The following is a summary of the estimate of Mineral Resources and Ore Reserves held under the Zimplats Mining Leases on the Great Dyke of Zimbabwe, as at 30 June 2018. The highlights of the changes are accompanied by a JORC Table 1 document below.

Mineral Resources (inclusive of Reserves)

Category	June 2018				June 2017			
	Tonnage (millions)	4E (g/t)	6E g/t	Pt oz (millions)	Tonnage (millions)	4E (g/t)	6E g/t	Pt oz (millions)
Measured	181	3.53	3.72	10.2	168	3.53	3.73	9.5
Indicated	613	3.55	3.74	35.3	666	3.51	3.71	37.2
Inferred	207	3.47	3.65	11.8	1,226	3.25	3.52	61.8
Total	1,002	3.53	3.72	57.3	2,060	3.36	3.60	108.5

Ore Reserves

Category	June 2018				June 2017			
	Tonnage (millions)	4E (g/t)	6E g/t	Pt oz (millions)	(millions)	4E (g/t)	6E g/t	Pt oz (millions)
Proved	93.4	3.17	3.34	4.67	63.6	3.25	3.43	3.3
Probable	132.9	3.21	3.38	6.79	101.5	3.26	3.44	5.3
Total	226.3	3.19	3.37	11.46	165.1	3.25	3.43	8.6

Overview of changes

- The Board of Directors approved the mining method for the Upper Ores I (which dip between 9 degrees to 14 degrees) following the successful trial at Ngezi.

- Ore Reserve tonnages and Pt ounces increased by 37% and 33% respectively relative to the 30 June 2017 estimates owing to the conversion of Upper Ores I to Ore Reserves.

- Zimplats agreed to release to the Government of Zimbabwe (GoZ) land measuring 23 903 hectares within Zimplats' mining lease area in support of the GoZ's efforts to enable participation by other investors in the platinum mining industry in Zimbabwe. Following this release of ground, Zimplats now holds two separate and non-contiguous pieces of land measuring in aggregate 24 632 hectares. Consequently, Zimplats applied for and was granted with effect from 31 May 2018, two separate mining leases over the two pieces of land measuring 6 605 hectares and 18 027 hectares respectively. These mining leases replace the special mining lease which was due for renewal in August 2019. The two mining leases issued to Zimplats are valid for the life of mine of Zimplats' mining operations and they secure Zimplats' mining tenure.

- The total Mineral Resource tonnages and Pt ounces declined by 51% and 47% respectively relative to June 2017 mainly due to the release of ground north of Portal 10 to the GoZ (ROGA II) as well as mining depletion during the year. A 5% increase in overall Mineral Resource grade (4E g/t) is attributed to the exclusion of lower grade ores in the ground released to the GoZ.

- The overall Ore Reserve grade (4E g/t) decreased by 2% due to the relatively lower grades associated with the Upper Ores included in the current estimate.

- The Open Pit operation was decommissioned in March 2018 and as a result is no longer included in the life of mine plan and Ore Reserves. It is still included in the Mineral Resources.

- New assays from forty seven (47) surface drill holes were received during the year and were used to update the Mineral Resource estimation models.

Competent Persons

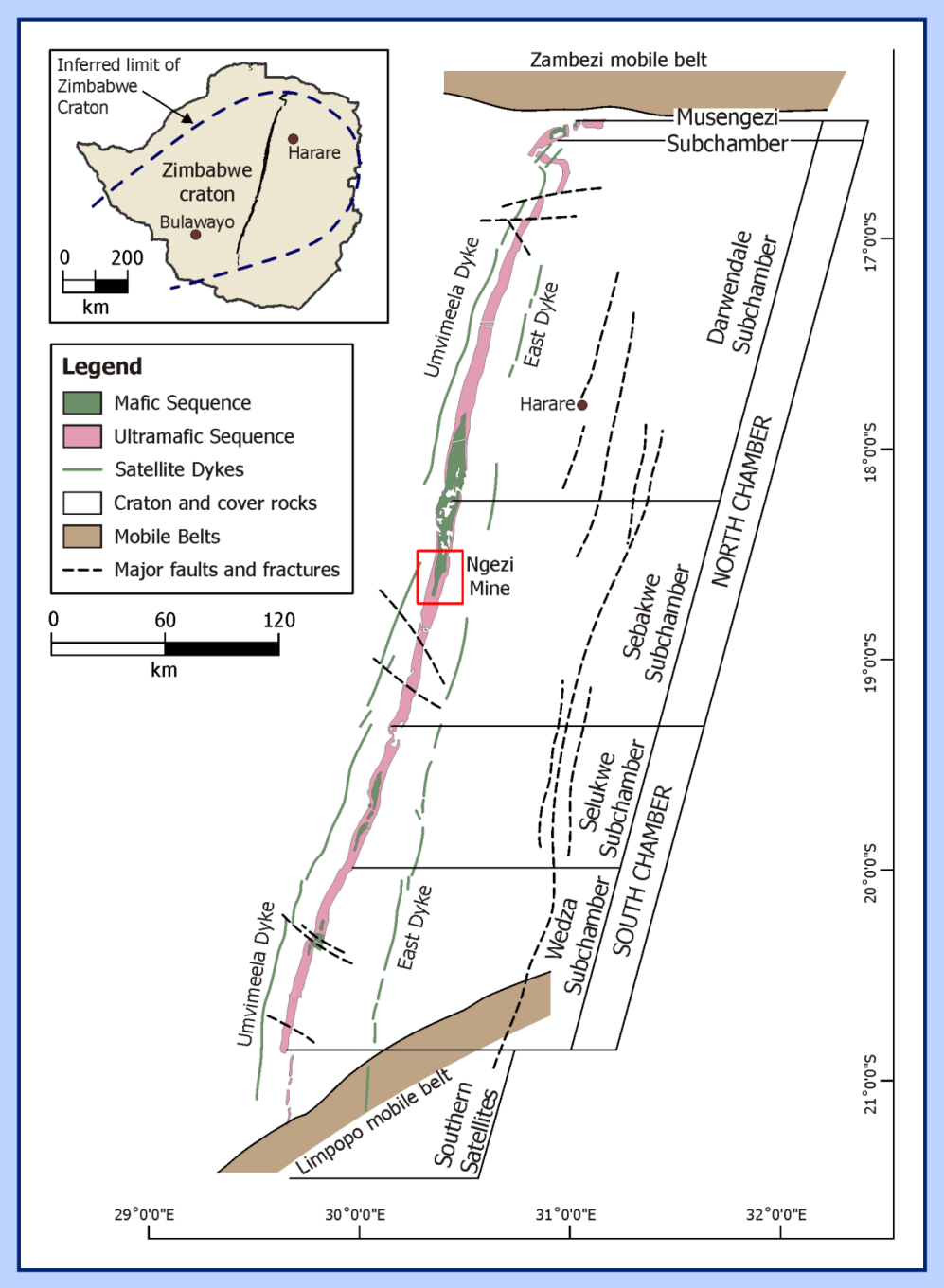
The information in this report was prepared in accordance with the JORC Code of 2012 by Competent Persons who are full-time employees of the company and have the required five years' experience relevant to the style of mineralisation and type of deposit described in this report.

The Competent Persons, listed below, have signed the required statement and consent for the release of this report in the form and context in which it appears.

Competent Person	Area of Responsibility	Professional Membership	Membership Number
Caston Mutevhe	Ore Reserves	The South African Institute of Mining and Metallurgy	704612
Steven Duma	Mineral Resources and Exploration	The Australasian Institute of Mining and Metallurgy	991294

Geology

The Great Dyke of Zimbabwe developed as a series of initially discrete magma chamber compartments, which coalesced as the chambers filled. On the basis of structure, style of layering and continuity of layers, the Great Dyke has been sub-divided into five sub-chambers namely the Wedza, Selukwe (Shurugwi), Sebakwe, Darwendale and Musengezi sub-chambers. The stratigraphic units in each sub-chamber are classified into the ultramafic (lower) and the mafic (upper) sequence. The ultramafic rocks are dominated from the base upwards by dunite, harzburgite and pyroxenite, while the mafic rocks consist mainly of gabbro and gabbronorite. Narrow layers of chromitite occur at the base of cyclic units throughout the ultramafic sequence. The platinum-bearing horizon is known as the Main Sulphide Zone (MSZ), which is part of the lower sequence and is located below the contact with the mafic sequence. The platinum-bearing MSZ is located in the P1 pyroxenite some 5m to 50m below the ultramafic/mafic contact. The MSZ is a continuous layer, 2m to 10m thick, and forms an elongated basin. The zone strikes in a north-north-easterly trend and dips between 5° and 20° on the margins, flattening towards the axis (centre) of the basin. The areas where the dip is less than 9° is referred to as the "Flats"; these have historically been the target for mining due to the ease of operating. The areas with dips between 9 and 14° are referred to as the "Upper Ores I". Peak base metal and platinum group metal (PGM) values are offset vertically with palladium peaking at the base, platinum in the centre and nickel towards the top. Visual identification of the MSZ is difficult, therefore systematic monitoring of the reef using various sampling methods is needed to guide mining. The accompanying schematic diagram illustrates the form of the Great Dyke.



Sampling and sub-sampling

Diamond drill samples are split using a diamond saw and half core samples mostly of the NQ size (47.6mm inside diameter) and a few BQ size (36.6mm inside diameter) are taken (weighing approximately 400g to 650g, respectively). Core is cut along the line joining the top or bottom of the igneous layering, ensuring that a representative sub-sample can be taken. The core is sampled throughout the mineralized interval, ensuring it is representative of the in-situ material. The use of half-core mainly from NQ size drilling is considered acceptable for the style of mineralisation present. Sample preparation is conducted at the Genalysis (Pty) Limited (Genalysis) where samples are entered into its management system, crushed and pulverized.

Zimplats employs various sampling techniques that include diamond and reverse circulation (RC) drilling and channel sampling, but only the diamond drilling data acquired primarily for Mineral Resource estimation has been used for the estimates. The drill hole data was derived from various drilling campaigns dating from the 1990s. Zimplats has employed similar exploration drilling protocols, sampling, laboratory and analytical techniques over this time, and thus the resultant exploration data is essentially of the same quality. The

platinum group elements (PGEs) and base metal mineralization is associated with macroscopic sulphide mineralization and sampling of diamond drill core by 25cm samples, over a total sampling interval of approximately 8m, which straddles the peak sulphide mineralization, provides the necessary data for Mineral Resource estimation.

Drilling Techniques

All drill hole data used in this estimate is based on surface diamond drill core, with the main drill core size being NQ core (47.6mm diameter) in most of the areas except for the Portal 4 where the BQ size (36.4mm diameter) was employed.

Mineral Resource Classification Criteria

The scheme for classification of the Mineral Resource was implemented based on the standards implemented by Implats, as well as the JORC Code (2012). The Mineral Resources are classified into the various Mineral Resource categories based primarily on drill hole density, which impacts on geological and grade continuity. The criteria, which inform the Mineral Resource classes, are:

- Less than 250m by 250m for Measured Mineral Resources.
- Greater than 250m by 250m but less than 1000m by 1000m for Indicated Mineral Resources.
- Greater than 1000m by 1000m for Inferred Mineral Resources.

Sample analysis method

The laboratory employed for the analysis of samples is Genalysis (Pty) Limited (Genalysis) that is certified by the National Association of testing Authorities Australia (Nata). Genalysis used nickel sulphide collector fire assays with ICP-MS finish for platinum group elements and total acid attack and optical emission spectrometry for base metals. The detection limits for platinum group metals and base metals were between 1 to 2ppb and 1 ppm respectively. These analytical methods are appropriate for the elements and mineralization style present.

