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29 May 2015

SYRAH FINALISES BALAMA GRAPHITE FEASIBILITY STUDY AND DECLARES MAIDEN ORE RESERVE

INTRODUCTION

Syrah Resources (ASX:SYR) is pleased to report the results of its Feasibility Study prepared by Snowden Mining Industry Consultants for its 100% owned Balama Graphite Project in Mozambique.

Highlights:

- **Feasibility Study confirms Balama as a project with low capital intensity, low technical risk and attractive returns**
- **Initial capital expenditure of US$138 million, with a payback period of less than 2 years from commercial production**
- **Nameplate capacity of 380,000 tonnes of concentrate per annum at 95% total graphitic content**
- **Maiden JORC Compliant Ore Reserves sufficient to support operations for over 40 years, with an average head grade of approximately 19% TGC during the first 10 years**
- **Internal rate of return of 71%, post-tax NPV_{10} of US$1.1 billion**
- **Average unlevered project free cash flow of approximately US$160 million per annum during the first 10 years at full production**
- **Open pit operation with low stripping ratios**
- **Average cash operating costs of US$286 per tonne free on board from the Port of Nacala over life of mine**
- **Balama Graphite Project scheduled to commence ramp up of production 18 months after completion of financing**
- **Front End Engineering Design has commenced to further optimise and de-risk the development plan as well as bringing greater certainty to the timing of procurement for key capital equipment**
- **Financing discussions are well advanced**

BACKGROUND

The Balama Project is located on a 110.6 km^2 mining concession in northern Mozambique, within the district of Balama in the Cabo Delgado province. The project area is accessible by a sealed highway and is close to the large regional Chipembe Dam.

The Balama Project will be a high grade, open pit operation utilising conventional mining methods with an extremely low stripping ratio. The processing plant will have a feed rate of 2 million tonnes per annum and a nameplate capacity of 380,000 tonnes of concentrate per annum at 95% total graphitic carbon (TGC).

Graphite concentrate will be transported to and shipped via the Port of Nacala which is located approximately 490 km by a sealed highway southeast of the project. The Port of Nacala is a major port in Mozambique and the deepest port in southern Africa.

The completion of the Feasibility Study represents a milestone in Syrah's progression to becoming one of the leading suppliers of high quality graphite to key industrial and technology markets.

FEASIBILITY STUDY SUMMARY

The author and key contributor of the Feasibility Study was Snowden Mining Industry Consultants (Snowden), with input from a range of technical specialists including China Aluminium International Engineering Corporation Limited (Chalieco), Changsha Engineering and Research Institute Ltd of Nonferrous Metallurgy, Coastal & Environmental Services, Knight Piésold, SRK Consulting, Intech Engineers and Digby Wells, together with Syrah's experienced internal technical team.

The Feasibility Study highlights the low technical risk and attractive economic returns of the Balama Graphite Project. The Feasibility Study does not consider the vanadium production potential of Balama (scoping study completed previously), which will be progressed to full feasibility following commissioning of the graphite project.

As part of the Feasibility Study, a maiden Proved and Probable graphite Ore Reserve has been declared, comprising 81 million tonnes at 16.2% TGC for 13.2 million tonnes of contained graphite. This Ore Reserve provides sufficient inventory to support operations (after project ramp up) for over 40 years.

After project ramp up, average production over the first 10 years will be 356,000 tonnes of graphite concentrate per annum, at an average head grade of approximately 19% TGC. The final graphite concentrate product will be classified into five particle sizes as required under Syrah's binding offtake agreement with Chalieco and requested by other customers.

The Balama Project demonstrates low capital intensity (US$138 million initial capital cost, including 10% contingency) and will be a first quartile producer with cash costs of US$286 per product tonne free on board (FOB) from the Port of Nacala. These costs compare favourably to current graphite prices and highlight the economic strength of Balama.

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Syrah's Managing Director, Tolga Kumova said "*We are absolutely delighted with the results of this Feasibility Study, which confirms our long held view that Balama will shortly become the world's premier graphite mine. Metallurgical testing has also confirmed that Balama graphite will become a leading source of high quality spherical graphite for Li-ion battery applications. On behalf of the Board of Syrah, I'd like to take this opportunity to thank our shareholders for their support as well as the employees and consultants who have allowed our company progress to this exciting stage of its development.*"

MINERAL RESOURCES & ORE RESERVES ESTIMATE

Balama comprises a series of hills consisting of graphitic schist which rise up to 250 m from the surrounding plains. The outcropping strike extent of the graphite is in excess of 7 km.

To date, 18,434m of resource diamond core drilling has been completed on the Balama Project. As part of the Feasibility Study, a Mineral Resource estimate using a 3% TGC cutoff (constrained within a pit shell) has been determined by Snowden as shown in the following table and was completed in accordance with the guidelines of the JORC Code (2012 edition).

Classification	Tonnes (Mt)	Density (t/m^3)	TGC (%)	Contained Graphite (Mt)
Balama West				
Measured	75.0	2.5	11	8.4
Indicated	110.0	2.6	8.1	9.1
Inferred	460.0	2.7	11	51
Balama East				
Indicated	76.0	2.6	14	11
Inferred	470.0	2.7	10	49
TOTAL				
Measured	75.0	2.5	11	8.4
Indicated	186.0	2.6	11	20.1
Inferred	930.0	2.7	11	100

Table 1 – Mineral Resource estimate at 3% TGC cutoff grade (constrained within a pit shell)

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The Proved and Probable Ore Reserve estimated by Snowden as part of the Feasibility Study is based on, and inclusive of, the above Measured and Indicated Mineral Resources only, as Inferred Mineral Resources are not sufficiently reliable to be used in Ore Reserve estimates.

Accordingly, Syrah is pleased to announce a combined Proved and Probable Reserve of 81.4 Mt at an average grade of 16.2% TGC (using a 9% TGC cutoff grade). **This reserve constitutes 13.2 Mt of contained flake graphite making the Balama Project the world's largest Reserve of flake graphite.** Snowden notes that the deposit is open along strike at both Balama East and Balama West, to the south as well as at depth.

Classification	Ore (Mt)	TGC (%)	Contained Graphite (Mt)
Balama West			
Proved	20.0	19.2	3.8
Probable	2.6	17.5	0.4
SUB TOTAL	**22.5**	**19.0**	**4.3**
Balama East			
Probable	58.8	15.1	8.9
SUB TOTAL	**58.8**	**15.1**	**8.9**
TOTAL			
Proved	20.0	19.2	3.8
Probable	61.4	15.2	9.3
	81.4	**16.2**	**13.2**

Table 2 – Ore Reserve estimate at 9% TGC cutoff grade

Based on the projected average annual production over the life of mine as outlined in the Mine Plan, there are sufficient Ore Reserves for over 40 years of production (after project ramp up).

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FEASIBILITY STUDY

The key results of the Balama Graphite Feasibility Study are summarised in the following table:

Operational metrics	Unit	
Operational period	years	42
Plant feed rate	tpa	2,000,000
Average strip ratio (life of mine)	ratio	0.04
Average head grade (life of mine)	%	16.2
Average recovery (life of mine)	%	92.5
Average production (life of mine) - 95% TGC	tpa	313,000

Financial metrics	Unit	
Total initial capital expenditure	US$ m	138
Weighted average basket graphite price	US$/t (FOB) [1]	1,000
Average operating cash costs over life of mine [2]	US$/t product (FOB) [1]	286
Average annual unlevered project free cash flow [3]	US$ m	158
Post-tax NPV (10% discount rate)	**US$ m**	**1,125**
Internal rate of return (IRR)	**%**	**71**
Payback period	**years**	**< 2**

Note 1: FOB from the Port of Nacala

Note 2: Excluding royalties and taxes

Note 3: Over first 10 years at full production

Table 3 – Key operational and financial metrics of the Balama Graphite Feasibility Study

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MINE PLAN

There are sufficient Ore Reserves to support operations for over 40 years. The initial term of Syrah's Mining Concession, which was issued on 6 December 2013, is for 25 years and is renewable for a further term of 25 years. The following figure sets out the general arrangement for the mine layout.

