Appendix 4D

Half Year Report
Zimplats Holdings Limited
ARBN: 083 463 058
Australian Stock Exchange code: **ZIM**

Results for the half year ended 31 December 2016

			2016 US$ 000	2015 US$ 000
1.	Revenue		237 688	204 393
2.	Profit before income tax		37 151	553
3.	Income tax expense		(20 982)	(1 170)
4.	Profit/(loss) for the year attributable to shareholders		16 169	(617)

The directors' report and the condensed consolidated interim financial statements of Zimplats Holdings Limited ('Zimplats' or the 'Company') and its subsidiaries (together the 'Group') for the half year ended 31 December 2016, which have been reviewed by auditors, have been released and are available on the Company's website (www.zimplats.com).

Finance

- Revenue for the half year increased by 16% to US$237.7 million compared to the same period last year due to the relative increase in metal prices and higher sales volumes. Platinum ounces sold increased by 4% to 133 937 ounces compared to the same period last year. The gross revenue per platinum ounce for the half year at US$1 745 was 10% higher than the US$1 591 reported during the same period last year.

- Cost of sales of US$179 million was 4% better than the same period last year's US$185.7 million mainly due to the decrease in depreciation (arising from the increase in life of Bimha Mine due to the extension of boundaries) and price reductions achieved as a result of cost saving initiatives on consumables and procurement contracts. Resultantly, gross profit margins gained from 9% in the prior period to 25% in the current half year.

- Administrative expenses for the half year ended 31 December 2016 at US$22 million were 61% higher than the US$13.7 million reported during the same period last year mainly driven by the following:

  - Share based payments for the half year were higher than the same period last year in line with the improvement in the price of the underlying shares

  - Insurance premiums for the half year were increased to reduce the insurance excess in the event of property damage or business interruption

  - Labour cost for the six months ended 31 December 2015 benefitted from the reversal of bonus and retrenchment costs over provision.

- Selling and distribution expenses for the half year at US$3.5 million were 182% higher than the same period last year due to the export of concentrates which attract higher transport charges.

- Royalty and commission expense for the half year increased by 16% from US$5.1 million reported in the same period last year to US$5.9 million in line with the increase in sales revenue.

- The half year ended 31 December 2016 benefited from export incentive of US$6.6 million and a reversal of impairment of US$13 million on the previously written off Reserve Bank of Zimbabwe (RBZ) debt. The Government of Zimbabwe issued to the Group's main operating subsidiary, Zimbabwe Platinum Mines (Private) Limited, treasury bills with a total nominal value of US$34 million in settlement of the principal amount owed by the RBZ. The treasury bills have been discounted using a rate of 27.5% to arrive at a fair value of US$13 million which has been recognised in the income statement.

- Cash operating cost per platinum ounce produced decreased by 4% to US$1 185 compared to the same period last year due to higher production volumes and benefit of the sustained cost management measures adopted starting from the second quarter of the financial year ended 30 June 2016 in response to the collapse in metal prices.

As a result of these factors, profit before income tax for the period at US$37.2 million was significantly higher than the US$0.6 million loss recorded in the same period last year.

- Income tax for the half year at US$21 million (2015: US$1.2 million) resulted in a profit after tax for the period of US$16.2 million compared to a loss of US$0.6 million incurred in the same period last year.

- Net cash inflows from operating activities increased from US$6.5 million recorded during the same period last year to US$46.1 million mainly due to higher sales proceeds (US$217.5 million compared to US$174.3 million received in the same period last year). The sales receipts for prior year period were affected by the 15 days furnace shutdown resulting from the furnace shell breakout incident which happened on 18 May 2015.

- At the end of the half year, the Group had bank borrowings of US$85 million (30 June 2016: US$109 million and 31 December 2015: US$101 million) and a cash balance of US$52.9 million (30 June 2016: US$55.7 million and 31 December 2015: US$58.9 million).

Safety, Health and Environment

- There were no fatalities or lost-time injuries reported during the half year resulting in the lost-time injury frequency rate improving from 0.44 to 0.

- The Group's employee wellness programmes have continued to be effective during the half year with turnout for voluntary counselling and testing increasing by 5% from the same period last year.

- Rehabilitation of the closed open-pit mine progressed well with approximately 85% of the pit rehabilitated by the end of the half year under review.

- The Group's water conservation programmes were effective in the half year with water recycled increasing to 33% from 28% recorded in the same period last year. This improvement was largely due to the increase in the amount of rainfall received.

Operations

- Tonnes mined during the half year increased by 6% to 3.47 million tonnes compared to the same period last year mainly due to the ramping up of production at Mupfuti and Bimha mines. In addition, South Pit Mine recorded an increase of 18% from 423 000 tonnes reported for the same period last year to 500 000 tonnes.

- Tonnes milled increased by 6% to 3.21 million tonnes compared to the same period last year in line with improved ore supply highlighted above.

- Four elements (platinum, palladium, rhodium and gold) (4E) mill head grade at 3.239g/t was marginally better than the 3.223g/t achieved for the same period last year reflecting sustained grade control at the Group's operations.

