of PT Mekongga Sejahtera and 99% of PT Eagle Rich Nusantara, giving WMN access to 98.04 Ha of Mekongga's graphite Tenement in Tamboli, Kolaka, Indonesia. The total consideration of US$1.97 Million was paid for through exchange of 50% of WMC shares valued at US$ 0.07 and is subject to additional performance based share issues. | 75 | 1.97 | 2.6 | | Unknown | 0.984 | 900 | 1.00 | 2.6 | 3,553,749 |
| Sep-11 | Deep Bay East and Simon Lake Projects | Canada | In September 2011, the acquisition of 100% of the Deep Bay East and Simon Lake Graphite Projects by Strike Gold Corporation from Zimtu Capital Corporation. The total consideration of US$ 0.9 M to be paid for cash and shares, Zimtu will retain a 3% net smelter royalty on both projects. | 100 | 0.90 | 0.9 | 3 | Large Flake | 89.72 | 2200 | 2.44 | 0.4 | 4,104 |
| Dec-14 | Exploration Ground | Sri Lanka | In December 2014, the 100% acquisition of 5,600 hectares of exploration ground by MRL Corporation from an undisclosed vendor. The total consideration of US $0.48 M for issue of 6.6 million shares at ~US$0.072 per share. | 100 | 0.48 | 0.48 | | Vein | 56 | 1200 | 1.33 | 0.4 | 6,364 |
| Oct-14 | Aluketiya Graphite Mine | Sri Lanka | In October 2014, the 100% acquisition of the Aluketiya Graphite Mine by the MRL Corporation Ltd from an undisclosed vendor. MRL will pay a monthly upkeep fee of $3,500 and will pay a royalty of 10% of sales to the vendor. | 100 | 0.04 | 0.04 | 10 | Vein | | 1050 | 1.17 | 0.0 | |
| Apr-13 | Exploration Ground | Sri Lanka | In April 2013, the 100% acquisition of 45km² of exploration ground by MRL Corporation Ltd from the Supreme Group. The initial consideration of US $ 1.2M is effectively consisting of cash and shares will be doubled on conversion of any of this area to a mining licence. | 100 | 1.20 | 1.20 | | Vein | 45 | 1100 | 1.22 | 1.0 | 21,818 |
| Dec-14 | Bogala Graphite Mine | Sri Lanka | On 22 December 2014, AMG signed a definitive agreement with Alterna Capital Partners, for the sale of a 10.33% interest at Bogala. As consideration for this and a 40% interest in AMG's Kropfmuehl operation, Alterna would pay $38 million. Upon completion of the transaction, AMG would retain an 80% interest. | 10.33 | 0.03 | 0.30 | | Vein | | 1200 | 1.33 | 0.2 | |
| Dec-14 | Miller East and Page Graphite Projects | Sri Lanka | In December 2014, the acquisition of the Miller and Page Graphite Projects consisting of a total of 7.96 km² exploration ground by Saint Jean Carbon from an unnamed vendor. The total consideration for 3 million shares at US$ 0.043 and a 1% royalty is approximately US$ 0.13 Million with additional contingent payments based on future mining studies. | 100 | 0.13 | 0.13 | 1 | Lump? | 7.96 | 1100 | 1.22 | 0.1 | 13,494 |
| Oct-13 | Historical Workings? | Sri Lanka | In October 2013, the acquisition by Torch River Resources from Han Tal Holding (Private) Limited for 100% of the US$0.77. The total consideration of US$ 0.7 Million includes issue of 5.0 million common shares at C$ 0.05 and a cash component of C$ 0.3 Million. An additional 7.5 million shares and C$ 0.75 Million to be paid upon achieving 3 months production at a rate of 300 t/month. | 100 | 0.77 | 0.77 | | Vein | 113 | 1050 | 1.17 | 0.7 | 5,866 |
| Jun-14 | Queens Graphite Mine | Sri Lanka | Note this deal did not proceed. In June 2014, the acquisition of 15% the Queens Graphite Mine by Bora Bora Resources from RS Mines (PVT) Limited. The total consideration for ~US$ 3.3 included US$ 1.08Million in cash payments and 6 million shares. 2 million shares were contingent upon, definition of JORC compliant Resources and signing of off take agreements. | 15 | 3.30 | 22.00 | | 99% TGC ROM - crystalline vein | 0.15 | 1050 | 1.17 | 18.9 | 18,900,000 |
| Oct-14 | Lanka Graphite Pvt Ltd | Sri Lanka | In October 2014, the acquisition of Euro Petroleum by Viculus Limited. The total consideration of US$ 7.1 Million for 100% of Euro who own a 70% equity interest in Lanka Graphite which holds a 100% interest in 242km² of Graphite exploration tenure. | 70 | 7.10 | 10.14 | | Vein | 242 | 1050 | 1.17 | 8.7 | 51,310 |
| Nov-10 | Albany Graphite Project | Canada | In November 2010, the farm in agreement for the Albany Project by Zenyatta Ventures Ltd and Cliffs Natural Resources. The total consideration of US$ 9.1 Million in exploration expenditure by Zenyatta for an 80% equity interest. | 80 | 9.20 | 11.50 | | 97 .2% TGC Vein Type | 1215 | 1150 | 1.28 | 9.0 | 9,259 |
| Nov-12 | Albany Graphite Project | Canada | In November 2012, the acquisition of the remaining 20% of the Albany Project by Zenyatta Ventures Ltd from Cliffs Natural Resources. The total consideration of US$ 0.7 Million includes both cash and shares. | 20 | 0.70 | 3.50 | 0.75 | 97 .2% TGC Vein Type? | 1215 | 1050 | 1.17 | 3.0 | 12,346 |