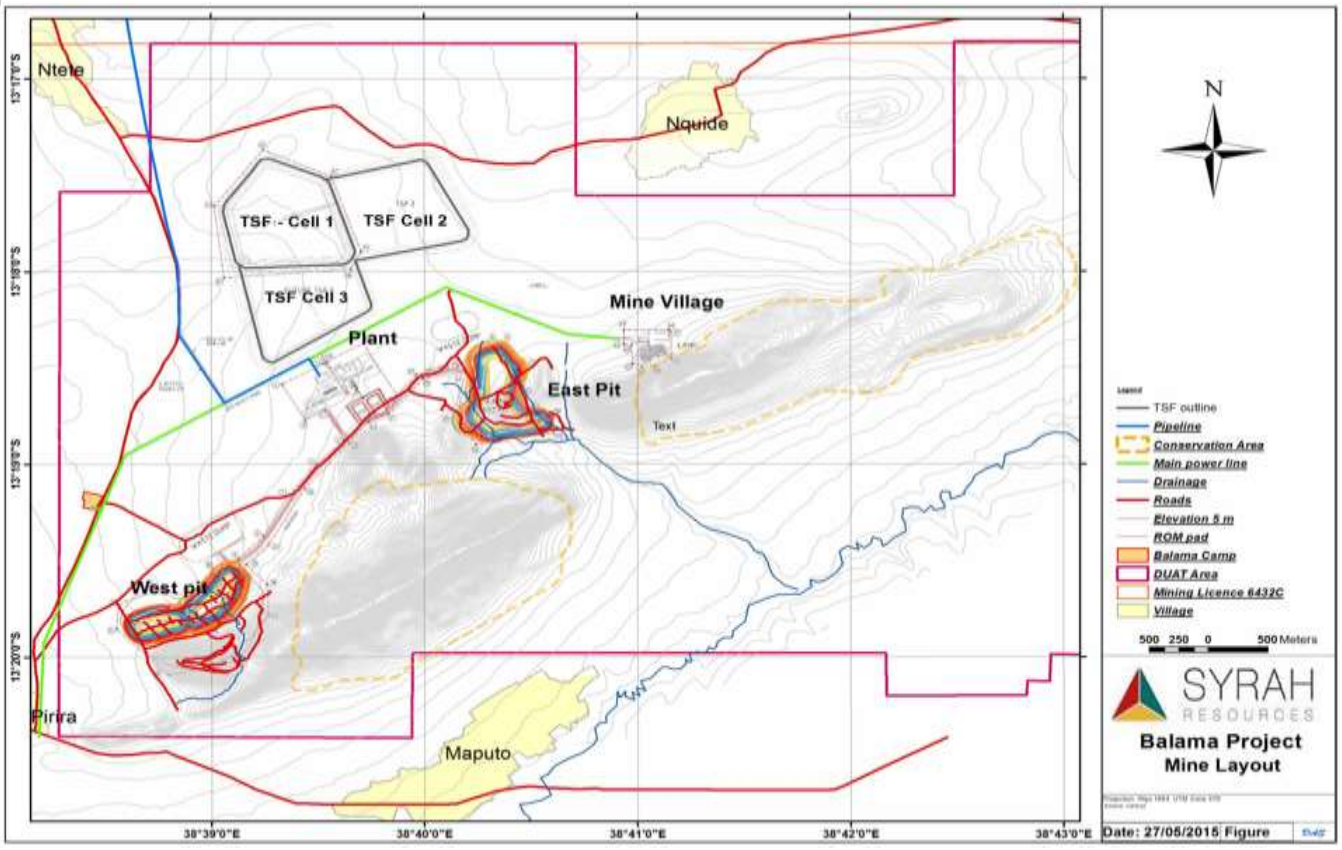

Figure 1 – Mine layout for the Balama Project

Highlights of the mine plan and schedule include:

- a plant feed rate of 2 million tonnes per annum
- operations will commence as free-dig mining within the high grade pits of Balama West using conventional truck and shovel mining
- following completion of open pit mining at Balama West, operations will shift to the pits in Balama East
- low average strip ratio of 0.04:1 projected over the life of mine (inclusive of economic low grade ore ranging from > 2% to < 9% TGC which will be stockpiled for processing in the future)
- On average, approximately 2 million tonnes of low grade (> 2% to < 9% TGC) material will be stockpiled per annum over the first 10 years of operations
- average head grade of approximately 19% TGC for the first 10 years of operations.

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PROCESSING PLANT

The processing plant was designed by Chalieco and Changsha Engineering and Research Institute Ltd of Nonferrous Metallurgy with a feed rate of 2 million tonnes per annum using conventional processes including:

- crushing and screening
- grinding
- flotation
- filtration and drying
- classification and screening
- bagging.

METALLURGY

The process recovery based on pilot plant results is set at 92.5%, with an average final concentrate grade of 95% TGC. Based on a feed rate of 2 million tonnes per annum, an average head grade of approximately 19% TGC over the first 10 years of operations, 356,000 tonnes of graphite concentrate will be produced per annum.

The final graphite concentrate product will be classified into five particle size classes as requested by potential customers and under the Binding Offtake Agreement with China Aluminium International Engineering Corporation Limited (Chalieco). These are shown in the following table.

Product	Upper size (US mesh)	Lower size (US mesh)	Upper size (microns)	Lower size (microns)	Average size distribution
Product 1	-	50	-	>300	8.5%
Product 2	-50	80	<300	>180	12.0%
Product 3	-80	100	<180	>150	11.5%
Product 4	-100	140	<150	>105	22.5%
Product 5	-140	-	<105	-	45.5%

Table 4 – Ex-mine Balama Project flake graphite products

The process plant has been designed with sufficient flexibility to ensure market demand for different particle sizes can be met as markets with different product specifications require.

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Vanadium bearing concentrate will initially be sent to the tailings storage facility to minimise construction, commissioning and processing complexities during start up.

INITIAL CAPITAL EXPENDITURE

The capital expenditure, inclusive of contingency, required for the production of first graphite concentrate is estimated to be approximately US$138 million as itemised in the following table.

Item	US$ m
Process plant	65.5
Site infrastructure [1]	32.8
Owner's costs	27.0
SUB TOTAL	**125.3**
Contingency - 10%	12.5
TOTAL	**137.8**

Note 1: Inclusive of haul roads, ROM pad, camp and tailings storage facilities

Table 5 – Breakdown of initial capital expenditure

The nameplate capacity of the processing plant is 380,000 tonnes per annum. The average annual sustaining capital expenditure is estimated to be approximately US$7.1 million per annum over life of mine. In addition, Snowden estimates that approximately US$30 million will also be required for working capital to cover initial production expenses during the ramp up period and prior to positive, sustainable cash flows.

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OPERATING COSTS

The Feasibility Study has confirmed that the Balama Project will be a first quartile, substantial graphite producer with total cash operating costs (excluding royalties and taxes) of approximately US$286 per product tonne FOB from the Port of Nacala, over life of mine.

