ASX/Media Release

SYRAH RESOURCES

29 March 2019

GRAPHITE MINERAL RESOURCES AND ORE RESERVES UPDATE

Syrah Resources Limited (**ASX: SYR**) ("Syrah" or "Company") releases an update on its graphite Ore Reserve and Mineral Resource estimates for the Balama Graphite Operation ("Balama") in Mozambique compared to the previous estimates as at 31 December 2017 (disclosed in the 2017 Annual Report and previous ASX announcements).

The updated Ore Reserve and Mineral Resource estimates are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 edition ("JORC Code") and the ASX Listing Rules. Supporting information relating to the changes is set out in this release and in each of the JORC Code Table 1 appendices.

Key Highlights

- Increase of 19% in estimated Mineral Resources at Balama compared to previous ASX disclosures.
- Balama hosts a significant graphite Ore Reserve of 113.3 Mt at 16.36% total graphitic carbon ("TGC") for 18.5Mt graphite at 7.2% cut-off grade as at 31 December 2018 (versus prior disclosure of 114.5Mt at 16.5% and 9% cut-off grade, as set out in the Company's 2017 Annual Report).
- Reserve largely maintained with reduction due to operational depletion offset by lowering the Reserve cut-off grade from 9% to 7.2% TGC.
- Reclassification of Reserve from Proved to Probable due to changes in assumptions based on production and recovery, performance to September 2018 and weighted average price.

UPDATE ON ESTIMATES OF MINERAL RESOURCES AT BALAMA

An increase of 19% in estimated Mineral Resources at Balama compared to the previous estimates as at 31 December 2017 as disclosed in the 2017 Annual Report (refer to Table 1 below) and discussed below.

Mineral Resources Estimates

Balama Mineral Resources at 3% TGC cut-off grade have been estimated by MPR Geological Consultants Pty Ltd ("MPR") as shown in the following Table 1.

The revised Balama Mineral Resources (comprising Balama West (including Mualia) and Balama East) reported in accordance with the JORC Code as at 31 December 2018 is 1,423Mtat 10% TGC (average grade) (which is equivalent to 146.7Mt of graphite), compared to 1,191 Mt at 11% TGC (average grade) (which is equivalent to 128.5Mtof graphite at 31 December 2017 for Balama West (including Mualia)

and Balama East as disclosed in Table 1 of the Resource and Reserve Statement included in the Company's 2017 Annual Report.[1]

The increase in Mineral Resource arises from additional extrapolation which is warranted by improved representation of mineralisation continuity, primarily at Balama East.

Table 1: Mineral Resource estimate at 3% TGC cut-off grade

As at 31 December 2017			
Classification	Tonnes (Mt)	TGC (%)	Graphite (Mt)
Balama West	645	10.5	68.5
- Measured	75	11	8.4
- Indicated	110	8.1	9.1
- Inferred	460	11	51
Balama East	546	10.6	60
- Measured			
- Indicated	76	14	11
- Inferred	470	10	49
Total	1,191	11.0	128.5
- Measured	75	11	8.4
- Indicated	186	11	20.1
- Inferred	930	11	100

As at 31 December 2018			
Classification	Tonnes (Mt)	TGC (%)	Graphite (Mt)
Balama West	640	10	63.9
- Measured	24.3	17.6	4.3
- Indicated	256	10.2	26.1
- Inferred	360	9.3	33.5
Balama East	783	11	83.1
- Measured			
- Indicated	123	13.4	16.5
- Inferred	660	10.1	66.7
Total	1,423	10	147
- Measured	24.3	17.6	4.3
- Indicated	379	11.2	42.6
- Inferred	1,020	9.8	100

Notes:
- The figures in these tables are rounded to reflect the precision of the estimates and include rounding errors.
- The Mineral Resource was estimated using a 3% TGC cut-off grade.
- Mineral Resource estimates are reported inclusive of Ore Reserve estimates. However, the Ore Reserves in Table 2 are based on -
- Mineral Resource estimates released by the Company on 29 May 2015 and 15 November 2016 (not Table 1 above).

Geology and Geological Interpretation

Geological setting and mineralisation controls of the Balama mineralisation have been confidently established from drill hole logging and field mapping.

Mineralised domains used for resource modelling were interpreted from 2 m down-hole composited TGC grades from diamond drilling with reference to geological logging. Information from exploratory trenches and un-assayed RC holes, along with grade control trenches were used to aid interpretation.

[1] This comprises the total Mineral Resources estimate for Balama West and Balama East set out Table 1 of the 2017 Annual Report. This table includes Mualia at 3% TGC cut-off grade. The 2017 Annual Report also included a separate estimate for Mualia at 5% TGC cut-off grade that was not further updated in this table given the different basis of the estimate.

The domains are consistent with geological interpretation and comprise zones of higher TGC grades flanked by generally lower grade background zones.

The high grade zone interpreted for Balama West (Ativa and Mualia) extends over approximately 1,150m and dips variably to the north at an average of around 45° with an average thickness of around 80m. The combined Mualia domains are truncated to the east by an interpreted fault and extend over 800m of strike and dip at around 45° to the north with an average thickness of around 170m.

Balama East Mineralised domains comprise a main zone of generally moderate TGC grades flanked to the south by a comparatively narrow zone of lower TGC grades. In the east, the domains bifurcate around a granitic intrusion. The combined Balama East domains extend east-west over approximately 1,000m and dip to the north at an average of around 40° with an average thickness of around 150m.

Sampling and Subsampling

Lengths of assayed diamond core samples range from around 0.4m to 25.6m with around 80% of core assayed over 2m intervals.

Field-sampling employed appropriate methods and was closely supervised by company geologists. Diamond core was generally quartered, or less commonly halved for assaying with a diamond saw.

Information available to demonstrate sample representivity includes assays for duplicate samples collected at an average frequency of one duplicate per 18 primary samples. These results confirm the repeatability of field sampling.

Sample Analysis Method

Primary sample preparation and assaying was undertaken by Bureau Veritas at Rustenburg in South Africa. After oven drying samples were crushed with riffle split sub-samples pulverized in a ring mill and analysed for attributes including carbon and, variably, sulphur by total combustion analysis in a Leco analyser, vanadium by Inductivly Coupled Plasma ("ICP"), and Loss On Ignition ("LOI") by gravimetric determination. Total Graphitic Carbon ("TGC") was determined by total combustion analysis after washing with dilute acid and roasting to remove carbonate minerals and organic carbon

Routine monitoring of laboratory performance included submission of coarse blanks and reference standards which have expected values for TGC, Carbon ("C") and Vanadium Pentoxide (V_2O_5). SGS inter-laboratory repeats provide additional information about assay reliability. This data supports the reliability of Bureau Veritas sample preparation and analyses for C, TGC, V2O5 and LOI.

Drilling Techniques

Diamond drilling included HQ (51%), NQ (39%) and less commonly PQ (10%) diameters. Core orientations were not recorded.

Estimation Methodology

Grades were estimated by Ordinary Kriging of 2m down-hole composited assay grades within each Mineralised domain. Grades were Kriged into 50m by 20m by 20m parent blocks which were re-blocked to 10m by 10m by 5m for assignment of mineralisation and weathering domains.