Estimation methodology

Estimation is done in Isatis™ geostatistical software using Ordinary Kriging interpolation method. Grades are estimated for several 0.25m layers that represent the Mineral Resource evaluation cut. A 10m x 10m grid dimension (similar to the dimensions of the selective mining unit) is utilised, which provides the resolution required for mine planning. Given the drill hole densities in most areas currently being mined and the grade continuity (long ranges) of the MSZ in general, grade estimating into 10m x 10m grids does not have a material impact on biasing the estimates. The estimates are similar to check estimates by The Mineral Corporation based on 200m x 200m. The suitability of the search neighbourhoods employed was assessed by reviewing a number of kriging statistics notably the slope of regression and the mean of the weights. The slope of regression for Pt in the PK layer, for instance, has a mean of 0.92 and mean of weights of 0.1, which indicates good quality estimation. Zimplats also utilises histogram plots to compare estimates and input data, as an additional validation measure. The quality grids for all layers generated in Isatis is then imported into Vulcan. These quality grids and structure (stratigraphic) grids generated in Vulcan were used to form Horizon Adaptive Rectangular Prism (HARP) models. In addition and as a validation measure, quality grids were generated in Vulcan and these were compared with those generated in Isatis. HARP models contain estimates of variables for each of the domains (layers) modelled.

Cut-off grade

The geological variability of the MSZ grade and thickness profiles influences the selection of the most appropriate evaluation and mining cuts, and the resultant head grade generated by mining. The cut is optimised to ensure that the Pt peak layer is fully extracted and not left in the hangingwall.

The evaluation cut for Portals 1-5 areas, which is the planned underground mining cut, is a 2.5m-wide interval that incorporates the Pt peak zone. The width cut-off of 2.5m is an economic (optimal mining) cut-off based on feasibility study work completed for the portals. However, owing to thinner but higher-grade intersection in areas north of Portal 6, Mineral Resources are reported at thickness cut-offs varying from 1.6m to 2m.

Mining Factors

Zimplats employs mechanised room and pillar mining to extract ore from stopes, with a nominal width of 2.5m at dips of less than 9°. Each production team deploys a single-boom face rig, a bolter, a 10t LHD and a 30t dump truck and mines twenty panels. This allows sufficient flexibility for the required grade control sampling and to negotiate faults and intrusions while still meeting the team's monthly production target. The revised layout has 6m panels with 4m square pillars, but spans decrease and pillar dimensions increase in bad ground and with depth. A combination of roof bolts and tendons is integral to the support design. Underground mining infrastructure is accessed through declines from surface portals. There is an inverse relationship between grades and thickness, with areas north of Portal 5 characterised by narrower (1.6m-2m) but higher-grade economic mining cuts and areas to the south are characterised by wider (2.5m-3m) cuts of moderate grades. The variability is taken into consideration when reporting Mineral Resources. Mineral Resources have been reported at a constant thickness cut-off of 2.5m for the Ngezi Mine area, which is based on results of feasibility studies and other technical studies of similar level for the various portals in this area and for the open pit. These studies indicated economic mining widths in the 2.5 to 3m range based on Implats' long-term metal price assumptions. The underground mining cut is optimised to ensure that the Pt peak is fully extracted and not left in the hangingwall. An allowance of 50cm of hangingwall overcut is made in defining the underground mining cut and 75cm for the open pit mining cut.

A narrow mining cut is preferred when metal prices decline as increasing the mining cut decreases the grade of the primary element, Pt. However, the benefits of a narrow mining cut are offset by higher mining costs and dilution. Therefore, an optimum mining width based on equipment height of 2.5m, which provides a reasonable combination of tonnage, mining cost, head grades and dilution, was selected for underground mining in the Portal 1-6 areas. Given the difficulty of visually locating the MSZ, the smaller faults give rise to inherent dilution of the Mineral Resources. Location and efficient traversing of the larger faults is an important component of the mining operation. Shears, sub-parallel to the MSZ can have a significant negative effect on the geotechnical characteristics of the rock. The mining operations will continue within the framework of existing government approvals, available surface engineering infrastructure and transportation solutions to the market for the final products.

Metallurgical Factors

Zimplats has in place two operating flotation plants at Ngezi Mine and the Selous Metallurgical Complex (SMC), and a smelter at the SMC. The metallurgical processes at these plants are well established, and no material changes are envisaged. The recoveries applied in the development of the Ore Reserves and subsequent mining schedules are based on actual recoveries achieved at these plants. The processing efficiencies are also cross-checked against past metallurgical mineral deportment studies that have been carried out on similar types of ores from Ngezi. All waste rock is contained in designated storage areas and based on historical evidence is not likely to produced acid mine drainage. Regular monitoring and audits are carried out for the tailings facilities to ensure that the discharge from the tailings is within the statutory requirements of the environmental permits. The tailings material produced during the processing of the ore is stored in a purpose built facility that has sufficient capacity to contain all tailings produced over the life of mine. The facility is designed to prevent any inadvertent discharges into the general environment.

Ore Reserve Classification

Ore Reserves are classified as Proved or Probable depending on the confidence in the Mineral Resource model and modifying factors. The Proved Ore Reserve is a sub-set of Measured Mineral Resources, and the

Probable Ore Reserve is derived from Indicated Mineral Resources. No Inferred Resources have been included in the Ore Reserve estimate.

Additional Notes

- The Ore Reserves figures are estimated based on the diluted grades delivered to the processing plants.
- There are no Inferred Mineral Resources included in the Ore Reserves at Zimplats, only Measured and Indicated Mineral Resources are converted into Ore Reserves.
- Day to day operations are monitored using in-house lead collector fire assays with AA finish. The Mineral Resources and Ore Reserves in this statement are based largely on Genalysis nickel sulphide collector fire assays with ICP-MS finish. The differences between the methods are incorporated within the modifying factors that have been applied which mean that there may be slight distortions in recovery and other parameters.
- Mineral Resources have been estimated using Kriging techniques on data derived from surface diamond drill holes. Estimates are based on composite widths that vary depending on cut off grades, which are based on appropriate economic conditions.
- The boundaries of the ore envelope are gradational, particularly in the footwall, so the choice of mining cut is affected by economic factors. The price of the suite of metals that is produced from the MSZ has fluctuated considerably in the last few years. It is, however, believed that the choice of mining cut is robust under a wide range of pricing conditions.
- Estimates are produced in accordance with Implats' group-wide protocol for the estimation, classification and reporting of Ore Reserves and Mineral Resources. The objectives of the code are to improve standardisation, consistency and to facilitate auditing.
- The maximum depth of these Mineral Resources is 1250m and no part is more than 5km down-dip from outcrop therefore any part is theoretically accessible to mining within a 10-15 year time frame.
- Zimplats' Mineral Resources are held under Mining Lease numbers 36 and 37, which have replaced SML1. The mining leases are valid for the life of mine of Zimplats mining operations.
- The Mineral Resources and Ore Reserves tabulated in this report are estimates and not calculations. They are subject to a wide range of factors, some of which are outside the Company's control, which include:-
  - The quality and quantity of available data. Estimates are based on limited sampling and, consequently, there is uncertainty as the samples may not be representative of the entire ore body and Mineral Resources.
  - The quality of the methodologies employed.
  - Economic conditions and commodity prices.
  - Geological interpretation and the professional judgement of the individuals involved. Changes in these factors along with developments in the understanding of the ore body and changes in recovery rates, production costs and other factors may ultimately result in a restatement of Ore Reserves and/or Mineral Resources and may adversely impact future cash flows.
- To mitigate this risk the company appoints independent 3rd parties to review the Mineral Resource and Ore Reserve estimates on a regular basis and mining project feasibilities studies are subject to independent review prior to applying to the Board for capital approval.
- Rounding-off of numbers may result in minor computational discrepancies.

Criteria	Explanation	Observations
Sampling Techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down-hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	Soil sampling and analysis is performed to locate the outcrop location of the Main Sulphide Zone (MSZ). The soil geochemistry results are not used for Mineral Resource estimation but only for target delineation. Zimplats employs various sampling techniques that include diamond and RC drilling and channel sampling, but only the diamond drilling data acquired primarily for Mineral Resource estimation has been used for the estimates. The drill hole data was derived from various drilling campaigns dating from the 1990s. Zimplats has employed similar exploration drilling protocols, sampling, laboratory and analytical techniques over this time, and thus the resultant exploration data is essentially of the same quality. Data that is used for Mineral Resource estimation is subjected to checks and quality control and only data that satisfies Zimplats' acceptability criteria is utilised for Mineral Resource estimation.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	In the mineralized zone core recovery approaches 100% as its location can be anticipated from the well understood stratigraphy and the drillers can be forewarned.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	The platinum-group metal (PGM) and base metal mineralization is associated with macroscopic sulphide mineralization. Sampling of diamond drilled core by cutting and analysing 25cm samples that straddle the peak sulphide mineralization provides the necessary data for Mineral Resource estimation
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.	All drill hole data used in this Mineral Resource estimate is based on surface diamond drill core, with the main drill core size being NQ core (47.6mm diameter) in most of the areas except for Portal 4 where the BQ size (36.4mm diameter) was employed. This is accounted for in the final estimation process.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	In the mineralized zone core recovery approaches 100% (averaging 97%). The location of the mineralised zone can be anticipated reasonably well from the well understood stratigraphy and the drillers can be forewarned. Core recovery is routinely measured during drilling campaigns and drill holes with poor recovery of the mineralised zone are either redrilled or the relevant data is excluded from the Mineral Resource estimation database.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	The homogeneity of the lithology hosting the mineralisation (a competent bronzitite) works against the preferential loss or gain of ore minerals as a result of core losses during the drilling.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	This relationship has not been tested but a bias due to core loss is unlikely because the ore minerals are not linked to a specific component that may be preferentially lost or gained during the drilling and sampling. Even so, mineralised intersections for which core recovery is less than 90% are redrilled or the relevant data is excluded from the Mineral Resource estimation database.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Once core is received at the core yard, it is immediately prepared for lithological and geotechnical logging, sampling and density determination by experienced Zimplats geological personnel. Initially preliminary lithological logging is undertaken and this involves the careful examination of the drill cores and recording on customised log sheets the lithology, structure, texture, oxidation status, etc. Subsequently, the drill cores are geotechnically logged. Detailed lithological logging is completed on the remaining half core and only for sampled sections and this entails recording of lithology, texture, structures, alterations, proportion of sulphide minerals.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Quantitative logging is completed to cm accuracy. All core is photographed before and after sampling.
	The total length and percentage of the relevant intersections logged.	Close to 170 000m of core is employed in the Mineral Resources of which 100% has been lithologically logged, of which approximately 4 700m have been assayed.

<table>
<tr><td rowspan="6">Sub-sampling techniques and sample preparation</td><td>If core, whether cut or sawn and whether quarter, half or all core taken.</td><td colspan="4">Diamond drill samples are split using a diamond saw and half core samples mostly of the NQ size and a few BQ size are taken (weighing approximately 400g to 650g, respectively).</td></tr>
<tr><td>If non-core, whether riffled, tube sampled, rotary split etc. and whether sampled wet or dry.</td><td colspan="4">Not applicable</td></tr>
<tr><td>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</td><td colspan="4">Sample preparation is conducted at the Genalysis Laboratory where samples are entered into its management system, crushed and pulverized.</td></tr>
<tr><td>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</td><td colspan="4">Core is cut along the line joining the top or bottom of the igneous layering, ensuring a representative sub-sample.</td></tr>
<tr><td>Measures taken to ensure that the sampling is representative of the in situ material collected.</td><td colspan="4">The core is sampled throughout the mineralized interval, ensuring its representivity in terms of the in-situ material</td></tr>
<tr><td>Whether sample sizes are appropriate to the grain size of the material being sampled.</td><td colspan="4">The use of half-core, from either NQ or BQ drilling, is considered acceptable for the style of mineralisation.</td></tr>
<tr><td rowspan="3">Quality of assay data and laboratory tests</td><td>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</td><td>The laboratory employed for the analyses was Genalysis (Pty) Limited (Genalysis) that is stated by Zimplats to be certified by the National Association of testing Authorities Australia (Nata). The adjacent table contains the method of analysis per element by Genalysis.