	US$/t (FOB)
Mining	33.3
Processing [1]	83.6
Transport [2]	125.7
General & administration	43.5
TOTAL (excluding royalties and taxes)	**286.1**

Note 1: Assumes five years of diesel power generation before switching to grid power for the remaining life of mine

Note 2: Inclusive of trucking costs to the Port of Nacala, storage and containerising charges, port and customs charges

Table 6 – Breakdown of total cash costs (excluding royalties and taxes)

The Port of Nacala consists of a 600 m bulk berth and a 395 m container berth. Nacala currently handles over 100,000 containers a year and will have with ample capacity to handle the production volumes of the Balama Project (approximately 18,000 containers per year at 20 tonnes per container). Four major shipping lines currently call on this port with regular international cargo services well suited to the Balama Project's demands.

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SHIPPING COSTS

The current total shipping costs from the Port of Nacala to major regions around the world are set out in the following table.

Destination	Total shipping costs (US$/t)
Main ports of China [1]	30 - 35
Main ports of Japan [1]	40 - 45
Rotterdam [1]	90 - 95
New Orleans [2]	90 - 110

Note 1: Based on 20 foot containers

Note 2: Break bulk shipping rates

Table 7 – Current total shipping costs from the Port of Nacala to major regions around the world

ROYALTIES & TAXES

Syrah's Mining Concession was granted on 6 December 2013. Accordingly, the Feasibility Study incorporates a 3% royalty on gross sales and a corporate tax rate of 32%.

PRICE ASSUMPTIONS

A weighted average basket graphite price of US$1,000/t FOB over life of mine has been assumed in the Feasibility Study.

NEXT STEPS

The Land Access (DUAT) application has been lodged and is presently being reviewed by the Mozambique government.

With ramp up of production scheduled to commence 18 months after completion of financing, pre-construction works and early engineering activities are occurring to ensure a smooth transition into the project development phase. Accordingly, Syrah has appointed CPC Engineering to complete Front End Engineering Design (FEED) on the processing plant. The objective of this work is to further optimise and de-risk parts of the development plan, as well as bringing greater certainty to timing of procurement for key capital equipment. This work is well advanced and is expected to be completed by the end of June 2015.

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In conjunction with this, Syrah continues to expand its management team in Australia and Mozambique in order to achieve a high degree of readiness for construction and commissioning.

The project development phase will commence upon the completion of financing. Financing discussions are well advanced.

The Feasibility Study does not consider the vanadium potential of Balama. A Scoping Study on the potential recovery and production of vanadium has been completed (refer ASX announcement dated 30 July 2014). Syrah intends to conduct further vanadium technical studies during the construction and commissioning phase of the Balama Project, with full feasibility studies to commence after successful commissioning of graphite production. High purity vanadium samples produced from Balama pilot plant test work have been sent to a number of major Vanadium Redox Flow battery producers.

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About Syrah Resources

Syrah Resources (ASX code: SYR) is an Australian resource company that is rapidly progressing its flagship Balama Graphite and Vanadium Project in Mozambique to production. The Project hosts the largest graphite ore reserves in the world with an Australasian Joint Ore Reserves Committee (JORC) compliant Ore Reserve of 81.4 Mt at 16.2% total graphitic carbon. Balama is a 110 km^2 granted Mining Concession located within the Cabo Delgado province in the district of Namuno in northern Mozambique. The Project is approximately 260 km by road west of Pemba and is accessible by a sealed, main road, running directly from Pemba Airport. The Port of Nacala is approximately 490 km by road south east of the Project and is the deepest port in Southern Africa.

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Competent Persons' Statement

The information in this report as it relates to geology, QAQC and Mineral Resource estimation was compiled by Mr Mark Burnett, Pri. Sci. Nat., who is a Competent Person and a Principal Consultant at Snowden Mining Consultants Pty Ltd. Mr Burnett has more than 20 years of experience in the activities being reported on and has sufficient expertise which is relevant to the style of mineralisation and type of deposit under consideration and to the activity undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Burnett consents to the inclusion of this information in the form and context in which it appears in this report.

The information in this report that relates to Syrah Balama Ore Reserves is based on information reviewed or work undertaken by Mr Anthony Finch P Eng, MAusIMM (CP), RPEQ, a full time employee of Snowden Mining Industry Consultants Pty Ltd. Mr Finch has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the preparation of mining studies to qualify as a competent person as defined by the JORC Code (2012). Mr Finch consents to the inclusion of this information in the form and context in which it appears in this report.

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APPENDIX A

JORC TABLE 1

Section 1 - Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	The sampling of core was collected on a nominal 2 m interval, unless the dykes/pegmatite intersection is less than 1m, then it is included with the sample as a dilution. Pegmatite intervals of greater than 1m are treated as a separate sample. Samples length range between 0.40 m to 10.00 m. For broad graphite barren zones (>4 m) where core recovery is low, samples are collected according to core runs. Samples were collected from half and quarter core, which was cut using a diamond saw were and bagged at the Balama core yard. The routine sampling methods were performed according to documented set of Standard Operating Procedures (SOPs) and were periodically audited by the competent person, Mr Rob Barnett. Samples from trenches were also collected but were only used to guide geological modelling, and not in the Resource estimation. While some RC holes were completed during the exploration phase, none of the results have been used in the modelling or estimating of the resource.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-*	Holes were drilled with HQ drill bits through weathered and broken rock to allow for casing. Thereafter the core barrel was reduced to NQ. The core barrel used was a 3 m double split barrel.

Criteria	JORC Code Explanation	Commentary
	sampling bit or other type, whether core is oriented and if so, by what method, etc).	
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	Recoveries were documented in borehole logs for all 84 boreholes. The average core recovery in all boreholes used in the MRE was 94.5%. Core recovery was observed to increase with depth due to the decrease in weathering at depth.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	All the drillhole core was geologically logged by qualified geologists. Logging was undertaken using code sheets and data entry templates. The templates included columns for the recording of lithology, accessory minerals, degree of weathering (oxidation), mineralisation and structural zones. Separate tables were used to record graphite grade estimates and flake size. A litho-stratigraphic sequence has not been compiled for this area, and correlation between boreholes is based on lithological and grade continuity.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted*	The sampling of core was collected on a nominal 2 m interval, unless the dyke/pegmatite intersection is less than 1m, then it is included with the sample as a dilution. Pegmatite intervals of greater than 1m are treated as a separate sample. For broad graphite barren zones (>4 m) these can be composited with short lengths of quarter core collected every metre. Hence extremely long

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Criteria	JORC Code Explanation	Commentary
	for all sub-sampling stages to maximise representivity of samples. • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	samples in the database are over unmineralised intersections. Where core recovery is low, samples are collected according to core runs. Samples were collected from half or quarter core, which was cut using a diamond saw were and bagged at the Balama core yard. The routine sampling methods were performed according to documented set of Standard Operating Procedures (SOPs) and were periodically audited by the competent person, Mr Rob Barnett. Samples from trenches were also collected but were only used to guide geological modelling, and not in the Resource estimation. While some RC holes were completed during the exploration phase, none of the results have been used in the modelling or estimating of the resource. The sub-sampling method was deemed appropriate to the type of mineralization, and this was supported by the duplicate results analyses. Sample preparation took place at BV Rustenburg in South Africa, which entailed drying the samples at 105°C, crushing using a jaw crusher, split, and milling in a ring vibrator mill.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make*	Total Graphitic Carbon (TGC) was analysed by Bureau Veritas (BV) in Rustenburg, through analysing for total carbon in a LECO sulphur/carbon analyser (BV Codes GRAV4D and TC001). This method had a detection limit of 0.01%. The rest of the elements were analysed using ICP methods. Bureau Veritas (BV) Rustenburg holds an