Grade estimation included a three pass, octant search strategy with search ellipsoids, and variogram orientations aligned with local mineralisation orientations.

No upper cuts were applied. This reflects the generally moderate variability of grade attributes, and ameliorates risk of understating secondary attribute grades

Model validation included visual comparison of model estimates and composite grades, and trend (swath) plots.

Mineral Resource Classification

Resource estimates were classified as Measured, Indicated and Inferred by search pass, Mineralised domain, a plan-view polygon outlining the area of relatively consistent 200m by 100m spaced drilling at Balama East. The classification approach reflects mineralisation trends and grade continuity.

Measured resources comprise portions of the Ativa Mineralised domains at Balama West with 100m by 50m diamond drilling. Estimates for other zones tested by consistently by 200m by 100m spaced drilling are classified as Indicated. The remaining estimates are classified as Inferred.

Cut-off grade

The cut-off grades used for resource reporting reflect Syrah's interpretation of potential project economics for a large scale operation.

Mining and Metallurgical Methods and Parameters

The estimates reflect medium to large scale open pit mining comparable to current practices. Around 90% of the Balama West and Balama East estimates are from depths of less than around 275m and 350m respectively. The mineralisation is broad, and continuous in nature and the estimates are interpreted to have reasonable prospects of extraction by open pit mining.

The processing plant is planned to progress to a recovery of 87% of the graphite in the feed by 2021 which will have a concentrate grade of 95% TGC. The long-term recovery has been reduced from the previous 92.5% in the feasibility study based on lessons learned from an operational plant compared to previous test work. The recovery has been progressing gradually from the commencement of ore feed in October 2017. Recovery of 53% rwas achieved in the previous 2018 financial year with highest quarterly recovery achieved of 74% for Q4 2018.

An average Particle Size Distribution (PSD) for Balama West and Balama East based on previous test work shows +300 µm 8.5%, +180 µm 12%, +150 µm 11.5% and -150 µm 68.0%.

Competent Person's Statement

The information in this document related to Mineral Resource estimates is based on information compiled by Mr Jonathon Abbott, a Competent Person who is a member of the Australian Institute of Geoscientists. Mr Abbott is employed by MPR Geological Consultants Pty. Ltd and is an independent consultant to Twigg Exploration and Mining Limitada. Mr Abbott has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is reporting to qualify as a Competent Person as defined in the JORC Code". Mr Abbott consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Additional information is contained in Appendix 1.

UPDATE ON ESTIMATES OF ORE RESERVES AT BALAMA

The Balama Ore Reserve estimate (Balama West (Ativa and Mualia) and Balama East) reported in accordance with the JORC Code as at 31 December 2018 is 113.3Mt at 16.36% TGC and 7.2% cut-off grade, equivalent to 18.5Mt of graphite, compared to 114.5Mt at 16.5% TGC and 9% cut-off grade, equivalent to 18.6Mt of graphite as at 31 December 2017 and disclosed in the 2017 Annual Report.

The Ore Reserves are based on the Mineral Resource estimates as released by the Company on 29 May 2015 (Ativa in Balama West and Balama East) and 15 November 2016 (Mualia).

The change in Ore Reserve tonnes is due to:

- Mining ore depletion of 1.2Mt at 16% TGC from West Balama (Ativa)
- Ore Reserve estimate was developed at 7.2% cut-off grade to reflect the relative value across the flake size distribution. The net effect to the Ore Reserve estimate is to include an additional of 6Mt of marginal economic ore. The material is processed mainly at the end of Life of Mine ("LOM").
- Reclassification of Ore Reserves from Proved to Probable due to changes in assumptions based on production and recovery performance to September 2018, and weighted average price.

Table 2: Ore Reserve estimate

As at 31 December 2017 (9% cut-off grade)				As at 31 December 2018 (7.2% cut-off grade)			
Classification	**Tonnes (Mt)**	**TGC (%)**	**Graphite (Mt)**	**Classification**	**Tonnes (Mt)**	**TGC (%)**	**Graphite (Mt)**
Balama West	**22.5**	**19**	**4.3**	**Balama West**	**22.76**	**17.41**	**4.0**
- Proved	20.0	19.2	3.8	- Proved	5.15	17.20	0.9
- Probable	2.6	17.5	0.4	- Probable	17.61	17.48	3.1
Mualia [2]	**33.1**	**17.5**	**5.4**	**Mualia [3]**	**33.89**	**18.74**	**6.4**
- Proved				- Proved			
- Probable	33.1	17.5	5.4	- Probable	33.89	18.74	6.4
Balama East	**58.8**	**15.1**	**8.9**	**Balama East**	**56.41**	**14.51**	**8.2**
- Proved				- Proved			0
- Probable	58.8	15.1	8.9	- Probable	56.41	14.51	8.2
Stockpiles (T)				**Stockpiles (T)**	**0.24**	**17.18**	**0.04**
- Proved				- Proved	0.24	17.18	0.04
- Probable				- Probable			
Total	**114.5**	**16.5**	**18.6**	**Total**	**113.29**	**16.36**	**18.5**
- Proved	20	19.2	3.8	- Proved	5.39	17.20	0.9
- Probable	94.5	16.0	14.7	- Probable	107.9	16.32	17.6

Notes:
- The Ore Reserve as at 31 December 2017 was estimated using a 9% TGC cut-off grade.
- The Ore Reserve as at 31 December 2018 was estimated using a 7.2% TGC cut-off grade.
- All Ore Reserve tonnes have been rounded to the nearest 10,000 tonnes and grade to the nearest 0.01%.
- The Ore Reserve estimate includes small amounts of inferred material in the form of mining edge dilution.

Ore Reserve Estimate

Material Assumptions for Ore Reserve

Material assumptions applied for the Balama Ore Reserve include:

- Graphite price based on Syrah's long term price forecasting protocols were used for the optimization
- Capital and operating costs as derived from Syrah long term forecasts
- Allowance for ore dilution included in the mining performance
- Metallurgical performance adjusted to reflect current practice
- Geotechnical recommendations from SRK Consulting and Middindi Geotechnical Consulting (Pty) Ltd

[2] 2017 Annual Report, Table 4. In the 2017 Annual Report the Balama West (Mualia) Ore Reserves were reported separately to the Balama West (Ativa) and Balama East Ore Reserves as the Balama West (Mualia) Ore Reserves were the subject of a standalone study (reported by the Company on 15 November 2016).
[3] The Company's most recent Ore Reserve update covers Balama West (Ativa), Balama West (Mualia) and Balama East in a single study.

Ore Reserve Classification

The Ore Reserve has been given a Proved and Probable classification as defined by the JORC Code.

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. The Balama Ore Reserve estimate is reported in accordance with the JORC Code.

All Measured and Indicated Mineral Resource categories for the Balama East pit were classified as Probable.

Mining Method

The mining method applied in the Ore Reserve is conventional drill, blast, load and haul open pit mining method currently practiced at Balama. Some of the softer material in the oxide zone is identified as free-dig, meaning no drilling and blasting is required for in this zone.