These analytical methods are appropriate for the elements and mineralization style present.</td><td>Element
Pt, Pd, Rh, Ir, Ru

Au
Ni, Cu
Ni(S)
SG</td><td>Method
Fire Assay – NiS collection & mass spectrometry

Fire Assay – NiS collection & mass spectrometry
Total acid attack & optical emission spectrometry
Golden dumps leach & atomic absorption
Gravimetric technique and pycnometer</td><td>Detection Limit
1ppb

2 ppb
1 ppm
1 ppm
None</td></tr>
<tr><td>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</td><td colspan="3">No geophysical measuring tools were used for the determination of element abundance</td></tr>
<tr><td>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</td><td colspan="3">Standards, blanks and duplicates were inserted, for the purpose of determining whether acceptable levels of accuracy, sample preparation and precision have been established.

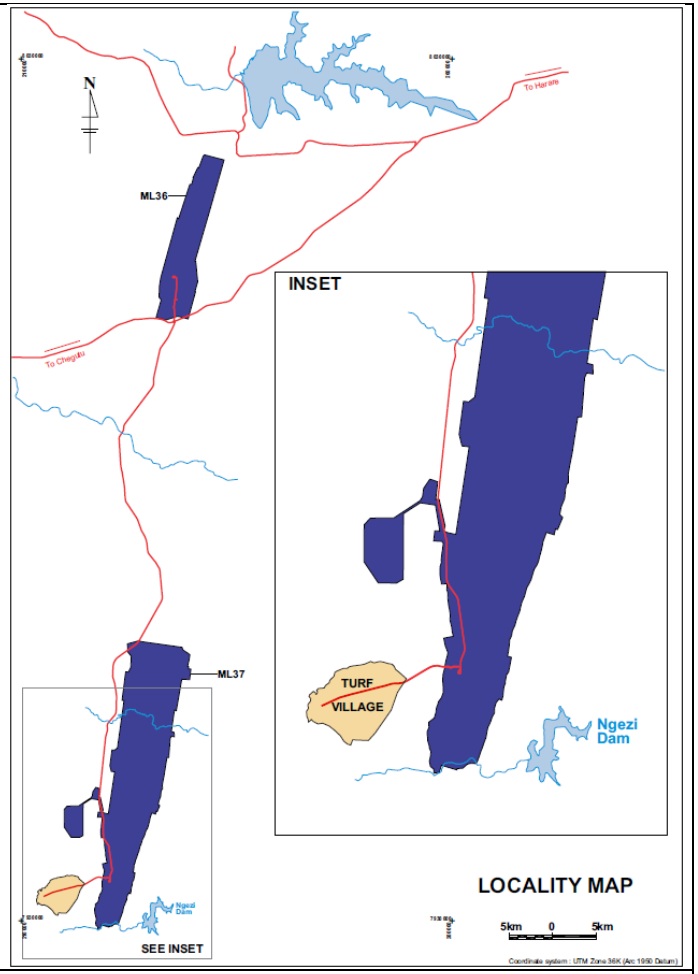
Standard controls on Quality Control are applied and resampling or re-assay are considered on the basis of the QAQC performance.</td></tr>
<tr><td rowspan="3">Verification of sampling and assaying</td><td>The verification of significant intersections by either independent or alternative company personnel.</td><td colspan="3">The 2.5m evaluation cut data has been scrutinised via regression analyses of various pairs of elements to identify outliers and possible analytical/database errors. Six boreholes were identified as having anomalous Pt:Pd and Cu:Ni relationships.

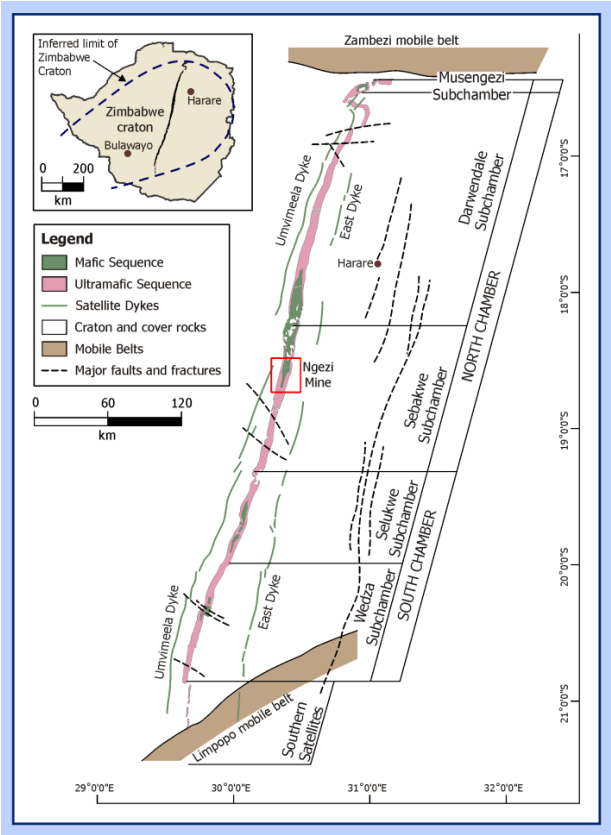
No independent sampling and analyses have been completed, as there has been no requirement for this.</td></tr>
<tr><td>The use of twinned holes</td><td colspan="3">As there is no historical data utilised in the current Mineral Resource estimate there has not been any requirement for twinning of drill holes in the Portal 1-10 area. Furthermore, grades and thickness distribution of the Main Sulphide Zone (MSZ) are well understood from close spaced sampling from underground and open pit excavations. Twinned holes are being drilled in the Hartley area to revalidate the assays database ahead of possible resumption of mining at Hartley in the future.</td></tr>
<tr><td>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</td><td colspan="3">The PGM data used for Mineral Resource estimation is based largely on Genalysis NiS collector fire assays with ICPMS finish. As an additional QAQC procedure, when a new batch of results is received, down hole profiles are plotted and checked for anomalous areas. Unexpected grades are double checked with drill logs to see if these are the result of geological disturbances. The possibility of swapped samples is also checked. Once the profiles are checked, explained and confirmed, the results are signed-off and the data is accepted into the database.</td></tr>
</table>

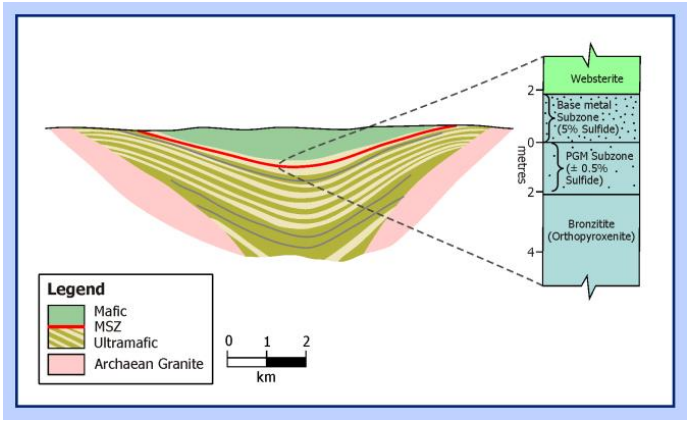
		The drill hole data is stored in the Sable™ database, which houses most of Zimplats current and historical drill hole information. Access and entries to the database are password restricted, and these are the responsibility of authorised experienced geological personnel. The database is routinely updated as new data becomes available. The database is maintained by Zimplats Exploration staff and Implats Database Administrator who oversees data validation and QAQC reporting.
	Discuss any adjustment to assay data.	Masking out of outliers in the dataset is undertaken in Isatis using the Exploratory Data Analysis (EDA) tools such as histograms, base maps and scatter plots. Zimplats eliminated outliers from the dataset used for variography and in certain isolated cases, extreme nugget values were excluded from both the variogram modelling and kriging dataset.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Air Survey Company in Harare prepared contours, at 2m intervals covering the Ngezi Mine area south of Northing 7960000. These contours are based on dedicated 1:20 000 air photography and ground control. All drill hole collars have been surveyed by qualified surveyors using total stations referenced to a network of base stations around the site. Down hole surveys were completed for 20 holes (approximately 6% of the holes), mostly earlier Zimplats holes. Only vertical holes are utilised for Mineral Resource estimation and all the surveyed boreholes are vertical or near vertical (average 89°, range from 83.4°-89.9°).
	Specification of the grid system used.	All the work was done in UTM (Arc 1950). UTM has a scale factor of 0.9996. This means that areas should be scaled by 0.9996.
	Quality and adequacy of topographic control.	Accuracy of the topographic surveys will affect tonnage estimates in the fourth significant figure but as tonnages are not quoted to this level of precision the effect is considered insignificant and has been ignored.
Data spacing and distribution.	Data spacing for reporting of Exploration Results.	Drilling spacing ranges from 250m by 250m, up to 1000m by 1000m.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The MSZ is a magmatic tabular deposit which is continuous along considerable strike extents. Continuity is disrupted at a local scale by faults and intrusions. Drill hole spacing of 250m should be adequate to demonstrate continuity of the MSZ while spacing of 250m to 500m should be adequate to assume continuity of the MSZ. A spacing of 500m to 1 000m should be adequate to reasonably infer continuity of the MSZ. The Competent Person confirms that the spacing and distribution of the boreholes used for the Mineral Resource estimate are appropriate for the Mineral Resource classification applied.
	Whether sample compositing has been applied	In order to honour the grade variability in the vertical profile of the MSZ, the 25cm layers are evaluated individually thus no data compositing is undertaken. Variable width composites were, however, applied in the older Hartley estimates.
Orientation of data in relation to geological structures	Whether the orientation of sampling achieves unbiased sampling of possible and the extent to which this is known, considering the deposit type.	With the synformal shape, shallow dips of the limbs of the synform and the stratiform nature of the MSZ only the vertical thickness rather than the true thickness of the mineralisation has been modelled. It is not possible to determine the angle of the MSZ relative to the drill hole from the core and, as such, estimation of true width would require assumptions about local dip. Similarly, it is rarely possible to determine how much of the local dip is as a result of faulting.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	This is not material as the product of the vertical width and horizontal areas (blocks) is the same as for the true width and area on the plane of the orebody.
Sample security	The measures taken to ensure sample security.	All drill core from Mineral Resource evaluation drill holes is stored at a core yard facility at the Selous Metallurgical Complex (SMC). Zimplats' policy is to keep all exploration drill cores permanently. Reject sample material from Genalysis is stored at the laboratory for three months after assaying after which it is transported to the SMC core yard facility for archiving.