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Criteria	JORC Code Explanation	Commentary
	and model, reading times, calibrations factors applied and their derivation, etc. • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	ISO 17205:2005 accreditation, but this accreditation is not applicable to the LECO carbon analysis procedure (BV Codes GRAV4D & TC 001). Umpire samples were analysed at SGS Canada, which has a Certificate of Accreditation No. 184 from the Standards Council of Canada. This certificate covers the laboratory's LECO carbon and sulphur analytical procedure (SGS Code GE_CSA06V). The assay database displays industry standard levels of precision and accuracy and meets the requirements for use in a Mineral Resource estimate. The quality of the assay work was Balama included the following QC samples with the analyses of its samples, blanks, certified reference material (CRMs) and coarse duplicates. Assay analyses from the first phase of drilling included marble blanks, from a nearby quarry. These got discontinued it was observed that the marble samples contained some Vanadium mineralisation. Assay analyses for the second phase utilised ceramic grade silica blanks. The overall rate of insertion for all QC samples for both drilling programmes at Balama was above 5%. In the opinion of the Competent Person the quality of the assays support their use in Mineral Resource estimation. A subset of >6% of the total samples across the whole grade range of carbon assay results were collected as umpire samples, which were analysed at SGS Canada.
Verification of sampling and	• *The verification of significant*	Precision between the original and

Criteria	JORC Code Explanation	Commentary
assaying	*intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	umpire results was adequate. Data was validated prior to use in the Resource estimation. Field data collection was periodically observed by MSA. No twin diamond drilling was conducted.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	All of the borehole collars were surveyed by Geosurvey Limitada (a qualified surveyor) on a UTM grid, from a WGS84 datum, using a differential GPS. Drillholes were located to within an accuracy of <5 cm. Downhole surveys were carried out by the drilling contractor using a Reflex EZ shot digital camera at a nominal interval of 50m. Occasional surveys recorded azimuths that were more than 10° different to prior readings and were deemed problematic and not included in the database.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	Drillhole spacing ranges between 100 m and 200 m in the strike direction, and the spacing ranges from 50m down dip. This spacing was considered appropriate to estimate Mineral Resources in the Measured, Indicated and Inferred categories, depending on the borehole frequency in each domain. Drillhole samples were composited to 2m for Balama West and 5m for Balama East.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the*	At Balama West holes were drilled inclined to the southeast at -60 degrees, across strike to intersect the lithologies as close to perpendicular to their dip as

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Criteria	JORC Code Explanation	Commentary
	deposit type. • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	possible, and therefore approximating true thickness intersections. It is considered that no sampling bias has been created by this drilling orientation. One vertical borehole was also drilled (BMDD0119). Drillholes at Balama East were inclined to the southeast at -60 to -70 degrees. Due to the thickness of the geological units, some drillholes were not able to fully intersect each unit.
Sample Security	• *The measures taken to ensure sample security.*	Once bagged, samples were sealed in plastic bags and inserted into large polyweave bags for transport to the laboratory. The polyweave bags were dispatched to the laboratory by courier. The remaining core was securely stored at the exploration camp at the project site.
Audits and reviews	• *The results of any audits or reviews of sampling techniques and data.*	The following audit and review work was completed by MSA: - Site visits to review adherence to the Standard Operating Procedures - a review of the database - a review of drillhole data collection protocols and QA/QC procedures - interrogation of the QA/QC data.

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Section 2 - Reporting of Exploration Results

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	A mining concession (6432C) was granted to TEML on 6 December 2013. The mining concession has a 25-year life, renewable for a further 25 years.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	All exploration data used for the Mineral Resources reported was generated by Syrah Resources Limited and its appointed contractors.
Geology	• *Deposit type, geological setting and style of mineralisation.*	The geology of the project area comprises metamorphic rocks of the Xixano Complex, dated at 735 Ma. Lithologies include schists, mica-schists and psammites, of granulite and upper amphibolite metamorphic grade. The graphite mineralisation is mostly contained in stratiform graphitic schists. The flake size of the graphite is up to 4mm. The strike of the mineralised lithologies at Balama is generally north east. The layering of lithologies to the east at Balama East is disrupted by the emplacement of a granite intrusion.
Drill hole Information	• *A summary of all information*	Some 142 drillholes are contained in

Criteria	JORC Code Explanation	Commentary
	material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	the database for the project area. Holes were drilled at an inclination, with the intention to intersect the lithologies perpendicularly. For the purpose of reporting an estimated Mineral Resource, reporting exploration results is not necessary.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*	Drillhole samples were composited to 2 m for Balama West and at 5 m for Balama East, for use in grade estimation. Compositing was undertaken is such a way as not to allow for residuals. Compositing was reviewed by Snowden, and no significant gain or loss in grade was observed in the compositing process.

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Criteria	JORC Code Explanation	Commentary
	• *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	Samples were taken at a nominal 2m length, which were varied where zones of waste occurred or geological boundaries were crossed. The drilling pattern and inclination yielded close to true width intersections of the mineralised zones, where the full lithology was intercepted.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	Resource classification and geology plans showing drillhole distribution are included in Appendix B following this table. Previous ASX releases have presented, in detail, cross-sections and tabulations of intercepts.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	This Mineral Resource estimate is based on all drilling data on the project. Trench samples were not utilised.

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Criteria	JORC Code Explanation	Commentary
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	Surface geological maps were used to assist in the interpretation of geology.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	No further work is planned at Balama. The higher grade mineralization at Balama West is open in the west and east directions, and at depth. While at Balama East the higher grade mineralisation is open to the east, west and at depth.

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Section 3 - Estimation and Reporting of Mineral Resources

Criteria	JORC Code Explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	Data was provided in a MS Access database. Each geologist checks all of their data entry sheets and those of the field technicians, using a checklist for any obvious errors. The database is set up with validation rules and quality assurance and quality control ("QAQC") queries to ensure that data errors are captured. These validation queries are run each time data is loaded into the database. The CP has checked the integrity of the database for use in Mineral Resource estimation processes and considers that the database is an accurate representation of the original data collected.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	Site visits were undertaken by the Competent Persons during both phases of exploration. Messrs R Barnett and M Lynn undertook a site visit during each phase of exploration. Mr M. Hall also undertook a site visit in phase 2.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.*	The mineralisation is found in stratiform graphitic schists. Geological continuity was confirmed by the diamond drilling and trenching, which was used purely for interpretation. An earlier interpretation for Balama West was based on grade distribution. The mineralisation interpretation is currently been based more on geology. The mineralisation outcrops throughout the project area. The high grade mineralisation is associated

Criteria	JORC Code Explanation	Commentary
	• *The factors affecting continuity both of grade and geology.*	more with XGS1 at Balama West and XGS4 at Balama East. Snowden is of the opinion that the mineralisation is not purely lithologically controlled.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The mineralisation interpretation extends over a strike length of 1,050 m and 1,450m at Balama West and Balama East, respectively. The mineralisation is open to the west, east and north.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade*	Estimation domains were based on lithologies, and TGC grade and density was estimated into a 20 m N by 20 m E by 10 m RL three dimensional block model using inverse distance squared. Subcelling of 2.5 m N by 2.5 m E by exact fitting in the Z was applied to accurately represent the volume of the mineralised bodies. The sample search ellipse was aligned parallel to the strike and dip direction The nominal borehole spacing +10% (110 m x 110 m) was assigned as the along-strike and down-dip sample search. The third search distance was derived from the downhole (and direction 3) variogram ranges. The minimum number of composites required for an estimate was 5 and the maximum number was 24, with a maximum of 4 composites were allowed from each borehole. No declustering was applied per Zone as the boreholes were drilled on an approximately regular grid. Top capping was not applied in estimating TGC. Datamine's dynamic

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Criteria	JORC Code Explanation	Commentary
	variables of economic significance (eg sulphur for acid mine drainage characterisation). • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	anisotropy was used to interpolate TGC per estimation zone using inverse distance to the power of two (ID2). The grade was interpolated into parent cells.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The tonnes are reported on a dry tonne basis, natural moisture was not determined.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	The Resource is reported above 3% TGC, which is the economic cutoff grade for the project.