Notes:
The transaction highlighted in blue was predominantly based on royalty (10%) with no material payment for the asset at the time of the transaction.
The transaction highlighted in orange did not proceed or failed.

Six of the transactions involved a 100% acquisition by cash ±shares. The remaining transactions involved an equity interest stake oh which the smallest was 10.33% and the largest 80%.

SRK is aware that 3 of the transactions contain royalty components and notes that the Aluketiya Graphite Mine acquisition consideration is based almost entirely on the 10% royalty.

SRK has reviewed each of these transactions and tried to identify the total exploration area in km² acquired for the purposes of deriving a factor in US$/km².

The transaction prices have been factored/adjusted to a normalised US$ value based on the ratio between the Graphite Price (Flake Graphite, 94-97% C, +100 Mesh) at the time of transaction and the December 2015 price.

The analysis of the comparable project transactions is summarised in Table 10-2.

**Table 10-2: Comparable transaction analysis**

| | Raw Price paid @100% basis | Normalised 100% acquisition basis (US$M) | Raw Price per km ($/km²) " | Normalised area based (US$/km) |
|---|---|---|---|---|
| **Min** | $0.04 | $0.04 | $2,880.66 | $2,469.14 |
| **Median** | $1.20 | $0.98 | $16,492.41 | $13,493.79 |
| **Weighted Average** | $8.25 | $6.55 | $15,909.24 | $13,100.31 |
| **Average** | $4.37 | $3.67 | $2,325,729.30 | $2,027,388.45 |
| **Max** | $22.00 | $18.85 | $21,996,000.00 | $18,853,714.29 |

