Table 5: Summary of resource estimate and reporting criteria

Drilling techniques	All drillholes were diamond drill cored and drilled from surface (mostly NQ) at angles of between -60° and -75°. The drillholes were drilled from east to west along section lines spaced between approximately 25 m and 50 m apart. 21 PQ sized holes from a metallurgical drilling campaign were included that were drilled in three clusters approximately 25 m apart
Logging	All of the drillholes were geologically logged by qualified geologists. The logging is of an appropriate standard for grade estimation.
Drill sample recovery	Core recovery in the mineralised zones was observed to be very good and is on average greater than 95%. Five of the shallow drillholes intersected artisanal workings and so recovery of the high grade mineralisation was poor and therefore the data from these holes were not used for grade estimation.
Sampling methods	Half core samples were collected continuously through the mineralised zones after being cut longitudinally in half using a diamond saw. Drillhole samples were taken at nominal 1 m intervals, which were adjusted to smaller intervals in order to target the vein zones. Lithological contacts were honoured during the sampling. MSA's observations indicated that the routine sampling was performed to a reasonable standard and is suitable for evaluation purposes.
Quality of assay data and laboratory tests	The assays were conducted at ALS Chemex in Johannesburg where samples were analysed for tin using fused disc ME-XRF05 conducted on a pressed pellet with 10% precision and an upper limit of 10 000ppm. This was reduced to 5,000 ppm from 2014 onwards. Over limit samples were sent to Vancouver for ME-XRF10 which uses a Lithium Borate 50:50 flux with an upper detection limit of 60% and precision of 5%. ME-ICP61, HF, HNO3, HCL04 and HCL leach with ICP-AES finish was used for 33 elements including base metals. ME-OG62, a four acid digestion, was used on ore grade samples for Pb, Zn, Cu & Ag. External quality assurance of the laboratory assays for the Alphamin samples was monitored using the following measures: • Blank samples, certified reference materials and duplicate samples were inserted with the field samples accounting for approximately 10% of the total sample set. • 150 pulp duplicates were sent to SGS (Johannesburg) in 2013 for confirmation assay and a further 173 were assayed in 2015. In 2015, 99 pulp duplicates were sent to Setpoint (Johannesburg) for confirmation

	assays. The QAQC measures used by Alphamin revealed the following: • The high grade CRM (31.42% Sn) appears to have been over-assayed by approximately 8% by ALS prior to 2015. The lower grade CRM assays (<2% Sn) indicated that the Sn and Cu assays were accurate and unbiased, consistently returning values within two standard deviations of the accepted CRM value. • The field duplicates confirmed the nuggetty nature of the tin mineralisation. The majority of the duplicate assays were within 20% of the field sample. • Blank samples indicated that no significant contamination occurred for most of the programme. • The pulp duplicates assayed by SGS in 2013 showed excellent correlation with the ALS assays at both high and low grade ranges. However both SGS and Setpoint assays were lower than ALS for grades above 20% for the 2014 data checked in 2015. As the high grade CRM assays indicate a potential over-assaying of the high Sn grade assays by ALS completed prior to 2015, a correction was applied to the data to mitigate this risk. The mineral resource estimate was completed on the corrected data. Work is ongoing in order to resolve this issue.
Verification of sampling and assaying	A selection of cores representative of the entire drilling programme at Mpama North have been visually verified during three site visits by the QP (July 2013, May 2014 and August 2015). The QP observed the mineralisation in the cores and compared it with the assay results. It was found that the assays generally agreed with the observations made on the core. The QP took ten quarter core field duplicates for independent check assay in 2013, which confirmed the original sample assays within reasonable limits for this style of mineralisation.
Location of data points	All except two of the Bisie surface drillhole collars used in the mineral resource estimate were surveyed by digital GPS. For the two that were not surveyed, the hand-held GPS readings were used with the elevation being corrected to that of the LIDAR topographic survey. Down-hole surveys were completed for all of the holes drilled at Mpama North.
Tonnage factors (in situ bulk densities)	Specific gravity determinations were made for 1,890 drillhole samples using laboratory gas pycnometer. A regression formula of tin grade against specific gravity was developed that was applied to the samples that did not have direct SG measurements. The assigned specific gravity was interpolated into the block