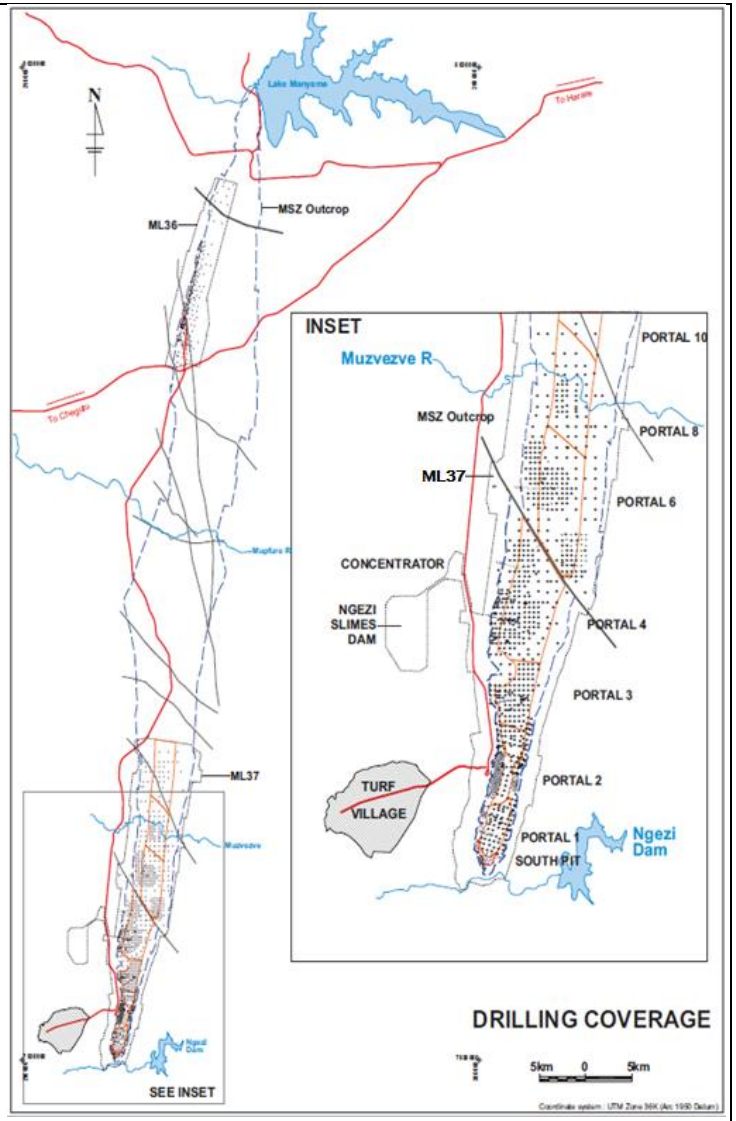
		The SMC facility is securely locked with access to the facility controlled and mostly restricted to Zimplats' exploration geological personnel. Zimplats geological personnel transport samples in secure sample bags from the core yard to DSV Couriers in Harare for onward transmission to Genalysis.	
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Zimplats carries out Mineral Resource and Ore Reserve management audits after every two years. Zimplats' borehole sampling standards and the validity of the borehole database were included in the scope of an audit undertaken by AMEC Americas Limited (AMEC) in June 2010 and July 2012. In both cases no key issues which would "prevent classification of Mineral Resources/Ore Reserves or issuance of the Mineral Resource or Mineral Reserve Report" were identified. The Mineral Corporation carried out audits in 2014, 2016 and 2017 and no material issues were raised.	
Section 2: Reporting of Exploration Results			
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	Exploration and mining in Zimbabwe is regulated by the Mines and Minerals Act, the Environmental Management Act and other related mining regulations. According to the Mines and Minerals Act, Mineral Resources belong to the State such that one requires rights to work mineral deposits through an application to the Mining Commissioners. There are currently three types of mineral title relating to exploration and prospecting in the country, namely an Exclusive Prospecting License/Order (EPO), Special Grant, and a Prospecting License (Ordinary or Special). Titles relating to mine development and mining include a Mining Claim, Mineral Lease and a Special Mining Lease. The mining rights granted through such a Certificate or Mining Lease are independent from surface or land ownership rights, but the holder of a Mining Lease has certain rights with regards to the surface use. Zimplats owns various forms of title and surface rights that cover its exploration and mining activities and that have enabled it to establish mining and residential infrastructure required for mining. These are summarised in the table on the RHS.	

Claim Number	Claim Name	Area (ha)	Registration Date	Expiry Date
Site22	Football Pitch	5	05/11/2004	05/11/2019
Site 31	Water site	32	22/11/2004	22/02/2019
Site32	Water site	31	22/11/2004	22/02/2019
Site 115	Residential	26	22/11/2004	22/02/2019
Site62	Attach to 2802BM	30	31/08/2004	31/08/2019
Site 64	Contractor camp	39	14/08/2005	31/08/2019
Site 65	Water site	26	14/08/2005	31/08/2019
Site 66	Water site	29	14/08/2005	31/08/2019
Site 67	Water site	37	14/08/2005	31/08/2019
Site 68	Contractor camp	26	14/08/2005	31/08/2019
Site 76	Water site	18	12/08/2006	31/08/2019
Site 97	Sewerage Ponds	6	20/02/2007	20/02/2019
Site 114	Air Strip	44	30/01/2008	30/01/2019
Site 295	Road &Overland conveyor access	4	20/01/2014	20/01/2019
Site 296	Road & Overland Conveyor access	7	20/01/2014	20/01/2019
ML36	Mining Lease No 36	6 605	31/05/2018	Life of mine
ML37	Mining Lease no 37	18 027	31/05/2018	Life of mine
9134BM	BEE163	18		16/03/2019

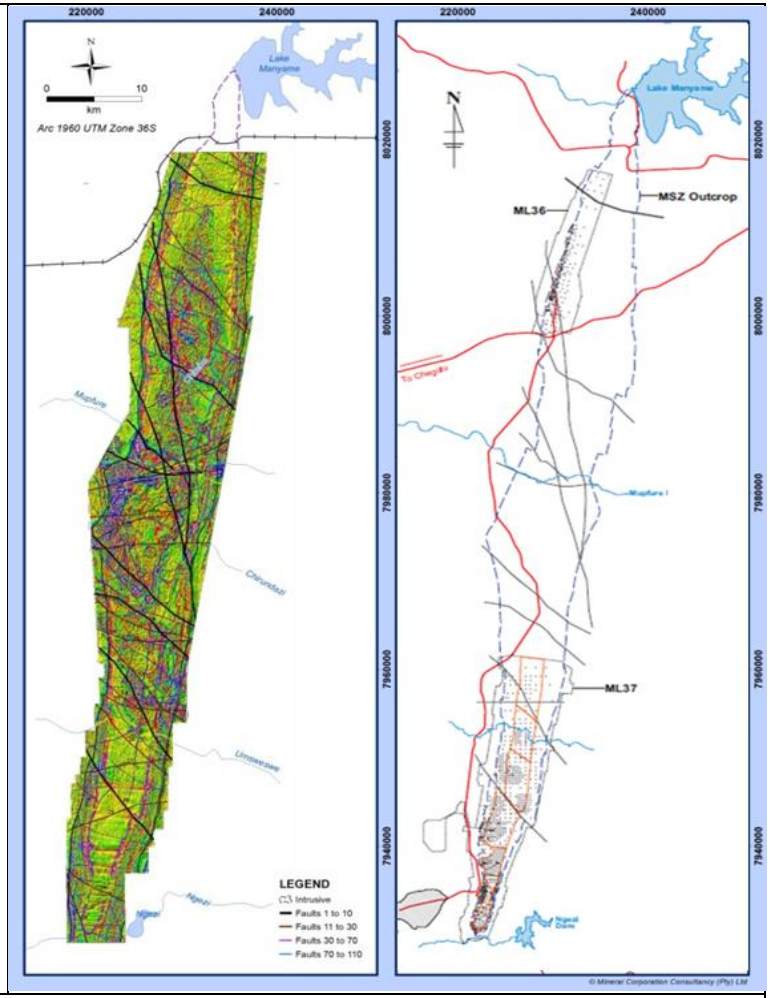
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The current Mineral Resource and Ore Reserve estimates are reported on the basis of the two Mining Leases for Platinum Group Metals (ML36 and ML37), which are valid for the life on the mine.	
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Historical exploration work since the 1970s, primarily by the former owners BHP/Delta Gold but also by Anglo American, Rio Tinto and JCI, included: • Geophysical (aeromagnetic) surveys, including the interpretation at 1:10 000 scale. • Surface mapping; • Soil geochemical surveys; • Diamond and reverse circulation (RC) drilling; • Mineral Resource estimation; and • Significant mining operations.	

Geology	Geological setting	The Great Dyke is a layered, 2.58 billion-year old, igneous intrusion into granites and greenstone belts of the Zimbabwe Craton (Figure 1). It is 550km long, north north-east trending, with a maximum width of 12km. The Great Dyke consists of the North and South Chambers, which are sub-divided into the Wedza, Selukwe (Shurugwi), Sebakwe, Darwendale and Musengezi Sub-chambers. The stratigraphic sequence consists of a lower ultramafic sequence (up to 2 200m thick) and an upper mafic sequence (1 150m thick). The PGM-bearing Main Sulphide Zone (MSZ) lies 5m to 50m below the base of the mafic sequence. The MSZ is a continuous layer between 2m and 10m thick that forms an elongate basin. Much of the MSZ and the overlying mafic sequence have been removed by erosion. There are four erosional remnants of MSZ. The MSZ dip at between 5° and 20° near the margins and flatten out near the axis of the Great Dyke to form a flat-lying floor. Faulting on all scales has modified the synformal shape of the Great Dyke and therefore the MSZ. Post-mineralization intrusions also disrupt the mineralisation in the MSZ. Bushveld-style potholes are not prevalent; however, there are areas with disrupted metal profiles and hangingwall slumps. PGM grades in the MSZ inversely correlate with thickness and the grade distribution is asymmetric with higher grade, narrower profiles along the western margin.	

Drill hole Information	Deposit type and style of mineralisation	The MSZ is a stratiform PGM deposit, with Ni and Cu occurring as co-products, hosted by a layered igneous complex. As is typical of such deposits, the mineralisation is associated with sulphide minerals and occurs close to the contact between the mafic and ultramafic sequences as portrayed in the figure on the RHS. Typically, the MSZ consists of a 2m to 10m thick zone containing sulphides disseminated in pyroxenite termed the Base Metal subzone (BM subzone). The base of the BM subzone is straddled by a 1m to 5m thick zone of elevated precious metal values (Pt, Pd, Au, and Rh) termed the PGM subzone. On average the BM subzone contains up to 5% sulphide minerals while the sulphide content of the PGM zone is less than 0.5%. The PGM and base metal distribution is closely linked to the change in sulphide mineral content in a consistent manner and is used as a marker for Mineral Resource evaluation as well as mining grade control.	

	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length.	The borehole distribution which informs this estimate is shown in the Figure on the right. Data for 707 vertical boreholes has been utilised. Reporting of results for all of these drill holes is impractical.	
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the	The exclusion of the actual borehole results is not considered to detract from the understanding of the report, in that a significant amount of boreholes, over a widely distributed area have been drilled, and analysis can be made of the summary statistics tables provided.	