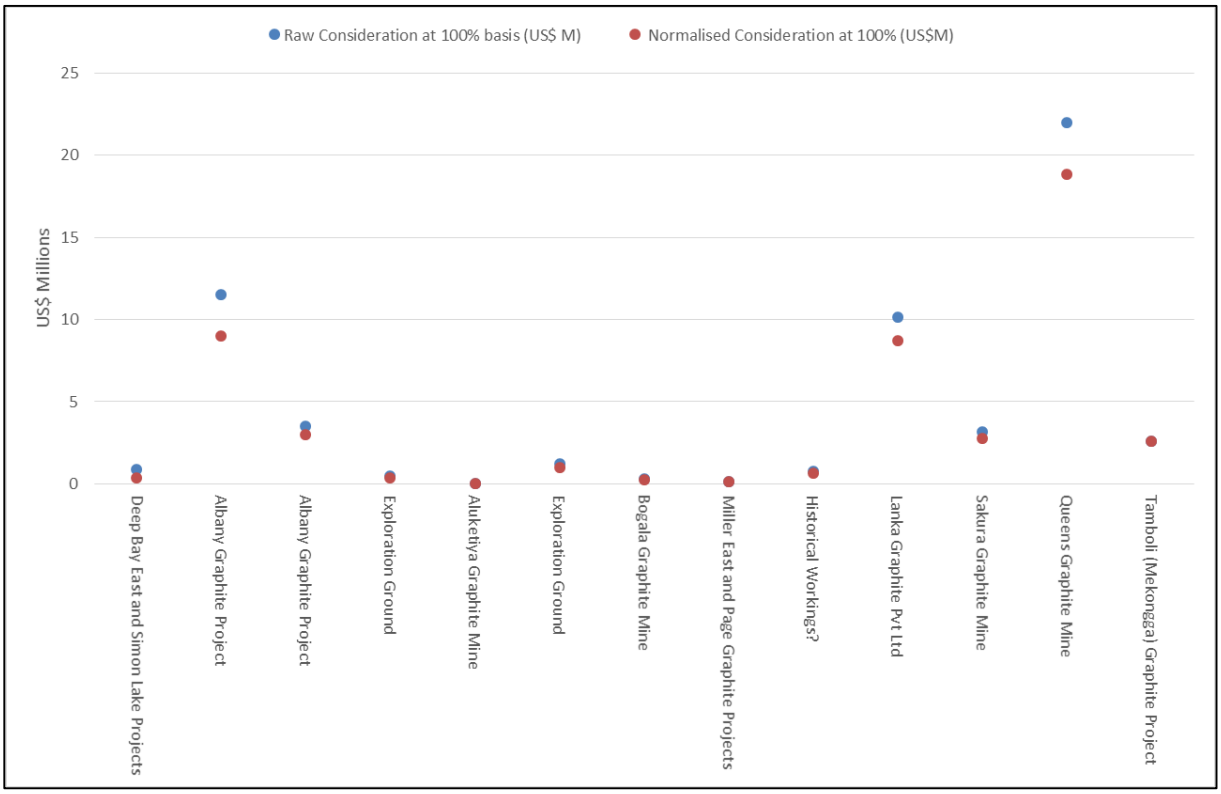


**Figure 10-1: Consideration at 100% acquisition basis (raw and normalised)**

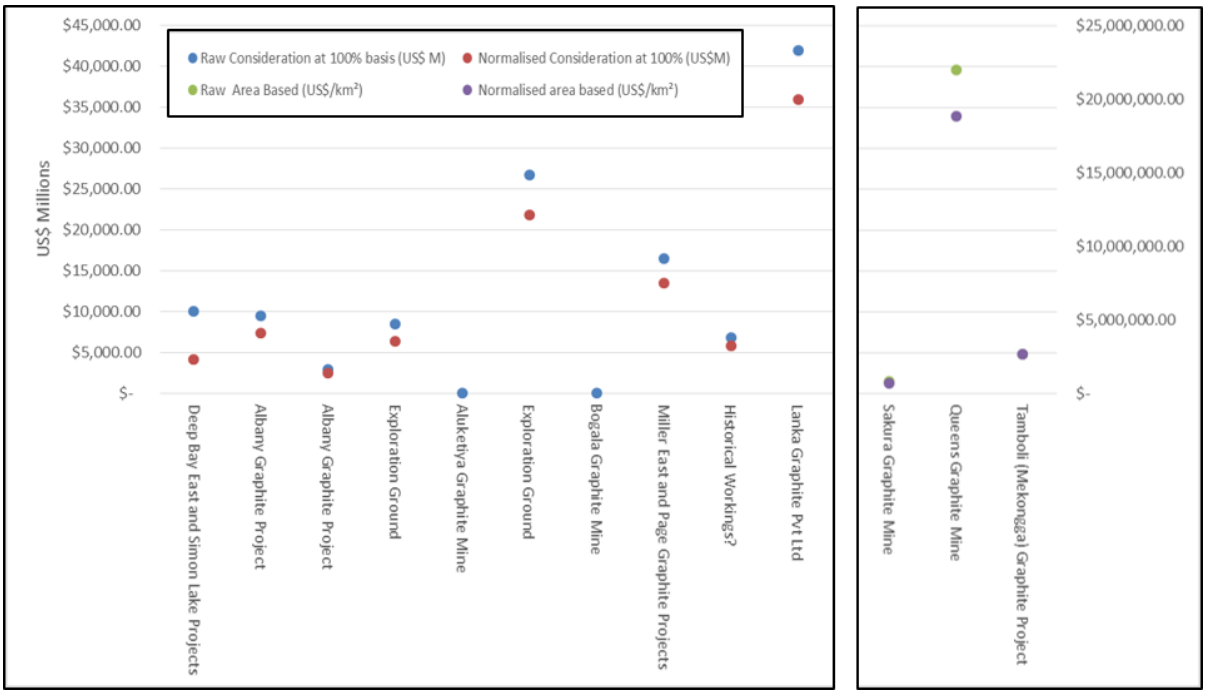


**Figure 10-2: Area based consideration (raw and normalised)**

Note: Queens Mine, Sakura Mine and Tamboli $/km are displayed on the second axis due to their small areas and therefore extremely large $/km².