	model using Ordinary Kriging.
Data density and distribution	The drillholes were drilled from east to west along section lines spaced approximately 50 m to 60 m apart with infill drilling on 25 m to 30 m spaced sections in a portion of the shallower area. Along the section lines, the drillholes intersected the mineralisation between approximately 25 m and 50 m apart in most of the Mineral Resource area. 21 PQ sized holes from a metallurgical drilling campaign were included that were drilled in three clusters approximately 25 m apart. Within the clusters, the PQ holes were drilled approximately 5 m apart. In the Mineral Resource area, 111 NQ drillholes were used for the grade estimate. A number of holes intersected mineralisation outside of the area currently defined as a Mineral Resource and five of the shallow drillholes intersected artisanal workings. The data from these holes were not used for grade estimation.
Database integrity	Data are stored in an Access database. MSA completed spot checks on the database and is confident that the Alphamin database is an accurate representation of the original data collected.
Dimensions	The area defined as a Mineral Resource extends approximately 700 m in the down plunge direction. It extends for between approximately 100 m and 300 m in the plane of mineralisation perpendicular to the plunge. The main zone of the Mineral Resource, which accounts for 95% of the Mineral Resource, is on average approximately 9 m thick, although is narrower (less than 1 m) at the margins and up to 20 m thick in the central areas. The zones that occur several metres above and below the main zone are considerably narrower than the main zone and cover areas of between 100 m and 200 m in the dip and strike directions.
Geological interpretation	The mineralised intersections in drill core are clearly discernible. The Mineral Resource is interpreted to occur as tabular mineralised zones, dipping 65° to the east, containing several narrow veins, blocks and disseminations of cassiterite. The mineralised zones are hosted in chlorite schist that is the result of intense alteration and may originally have been a distinct stratigraphic interval. The main zone of the Mineral Resource is almost continuous for over 650 m although it may be affected by a number of faults causing local displacement. Several faults have been modelled in the up-and down-plunge extremities. • The Main Vein mineralisation consists of a number of uncorrelated cassiterite veins within pervasively choritised schist. This zone generally occurs over thicknesses of between 2 m and 22 m with an average thickness of

	approximately 9 m. The Main Vein zone is generally the highest grade and most consistent overall. • Hanging Wall Vein mineralisation occurs within partly chloritised schist and micaceous schist between 4 m and 20 m above the Main Vein. This zone of mineralisation is generally between 0.5 m and 4 m wide and occurs in the central area of the deposit and tapers out northwards. The middling between the Hanging Wall Vein and the Main Vein decreases in areas and it is possible that this vein merges into the Main Vein in the some parts of the deposit. • Footwall Vein (FW Vein) mineralisation occurs within the micaceous schist and amphibolite schist between 2 m and 12 m below the Main Vein. This zone is restricted to the southern areas, is very narrow (<50 cm) and high grade in its most northern occurrences but thickens to the south to several metres. It is possible that this vein merges into the Main Vein in the some parts of the deposit. A three dimensional wireframe model was created for the three zones of mineralisation based on a grade threshold of 0.30% Sn. The main zone is the most consistent zone and occurs within a persistent chlorite schist. Narrower less continuous zones occur above and below the main zone within chlorite-mica schists.
Domains	The mineralisation was modelled as three tabular zones containing irregular vein style mineralisation. A hard boundary was used to select data for estimation in order to honour the sharp nature of vein boundaries.
Compositing	Sample lengths were composited to 1 m. Composites of less than 1 m occurred in the narrow vein areas, which were retained. Accumulations of Sn%-density-composite length were calculated for grade estimation so that narrow extremely high grade composites did not excessively influence the estimate.
Statistics and variography	Two populations of Sn mineralisation occur, a high grade population of cassiterite veins and a lower grade population containing disseminated cassiterite as vein fragments and blebs. The data were separated into the two statistical populations, which resulted in the coefficient of variation for the Sn accumulation composites in the high grade population being 0.59 and for the lower grade population being 1.49. The histograms are positively skewed. Normal Scores variograms were calculated in the plane of the mineralisation, down-hole and across strike. Variogram ranges for the Sn accumulation in the main zone were modelled with a ranges in the order of 50 m in the plane of mineralisation. Reliable variograms could not be produced for either the hangingwall or footwall zones and the main zone variogram was used to