	Competent Person should clearly explain why this is the case	
Data aggregation methods.	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually material and should be stated.	The modelling domains (layers) were defined according to the predominant sampling interval of 0.25m. Samples lengths of 0.15m were regularised into 0.25m lengths generated from base of the BM Subzone – the reference. The 0.25m layer immediately above this reference is designated PK and contains the highest Pt value. Eight 0.25m thick layers are defined above the PK sample and are designated, from bottom upwards, HA, HB, HC, HD, HE, HF, HG and HH. Below the reference fifteen 0.25m thick layers are defined and designated, from top downwards, FA, FB, FC, FD up to FO. The evaluation cut, which is the planned underground mining cut, is defined as the 2.5m thick interval between layers HB and FG. The PGM content and distribution within the MSZ is consistent from hole to hole and over large areas. MSZ mineralisation is vertically gradational over the thickness of unit and elevated PGM grades occur around a high-grade central zone. This gradation means that the selected cut on which Mineral Resources are based is dependent on a view on what is likely to be economically mineable rather than on a sharp geological boundary. In order to honour the grade variability in the vertical profile of the MSZ, the layers described above were evaluated individually and thus no data compositing was undertaken.
	Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	This is not applicable, as the sampling protocol is aligned with the compositing protocol, and each layer is modelled individually.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent calculations were derived or used; individual PGE and base metal elements have been evaluated separately.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Holes are drilled vertically, and thus the intersection angle is usually less than 20° and is often near-orthogonal to the mineralization.
	If it is not known and only the down-hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	This is not material as the product of the vertical width and horizontal areas (blocks) is the same as for the true width and area on the plane of the ore body.
Diagrams.	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate diagrams have been provided.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practised to avoid misleading reporting of Exploration Results.	There are no exploration projects in Zimplats project pipeline. Some of the projects are operating mines and others are replacement projects that have previously been subjected to Prefeasibility level assessment. Accordingly, no exploration results were included in the statement. All material is classified as per the requirements of the JORC Code and Implats protocol for reporting Mineral Resources and Ore Reserves.

Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not . limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	A figure of the geophysical survey result and, and interpretation thereof, and location of the MSZ outcrop based on soil geochemical results has been provided, as these are material to the structural interpretation, which informs the Mineral Resource estimates.	
Further work	The nature and scale of planned further work (egg. tests for lateral extensions or depth extensions or large-scale step-out drilling).	The five year forecast for exploration drilling is mainly on evaluation infill drilling at existing mines.	
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	No further work planned for extending beyond ML36 and ML37.	

<table>
<tr><th>Criteria</th><th>Explanation</th><th colspan="4">Observations</th></tr>
<tr><td colspan="6">Section 2: Reporting of Mineral Resources</td></tr>
<tr><td rowspan="2">Database integrity</td><td>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</td><td colspan="4">The metal profiles across the MSZ are consistent between boreholes. The PGM data used for Mineral Resource estimation is based largely on Genalysis NiS collector fire assays with ICPMS finish. As an additional QAQC procedure, when a new batch of results is received, down hole profiles are plotted and checked for anomalous areas. The database is routinely updated as new data becomes available. Random checks on the data used in the Mineral Resource estimation were conducted to verify consistency of digital data with hard copy data. The database is maintained by Zimplats Exploration staff and Implats Database Administrator who oversees data validation and QAQC reporting.</td></tr>
<tr><td>Data validation procedures used.</td><td colspan="4">Unexpected grades are double checked with drill logs to see if these are the result of intrusions; harzburgite, pegmatites, dolerites, fine or coarse-grained bronzitite lenses, etc.,. The possibility of swapped samples especially with standards, blanks and repeats is also checked. Once the profiles are double checked, explained and confirmed the results are signed-off and the data is accepted into the database.

Only vertical diamond drill holes were used for the current estimate. Underground diamond drill holes, reverse circulation holes and channel samples were excluded as these are for localised areas and are often only analysed for a reduced spread of elements which are utilised primarily for grade control.</td></tr>
<tr><td>Site visits</td><td>Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case.</td><td colspan="4">The Competent Person for Mineral Resources is a full-time employee of Zimplats and is based at the operation.</td></tr>
<tr><td rowspan="2">Geological interpretation</td><td>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</td><td colspan="4">In the Portal 1-10 there is geological and grade continuity at a global scale but this is disrupted at a local scale mainly by faults and to a lesser extent by dolerite intrusions. The density of drill holes and the aeromagnetic data in areas earmarked for mining in the short and medium term is generally sufficient to demonstrate and/or assume continuity of the MSZ.</td></tr>
<tr><td>Nature of the data used and of any assumptions made.</td><td colspan="2">For Mineral Resource estimation Zimplats uses data only from surface drill holes with assays from Genalysis based on the 6E NiS collection method. The drill hole data selected for the current Mineral Resource estimate underwent screening based on several criteria noted below:

• Surface drill holes bounded within ML36 and ML37.
• Vertical holes (dip must be between 80 and 90 degrees) and must be diamond drill holes.
• Comparative validation of vertical grade profiles for each element was inspected and drill holes with anomalous profiles were excluded. Notably drill holes associated with Mulota Hill in Portal 3 were excluded as these have disrupted mineralisation profiles.
• The northern boundary for Portal 10 marks the northern boundary of the sampling zone used in the estimation of Ngezi Mine Mineral Resources. However, the rest of the boundary is derived from the margins of the MSZ, defining the shell of the domain, and title (ML37) boundaries.

A summary of the drill holes removed from the database, and the explanation thereof, is provided.</td><td colspan="2"><table>
<tr><th>Hole_ID</th><th>location</th><th>Comments</th></tr>
<tr><td>MH0253</td><td>Portal 2</td><td>Inclined holes</td></tr>
<tr><td>MH0255</td><td>Portal 2</td><td>Inclined holes</td></tr>
<tr><td>MH0257</td><td>Portal 2</td><td>Inclined holes</td></tr>
<tr><td>MH0259</td><td>Portal 2</td><td>Inclined holes</td></tr>
<tr><td>MH0281</td><td>Portal 2</td><td>Inclined holes</td></tr>
<tr><td>MH0283</td><td>Portal 2</td><td>Inclined holes</td></tr>
<tr><td>MH0285</td><td>Portal 2</td><td>Inclined holes</td></tr>
<tr><td>MH0287</td><td>Portal 2</td><td>Inclined holes</td></tr>
<tr><td>MH0297</td><td>Portal 2</td><td>Has two peaks</td></tr>
<tr><td>MH0405</td><td>Portal 2</td><td>short F/W</td></tr>
<tr><td>MH0589</td><td>Portal 2</td><td>No Peak Platinum</td></tr>
<tr><td>MH0604</td><td>Portal 2</td><td>Abnormal structure</td></tr>
<tr><td>MH0760</td><td>Portal 2</td><td>No Peak</td></tr>
<tr><td>MH0819</td><td>Portal 2</td><td>Insufficient assays</td></tr>
<tr><td>MH0820</td><td>Portal 2</td><td>Insufficient assays</td></tr>
<tr><td>MH0843</td><td>Portal 1</td><td>Short F/W</td></tr>
<tr><td>MH0852</td><td>Portal 2</td><td>NO Peak Platinum</td></tr>
<tr><td>MH0878</td><td>Portal 2</td><td>NO Peak Platinum</td></tr>
<tr><td>MH1083</td><td>Portal 2</td><td>NO Peak Platinum</td></tr>
<tr><td>ML0045</td><td>Portal 4</td><td>Geotech drill hole</td></tr>
<tr><td>ML0046</td><td>Portal 4</td><td>Geotech drill hole</td></tr>
<tr><td>ML0047</td><td>Portal 4</td><td>Geotech drill hole</td></tr>
<tr><td>ML0048</td><td>Portal 4</td><td>Geotech drill hole</td></tr>
<tr><td>ML0049</td><td>Portal 4</td><td>Geotech drill hole</td></tr>
<tr><td>MLC001</td><td>Portal 3</td><td>Mulota hill disruption</td></tr>
<tr><td>MLC007</td><td>Portal 3</td><td>Mulota hill disruption</td></tr>
<tr><td>MLC008</td><td>Portal 3</td><td>Mulota hill disruption</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Criteria</th><th>Explanation</th><th>Observations</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>MLC026</td><td>Portal 3</td><td>Mulota hill disruption</td></tr>
<tr><td>MLC028</td><td>Portal 3</td><td>Mulota hill disruption</td></tr>
<tr><td>MLC030</td><td>Portal 3</td><td>Mulota hill disruption</td></tr>
<tr><td>MLC045</td><td>Portal 3</td><td>Mulota hill disruption</td></tr>
<tr><td>MLC046</td><td>Portal 3</td><td>Mulota hill disruption</td></tr>
</table>
</td></tr>
<tr><td></td><td>The effect, if any, of alternative interpretations on Mineral Resource estimation.</td><td>Sufficient exploration data is available to ensure that limited alternative interpretations are available, and these would not be considered material to the estimates. The modelling method allows for thicker evaluations cuts to be chosen for the Mineral Resources.</td></tr>
<tr><td></td><td>The use of geology in guiding and controlling Mineral Resource estimation.</td><td>The orebody occurs at a consistent stratigraphic location within the topmost bronzitite in the ultramafic sequence and it is identified visually on the sulphide content (MSZ) as well as via analysis.</td></tr>
<tr><td></td><td>The factors affecting continuity both of grade and geology</td><td>The MSZ is continuous over considerable strike lengths (several kilometres). Vertical grade profiles are consistent between drill holes for several kilometres e.g. from Portal 1 to 6, a strike length of approximately 21km. Geological continuity is broken at a local scale by geological structures. Similarly, grade continuity is affected by intrusives (e.g. dolerites and felsic pegmatites) and other barren material (e.g. pegmatoids and fine-grained bronzitites).</td></tr>
<tr><td>Dimensions</td><td>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</td><td>The Mineral Resource area for Portal 1-6 has a strike length of 21km and an average width of 3km. Mineral Resources in this area are reported from depth below surface of approximately 15m to a depth of 358m. Mineral Resources in this area are currently being exploited by Zimplats.

The Mineral Resource area for the Portal 8-10 area has a strike length of 12km and a width of 4.6km. Mineral Resources in this area are reported from depth below surface of approximately 11m to a depth of 650m.

The Mineral Resource area at Hartley (SMC) has a strike of 20km and width of 2km. Mineral Resources in this area are reported from depth below surface of approximately 14m to a depth 786m.</td></tr>
<tr><td rowspan="3">Estimation and modelling techniques</td><td>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters, and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</td><td>Quality grids for all layers generated in Isatis were imported into Vulcan. These quality grids and structure (stratigraphic) grids generated in Vulcan were used to form Horizon Adaptive Rectangular Prism (HARP) models. In addition and a validation measure, quality grids were generated in Vulcan and these were compared with those generated in Isatis. HARP models contain estimates of variables for each of the domains (layers) modelled.

The table on the right summarizes the modelling method and parameters utilised for quality modelling (estimation) in Vulcan for all layers.
<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Modelling Algorithm</td><td>Ordinary Kriging</td></tr>
<tr><td>Variogram Type</td><td>Spherical</td></tr>
<tr><td>Trend Order</td><td>0</td></tr>
<tr><td>Smoothing</td><td>0</td></tr>
<tr><td>Maximum Number of Interpolative Points</td><td>10</td></tr>
<tr><td>Maximum Search Distance</td><td>1 500m</td></tr>
<tr><td>Number of Search Sectors</td><td>0</td></tr>
<tr><td>Sector Angle Offset</td><td>0</td></tr>
<tr><td>Nugget of Variogram</td><td>1</td></tr>
<tr><td>Bearing to Major Direction</td><td>15 degrees</td></tr>
<tr><td>Major Range</td><td>3 000m</td></tr>
<tr><td>Minor Range to the Sill</td><td>1 000m</td></tr>
</table>
</td></tr>
<tr><td>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</td><td>The Mineral Resources for Zimplats are updated annually, and reconciliation against the previous Mineral Resource estimate is undertaken. Each Mineral Resource update considers the impact of additional exploration data obtained during the year, as well as taking into account the annual production.