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. This criterion was adopted in both optimisation works and pit designs.

Processing Method

Refer to the Mineral Resource section.

Cut-off Grade

The marginal cut-off grade was calculated to be 7.2% TGC based on all pre-tax costs associated with the processing and selling of a composite graphitic product containing 95% TGC which includes stockpile reclaiming, processing, road transport, ship loading, royalties, general and administration, product pricing from Syrah, sales prices for each product size fraction and mining costs. The Ore Reserve estimate was undertaken at a 7.2% cut-off to accommodate the risk of potential pricing changes. The net effect to the Ore Reserve estimate is to include an additional of 6Mt of marginal economic ore. The material is processed mainly at the end of the life of mine. As for the Mineral Resource section, no upper cut was applied in the Ore Reserve.

Estimation Methodology

Refer to the Mineral Resource section.

Material Modifying Factors

Syrah has all regulatory leasing, approvals, licensing, and agreements required for the Balama graphite mine. In addition to regulatory and legal requirements, Balama has all infrastructure in place which means at this stage no material modifying factors need to be highlighted that might on Ore Reserve estimates.

Competent Person's Statement

The information in this report as it relates to Ore Reserve estimation was compiled under the supervision of Mr Jon Hudson who is an employee of Snowden Mining Industry Consultants Pty Ltd and a Fellow of the South African Institute of Mining and Metallurgy. Mr Hudson has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity that he has undertaken to qualify as a Competent Person as defined in the JORC Code. Mr Hudson consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Additional information is contained in Appendix 2.

For further information contact Investor Relations:

Nova Young

Contact: +61 422 575 530

Email: n.young@syrahresources.com.au

Appendix 1 – Mineral Resources Update

The following table provides a summary of important assessment and reporting criteria used at the Balama deposits for the reporting of Mineral Resources in Table 1 of this announcement in accordance with the Table 1 checklist of the JORC Code. Criteria in each section apply to all preceding and succeeding sections.

The table in Appendix 2 provides a summary of important assessment and reporting criteria used at the Balama deposits for the reporting of Ore Reserves in Table 2 of this announcement in accordance with the Table 1 checklist of the JORC Code. Sections 1, 2 and 3 below do not refer to the Mineral Resources upon which the Ore Reserves were derived. Sections 1, 2 and 3 of the Table 1 checklist of the JORC Code for those Mineral Resources is set out in Appendix 2.

Section 1: Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	The sampling database compiled for resource estimation comprises 20 exploratory and grade control trenches, 22 RC holes and 163 diamond holes for 21,446.9 m. RC and trenching data were used to aid mineralised domain interpretation but were not used for grade estimation. The RC holes were drilled for regional exploration or defining pegmatite intrusions at Balama West. No assay results are available for RC holes or exploratory trenches. Diamond drilling and sampling and was closely supervised by company geologists and utilised appropriate methods. Diamond core was generally quartered, or less commonly halved for assaying with a diamond saw. Information available to demonstrate diamond core sample representivity includes duplicates and recovery measurements. These data adequality confirm the repeatability of field sampling. Lengths of assayed diamond core samples range from around 0.4 to 25.6 m with around 80% of core assayed over 2 m intervals. Primary sample preparation and assaying was undertaken by Bureau Veritas at Rustenburg in South Africa. After oven drying samples were crushed with riffle split sub-samples pulverised in a ring mill and analysed for attributes including carbon and, variably, sulphur by total combustion analysis in a Leco analyser, vanadium by ICP, and LOI by gravimetric determination. Total Graphitic Carbon (TGC) was determined by total combustion analysis after washing with dilute acid and roasting to remove carbonate minerals and organic carbon.
Drilling techniques	Around two thirds of diamond holes have un-assayed open hole pre-collars, averaging 2.6m deep. Diamond drilling included HQ (51%), NQ (39%) and less commonly PQ (10%) diameters. Core orientations were not recorded.
Drill sample recovery	Sample recovery was maximised by use of appropriate drilling techniques. Recovered core lengths were measured for virtually all diamond drilling. Core recoveries for weathered and fresh mineralised domains average 99.8% and 91.0% respectively, with no notable grade-recovery trends. Recovery for weathered background, generally lower TGC grade domains domain averages around 79%, with a general association between lower TGC grades and lower recoveries. It is uncertain whether this trend reflects selective sample loss or recovery variability with material type. Weathered background represents only a small

	proportion of resource estimates and uncertainty over the representivity of lower recovery core samples for this material does not significantly affect confidence in estimated resources.
Logging	All diamond holes were geologically logged by industry standard methods including oxidation, lithology, grainsize, texture and structural fabric. This logging is qualitative in nature and of sufficient detail for mineral resource estimation. Graphite flake sizes were visually logged for most holes. Initial visual logs of maximum flake size and average flake sizes provide un-reliable indication of flake sizes for assay sample intervals and around half of the diamond holes were re-logged for these attributes using a microscope. Geotechnical logging was done in both exploration and newly drilled geotechnical holes. Detailed geotechnical logging conducted in geotechnical drilled holes include measurements and assessments of lithological description, RQD, weathering description, count of fractures and discontinuities sets, bedding / foliation spacing and soil classification. Unconfined compressive strength tests were done using low impact Schmidt hammer for all geotechnical drill holes.
Sub-sampling techniques and sample preparation	Field-sampling employed appropriate methods and was closely supervised by company geologists. Diamond core was generally quartered, or less commonly halved for assaying with a diamond saw. Core was generally (80%) assayed over 2 m intervals, with around 97% drilling sampled over lengths of between 1 and 3 m. Information available to demonstrate sample representivity includes assays for duplicate samples collected at an average frequency of one duplicate per 18 primary samples. These results confirm the repeatability of field sampling. Field and laboratory sub-sampling was appropriate for the sampled material, and of appropriately high quality for resource estimation. The sample sizes are appropriate for the grainsize of the material being sampled.
Quality of assay data and laboratory tests	After oven drying samples were crushed, and riffle split sub-samples pulverised in a ring mill and analysed for attributes including carbon and, variably, sulphur by total combustion analysis in a Leco analyser, vanadium by ICP, and LOI by gravimetric determination at 1000°C. Total Graphitic Carbon (TGC) was determined by total combustion analysis after samples were washed with dilute acid and roasted to remove carbonate minerals and organic carbon. The assaying represents total analyses, with the exception of TGC, which is partial. Routine primary assaying included sulphur grades only for the initial 2012 drill programme. Most samples from 2013 and 2014 drilling were subsequently assayed for sulphur in 2015 and 2017. Routine monitoring of laboratory performance included submission of coarse blanks and reference standards which have expected values for TGC, C and V_2O_5. SGS inter-laboratory repeats provide additional information about assay reliability. These data support the reliability of Bureau Veritas sample preparation and analsyes for C, TGC, V_2O_5 and LOI. The reliability of sulphur assaying has not been confidently established and sulphur is not included in Mineral Resource estimates. Acceptable levels of accuracy and precision have been established for attributes included in Mineral Resources.
Verification of sampling and assaying	No individual drill hole results are reported in this announcement. No twinned holes have been drilled at Balama. Sampling and geological information was recorded by company geologists on standard log sheets was routinely entered into a master Access database, and carefully checked and validated. Assay results were merged directly into the database from digital files provide by the laboratory. Assay values were not adjusted for resource estimation.
Location of data points	Resource drilling was collar surveyed by high accuracy differential GPS (DGPS), and generally down-hole surveyed by single shot Reflex tool at intervals of around 50m and closer.