	estimate these areas.
Top or bottom cuts for grades	Top cuts were applied to outlier values that were above breaks in the cumulative probability plot for metals other than Sn. The high grade Sn values occur as a statistically distinct population with a low coefficient of variation and no top-cuts were considered necessary, the high grade distribution being estimated separately.
Data clustering	21 PQ sized holes from a metallurgical drilling campaign were included that were drilled in three close clusters approximately 25 m apart. Within the clusters the PQ holes were drilled approximately 5 m apart. Outside of the metallurgical sampling area the grid is approximately regular.
Block size	20 mN by 2 mE by 10 mRL three dimensional block models. The blocks were divided into sub-cells to better represent the interpreted mineralisation extents. The blocks were rotated into the plane of mineralisation prior to estimation.
Grade estimation	The accumulation of grade, density and composite length were estimated using Ordinary Kriging. The Sn%-density-composite length accumulations were divided into a high grade population (>60 %t/m) and a lower grade population (<60 %t/m). The probability of a block containing values above and below this threshold was estimated by Indicator Kriging. The high and low grade populations were estimated separately using Ordinary Kriging and the block model grade was then assigned based on the estimated grade of the high and low grade and their proportion in each block. A minimum number of 4 and a maximum of 10 one metre composites were required for each Sn-accumulation population. The number of composites was restricted in order to mitigate against excessive spreading of higher grades into lower grade areas. Search distances and orientations were aligned with the variogram range and mineralised trends. Estimates were extrapolated for a maximum distance of 20 m up-or down-plunge from the nearest drillhole intersection. Extrapolation is minimal over most of the Mineral Resource as the up-and down dip limits have been well defined by the drilling.
Resource Classification	The mineralisation was classified as Indicated Mineral Resources if block estimates occur within the 50 m drilling grid, so that all Indicated estimates are informed by samples within the variogram range. The remainder of the interpreted model within the sparser drilled area was classified as Inferred Mineral Resources with a maximum extrapolation from a drillhole of 20 m along

	plunge. The up-and down-plunge extremities are separated from the main area by faults and the structural interpretation is tenuous and they do not contains sufficient numbers of data to classify them as Indicated Mineral Resources. Consequently these areas were classified as Inferred Mineral Resources. The high grade mineralisation of reasonable tonnage leads no doubts as to reasonable potential for economic extraction, it being one of the highest grade undeveloped tin deposits in the world.
Mining Cuts	The thickness of the mineralisation was honoured in the estimate and as a result some areas will be more sensitive to dilution than others. The thickness, grade and steep dip implies that the Mineral Resource can be extracted using established underground mining methods.
Metallurgical factors or assumptions	The tin mineralisation occurs as cassiterite, an oxide of tin (SnO2). The Cu, Zn and Pb mineralisation occurs as sulphides. Each of these minerals is amenable to standard processing techniques for each metal.
Legal Aspects and Tenure	Alphamin through its wholly owned DRC subsidiary, Alphamin Mining Bisie SA, has a Mining License PE 13155 which covers a portion of its 95% owned PR5266 and includes the Bisie Tin Prospect.
Audits, reviews and site inspection	The following review work was completed by MSA: • Inspection of approximately 25% of the Alphamin cores used in the Mineral Resource estimate • Database spot check • Inspection of drill sites • Independent check sampling