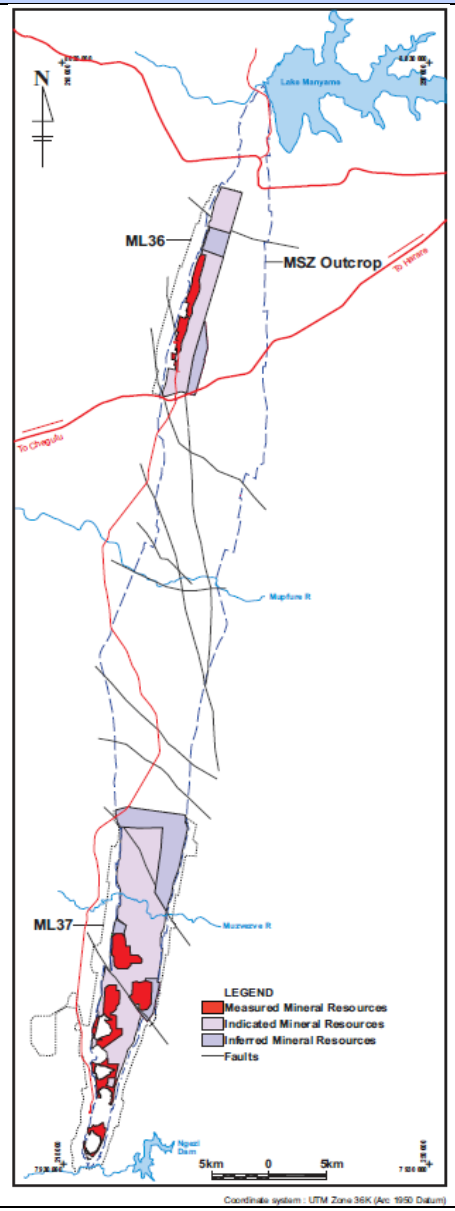
There are no issues with Zimplats' Mineral Resource and Ore Reserve estimates. For example the check estimates compiled by The Mineral Corporation for the Ngezi Mine area (Portal 1-5) as part of the 2014 independent review of Zimplats Mineral Resources revealed that The Mineral Corporation's estimates were 1-2% higher than Zimplats' estimates. It is thus concluded that Zimplats estimates are unbiased.</td></tr>
<tr><td>The assumptions made regarding recovery of by-products.</td><td>Cu and Ni are recovered as co-products. The recovery of these products is well understood, on the basis of previous production results.</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>Explanation</th><th colspan="2">Observations</th></tr>
<tr><td></td><td>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</td><td colspan="2">No deleterious elements have been estimated as these are not applicable to MSZ ores. However, Zimplats has excluded oxide mineralisation from the Mineral Reserves as this presents ore challenges using available processing technology (sulphide floatation based technology).</td></tr>
<tr><td></td><td>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</td><td colspan="2">Zimplats does not estimate grades into block. Instead grids are created and grades for each of the 0.25m layers of the Mineral Resource evaluation cut as discussed above. A 10m x 10m grid dimension (similar to the dimensions of the selective mining unit) is utilised as this provides the resolution required for mine planning. Given the drill hole densities in most areas currently being mined and the grade continuity (long ranges) of the MSZ in general, grade estimating into 10m x 10m grids does not have a material impact on biasing the estimates. The estimates are similar to check estimates by The Mineral Corporation based on 200m x 200m.</td></tr>
<tr><td></td><td>Any assumptions behind modelling of selective mining units.</td><td colspan="2">The Mineral Resources are reported at a fixed width, which takes into consideration the minimum mining width and potential dilution. The grid size used for the estimates is appropriate for the variability of the PGM grade.</td></tr>
<tr><td></td><td>Any assumptions about correlation between variables.</td><td colspan="2">No correlation between variables is considered in the Mineral Resource estimates, with the exception of checking for potentially erroneous assay results.</td></tr>
<tr><td></td><td>Description of how the geological interpretation was used to control the Mineral Resource estimates.</td><td colspan="2">On average the BM subzone contains up to 5% sulphide minerals while the sulphide content of the PGM zone is less than 0.5%. This change in sulphide mineral content is related to the PGM and base metal distribution in a consistent manner and is used as a marker for Mineral Resource evaluation and mining grade control. In addition, it can normally be located visually in drill core and, with careful observation it can also be located on underground faces.</td></tr>
<tr><td></td><td>Discussion of basis for using or not using grade cutting or capping.</td><td colspan="2">Zimplats eliminated outliers from the dataset used for variography as the outliers impose undue influence on variography. However, in certain isolated cases, extreme nugget values are excluded from both the variogram modelling and kriging dataset.</td></tr>
<tr><td></td><td>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</td><td>The suitability of the search neighbourhoods employed was assessed by reviewing a number of kriging statistics notably the slope of regression and the mean of the weights. The slope of regression for Pt in the PK layer, for instance, has a mean of 0.95 and mean of weights of 0.06, which indicates good quality estimation.

Zimplats also utilises histogram plots to compare estimates and input data, as an additional validation measure.</td><td>
<table>
<tr><th>Parameter for Pt in PK Layer</th><th>Count</th><th>Minimum</th><th>Maximum</th><th>Mean</th><th>Standard Deviation</th></tr>
<tr><td>Estimate</td><td>4195</td><td>2.41</td><td>4.78</td><td>3.57</td><td>0.10</td></tr>
<tr><td>Standard Deviation</td><td>4195</td><td>0.09</td><td>0.36</td><td>0.19</td><td>0.00</td></tr>
<tr><td>Samples</td><td>4195</td><td>4.00</td><td>27.00</td><td>8.25</td><td>12.54</td></tr>
<tr><td>Mean Distance</td><td>4195</td><td>190.6</td><td>634.7</td><td>377.2</td><td>2970.8</td></tr>
<tr><td>Slope Regression Z|Z*</td><td>4195</td><td>0.60</td><td>1.01</td><td>0.95</td><td>0.00</td></tr>
<tr><td>Weight of the Mean</td><td>4195</td><td>-0.01</td><td>0.40</td><td>0.06</td><td>0.00</td></tr>
</table>
</td></tr>
<tr><td>Moisture</td><td>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</td><td colspan="2">Tonnages are reported on a dry basis, and moisture content in this setting is not considered a material issue.</td></tr>
<tr><td>Cut-off parameters</td><td>The basis of the adopted cut-off grade(s) or quality parameters applied</td><td colspan="2">The geological variability of the MSZ grade and thickness profiles influences the selection of the most appropriate evaluation and mining cuts, and the resultant head grade generated by mining. The cut is optimised to ensure that PGE peak is fully extracted and not left in the hangingwall.</td></tr>
</table>

Criteria	Explanation	Observations
		The evaluation cut for Portal 1-6 area, which is the planned underground mining cut, is a 2.5m-thick interval that incorporates the Pt peak zone. The thickness cut-off of 2.5m is an economic (optimal mining) cut-off based on feasibility study work completed for the portals. However, owing to thinner but higher-grade intersection in areas north of Portal 6, Mineral Resources are reported at thickness cut-off varying from 1.6m to 2m.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	There is an inverse relationship between grades and thickness, with areas north of Portal 6 characterised by narrower (1.6m-2m) but higher-grade economic mining cuts and to the south characterised by wider (2.5m-3m) cuts of moderate grades. The variability is taken into consideration when reporting Mineral Resources. Mineral Resources have been reported at a constant thickness cut-off of 2.5m for the Ngezi Mine area, which is based on results of feasibility studies and other technical studies of similar level for the various portals in this area and for the open pit. These studies indicated economic mining widths in the 2.5 to 3m range based on Implats' long-term metal price assumptions. The underground mining cut is optimised to ensure that the PGE peak is fully extracted and not left in the hangingwall. An allowance of 15cm of hangingwall overcut is made in defining the underground mining cut. A narrow mining cut is preferred when metal prices decline as increasing the mining cut decreases the grade of the primary element, Pt. However, the benefits of a narrow mining cut are offset by higher mining costs and dilution. Therefore, an optimum mining width based on equipment height of 2.5m, which provides a reasonable combination of tonnage, mining cost, head grades and dilution, was selected for underground mining in the Portal 1-6 area. A wider mining cut makes sense for open pit mining where it leads to a lower stripping ratio and significant mining cost savings, for as long as the added material pays for its ore mining and processing cost. Given the difficulty of visually locating the MSZ, the smaller faults give rise to inherent dilution of the Mineral Resources. Location and efficient traversing of the larger faults is an important component of the mining operation. Shears, sub-parallel to the MSZ can have a significant negative effect on the geotechnical characteristics of the rock.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	For the estimation of Mineral Resources it has been assumed that the mineralization will be amenability to extraction through Zimplats' existing metallurgical processing facility. No material change in the metallurgical characteristics of the deposit is anticipated. The metallurgical process is tested and proven on site. The Ore Reserves in this study are metallurgically similar to mill feed to-date. • Throughput rates and metallurgical recoveries achieved have generally exceeded initial design performance • Plant recoveries have been based on operational performance to date.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Consideration of the environmental factors is made in the estimation of the Mineral Resources. These are described within Section 33 (Reporting of Mineral Reserves).

Criteria	Explanation	Observations
	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	The analytical laboratory determines SG using the water displacement method and by means of a gas pycnometer. Zimplats have ascertained that the gas pycnometer results are typically equal to or slightly higher than the water immersion results. For Mineral Resource estimates, SG results from the water immersion are used, unless only gas pycnometer results are available, in which case a regression is used to remove the potential for bias.
Bulk density.	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Void spaces are not prevalent in the MSZ, and bulk density is considered to be essentially the same as SG.

Criteria	Explanation	Observations	
Classification	The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit.	The scheme for classification of the Mineral Resource was implemented based on the standards implemented by Implats, as well as the JORC Code (2012). The Mineral Resources are classified into the various Mineral Resource categories based primarily on drill hole density, which impacts on geological and grade continuity. The practical borehole spacing which inform the Mineral Resources are: • Less than 250m by 250m for Measured Mineral Resources • Greater than 250m by 250m but less than 1000m by 1000m for Indicated Mineral Resources • Greater than 1000m by 1000m for Inferred Mineral Resources Mineral Resource classification for Zimplats is shown in the figure on the right.	