	The estimates are reported below a topographic surface generated from an aerial LIDAR (Light Detection And Ranging) survey and DGPS mining surveys. Topographic control is adequate for the Mineral Resources estimates. Resource modelling utilised a local grid developed by Syrah for mine planning and operational surveying which comprises a 40° rotation from WGS coordinates aligning the resource drilling to north-south local grid traverses.
Data spacing and distribution	No individual drill hole results are reported in this announcement. The resource area has been generally tested by approximately 200 by 100 m spaced diamond drilling, with broader and variably spaced drilling in peripheral areas and a comparatively small area of 100 by 50 m spaced holes at the Ativa zone at Balama West The data spacing and distribution is sufficient to establish geological and grade continuity for the Mineral Resource Estimates. Diamond core samples were composited to 2 m down-hole intervals for resource modeling.
Orientation of data in relation to geological structure	Virtually all resource holes are inclined at around 60° to local grid south, approximately perpendicular to the general mineralisation trends. True widths approximate down-hole widths. The resource drilling orientations provide un-biased sampling of the mineralisation.
Sample security	Diamond core was delivered to the on-site core shed by company personnel. Core-cutting and sampling was supervised by company geologists. Samples were collected in plastic bags and sealed in polywoven sacks for transportation to the assay laboratory by courier. No third parties were permitted un-supervised access to the samples prior to delivery to the assay laboratory. Results of field duplicates, inter-laboratory repeats and the general consistency of results between sampling phases along with comparisons with production provide additional confidence in the general reliability of the resource data.
Audits or reviews	Mr Abbott independently reviewed sample quality information and database validity. Mr Abbott considers that the resource data has been sufficiently verified to provide an adequate basis for Mineral Resource estimation.

Section 2: Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	Twigg obtained Mining license (6432C) for both graphite and vanadium on July 2013 which is valid for 15 years till December 2038. Renewable for further 15 years
Exploration done by other parties	All drilling included in Mineral Resource estimation was undertaken by Syrah
Geology	The project lies with the Neoproterozoic Xixano Complex, which in the Balama region comprises an NNE trending synform with a core of mafic orthogneisses surrounded micaceous gneiss and schist, quartz-feldspar gneiss, quartzite and marble. Graphitic gneiss and schist, which are locally enriched in vanadium occur within the micaceous gneiss unit which dominates the Balama area. Higher grade graphite mineralisation is hosted by graphitic schists interlayered with lower grade psammites and intruded by volumetrically minor pegmatites. At Balama East the graphitic units bifurcate around a granitic intrusion which outcrops as a dominant hill. The graphitic units dip variably to local grid north at an average of around 45°. Relative to the pre-mining surface, the graphitic schists were overlain by an average of around 2 to 3 m of un-mineralised soil and variably weathered to an average of around 30 m depth.
Drill hole Information	No individual drill hole results are reported in this announcement

Data aggregation methods	Diamond core samples were composited to 2 m down-hole intervals for resource modeling.
Relationship between mineralisation widths and intercept lengths	With the exception of a single vertical hole, all resource holes are inclined at around 60° to local-grid south, approximately perpendicular to mineralisation and lithological trends. True widths approximate down-hole widths.
Diagrams	No appropriate diagrams are included in this announcement
Balanced reporting	No individual drill hole results are reported in this announcement.
Other substantive exploration data	No other substantial exploration data
Further work	Due to the operational status further exploration is not planned at this time.

Section 3: Estimation and Reporting of Mineral Resources

Criteria	Commentary
Database integrity	Sampling and geological information recorded by field geologists on standardised log sheets was entered into a master Access database, and routinely carefully checked and validated by comparison with field sampling records. Analytical results were merged into the database from digital files provide by laboratories. Mr Abbott independently reviewed database validity including consistency checks within and between database tables, spot check comparison of original field records with database records and comparison of assay entries with laboratory source files. These checks were undertaken using the resource working database and check both the validity of Syrah's master database and potential data-transfer errors in compilation of the working database. They showed no significant discrepancies and Mr Abbott considers that the resource data has been sufficiently verified to provide an adequate basis for Mineral Resource estimation.
Site visits	Mr Abbott visited the Balama Project between the 24th and 29th of July 2017. The site visit included inspection of diamond core and mineralisation exposures and discussion of the project's geology and mineralisation and drilling and sampling with company geologists. Through these activities Mr Abbott gained an understanding of the geological setting and mineralisation controls, and the resource sampling activities.
Geological interpretation	Geological setting and mineralisation controls of the Balama mineralisation have been confidently established from drill hole logging and field mapping. Mineralised domains used for resource modelling were interpreted from 2 m down-hole composited TGC grades from diamond drilling with reference to geological logging. Information from exploratory trenches and un-assayed RC holes, along with grade control trenches were used to aid interpretation. The domains are consistent with geological interpretation and comprise zones of higher TGC grades flanked by generally lower grade background zones. Balama West mineralisation includes the northerly Ativa zone and southerly Mualia zone. The high grade zone interpreted for Ativa extends over approximately 1,150 m and dips variably to the north at an average of around 45° with an average thickness of around 80 m. The combined Mualia domains are truncated to the east by an interpreted fault and extend over 800 m of strike and dip at around 45° to the north with an average thickness of around 170 m. Balama East mineralised domains comprise a main zone of generally moderate TGC grades flanked to the south by a comparatively narrow zone of lower TGC grades. In the east, the domains bifurcate around a granitic intrusion. The combined Balama East domains extend east-west over approximately 1,000 m and dip to the north at an average of around 40° with an average thickness of around 150 m. Surfaces representing the base of un-mineralised soil and upper and lower weathering zones were interpreted from geological logs and sulphur grades which show a distinct