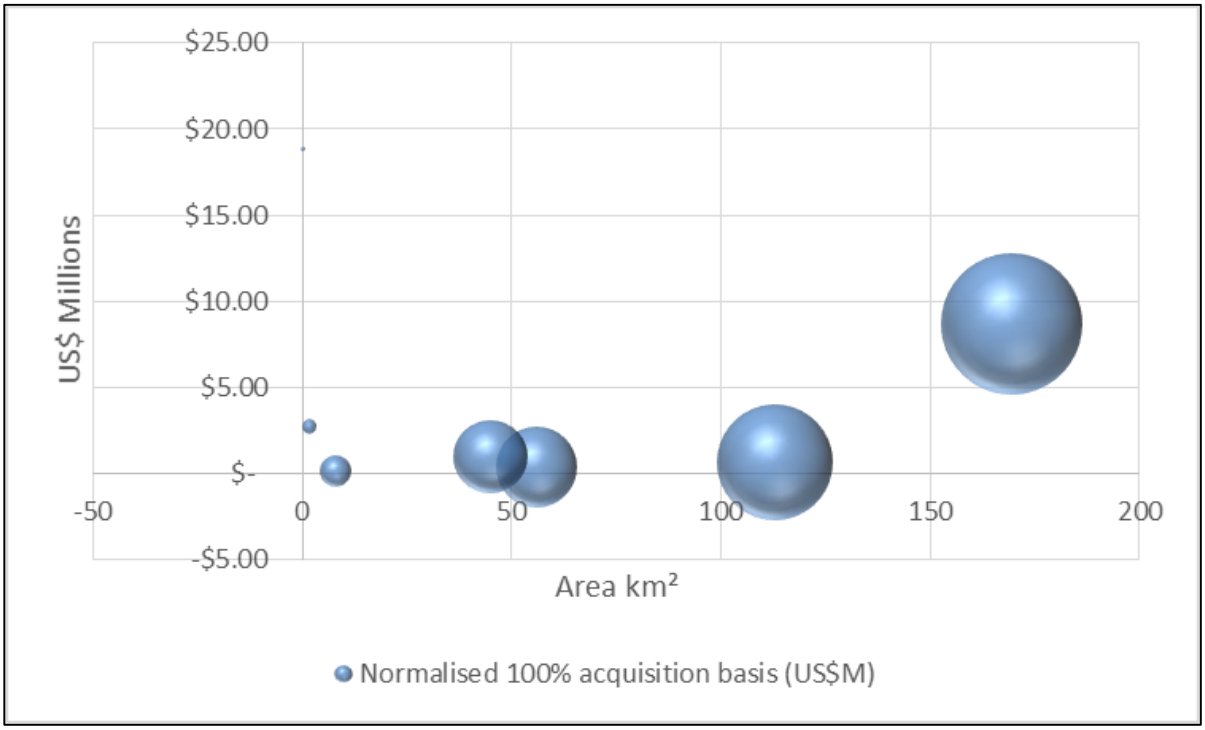


**Figure 10-3: Normalised acquisition cost at a 100% basis vs area with area shown as bubble size**

## 10.1 Comparative transaction summary

In SRK's opinion the area based method is not an appropriate method for valuation as the Queens Graphite Mine is a relatively small project area and has a value driven by the identified mineralisation based on past mining.

Review of the available comparative transactions SRK is of the opinion that the Sakura Graphite Mine partial acquisition by Elcora is most comparable. The Elcora project also contained historic workings and within a small area defined by the Mining Licence. SRK notes that on a 100% basis the transaction values the Sakura Graphite Mine at US$2.75 Million when normalised to the December Price. It should also be noted that a 100% and controlling interest would normally constitute a higher price.

SRK also notes the failed transaction in June 2014 between RSM and Bora Bora Ltd for a partial acquisition of the Queens Mine. As this deal failed it does not provide a reasonable basis for valuation. Despite this, SRK considers it a pertinent reference point in the valuation of this asset, and consider that it provides an upper end of the valuation for this project.

Analysis and resultant factors for valuation of the Queens Graphite Mine based on Sri Lankan assets is provided in Table 10-3. A secondary analysis excluding the failed Queens Transaction and Aluketiya Royalty has been provided in Table 10-4.

**Table 10-3: Comparable transaction valuation factor ranges for Sri Lankan Comparable transactions (Including the Queens Transaction)**

| | Low | Median | Weighted Average | High |
|---|---|---|---|---|
| **Normalised Acquisition cost 100%** | 0.04 | 0.66 | 4.12 | 18.85 |
| **Normalised Area based ($/km²)** | 5,866 | 21,818 | 30,822 | 18,853,714 |

**Table 10-4: Comparable transaction valuation factor ranges for Sri Lankan Comparable transactions (Excluding the Queens Transaction and the Aluketiya royalty based transactions)**

| | Low | Median | Weighted Average | High |
|---|---|---|---|---|