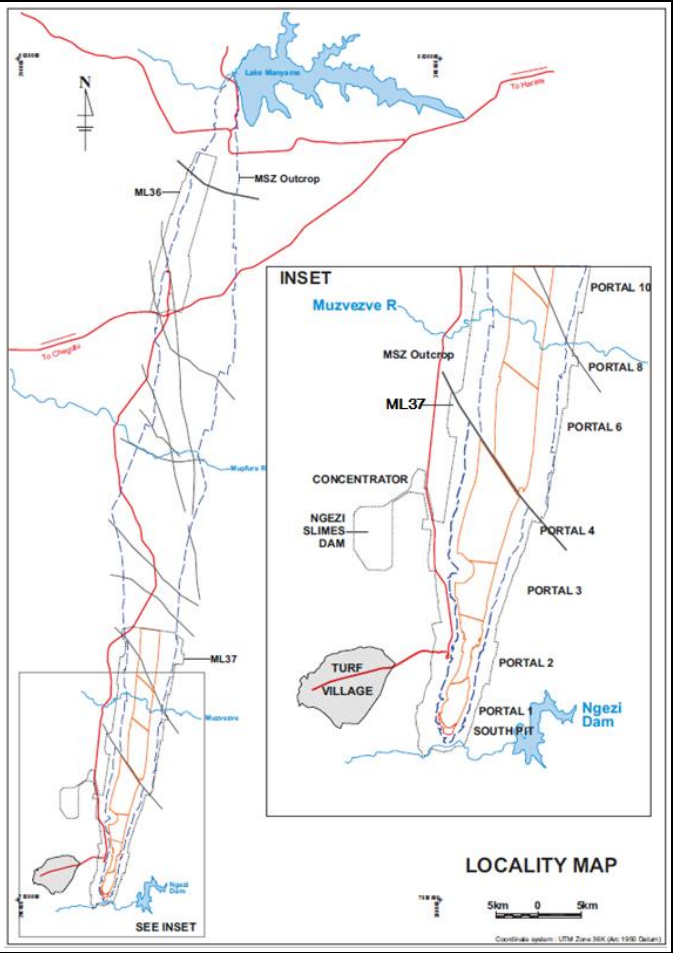
Criteria	Explanation	Observations
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates	In 2010 and 2012, AMEC completed an Implats' wide audit, which included Zimplats, with a specific scope of work for the respective areas. AMEC concluded that the Mineral Resource estimates were representative of the mineral deposit and that the methodology used for estimating Mineral Resources and Mineral Reserves was reasonable and in compliance with the SAMREC code, the JORC code and the Implats Code of Practice. No key/material issues were raised in the audit. AMEC provided recommendations for all significant and non-material issues that were identified and discussed these in detail in the audit reports describing the checks performed and qualifiers on AMEC's opinion. The only matter raised at Zimplats was a problem that existed between production figures and Mineral Resource and Ore Reserve estimates related to grade and tonnage reconciliation at the Portal 4 operation, which has since been resolved. The audits of Mineral Resources completed by The Mineral Corporation in 2015, 2016 and 2017 concluded that the estimate of tonnage and grade compiled by Zimplats are unbiased and reflective of the mineralisation in the MSZ. The only matter raised relates to Mineral Resource classification in structurally complex areas where it was the opinion of the auditor that in the eastern parts of Portal 3-4 classified as Indicated and the Manzamunyama Fault Zone classified as Measured and Indicated require additional drilling to improve confidence in the structural model. The issue has since been addressed by additional drilling in the Portal 3-4 area and revision of unknown geological losses and Ore Reserve extraction factors in the Manzamunyama Fault Zone.
Discussion of relative accuracy/confidence	Where appropriate a statement of the relative accuracy and/or confidence in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Mineral Resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	A qualitative procedure (scoring system) provided for in the Implats Protocol on Mineral Resources and Ore Reserves is utilised. Mineral Resources are delineated in areas where the MSZ mineralisation occurs within Zimplats mineral rights and close to existing or planned mining infrastructure. In addition, there should not be material issues from environmental, social, structural complexity and depth/temperature/water perspectives in these areas. Classification into the various Mineral Resource categories is based primarily on drill hole spacing, which influences confidence on geological and grade continuity. Other criteria include quality of assays and grade confidence (assessed in terms of variance compared to mean).
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages or volumes, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	Mining operations at Ngezi Mines have been continuous since 2001. • Life of Mine plans are regenerated from Measured and Indicated Mineral Resource polygons only. The plans are reviewed for economic viability and approved by the Zimplats Board of Directors. • For new portals, bankable feasibility study work is undertaken for the proposed portals. The bankable feasibility studies are reviewed internally and also by a 3rd party consulting company.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available	Open pit and underground mining since 2000 has increased confidence in the Mineral Resource estimate. The predicted mill feed grade has been achieved. The grade and mine call factors are monitored on month by month basis and this has been in line with Zimplats' expectations.
Section 3: Reporting of Ore Reserves		
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion estimate for conversion to an Ore Reserve.	All Mineral Resources for the operating mines (Portal 1-4) are classified in the Indicated and Measured categories. The Mineral Resources for the replacement project (Portal 6) currently under development are mainly classified in the Indicated and Measured categories with a very small proportion in the Inferred category. The Mineral Resources in the Portal 1-6 areas, including Upper Ores 1 (9° - 14° dip), have all been scheduled for mining and thus converted to Ore Reserves as reflected in the Ore Reserve tables. No Inferred Mineral Resources have been converted to Ore Reserves.

Criteria	Explanation	Observations
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of Ore Reserves. Ore Reserves have been estimated for the Portal 1-6 area.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person's for Mineral Reserves is a full-time employee of Zimplats, and is permanently based on site.
	If no site visits have been undertaken indicate why this is the case.	Not applicable
Study status.	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	Zimplats has aligned the criteria for the conversion of Mineral Resources to Ore Reserves with the Implats' group-wide protocol and only report Ore Reserves where a Feasibility Study has been completed, and the capital vote for development has been approved by the Board.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	The appropriate level of study has been undertaken, to enable the consideration of all of the material Modifying Factors. This is particularly the case as four of the operations are currently in production. The study for Portal 6 was completed and approved by the Zimplats Board of Directors. The method for mining Upper Ores 1 was also studied and approved by the Board hence the inclusion of Upper Ores 1 in the Ore Reserves.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied	The MSZ is a multi-metal PGE deposit. The cut-off grade is calculated based on the contributions from the various metals and the forecast metal prices. The minimum mining thickness (cut-offs) are 2.5m and 3m for underground operating portals and open pit mining (now discontinued) respectively. Inputs to the calculation of cut-off grades for Ngezi open pit and underground (based on Historical performances) included: • mining costs • metallurgical recoveries • treatment and refining costs • general and administrative costs • royalties • forecast metal prices
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	*Underground Flats* Zimplats employs mechanised room and pillar mining to extract ore from panels with a nominal width of 2.5m at dips of less than 9°. The default layout has 7m panels with 4m square pillars but spans decrease and pillar dimensions increase in bad ground and with depth. A combination of roof bolts and tendons is integral to the support design. The roadways are 6m wide and 3.2m high to accommodate the 30t trucks. A mining section is made up of a minimum of 21 panels (nineteen rooms and two roadways). Mining fleets of equipment are allocated to each underground operation dependant on the planned production levels and thus the number of sections. Each section is equipped with a trackless suite consisting of a 4m³ LHD, a single boom drill rig, a 30t truck and a dedicated bolter. Charge-up vehicles are allocated at one vehicle to two sections. Blasted ore is loaded by a LHD and taken to specific loading bays that are located within a radius of 75m from any mining face in the section. The LHDs transfer the ore into articulated trucks, which haul to grizzleys equipped with rock breakers which in turn feed into crushers. Crushers are either installed on surface or underground based on the particular operations design. Each crusher has enough capacity to handle its particular operations planned production levels.
		Underground Upper Ores 1 Mechanised room and pillar mining is also employed to extract ore in the Upper Ores 1 area from panels with a nominal width of 2.5m at an apparent dip of 9°. The default layout has 6m panels with 6m square pillars but spans decrease and pillar dimensions increase in bad ground

Criteria	Explanation	Observations
		and with depth. The dimensions of the roadway pillars are 7m x 7m. In additions there are 25m x 25m regional pillars and 30m barrier pillars. The dip rooms are developed down dip to facilitate LHD mucking. A combination of roof bolts and tendons is integral to the support design.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	*Underground* Underground mining infrastructure is accessed through declines for the existing portals and based on historical performance is deemed as appropriate for the nature of the planned mining operation
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	*Underground* The geotechnical design results from a geotechnical logging programme, laboratory testing and underground support requirements. Maximum stable panel spans are 7m with hanging-wall stability essentially governed by structural discontinuities which are supported. Room and pillar holings are 7m wide in the flat areas and 6m wide in the Upper Ores 1 areas and 2.65m high. The mining height is based on a planned extraction width which also accounts for 15cm of overbreak. The minimum pillar width on dip is 7m in the flat areas and 6m in the Upper Ores 1 areas in accordance with the approach for Ngezi, with the lengths varying between 5m and 6.5m in the flat areas depending on the mining depth below the surface and 6m in the Upper Ores 1 areas. Pillar dimensions are such that the effective pillar width is not less than twice the mining height. The minimum factor of safety for stoping pillars is 1.6. Barrier pillars have been incorporated on dip and strike into the mine design with a minimum width to height ratio of not less than 10. The skin-to-skin spacing between barrier pillars varies with depth below surface. The decline spines comprise of two 6m wide Declines and two 7m wide ledging panels, north and south of the spine. Where the conveyor decline is required, the declines are separated internally by four pillars 21m (dip width) x 20m (strike length). The pillars leading to the ledging panels are 7.5m on strike and 5m wide on dip.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	Some portions of Zimplats' Mineral Resources can be exploited by the open pit method. The ultimate pit which indicates positive economic assessments has an ultimate pit depth of 45m and includes a 30m wide ramp inclined at 6 degrees to accommodate the mining units (truck and shovels) for production. Because the reef inclination is also at 6 degrees, this implies that there is no need to establish an access road once the ore is intersected.

Criteria	Explanation	Observations
	The mining dilution factors used.	*Underground* It is assumed that waste mined as ore will have a 1.1% dilution on grade and Mineral Resource reconciliation a 4.95% dilution on grade. Mining dilution is estimated at 6% and the overbreak dilution has a metal content (grade) which is accounted for in the overall grade dilution calculation. The overall grade dilution of Mineral Resources to Ore Reserves is 3%. The dilution estimates are derived from production information.
	The mining recovery factors used.	*Underground* The total mining extraction rate varies with the mining depth below surface, currently it varies between 66% and 83%. Mining losses vary from portal to portal and range from 3% - 10%.
	Any minimum mining widths used.	*Underground* The planned mining width is 2.5m and allowing for 15cm of overbreak the final minimum mining width in the production sections is 2.65m. Dedicated strike roadways and dip roadways are a minimum of 3.2m high.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	No Inferred Mineral Resources have been scheduled for mining in either the underground or open pit operations.
	The infrastructure requirements of the selected mining methods.	*Underground* The following primary infrastructure exists at the Ngezi complex to support mining and processing operations: • Four portals for access to the underground mining operations; • Access roads; • Secure water supply; • Secure electricity supply; • Surface conveyors and crushers; • Managerial and technical service offices; • Workshops; • Re-fuelling facilities; • Explosives handling and storage facilities; • Water storage dams; • Ore processing facility; and