	increase with depth within the weathered zone. These surfaces were used for density assignment and coding of model blocks by weathering type. Due to the confidence in understanding of mineralisation controls and the robustness of the mineralisation model, investigations of alternative interpretations are considered unnecessary.
Dimensions	Balama West Mineral Resources lie within an area around 1.4 km east-west by 1.1 km north-south and extend to 400 m depth with around 90% of estimates from depths of less than 275 m. Balama East Mineral Resources lie within an area around 1.2 km east-west, by 1.6 km north-south and extend to 350 m depth with around 90% of estimates from depths of less than 250 m.
Estimation and modelling techniques	Attribute grades were estimated by Ordinary Kriging of 2m down-hole composited assay grades within each mineralised domain. Grades were Kriged into 50 by 20 by 20 m parent blocks which were re-blocked to 10 by 10 by 5 m for assignment of mineralisation and weathering domains. The resource area has been generally tested by approximately 200 by 100 m diamond drilling, with broader and variably spaced drilling in peripheral areas and a comparatively small area of 100 by 50 m drilling at Ativa. Grade estimation included a three pass, octant search strategy with search ellipsoids, and variogram orientations aligned with local mineralisation orientations. Balama West search radii (strike, dip, cross strike) and data requirements were Search 1: 120 by 120 by 20m, minimum 8 data in 2 octants, Search 2: 240 by 240 by 40m, 8 data/ 2 octants, Search 3: 240 by 240 by 40 m, 4 data/1 octant. Balama East search criteria were Search 1: 170 by 170 by 30 m, 8 data/ 2 octants, Search 2: 240 by 240 by 40m, 8 data/2 octants, Search 3: 240 by 240 by 40 m, 4 data/ 1 octant. Density was estimated by Ordinary Kriging, with composites flagged by weathering domain. Resource sampling is too broadly spaced for wire-frame interpretation of the barren pegmatites. The estimates allow for pegmatite by estimating the proportion of pegmatite within each model block by inverse distance weighting of composites flagged as pegmatite from geological logs. No upper cuts were applied. This reflects the generally moderate variability of grade attributes, and ameliorates risk of understating secondary attribute grades. The estimation technique is appropriate for the mineralisation style. In addition to the Mineral Resource attributes the models include estimates for sulphur and graphite flake sizes. The estimates make no assumptions about recovery of by-products and no assumptions about correlation between variables. Micromine software was used for data compilation, domain wire-framing, and coding of composite values, and GS3M was used for resource estimation. Model validation included visual comparison of model estimates and composite grades, and trend (swath) plots. For Balama West the current resource models gives very similar overall estimates to the previous model, with comparatively lower tonnages of Measured resources and higher Indicated tonnages for significantly more combined Measured and Indicated tonnages. These differences are due to the previous model classifications not reflecting mineralisation trends and continuity. For Balama East, relative to the previous model, the current model gives higher Indicated and Inferred tonnages for around 45% greater combined estimates. This difference primarily reflects additional extrapolation which is warranted by the mineralisation continuity. Production from Balama is at a comparatively stage, and comparisons between model estimates and production for the relatively small as-mined volume are not regarded as a definitive indication of long-term model performance. production to

	date has realised slightly lower tonnages and grades of ore (>9% TGC) than the combined model estimates at this cut-off.
Moisture	Tonnages are estimated on a dry tonnage basis.
Cut-off parameters	The cut-off grades used for resource reporting reflect Syrah's interpretation of potential project economics for a large scale operation.
Mining factors or assumptions	The estimates reflect medium to large scale open pit mining comparable to current practices. Around 90% of the Balama West and Balama East estimates are from depths of less than around 275 and 350 m respectively. The mineralisation is broad, and continuous nature and the estimates are interpreted to have reasonable prospects of extraction by open pit mining.
Metallurgical factors or assumptions	Syrah is processing the ore by crushing, grinding, flotation and screening, attrition cells and drying to produce graphitic concentrate of various flake sizes. The processing plant is planned to build up to a recovery of 87% of the graphite in the feed by 2021 which will have a concentrate grade of 95% TGC. The long-term recovery has been reduced from the previous 92.5% in the feasibility study based on lessons learned from an operational plant compared to previous test work. The recovery has been building up gradually from the commencement of ore feed in October 2017. 74% recovery was achieved in the previous 2018 financial year. An average Product Size Distribution (PSD) for West and East Balama based on previous test work shows +300 µm 8.5%, +180 µm 12%, +150 µm 11.5% and -150 µm 68.0%.
Environmental factors or assumptions	The application for the environment permit was lodged in March 2015. This is supported by all the appropriate studies and documentation required by the Mozambique Government. Syrah was granted its Environmental License on 23 April 2015, which has a five-year life and is renewable. Waste rock characterization 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.
Bulk density	The resource database contains 10,322 immersion density measurements of diamond core. The measurements did not include oven drying or reliable sealing to prevent water absorption during measurement, Available information, including comparison with production suggests the potential impact of these effects on average densities is unlikely to be material. For each model block, density was estimated by Ordinary Kriging, with composites flagged by weathering domain.
Classification	Resource estimates were classified as Measured, Indicated and Inferred by search pass, mineralised domain, a plan-view polygon outlining the area of relatively consistent 200 by 100 m spaced drilling at Balama East. The classification approach reflects mineralisation trends and grade continuity. Measured resources comprise portions of the Ativa mineralised domains at Balama West with 100 by 50 m diamond drilling. Estimates for other zones tested by consistently by 200 by 100 m spaced drilling are classified as Indicated. The remaining estimates are classified as Inferred. The resource classification accounts for all relevant factors. The resource classifications reflect the competent person's view of the deposit.
Audits or reviews	The resource estimates have been reviewed by company geologists, and are considered to appropriately reflect the mineralisation and sampling data.
Discussion of relative accuracy/ confidence	Confidence in the relative accuracy of the estimates is reflected by the classification of estimates as Measured, Indicated and Inferred.

Appendix 2 – Ore Reserves Update

The following table provides a summary of important assessment and reporting criteria used at the Balama deposits for the reporting of Ore Reserves in Table 1 of this announcement in accordance with the Table 1 checklist of the JORC Code. Criteria in each section apply to all preceding and succeeding sections. Sections 1, 2 and 3 have been provided for each of the Mineral Resource estimates from which the Ore Reserves were derived. This information was previously disclosed to the ASX on 15 November 2016 (Mualia) and 29 May 2015 (Ativa and Mepice).

Section 1: Sampling Techniques and Data (Mualia, November 2016)

Criteria	Commentary
Sampling techniques	Core samples were collected continuously through the mineralised zone. The average sample length is 2m in the drill holes, ranging from 0.40m to 10.00m, and an average of 1.97m in the trenches ranging between 0.60m to 2.90m. The sample data from the trenches were not used in the estimation. Half core samples cut with a diamond saw were prepared and bagged at the site core yard. The routine sampling methods were performed according to documented set of Standard Operating Procedures (SOPs) and were periodically audited. The sampling methods were of a high standard and suitable for evaluation purposes.
Drilling techniques	NQ diameter inclined diamond cored drill holes.
Drill sample recovery	Recoveries were documented in drill hole logs for all 96 drill holes. The average core recovery in all drill holes used in the Mineral Resource estimate was 92.5%.
Logging	All drill holes were geologically logged by qualified geologists. The logging was of an appropriate standard for Mineral Resource estimation using a standardised set of lithological codes. A litho-stratigraphic sequence has not been compiled for this area, and correlation between drill holes is based on lithological and grade continuity.
Subsampling techniques and sample preparation	The sampling method was deemed appropriate to the type of mineralisation and results of duplicate samples support this. Half-core samples were submitted. Where metallurgical sampling was undertaken, quarter core samples were taken.
Quality of assay data and laboratory tests	Total Graphitic Carbon (TGC) was analysed by Bureau Veritas (Rustenburg) after a weak acid wash to remove carbonates. Calcining at 420°C was undertaken to remove organic carbon. Analysis for Total Carbon in a LECO sulphur/carbon analyser was conducted to determine graphitic carbon. The level of detection was 0.01%. Vanadium was analysed by ICP following a sodium peroxide fusion, with a detection limit of 0.005%. Both methods are considered appropriate for the two elements concerned. Other elements were analysed for information purposes by different ICP analytical methods. The assay database displays industry standard levels of precision and accuracy and meets the requirements for use in estimating the Mineral Resource. The quality of the assay work was assessed by means of inserting approximately 5% CRMs, 5% Blanks and 5% field duplicates into the sample stream. Re-assay was conducted where necessary to confirm anomalous analyses. These measures were applicable to the drill hole samples only, the trench data having been discarded from the Mineral Resource estimation data due to grade inconsistencies between the two data sets (possibly due to near surface weathering of the rock in the trenches).
Verification of sampling and assaying	A subset of 5% of the total samples covering the majority of the grade range of carbon assay results were analysed by a second laboratory (SGS Lakefield, Toronto). The results of the 2nd lab assays validated the primary laboratory results. Data was audited against a set of standard measures to ensure the integrity of the database prior to use in the Mineral Resource estimation process. No twin drilling was conducted.