| **Normalised Acquisition cost 100%** | 0.11 | 0.66 | 4.11 | 8.69 |
| **Normalised Area based ($/km²)** | 5,900 | 17,650 | 23,600 | 684,800 |

The resulting implied value range for 100% of the Queens Graphite Mine project in US Dollars is summarised in Table 10-5

**Table 10-5: Comparable transaction valuation range for the Queens Graphite Mine**

| | Low (US$ M) | Preferred (US$ M) | High (US$ M) |
|---|---|---|---|
| **Acquisition cost 100%** | 0.11 | 4.10 | 8.70 |

**SRK recommends that on a comparable transaction basis the Queens Graphite Mine be valued in the range US$0.10M to US$8.7M, with a preferred value of US$4.1M.**

# 11 Conclusions

SRK considers on the basis of the information available, that the asset cannot be classified as a Development Project. SRK believe that DCF resulting in an NPV is not an appropriate valuation method for this asset, but has been used to provide a theoretical NPV for the target. SRK has considered two other valuation techniques in this report, Geological Risk Method (GRM) and comparative transactions. SRK believe that given the development status of the deposit the GRM method will provide value in this case and that an NPV is appropriate as a supporting methodology to the GRM by providing an aspirational 'Target Value' as appropriate to the GRM of valuation.

SRK has considered both the Geological Risk Method (GRM) as a primary valuation method and has used comparable transaction method to provide benchmark the GRM valuation approach to a market valuation.

**Geological Risk Method**

The GRM, has considered the geological models and available exploration data, using a Target Value, discounted the Target Value by the cost and probability of success through the relevant stage/s of the exploration process. The Target Value is derived from a Target size and in this study has been developed by SRK based on an independent critique of the development aspirations outlined for the Mine by RSM and a DCF model developed to derive an aspirational NPV. The project is considered to be at the Drill testing stage of the exploration and development process.