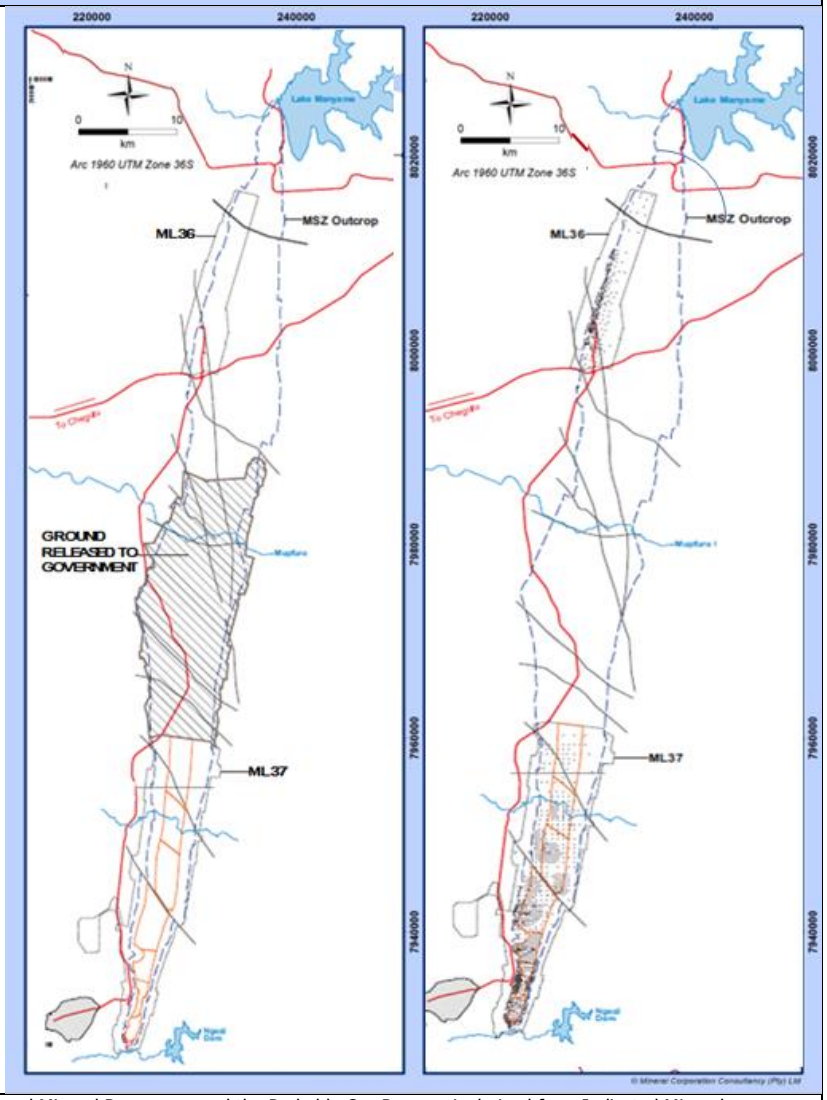
Criteria	Explanation	Observations
		• Housing. The following primary infrastructure exists at the SMC to support mining and processing operations: • Ore processing facility; • Smelter; • Access roads; • Secure water supply; • Secure electricity supply; • Managerial and technical service offices; • Workshops; • Re-fuelling facilities; • Water storage dams; and • Accommodation. It is deemed that there is sufficient infrastructure on the operational sites to meet the planned production requirements, in terms of ore, concentrate and smelter matt.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The recoveries applied in the development of the Ore Reserves and subsequent mining schedules are based on actual recoveries achieved from the existing two flotation plants (Ngezi and SMC) and the smelter. The processing efficiencies are also cross-checked against past metallurgical mineral deportment studies that have been carried out on similar types of ores from Ngezi.
	Whether the metallurgical process is well-tested technology or novel in nature. The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	The metallurgical process is well established, and no material changes are envisaged. No test work is required as the applied recoveries are based on those actually achieved at the two processing facilities and the refinery. This is particularly the case as the ore sources planned are the same as those historically mined.
	Any assumptions or allowances made for deleterious elements.	All waste rock is contained in designated storage areas and based on historical evidence is not likely to produced acid mine drainage. The tailings material produced during the processing of the ore is stored in a purpose built facility that has sufficient capacity to contain all tailings produced over the life of mine. The facility is designed to prevent any inadvertent discharges into the general environment.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.	No pilot test work is required as the applied recoveries are based on those actually achieved at the two processing facilities and the refinery.
	For minerals that are defined by a specification, has the Ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The following EIAs (environmental impact assessments) have been undertaken and approved for: • The original mining operations, actual and planned (2003). This is updated on an ongoing basis as mine the develops/expands; • Open pit EIA was approved in 1999, however an addendum was submitted and approved in 2008 and a renewal is currently under consideration by the Zimbabwean authorities; and • The Turf Housing Project was submitted and approved in 2004 and an addendum was submitted and approved to reflect the mines current housing strategy. Zimplats holds a number of EIA discharge permits and application for their renewal is always done ahead of their expiry. Furthermore Zimplats holds a lease agreement with the National Parks as a part of ML 37 falls within a national park.

Criteria	Explanation	Observations	
		All waste rock is contained in designated storage areas and based on historical evidence is not likely to produced acid mine drainage. The tailings material produced during the processing of the ore is stored in a purpose built facility that has sufficient capacity to contain all tailings produced over the life of mine. The facility is designed to prevent any inadvertent discharges into the general environment.	
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	As indicated previously there is sufficient land available to cater for the needs of the mining and processing operations and the required accommodation facilities. However this will be dependent on the timeous renewals of the EIA permits and land leases previously highlighted. Currently the mine has an allocation of 3000Ml from the Ngezi dam system and an additional 8 000Ml from the Chitsuwa as and when required. In addition there is on site recycling of effluent. The supply of water is deemed sufficient to support existing and planned mining and processing operations. A summary of the mine infrastructure is provided on the diagram.	
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital expenditure is based on equipment and mine replacement schedules using latest manufacturers' prices escalated by forecast inflation.	

Criteria	Explanation	Observations
	The methodology used to estimate operating costs.	A detailed cost model provides the basis for the estimate of underground operating costs. The cost model was developed using first principles derived from supplier quotations and historical data. • Open pit mining, concentrate and smelting treatment, freight, insurance and general and administrative costs have been sourced from historical data and quotations from suppliers.
	Allowances made for the content of deleterious elements.	• No penalty elements have been recorded in concentrates produced to date that affects the calculation of payable metal.
	The source of exchange rates used in the study.	The Reuters consensus forecast is used as the basis for the Rand/US Dollar exchange rate
	Derivation of transportation charges.	The transport charges are based on established contracts (where applicable) and production data.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Zimplats has established treatment and refining contracts with Implats, and these have been considered in the estimation of costs for the Ore Reserves.
	The allowances made for royalties payable, both Government and private.	The basis for forecasting royalties payable is established through the current operations, and allowances for these royalties have been made in the cost estimates which inform the Ore Reserves.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	Detailed mine designs were undertaken for both the open pit and underground operations. Diluted and recovered grades were calculated for all material being mined, which were in turn assessed against the relevant cut-off grades for determination of inclusion within the Ore Reserve estimate. Head grades for material sent to the process plants directly correspond to mined grades calculated. Metal prices and exchange rates are based on Implats forecasts, which are reviewed every month. Transportation costs are based on existing contracts and are escalated based on anticipated inflation. Penalties are based on the off take agreement with Impala.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	The assumptions regarding head grades are calculated from geological resource model grades estimates. Transportation and treatment charges, penalties and net smelter returns are based on historical production data and existing contracts with services providers and Impala.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	The price forecasts are compiled by a pricing committee, which consider a number of factors, including:- • Estimated supply of the metals (which is determined by competitor analysis) • Estimated demand for the metals (which is determined by customer analysis, market trends)
	A customer and competitor analysis along with the identification of likely market windows for the product.	The price forecasts are compiled by a pricing committee, which consider a number of factors, including:- • Estimated supply of the metals (which is determined by competitor analysis) • Estimated demand for the metals (which is determined by customer analysis, market trends)
	Price and volume forecasts and the basis for these forecasts.	The price forecasts are compiled by a pricing committee, which consider a number of factors, including:- • Estimated supply of the metals (which is determined by competitor analysis) • Estimated demand for the metals (which is determined by customer analysis, market trends)
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Not applicable

Criteria	Explanation	Observations
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	Zimplats uses forecast inflation numbers from reputable economic analyst firms and uses a required rate of return (which is always higher than the company's weighted average cost of capital) to discount differential cash flows to present value.
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Sensitivity studies were carried out on various parameters including mining cost, processing cost, metal prices and discount rate. This data suggests that the NPV is robust, returning a positive before tax NPV.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	From a legal and regulatory perspective, Zimplats has complied with its obligations under the Zimbabwean government's Mines and Mineral Act. Zimplats also implemented processes to obtain community endorsement for the Ngezi operations to the satisfaction of the regulatory authorities. Zimplats also established a community share ownership scheme that was approved by the Government of Zimbabwe. The Government of Zimbabwe has been pursuing greater participation in the mining sector by indigenous Zimbabweans. Implats and Zimplats engaged with the Government and the Indigenous Implementation Plan is being negotiated.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	The Zimplats operation holds the permits, certificates, licences and agreements required to conduct its current operations, and expand current operations. However, Zimplats maintains a range of operating permits which, by their nature, require renewal on an ongoing basis. Zimplats has dedicated programs and personnel involved in monitoring permit compliance and works closely with authorities to promptly address requests for information. Risks associated with review and renewal of operating permits is, upon that basis, regarded as manageable within the ordinary course of business.
	Any identified material naturally occurring risks.	In October 2014, Zimplats engaged the International Mining Industry Underwriters Limited to review all risks that could impact the business and no naturally occurring risks were identified.
	The status of material legal agreements and marketing arrangements.	There are no material, unresolved matters dependent upon a third party on which extraction of the Ore Reserve is contingent

Criteria	Explanation	Observations
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the Ore Reserve is contingent.	Zimplats formerly held a special mining lease, special mining lease number 1 (SML1), covering two areas measuring a total of 48 535ha. SML1 was supported by a mining agreement and was due for renewal in August 2019. In March 2013 the Government of Zimbabwe gazetted a notice of its intention to compulsorily acquire a portion of ground (measuring 27 948 hectares), held under the SML1 and situated on the north of Portal 10. The operating subsidiary lodged a formal objection to the preliminary notice and the matter was pending in the courts in Zimbabwe. On 6 June 2018, Zimplats announced that the issue concerning the proposed compulsory acquisition of a portion of Zimplats' mining lease area, as well as the issue of security of Zimplats' mining tenure, had been resolved amicably between Zimplats and the Government to the mutual benefit of the parties. Zimplats agreed to release to the Government land measuring 23 903 hectares within Zimplats' mining lease area in support of the Government's efforts to enable participation by other investors in the platinum mining industry in Zimbabwe. Zimplats applied for and was granted, with effect from 31 May 2018, two separate mining leases over the two pieces of land, ML36 and ML37 measuring 6 605 hectares and 18 027 hectares respectively. These mining leases replace SML1 which was due for renewal in August 2019. The two mining leases issued to Zimplats are valid for the life of mine of Zimplats' mining operations and they secure Zimplats' mining tenure.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Proved Ore Reserve is a sub-set of Measured Mineral Resources, and the Probable Ore Reserve is derived from Indicated Mineral Resources. No Inferred Resource metal included in the Ore Reserve estimate. • No Probable Ore Reserves have been derived from Measured Mineral Resources. • It is the opinion of the Competent Person for Ore Reserve estimation that the Mineral Resource classification adequately represents the degree of confidence in the orebody.



Criteria	Explanation	Observations
	Whether the result appropriately reflects the Competent Person(s)' view of the deposit.	It is the opinion of the Competent Person for Ore Reserve estimation that the Mineral Resource classification adequately represents the degree of confidence in the orebody.
Audit and reviews	The results of any audits or reviews of Ore Reserve estimates.	The Mineral Corporation reviewed Ore Reserves for Zimplats in 2015 after the pillar failure at Portal 4 associated with the Mutambara Shear Zone. The pillar failure necessitated a revision of the geotechnical designs but only for the Portal 3 upwards where the reef is deeper and where the Mutambara-like shears are prevalent. There were no material issues identified from the review of Ore Reserves for Portal 1 and 2. However, given the uncertainties in the geotechnical designs at that stage, The Mineral Corporation recommended the down-grading of a substantial portion of Ore Reserves previously classified as Proved resulting in Proved Ore Reserves declared only for Measured Resource areas scheduled for mining in the one-year plan for Portal 3 and Portal 4. The remainder of the Ore Reserves were classified as Probable. The new mine designs have since been approved and adopted hence Zimplats has converted all Measured Mineral Resources in the portals that qualify to Proved Ore Reserves.
Discussion of relative accuracy/confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Ore Reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	Reconciliation of actual production to the Mineral Resource model since the commencement of operations indicates that the estimate is representative of the deposit.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	As above
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	As above
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	As above