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Criteria	JORC Code Explanation	Commentary
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	Mining at Balama is planned to be open pit, with the use of regulate truck shovel mining with drill and blast assumed for the fresh material and ripping for the weathered material.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	Syrah proposes to process the ore by crushing, grinding, and flotation to produce the concentrate product which is graphite of various flake sizes. The process is expected to recover 92.5% of the graphite in the feed which will have a concentrate grade of 95% TGC. The process is conventional, well tested technology. Significant metallurgical testwork has been undertaken to support the process recovery assumptions. This testwork includes: • April 2012 Mintek initial scoping testwork • May 2013 Mintek comminution, gravity, flotation, and dewatering testwork • August 2013 Mintek mineralogy investigations

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Criteria	JORC Code Explanation	Commentary
		• October 2013 Mintek variability flotation testwork • July 2014 Mintek comminution and rheology testwork • September 2014 HPGR and flotation testwork • October 2013 Suntech rougher and cleaning testwork • March 2014 GZRINM laboratory flotation testwork • August 2014 GZRINM pilot plant testwork.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	A storage facility is planned for the disposal of tailings. These tailings will be rehabilitated. An Environmental and Social Management Plan (ESMP) has been compiled to assist Syrah Resources to manage the potential negative and positive impacts associated with the construction, operation and closure phases of the Balama Graphite Project.

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Criteria	JORC Code Explanation	Commentary
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	Density measurements were undertaken from core samples, using the Archimedes method. An appropriate number of relative density measurements were undertaken for the project; including 6286 measurements are recorded for Balama West and 3728 for Balama East. A depth-density relationship was observed, with a threshold at 2.57g/cm^3 at Balama West. A depth-related density contrast at a threshold of 2.45 g/cm^3 at Balama East.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit.*	The classification incorporated the confidence and the quality of the drillhole data, the data distribution, grade continuity and consideration of reasonable prospects for eventual economic extraction. The Mineral Resources are classified as Measured, Indicated and Inferred.

Criteria	JORC Code Explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	The Mineral Resource estimate has been internally audited at MSA. Further the Mineral Resource estimate was also reviewed by Snowden.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production*	Measured Resource at Balama West is characterised by a drill spacing of 50 m by 100 m, while most of the Measured area at Balama East had a drill spacing of around 100 m by 100 m. It is Snowden's opinion that Balama East has a more complex geology than Balama West and therefore recommends that the Measured Resource area be downgraded to Indicated Resource.

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Criteria	JORC Code Explanation	Commentary
	data, where available.	

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Section 4 - Estimation and Reporting of Ore Reserves

Criteria	JORC Code Explanation	Commentary
Mineral Resource estimate for conversion for Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	Data collection and geological interpretations which form the basis of the resource estimate were completed by Syrah Resources Ltd (Syrah). Model 3D wire-framing, resource block modelling and the Mineral Resource estimation were completed by Mike Lynn of Johannesburg based MSA Pty (Ltd). The Mineral Resource estimates are based on a cut-off grade of 3% TGC. The Mineral Resource estimates are not in addition to the Ore Reserve estimate. The Ore Reserve estimate is a sub-set of the Mineral Resource estimate.
Site Visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	The Competent Person is Mr Anthony Finch, Executive Consultant for Snowden Mining Industry Consultants (Snowden). Mr Finch undertook a site visit on October 14, 2014. Mr Finch reviewed surface expressions of the ore and the general layout of the site and the associated infrastructure.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to*	The study undertaken to enable the Mineral Resources to Ore Reserves is a Feasibility Study.

Criteria	JORC Code Explanation	Commentary
	convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	Snowden used a cut-off grade of 9% total graphite carbon (TGC) to define Ore Reserves. Although the marginal cut-off grade is around 2% TGC, the optimal NPV cut-off grade is much higher. The reason for the significantly higher NPV cut-off grade is the low production rate versus the deposit size. As the mine life is 42 years, Syrah has elected to use a 9% TGC cut-off as a compromise between maximising the ore reserve (i.e. using the marginal cut-off grade) and optimising the project NPV. Material between 2% and 9% TGC will be stockpiled as a low grade product for possible future processing.
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application*	**Mining method** Syrah proposes to mine the Balama resource using conventional open pit mining methods. Some of the softer material in the oxide zone is identified as free-dig, meaning no drilling and blasting is required for this material.

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Criteria	JORC Code Explanation	Commentary
	of appropriate factors by optimisation or by preliminary or detailed design). • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the*	**Production rate** The average total movement is 2.23 Mtpa for an average ore production rate of 2.0 Mtpa. **Dilution and mining ore loss** As the deposit has gradational ore boundaries, no mining dilution or ore loss were applied. All supporting material around the ore will have a grade above the marginal cut-off. **Whittle optimisation** The deposit was optimised using Whittle optimisation software. Only Measured and Indicated Mineral Resource categories were used in the optimisation process. **Mine designs** The mine designs were prepared by Snowden under the supervision of the Competent Person. They include pit designs, dump and stockpile designs and water diversion bunds and channels, with consideration for the topography and any infrastructure constraints. **Geotechnical** Syrah has recognised that the project life is very long and has elected to limit the pit depth to approximately 100 m, primarily to minimise geotechnical risk. Snowden has adapted these criteria to mean that the pit floor is the 470 mRL (i.e. the surface for both deposits is approximately 570 mRL). The overall pit slope angles that were developed from the geotechnical study provided by SRK Consulting are presented in the following table.

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<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td></td><td>outcome to their inclusion.
• The infrastructure requirements of the selected mining methods.</td><td>
<table>
<tr><th rowspan="2">Parameter</th><th rowspan="2">Units</th><th colspan="4">Domain</th></tr>
<tr><th>H/W wall</th><th>End wall</th><th>F/W wall</th><th>End wall</th></tr>
<tr><td>Bearing</td><td>Degrees</td><td>315</td><td>45</td><td>135</td><td>225</td></tr>
<tr><td>Western</td><td>Degrees</td><td>37.6</td><td>34.8</td><td>30.3</td><td>32.0</td></tr>
<tr><td>Eastern</td><td>Degrees</td><td>37.6</td><td>34.8</td><td>32.0</td><td>34.8</td></tr>
</table>
Hydrology
For this study, Snowden assumed that pit perimeter bores will be sufficient to dewater the pit slopes in advance of mining. Water will be collected for use in haul-road watering and dust suppression.

The areas of the pits are small, therefore a diesel/electric pontoon dewatering pump should be sufficient for pit surface water dewatering.

No study has been completed for excess water disposal. Snowden assumes that excess water will need to be settled and stored for reuse or sent to evaporation ponds.