**Applying the GRM of Valuation, the technical value ranges from US$2.9M to a high of US$5.5M with a preferred (or mid-point) value of US$4.2M.**

The GRM valuation methodology has discounted for US$2.7M for assumed exploration to drill out to a Measured/Indicated Resource confidence level and Feasibility studies.

**Comparable Transactions Method**

SRK identified a total of 13 graphite transactions dated between January 2010 and December 2015. Of those transactions SRK identified only 9 transactions that were located in Sri Lanka are considered as comparable Sri Lankan vein Graphite projects.

As Queens Mine has no formal Mineral Resource estimation and is therefore it can only be valued on an area basis, however SRK consider due the relatively small area it will not provide a reasonable basis or the Queens Graphite Mine.

**SRK recommends that on a comparable transaction basis the Queens Graphite Mine be valued on a 'project basis' rather than a value applied to an area basis. Appropriate transactions applied give a range of US$0.10M to US$8.7M, with a preferred value of US$4.1M.**

In review of the available comparative transactions SRK is of the opinion that the Sakura Graphite Mine partial acquisition by Elcora is most comparable. The Sakura project is in a similar development stage with historical workings and a relatively small License area. SRK notes that on a 100% basis the transaction values the Sakura Graphite Mine at US$2.75 Million when normalised to the December graphite Price. It should also be noted that a 100% and controlling interest would normally constitute a higher price.

SRK notes that the overall valuation range is reasonable reflecting the level of certainty with early to moderately advanced stage of the exploration projects for graphite in Sri Lanka.

In determining a final technical valuation, we note that the GRM Valuation derived for the Queens Mine project is supported by comparable market valuations identified for this study, in addition to the aspiration development plan for the asset.

In summary, SRK has chosen to rely on the GRM method supported by the Comparable Transaction method to derive our preferred Valuation. Table 11-1 presents a summary of the technical Valuation based on the current permit status of Licence.

**Table 11-1: Technical and Fair Market Valuation of the Queens Mine project**

| Project | Low (US$) | Preferred (US$) | High (US$) |
|---|---|---|---|
| Queens Mine | 2.9 | 4.2 | 5.5 |

Based on an exchange rate of AUD/USD $0.75.

**Table 11-2: Technical and Fair Market Valuation of the Queens Mine project**

| Project | Low (AU$) | Preferred (AU$) | High (AU$) |
|---|---|---|---|
| Queens Mine | 3.9 | 5.6 | 7.3 |

## Compiled by

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# 12 References

Bora Bora Resources, 2014. ASX Announcement 24-06-2014.

Dharmaratne PGR, Hemalal PVA, Hettiwatte MC 2013. Evaluation of Overhand Cut and Fill Mining Method used in Bogala Graphite Mines, Sri Lanka. National Engineering Conference 2013, 19th ERU Symposium, Faculty of Engineering, University of Moratuwa, Sri Lanka.

JORC, 2004. The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2004 Edition).

JORC, 2012: *Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves*. December 2012.

Lord D, Etheridge M, Willson M, Hall G and Uttley P, 2001. *Measuring exploration success: An alternative to the discovery-cost-per-ounce method of quantifying exploration effectiveness*. Society of Economic Geologists (SEG) Newsletter, Number 45.

Lord D, Williams PR, Kreuzer OP and Etheridge MA, 2012, Meaningful Market-Based Valuation of Exploration Assets. VALMIN Seminar Series 2011 – 2012.

Morley A, 2007. Evaluation of exploration projects. AusIMM Project Evaluation Conference, June 2009.

SAMVAL, 2008, The South African Code for the Reporting of Mineral Asset Valuation.

VALMIN, 2005, Code for the technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent expert reports (The VALMIN Code).

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| Name/Title | Company |
|---|---|
| Sheriozha Anthony Wijekoon | RS Mines Pvt Ltd |

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