Location of data points	All of the drill hole collars were surveyed by a qualified surveyor on a UTM grid with a WGS84 datum. Downhole surveys were conducted by the drilling contractor and this data was included in the database for the project.
Data spacing and distribution	The drill holes were spaced between 60 and 120 m apart in the plane of mineralisation. This spacing was considered appropriate to estimate Mineral Resources in the Indicated and Inferred categories, depending on the drill hole frequency in each domain.
Orientation of data in relation to geological structure	The drill holes were inclined to the southeast at approximately -60 degrees with the objective of intersecting the lithologies close to perpendicular to their dip, thereby approximating true thickness intersections. It is considered that no sampling bias has been created by this drilling orientation. One vertical drill hole was also drilled (BMDD0119).
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 or reviews	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 drill hole data collection protocols and QA/QC procedures; and interrogation of the QA/QC data.

Section 2: Reporting of Exploration Results (Mualia, November 2016)

Criteria	Commentary
Mineral tenement and land tenure status	The Balama West project area comprises 10 640 ha in a combined license, also covering the Balama West project area and is valid until 20 July 2015, renewable for a further 5 years.
Exploration done by other parties	All exploration data used for the Mineral Resource reported was generated by Syrah Resources Limited and its appointed contractors.
Geology	The geology of the project area comprises metamorphic rocks of the Xixano Complex, dated at 735Ma. Lithologies include schists, mica-schists and psammites, of granulite metamorphic grade.
Drill hole information	In total, 96 drill holes are contained in the database for the project area (as well as ten trenches). All drill hole collars were surveyed and all drill holes were surveyed down the hole. All core was geologically logged by qualified geologists according to a set of SOPs.
Data aggregation methods	Drill hole samples were composited by length weighting into 2 metre intervals for use in grade estimation. All sample lengths were included and there were no residuals.
Relationship between mineralisation widths and intercept lengths	Samples were taken at a nominal 2 metre length, which was 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 in all areas but the northeast, where the strike of the layering is affected by structural effects associated with the emplacement of a granite intrusion.
Diagrams	Relevant diagrams including plans and sections were utilised to assist with the generation of the geological model.
Balanced reporting	This Mineral Resource estimate is based on all drilling data on the project. Trench samples were not utilised. The results of the Mineral Resource estimation have been peer reviewed to ensure their quality and integrity, and that they represent a fair and reasonable assessment of the mineralisation.
Other substantive exploration data	Surface geological maps, along with topographic survey data were used to assist in the formulation of the geological model of the Mineral Resource.
Further work	No further work to extend the Mineral Resource is planned at Balama West. The mineralisation is open in the west and east directions, and at depth.

Section 3: Estimation and Reporting of Mineral Resources (Mualia, November 2016)

Criteria	Commentary
Database integrity	Data were provided in an Access database. MSA 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	Site visits were undertaken by MSA during both phases of exploration. Messrs R Barnett and M Lynn of MSA undertook one site visit during Phase 1 and one during Phase 2. Mr M Hall of MSA undertook a site visit during the Phase 2 exploration. Mr Witley has not undertaken a site visit to the project, he being reliant on information from his colleagues in this respect.
Geological interpretation	The Mineral Resource is stratiform. Geological continuity has been confirmed by the diamond drilling and trenching and outcrops of mineralisation are seen to occur throughout the area of the Mineral Resource estimate.
Dimensions	The Mineral Resource at Mualia in Balama West extends over a strike length of 740 m and appears to be open to the west, east and north. The Mineral Resource occurs from surface and has been constrained at depth by limiting down-dip extensions to 100 m vertically below the termination of each drill hole. The high grade mineralised zones have not been fully penetrated and dip at between 45 and 50 degrees to the north-west.
Estimation and modelling techniques	The Mualia Zone was divided into the Mualia West, Mulia West Medium Grade and Mualia East Zones. Mineralisation grades and density were estimated into a 20mN by 20mE by 10mRL three dimensional block model. The block model was split into sub cells of 4mN by 4mE by exact fitting in RL in order to accurately represent the volume of the mineralised bodies. Mineralisation grades and density were estimated using Inverse Distance weighting (to the power of 2). The sample search ellipse was aligned parallel to the strike and dip direction, using Datamine Studio 3 software's dynamic anisotropy function. The nominal drill hole spacing of 100 m +10% (110m x 110m) was assigned as the along-strike and down-dip sample search distance. The minimum number of composites required for an estimate was 5 and the maximum number was 24. Extreme outliers do not occur in the domained data, which have a low coefficient of variation (<1) and as a result no grade cutting of capping was applied.
Moisture	Loss on Ignition (LOI) analyses are available for all drill holes used in the Mineral Resource estimate. Estimates are on a dry basis.
Cut-off parameters	A range of cut-off grades have been selected for the purposes of illustrating the grade and tonnage potential of the mineralisation. The Mineral Resources have been reported using a base case of 5%TGC.
Mining factors or assumptions	No mining factors or assumptions have been applied.
Metallurgical factors or assumptions	An initial scoping level metallurgical test on a trench sample from the Balama West section showed that a crushing and flotation circuit could upgrade the mineralised rock to +90% graphitic carbon (Cg).

	Further test work on (i) a composite drill hole sample, and (ii) a surface bulk sample, both from Balama West and East indicated that a +95% Cg for +150µ flake graphite could be achieved by a crushing and multiple flotation and milling circuit. A process for recovering vanadium from the graphite process tails has been finalised with recoveries of vanadium from both ferro-vanadium magnetite and roscoelite/silicate phases. Two qualities produced of 98.5% and 99.5% V2O5. Syrah has submitted a number of graphite samples to potential customers who have conducted tests and confirmed that the graphite is of commercial interest.
Environmental factors or assumptions	The Balama Project is the subject of a Feasibility Study and environmental studies are ongoing. No environmental issues which would preclude the development of a mine have been found, or are expected to be found.
Bulk density	An appropriate number of relative density measurements are contained in the project database for the Mineral Resource estimation. The data were derived using the Archimedes method of weighing drill core in air and water, which is considered appropriate for the rock type. No density data were collected for the trench samples
Classification	The classification considered the quality of the drill hole data, the data distribution, geological and grade continuity. The Mineral Resources are classified as Indicated when drilled within 100 m spacing and Inferred to a maximum extrapolation of 100 m.
Audits or reviews	The Mineral Resource estimate has been internally reviewed at MSA.
Discussion of relative accuracy/confidence	The geological model and geological and grade continuity has been demonstrated to an acceptable level to support Indicated and Inferred Mineral Resources.