The pits are located in a flood plain that could be subject to flash flooding. Therefore, pit perimeter water diversion bunds have been designed to divert flood water around the pits. For the eastern pits, the height of the main diversion bund is minimised by the construction of a downstream water diversion channel.

The designs are conceptual and further study is required to determine the engineering requirements.
</td></tr>
<tr><td>Metallurgical factors or assumptions</td><td>• The metallurgical process proposed and the appropriateness of</td><td>Syrah proposes to process the ore by crushing, grinding, flotation and screening to produce graphite concentrate of various flake sizes. The process is expected to recover 92.5% of the</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
	that process to the style of mineralisation. • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	graphite in the feed which will have a concentrate grade of 95% TGC. The process is conventional and uses well tested technology. Significant metallurgical testwork has been undertaken to support the process recovery assumptions, this test work includes: - April 2012 Mintek initial scoping testwork - May 2013 Mintek comminution, gravity, flotation, and dewatering testwork - August 2013 Mintek mineralogy investigations - October 2013 Mintek variability flotation testwork - July 2014 Mintek comminution and rheology testwork - September 2014 HPGR and flotation testwork - October 2013 Suntech rougher and cleaning testwork - March 2014 GZRINM laboratory flotation testwork - August 2014 GZRINM pilot plant testwork

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Criteria	JORC Code Explanation	Commentary
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	Syrah's Environmental License was granted on 23 April 2015. It has a 5 year life and is renewable. Waste rock characterisation was undertaken and mitigation plans devised. These are included in the Environmental, Social and Health Impact Assessment (ESHIA) submitted to the Mozambique Government as part of the Environmental Permitting process.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	There is sufficient land for the proposed development. The site raw water supply comprises a pump station at Chipembe Dam, a 12 km pipeline and a HDPE lined storage pond at site. Syrah has a licence to extract the water. Syrah intends to build a power station to supply power for the plant and the accommodation village for the first five years of operation. There is a sealed road from Pemba to within 15 km of the site. The remaining 15 km is well compacted dirt road. The dirt road is in the process of being upgraded to a bitumen road to the town of Balama.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology*	**Currency and exchange rate** The basis currency is US Dollars. Foreign currency exchange rates were established by Intech and Syrah. The foreign currency exchange rates are summarised below:

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Criteria	JORC Code Explanation	Commentary
	used to estimate operating costs. • *Allowances made for the content of deleterious elements.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	

Currency	Description	Rate
AUD	Australian Dollar	0.778
CAD	Canadian Dollar	0.786
EUR	Euro	1.131
ZAR	South African Rand	0.086
MZN	Mozambican Metical	0.030

The forecast inflation rates were based on Bloomberg forecasts.

Capital costs

Snowden (mining), Intech (infrastructure) and Chalieco (processing plant) each contributed to the capital cost estimate. Syrah also contributed from an owner's perspective. Other specialised sources were provided by niche specialists for areas such as recruitment and accommodation. Each estimate has been developed based on the data and technical design parameters submitted by internal and external resources specialised in the relevant disciplines.

The initial capital costs were estimated as follows:

Item	Value (US$ m)
Process plant	65.5
Site infrastructure	32.8
Owner's costs	27.0
SUB TOTAL	125.4
Contingency - 10%	12.5
TOTAL	**137.8**

The average annual sustaining capital expenditure is estimated to be approximately US$7.1 million per annum over life of mine.

Criteria	JORC Code Explanation	Commentary
		Mining will commence on a contractor basis for the first 5 years of mine life. Mine-related infrastructure (eg. ROM pads and roads) are included in the Site Infrastructure cost estimate. The main equipment costs were based on both Chinese and Western based manufacturer quotations. Costs for construction were developed based on information on local material prices, local labour costs and labour requirements. A 10% contingency was applied to all project capital groups. **Operating costs** The operating cost estimates were prepared by specialist consultants for each area. Snowden (mining), Chalieco (processing plant), Intech (infrastructure), Syrah for product transport and logistics, each contributed to the operating cost estimate. The operating costs were developed having reference to expected equipment operating hours, equipment operating costs, reagent usage rates, diesel costs, consumable costs, local labour requirements and labour costs. Transport costs are premised on transporting the bagged graphite from the mine site to a containerising facility in Nacala. At this facility, the bagged product will be containerised, transported to, and stored at the Port of Nacala ready for export.

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<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>The operating cost (excluding royalties and taxes) were estimated as follows:

<table><tr><th></th><th>US$/t (FOB Nacala)</th></tr><tr><td>Mining</td><td>33.3</td></tr><tr><td>Processing</td><td>83.6</td></tr><tr><td>Transport</td><td>125.7</td></tr><tr><td>General & administration</td><td>43.5</td></tr><tr><td>TOTAL</td><td>286.1</td></tr></table></td></tr>
<tr><td>Revenue factors</td><td>• The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.
• The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</td><td>The revenue calculation is premised on the following parameters:

<table><tr><th>Item</th><th>Units</th><th>Value</th></tr><tr><td>Product price (FOB Nacala)</td><td>US$/t</td><td>1,000</td></tr><tr><td>Recovery</td><td>%</td><td>92.5</td></tr><tr><td>Product grade</td><td>TGC %</td><td>95.0</td></tr><tr><td>LOM head grade</td><td>%</td><td>16.2</td></tr></table>
The current weighted average basket price of the binding offtake agreement is approximately US$1,100 per tonne. Applying actual 2014 average prices, the weighted average basket price is approximately US$1,100 per tonne. Applying historical three year average prices from 2012 to 2014 gives a weighted average basket price of approximately US$1,200 per tonne.

Based on forecasts by Benchmark Minerals, the forecast weighted average basket price for the Binding Off-take Agreement is expected to be in the range of US$1,000 to US$1,600 per tonne from 2015 to 2019.

Exchange rates are discussed above, in the “Costs” section.</td></tr>
<tr><td>Market assessment</td><td>• The demand, supply and stock situation for</td><td>Graphite is used for its refractory properties of high electrical and thermal conductivity,</td></tr>
</table>

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Criteria	JORC Code Explanation	Commentary
	the particular commodity, consumption trends and factors likely to affect supply and demand into the future. • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	chemical inertness and stability. Graphite has the highest thermal and electrical conductivity of all non-metals. There are two main commercial types of graphite, namely natural and synthetic. Natural graphite comprises flake and amorphous graphite. Amorphous graphite is crystalline but with a very fine particle size. Flake graphite has a particle size that allows individual graphite flakes to be visible to the eye. The primary ex-mine Balama product will be flake graphite as follows: **Ex-mine Balama flake graphite products** The Feasibility Study forecasts approximately 313 ktpa of concentrate, grading at 95% TGC is produced over the LOM. The assumed sales price (FOB Nacala) used in the cash flow model is US$1,000/t. Syrah does not believe any penalties will be incurred from its saleable product, with carbon at approximately 95% TGC, with ash, volatiles and sulphur being within tolerable limits set out in indicative specifications provided by its Chinese offtake partner and European graphite traders. **Global demand and supply** Global production statistics below have been

Product	Upper size (ASTM mesh)	Lower size (ASTM mesh)	Upper size (Microns)	Lower size (Microns)
Product 1	-	+50	-	>300
Product 2	-50	+80	<300	>180
Product 3	-80	+100	<180	>150
Product 4	-100	+140	<150	>105
Product 5	-140	-	<105	-