Section 1: Sampling Techniques and Data (Ativa, Mepice, May 2015)

Criteria	Commentary
Sampling techniques	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	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	Commentary
Drill sample recovery	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	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	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 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	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 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

Criteria	Commentary
	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 assaying	Precision between the original and 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	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	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	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 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	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 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.

Section 2: Reporting of Exploration Results (Ativa, Mepice, May 2015)

Criteria	Commentary
Mineral tenement and land tenure status	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	All exploration data used for the Mineral Resources reported was generated by Syrah Resources Limited and its appointed contractors.

Criteria	Commentary
Geology	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	Some 142 drillholes are contained in 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	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.
Relationship between mineralisation widths and intercept lengths	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	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	This Mineral Resource estimate is based on all drilling data on the project. Trench samples were not utilised.
Other substantive exploration data	Surface geological maps were used to assist in the interpretation of geology.
Further work	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.

Section 3: Estimation and Reporting of Mineral Resources (Ativa, Mepice, May 2015)

Criteria	Commentary
Database integrity	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.

Criteria	Commentary
Site visits	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	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 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 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	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 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	The tonnes are reported on a dry tonne basis, natural moisture was not determined.
Cut-off parameters	The Resource is reported above 3% TGC, which is the economic cutoff grade for the project.
Mining factors or assumptions	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	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 October 2013 Mintek variability flotation testwork

Criteria	Commentary
	July 2014 Mintek comminution and rheology testwork September 2014 HPGR and flotation testwork
Environmental factors or assumptions	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.
Bulk density	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/cm3 at Balama West. A depth- related density contrast at a threshold of 2.45 g/cm3 at Balama East.
Classification	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.
Audits or reviews	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	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.

Section 4: Estimation and Reporting of Ore Reserve (Ativa, Mepice and Mualia, March 2019)

Criteria	Commentary
Mineral Resource estimate for conversion to Ore Reserves	The Ore Reserve estimate compiled by Snowden for the Ativa and Mepiche pits is based on the 2014 Mineral Resource model and estimate for Balama West (Ativa) and Balama East (Mepiche) completed by The MSA Group Pty Ltd (MSA). The Ore Reserve estimate for the Mualia pit is based on the updated 2015 Mineral Resource model and estimate for Mualia completed by MSA. Data collection and geological interpretations which form the basis of the Mineral Resource estimate were completed by Syrah Resources Ltd (Syrah). The Mineral Resource estimate for Balama West and Balama East is based on a 3% Total Graphitic Carbon (TGC) cut-off grade. The Mineral Resource estimate for Mualia is based on a 5% TGC cut-off grade. The Mineral Resources are reported inclusive of Ore Reserves. Mr Jon Hudson is the Competent Person for Snowden Mining Industry Consultants (Snowden) and has relied on the integrity and accuracy of the Mineral Resource estimates for the Ore Reserves.

	Subsequent to the Snowden Ore Reserve estimate of 31 December 2018 an updated Mineral Resource estimate for the Balama West and Balama East (including Mualia) was compiled by MPR Geological Consultants Pty Ltd (MPR) for Twigg Exploration and Mining Ltda (Twigg). The MPR resource estimate and block models did not inform and were not used for the Snowden 2018 Ore Reserve estimate.
Site visits	Mr Jon Hudson undertook a site visit from 7 to 10 January 2019. Mr Hudson reviewed the following areas: Balama West (Ativa pit) which is operational and providing the ore feed to the plant Proposed Balama West (Mualia pit) location adjacent to the Ativa pit Surface expressions of the ore at the Balama East (Mepiche pit) Surface layout and infrastructure including the following Processing plant which was on planned maintenance at the time Haul roads and stockpiles including ROM, Mineralised waste, waste and topsoil dumps Tailings storage facility (TSF) from viewpoint General offices and camp facilities. General discussions took place on site on the systems and underlying geology that support the planned grade, recovery and composite graphitic products including flake size distribution.
Study status	The Feasibility Study (FS) is complete and Balama is now an operational mine in the production build-up phase.
Cut-off parameters	For the planning, the mine requested that Snowden plan for an average 16.5% TGC based on current thinking around plant optimization and product size distribution. The marginal cut-off grade was calculated to be 7.2% TGC based on all pre-tax costs associated with the processing and selling of a composite graphitic product containing 95% TGC which includes: - Stockpile reclaiming - Processing - Road transport - Ship loading - Royalties - General and administration - Product pricing from Syrah - Sales prices for each product size fraction - Contractor mining costs. The process recoveries as outlined in the "Metallurgical factors or assumptions" section. The work is ongoing on the mine to understand the optimal plant feed based on lithology type and flake size distribution to improve the future mine planning. Mineralised waste from 2% to 7.2% cut-off was stockpiled for future potential use.
Mining factors or assumptions	**Mining method** Syrah is 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. **Production rate and mine life** The average total movement is 3.5 Mt/a for an average ore production rate of 2.0 Mt/a. The mine life is 56 years. **Dilution and mining ore loss** Given the bulk nature of the mineralisation, marginal mining dilution was applied based on re-blocking the Mineral Resource model to an SMU size 2.5 mX by 2.5 mY by 2.5 mZ. This block size was determined after consideration of the size of the excavator bucket and expanded to mimic the mixing associated with blasting and loading. Mineral Resource classifications were assigned on the basis of majority representation within the SMU block. Losses were incurred due to blocks being diluted below cut-off; no additional unplanned losses were included. **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 previous pit designs created by Snowden in 2014 and 2015 were deemed appropriate by the competent person for the Ativa and Mepiche ore reserve update based on no change to the previously used 2014 MSA Mineral Resource models. A new pit design was done for Mualia based using a revised Geotechnical design done by Snowden. The life of mine strip ratio was estimated to be approximately 0.81:1 (W:O) A minimum mining width of 15 m was allowed for in the designs based on the current mining fleet of 85-t excavator and 40-t articulated dump trucks and 50-t rigid trucks.

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 this criteria to mean that the pit floor is the 470 mRL (i.e. the surface for both deposits is approximately 570 mRL).

The following pit slope design parameters developed by SRK Consulting, were rationalised for use in the Whittle optimisation.

Wall	Overall slope (°)
Hangingwall	41
Footwall	33

More detailed geotechnical parameters for were developed from the geotechnical study provided by SRK Consulting for the Balama West and East detailed mine design.