Criteria	JORC Code Explanation	Commentary
		sourced from Benchmark Minerals. China and Brazil accounts for 85% of estimated world graphite production (flake and amorphous) of 645,000 tonnes in 2013. Although China has historically been the dominant global producer, recent government actions to modernise and consolidate the local graphite mining industry have resulted in significant supply pressure that is expected to continue in the medium term. The key drivers of flake demand are refractories, foundries and crucibles at 52%. Batteries and industrial manufacturing account for 23% and 22% of global demand, respectively. Demand for amorphous graphite is primarily driven by usage in recarburisers for steel production (80%) and lubricants (20%). **Growth markets, new markets and opportunities** Within traditional natural graphite users, intra-substitution of amorphous graphite and vein graphite can be undertaken with flake graphite. Recycling of graphite by end users is very limited across industries due to the high cost and because graphite is typically consumed or contaminated during usage. Growth markets include graphite electrodes, synthetic graphite replacement in electrical graphite uses, battery anodes, and non-traditional markets such as the carbon market. New markets and opportunities include expandable graphite, lithium-ion (Li-ion) batteries, fuel cells; graphene; and new refractory applications. For battery use, sphericised and coated flake graphite is required to have a high purity (above 99.8% C). Synthetic and natural flake graphite competes in the battery market with the current composition being 55% and 45%, respectively.

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Criteria	JORC Code Explanation	Commentary
		Competitor analysis Syrah's competitors include existing producers in China and Brazil, as well as emerging producers listed on the Australian and Toronto Stock Exchanges. Based on competitor analysis, Syrah considers that it can be highly competitive against these parties as it will be one of lowest cost producers globally. In addition, Syrah also has the following advantages: - close proximity to established infrastructure - several major binding and non-binding offtake agreements have been signed - significant "first mover" advantage over emerging producers (e.g. regulatory approvals, delineation of Proven and Probable Reserves, etc). **Marketing and distribution contracts** Syrah has successfully concluded a three year binding offtake agreement with Chalieco for 80,000 tpa across various size fractions. The current weighted average basket price of this agreement is approximately US$1,100/t. In addition, Syrah has a MOU with Asmet, for 100,000 to 150,000 tonnes of graphite per annum at a price of approximately US$1,000/t over an initial period of five years. Syrah also has a MOU with Marubeni, a major Japanese integrated trading and investment conglomerate to pre-market graphite samples for industrial and battery applications in Japan and Korea. Subject to demand from potential customers, both parties will then negotiate a Definitive Marketing Agreement and potential

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<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>offtake financing.</td></tr>
<tr><td>Economic</td><td>• The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.
• NPV ranges and sensitivity to variations in the significant assumptions and inputs.</td><td>The economic model was prepared on a real basis. The key inputs into the economic analysis are shown below:

<table><tr><th>Economic metric</th><th>Units</th><th>Value</th></tr><tr><td>Project valuation date</td><td>-</td><td>1/01/15</td></tr><tr><td>Real discount rate</td><td>%</td><td>10.00</td></tr><tr><td>Royalty rate</td><td>%</td><td>3.00</td></tr><tr><td>Company taxation rate</td><td>%</td><td>32.00</td></tr></table>
The project economic metrics are shown in the table below:

<table><tr><th>Economic metric</th><th>Units</th><th>Value</th></tr><tr><td>Initial capital investment</td><td>US$M</td><td>137.8</td></tr><tr><td>Net present value (NPV)</td><td>US$M</td><td>1,125</td></tr><tr><td>Internal rate of return (IRR)</td><td>%</td><td>70.7</td></tr><tr><td>Financial year of payback</td><td>-</td><td>2018</td></tr><tr><td>Payback</td><td>years</td><td>< 2</td></tr></table>
It is estimated that changes in the following key assumptions would have the following approximate impact on the net present value of the Balama Project:

<table><tr><th>Sensitivity factor</th><th>NPV impact (US$M)</th></tr><tr><td>±US$100/t change in sales price</td><td>190</td></tr><tr><td>±1.0% change in discount rate</td><td>130</td></tr><tr><td>±1.0% change in LOM head grade</td><td>90</td></tr></table></td></tr>
<tr><td>Social</td><td>• The status of agreements with key stakeholders and matters leading to social licence to operate.</td><td>A Public Participation Process (PPP) was undertaken as part of the Environmental, Social and Health Impact Assessment (ESHIA) study for the Balama Graphite mine. The following requirements have been met by the public participation process:
- identifying relevant Interested and Affected Parties (I&APs)
- identifying issues raised during the</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
		project's PPP - supplying the Ministry for the Coordination of Environmental Affairs (MICOA) with responses to issues raised by I&APs during its PPP - indicating to MICOA how the proponent commits itself to future, on-going public participation.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* - *Any identified material naturally occurring risks.* - *The status of material legal agreements and marketing arrangements.* - *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government*	Snowden is not aware of any material impediments to the project. Syrah currently holds the following permits: - A mining concession was granted on 6 December 2013. The mining concession has a 25 year life, renewable for a further 25 years. - Water uptake from Chipembe dam. - Environmental License which has a 5 year life and is renewable. The Land Access (DUAT) License application has been lodged and is presently being reviewed by the Mozambique government.

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Criteria	JORC Code Explanation	Commentary
	approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	The Ore Reserve has been given a Proved and Probable classification as defined by the JORC Code 2012. There are no historical Ore Reserve estimates. The key modifying factors used to estimate the Balama Ore Reserve are based on the experience of Snowden and Syrah employees in this type of deposit and style of mineralisation. This summarises the status of material aspects of the Balama Ore Reserve estimate, in the context of the JORC Code (2012), with reference to item 49 of the code - Reporting of Industrial Minerals and Table 1, Section 4 - Check List of Assessment and Reporting Criteria and also includes the Competent Person sign-offs for the Balama Ore Reserve. The Balama Ore Reserve estimate is in accordance with the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves, 2012 Edition ("JORC" Code). Snowden has classified all Measured and Indicated Mineral Resource categories for the

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Criteria	JORC Code Explanation	Commentary
		Balama East pit as Probable.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	Snowden has completed internal peer review of the Ore Reserve estimate.
Discussion or relative accuracy/confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the*	Snowden's opinion of the Ore Reserve is that the classifications assigned are reasonable and consistent with the Mineral Resources and the available information at the time of the study. Factors that may affect the global tonnages and grade estimates may include: - geological interpretation - mining ore recovery - mining dilution - processing performance. There is no production data for benchmarking of the Ore Reserve estimate. The deposit and the Ore Reserve are not particularly sensitive to economics, as demonstrated by an analysis of deposit NPV versus Whittle results by shell.