Ativa pit – geotechnical parameters

Parameter	Units	Domain				
		H/W wall No road	End wall No road	F/W wall No road	End wall No road	No road
Bearing	°	315	45	135	225	180
Total stack height	m	50	50	50	50	50
Bench height	m	10	10	10	10	10
Bench slope	°	55	50	42	45	42
Geotechnical berm width	m	10	10	10	10	10
Geotechnical berms	no.	1	1	1	1	1
Pit ramp width	m	21	21	21	21	21
Pit ramps	m	0	0	0	0	1
Overall slope	°	37.6	34.8	30.3	32.0	25.1
Benches	no.	5	5	5	5	5
Berm width	m	5.0	5.0	5.0	5.0	5.0
Inter-ramp	m	42.3	38.9	33.5	35.5	33.5

Mepiche pits – geotechnical parameters

Parameter	Units	Domain			
		H/W wall	End wall	F/W wall	End wall
		No road	No road	No road	No road
Bearing	°	315	45	135	225
Total stack height	m	50	50	50	50
Bench height	m	10	10	10	10
Bench slope	°	55	50	45	50
Geotechnical berm width	m	10	10	10	10
Geotechnical berms	no.	1	1	1	1
Pit ramp width	m	21	21	21	21
Pit ramps	m	0	0	0	0
Overall slope	°	37.6	34.8	32.0	34.8
Benches	no.	5	5	5	5
Berm width	m	5.0	5.0	5.0	5.0
Inter-ramp	m	42.3	38.9	35.5	38.9

For the Mualia pit, the slopes were divided into four sectors. The overall slope configurations for each sector of the pit were calculated. The most aggressive overall slope angle (OSA) was 38° for design sector 1. The shallowest OSA is 34° in design sector 4 due to the orientations of discontinuities in relation to the pit wall orientations, and it being the shallowest highwall, with a of depth of 85 m.

All highwalls that have been designed are the pit's end-walls. No designs have been undertaken for the pit's interim highwalls, as mining commences.

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 area 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.

Metallurgical factors or assumptions

Syrah is processing the ore by crushing, grinding, flotation and screening, attrition cells and drying to produce graphitic concentrate of various flake sizes. The processing plant is planned to build up to a recovery of 87% of the graphite in the feed by 2021 which will have a concentrate grade of 95% TGC. 80% recovery is used for 2019 and 2020. The long-term recovery has been reduced from the previous 92.5% in the feasibility study based on lessons learned from an operational plant compared to previous test work. The recovery has been building up gradually from the commencement of ore feed in October 2017. 74% recovery was achieved in the previous 2018 financial year.
An average product size distribution (PSD) planned for West and East Balama based on previous test work and is summarized in the table below.

Description	Product	Sieve size (µm)	Average PSD % per fraction
Concentrate	Syrah Coarse	+300	8.5
	Syrah Flake 80	-300 +180	12.0
	Syrah Flake 100	-180 +150	11.5
	Syrah Fine	-150	68.0

<table>
<tr><td></td><td>The mine is currently not achieving the planned PSD and has embarked on an exercise to define the PSDs by separation of lithology types from the pit. The focus of this exercise is to improve and align the ore feed in the plant to support the planned PSD and recovery. The plant is also setting up controls to assist with flake preservation.</td></tr>
<tr><td>Environmental</td><td>The application for the environment permit was lodged in March 2015. This is supported by all the appropriate studies and documentation required by the Mozambique Government. Syrah was granted its Environmental License on 23 April 2015, which has a five-year life and is renewable.
Waste rock characterization 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.</td></tr>
<tr><td>Infrastructure</td><td>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 license to extract the water. Syrah intend to build/ease a power station to supply power for the plant and the accommodation village which there is a sealed road from Pemba to the mine site. Most labour will be sourced from local villages however Syrah intend to construct some additional accommodation on site.</td></tr>
<tr><td>Costs</td><td>Currency and exchange rate
The basis currency is US dollars.
Capital costs
The capital infrastructure is in place except for remaining capex to be spent on the tailings dam. The average annual sustaining capital expenditure is estimated to be US$7.1 million per annum over the life of the mine.
Mining is currently taking place using contractors and has been costed as such in the long-term plan.

Operating costs
The operating cost estimates (excluding General and admin) provided by Twigg are based on current budget costs which include contract mining rates.
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.</td></tr>
<tr><td>Revenue factors</td><td>The revenue calculation is premised on the forecast long term Product price (CIF China) in US$/t (provided by Twigg) and the following technical parameters:
<table>
<tr><th>Item</th><th>Units</th><th>Value</th></tr>
<tr><td>Recovery</td><td>%</td><td>87</td></tr>
<tr><td>Product grade</td><td>TGC %</td><td>95.0</td></tr>
<tr><td>LOM head grade</td><td>%</td><td>16.19</td></tr>
</table></td></tr>
<tr><td>Market assessment</td><td>Graphite is used for its refractory properties of high electrical and thermal conductivity, 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:</td></tr>
</table>

Ex-mine Balama flake graphite products

Product	Upper size (ASTM mesh)	Lower size (ASTM mesh)	Upper size (µm)	Lower size (µm)
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	-

Syrah does not believe that 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

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

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 performed, Syrah also has the following advantages:

Close proximity to excellent infrastructure
Several major binding and non-binding offtake agreements have been signed.

Economic

An economic model was prepared by Snowden to test the economic viability of the ore reserves on a "real" pre-tax basis. The key inputs into the economic analysis are shown below:

Economic metric	Units	Value
Valuation date	-	1 January 2019
Real discount rate	%	10
Royalty rate	%	3.0

The Ore Reserves were proved to be robust and economically viable.

The financials are sensitive to the following areas:

- Processing recovery (%)
- PSD (%)
- TGC grade (%)
- Product pricing (US$/t)

Social

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 PPP:
Identifying relevant Interested and Affected Parties (I&APs)
Identifying issues raised during the 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, ongoing public participation.
Other	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 An Environmental Licence was applied for in March 2015 and granted on 23 April 2015. The Environmental Licence has a 5-year life and is renewable Water uptake from Chipembe dam An Environmental License is a prerequisite for a land access permit, which is Syrah's last required permit. Approval for the land access permit is expected by the end of June 2015.
Classification	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 report summarizes the status of material aspects of the November 2014 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 - Checklist of Assessment and Reporting Criteria of this report 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 Balama East pit as Probable.
Audits or reviews	No reviews or audits have been completed for the Ore Reserve estimate.
Discussion of relative accuracy/ confidence	Snowden has not made an assessment of the relative accuracy or confidence limits of the Ore Reserve estimate. 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 sensitive to economics based on the planning inputs, as demonstrated by an analysis of deposit NPV versus Whittle results by shell. The key sensitive areas for economic viability are price and recovery.

About Syrah Resources

Syrah Resources Limited (ASX code: SYR) is an Australian-based industrial minerals and technology company. Syrah owns and developed the Balama Graphite Project (Balama) in Mozambique. Balama transitioned to operations with sales and shipments to a global customer base including the battery anode producers, from the start of 2018. Balama will be the leading global producer of high purity graphite. Balama production is targeted to supply traditional industrial graphite markets and emerging technology markets. Syrah is also progressing its downstream Battery Anode Material strategy with first production of spherical graphite achieved in December 2018 from its plant in Louisiana, USA. Syrah has successfully completed extensive product certification test work with several major battery producers for the use of Balama spherical graphite in the anode of lithium-ion batteries. For further information, visit www.syrahresources.com.au