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Criteria	JORC Code Explanation	Commentary
	relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

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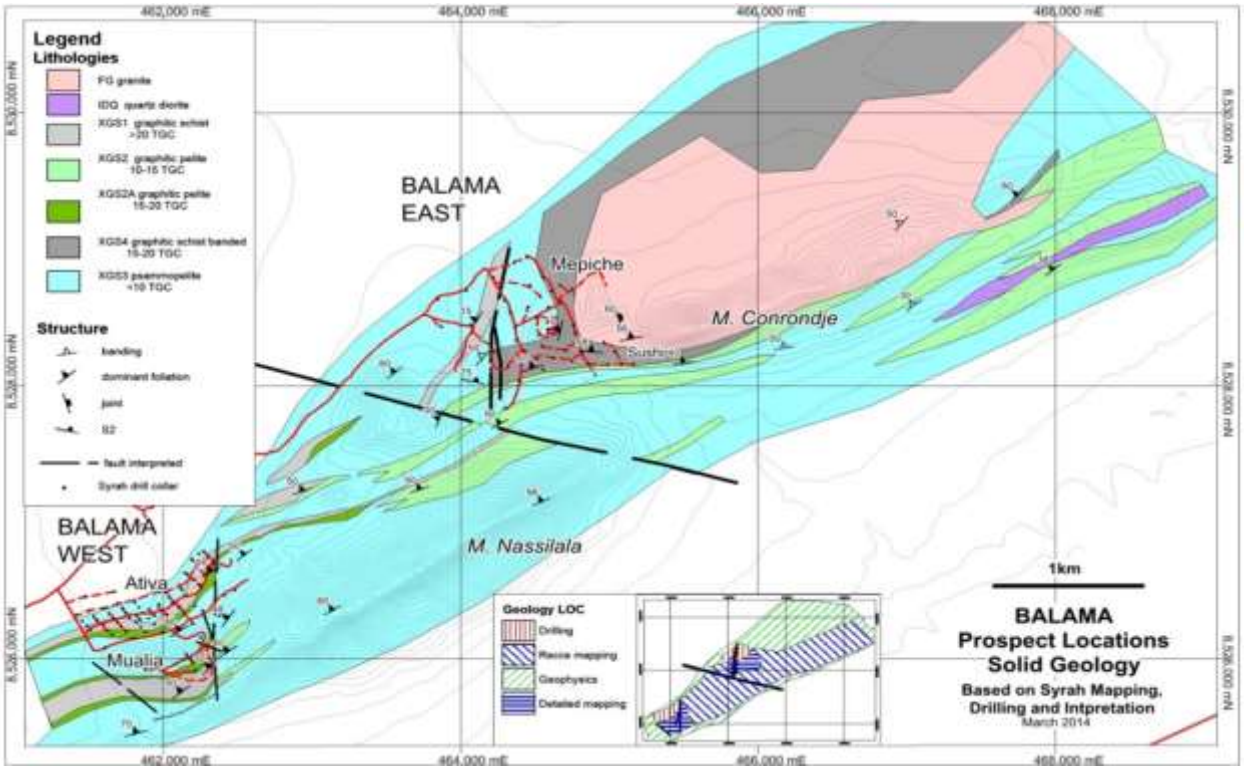
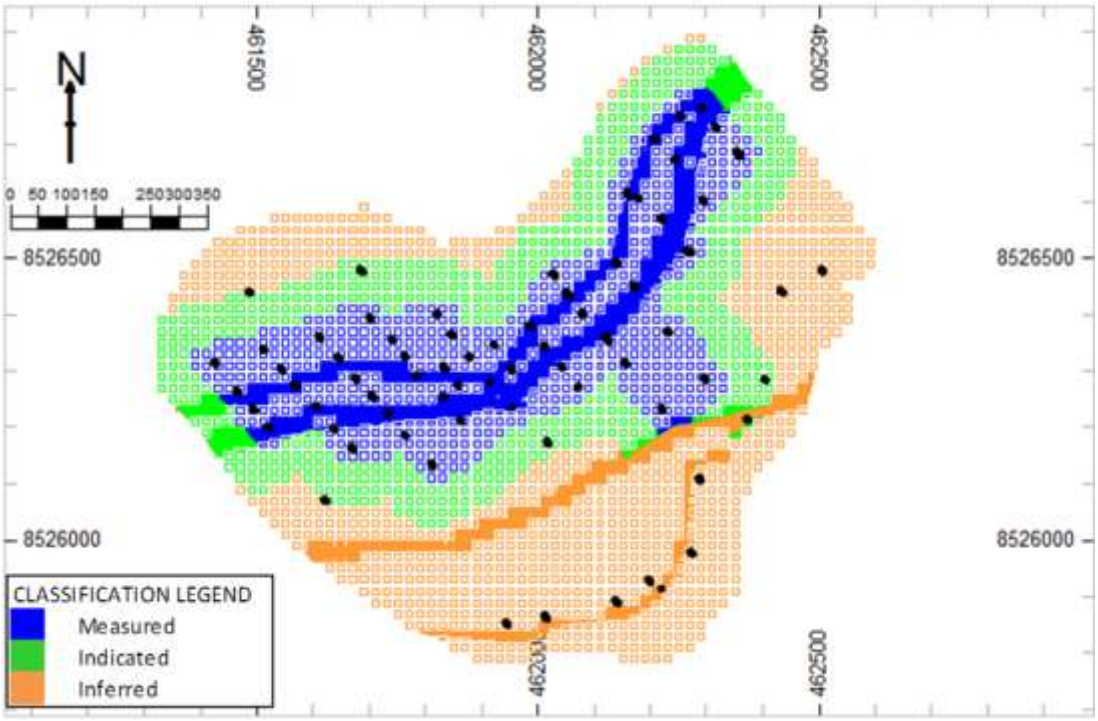
APPENDIX B

Balama solid geology with overburden removed

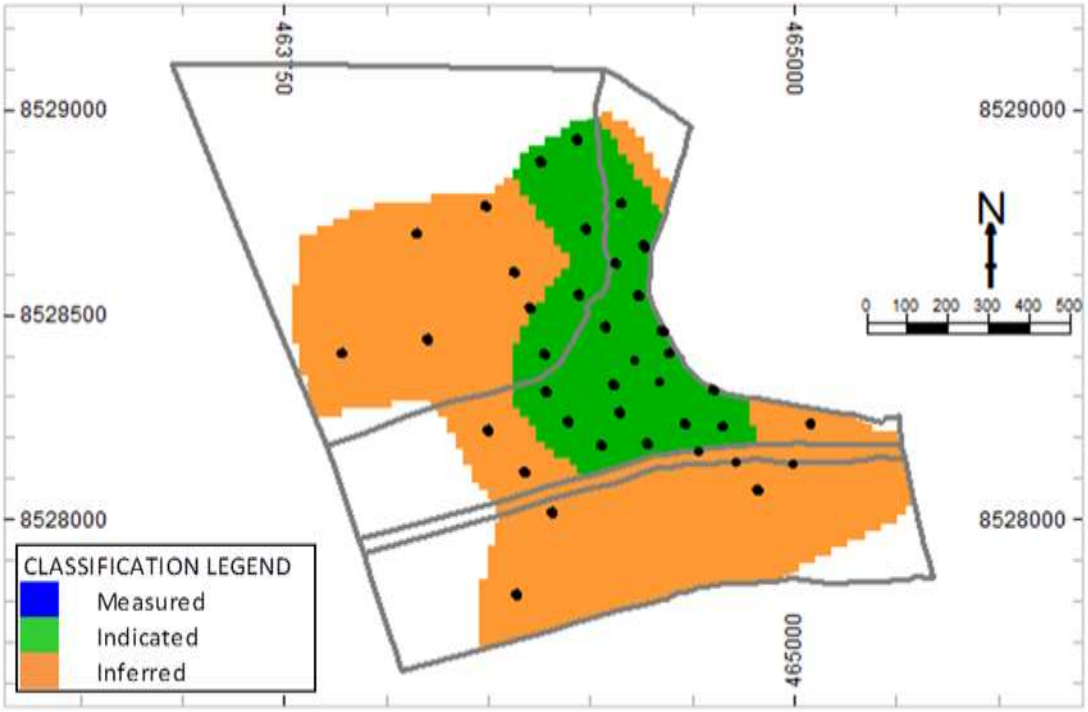


Balama West Mineral Resource Classification



The above figure shows the resource classification with drillhole distribution (black dots).

Balama East Mineral Resource Classification



The above figure shows the resource classification with drill hole distribution (black dots).

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