- Platinum and 4E metal production for the half year increased by 4% to 135 824 ounces and 273 905 ounces from 130 342 ounces and 262 749 ounces respectively due to higher mills throughput.

Capital Projects

- The Group spent a total of US$25.1 million on capital expenditure during the half year compared to US$27.2 million spent during the same period last year.

- The redevelopment of Bimha Mine remains on schedule to reach full production in April 2018. A total of US$24 million had been spent on the project as at 31 December 2016 against an approved total project budget of US$92 million.

- The bankable feasibility study for (Portal 6) Mupani Mine (replacement mine for Ngwarati and Rukodzi mines) was approved by the board in November 2016. The development of Mupani mine commenced and the box cut was completed during the period under review. Mupani Mine is scheduled to reach full production of 2.2Mtpa in August 2025 at an estimated total project cost of US$264 million.

Mineral Resources and Ore Reserves

- There has been no material change in the Group's Mineral Resources compared to those reported in the integrated annual report for the financial year ended 30 June 2016.

- As noted above and in the ASX announcement dated 30 November 2016, the board of directors approved the feasibility study for Mupani Mine development in November 2016.

- The main changes relative to the June 2016 annual Mineral Resource and Mineral Reserve statement was the conversion of Mupani Mine Mineral Resources into Mineral Reserves following the approval of the Mupani Mine project by the board of directors in November 2016. Consequently, the Group's total Ore Reserves increased by 2.9 million platinum ounces (49%) from 5.9 million platinum ounces as at 30 June 2016 to 8.8 million platinum ounces at 31 December 2016.

- The bankable feasibility study for Mupani Mine was carried out by an independent mining consulting firm. The study confirmed that Mupani Mine will have strong and robust project economics given the capital requirement of approximately US$264 million, low operating cost and an attractive life of mine operating margin. The Mupani Mine project economics were evaluated through a high level financial model. This process demonstrated that the project has a positive net cash flow. An independent consulting firm carried out a third party review and concluded that the designs, technology application, cost estimates and the financial evaluation model were sound.

- Please refer to attachment 1 for the competent persons report on Mineral Resource and Ore Reserve estimates for the Group.

Dividend

- No dividend has been proposed for the half year ended 31 December 2016.

- A dividend of US$13 million (equating to US$0.1208 per share) for the year ended 30 June 2015 was declared and paid during the half year ended 31 December 2015 to shareholders on record as at 7 September 2015.

ATTACHMENT 1

Update of Mineral Resource and Ore Reserve estimates for Zimplats

Zimplats is pleased to announce the updated Mineral Resources and Ore Reserves Estimates (JORC Code, 2012 Edition) for the platinum group metal operations in Zimbabwe.

Zimplats ordinarily discloses its Mineral Resources and Ore Reserves in its integrated annual report. However, due to the material change in Ore Reserves following the successful completion of the Mining Study as part of the Mupani Mine feasibility study and subsequent approval of the development of Mupani Mine by the boards of directors of both Zimplats and Impala Platinum Holdings Limited (Implats) in November 2016, the Company has decided to disclose its Mineral Resource and Ore Reserve estimates as part of the half year report (Refer to the table below).

Highlights

- No material change in the Company's Mineral Resources as compared to those reported last year in June 2016.
- In November 2016, the Zimplats and Implats boards of directors approved the feasibility study for Mupani Mine and the development of the mine. The feasibility study was carried out by independent mining consultants.
- Zimplats' total Ore Reserves has increased by 2.9 million platinum ounces from 5.9 million platinum ounces as at 30 June 2016 reported in the integrated annual report published in August 2016, to 8.8 million platinum ounces in the current estimate.
- The Ore Reserves estimate has been developed in accordance with the JORC code 2012 edition and summarised in the table below

Mupani Mine Feasibility Study Summary

- Mupani Mine is scheduled to replace Rukodzi and Ngwarati Mines whose Ore Reserves will be depleted by 2022 and 2025 respectively.
- The bankable feasibility study was completed by an independent mining consulting firm.
- The capital cost for developing Mupani Mine is estimated at US$264 million.
- Board approval for execution of the project was granted in November 2016.
- Mupani Mine is located along the Great Dyke of Zimbabwe.
- The current mining method employed on existing mines and processing facilities will be utilised.
- Mupani Mine will operate a total of 10 fleets (1 development and 9 production teams) producing a total of 2.2Mtpa.
- Ramp up to full production is scheduled for 2025 with an estimated life of mine of 34 years.

Zimplats Mineral Resource and Ore Reserve statement

The statement shows no material change to the Company's Mineral Resource base and a 49% increase in Ore Reserves relative to June 2016 estimates. The increase is as a result of the addition of the Mupani Mine Ore Reserves following the successful completion of the Mining Study as part of the Mupani Mine feasibility study and subsequent approval of the development of Mupani Mine by the boards of directors of both Zimplats and Impala Platinum Holdings Limited (Implats) in November 2016.

Mineral Resources (inclusive of Reserves)

Category	December 2016				June 2016			
	Tonnage (millions)	4E (g/t)	6E g/t	Pt oz (millions)	Tonnage (millions)	4E (g/t)	6E g/t	Pt oz (millions)
Measured	171	3.54	3.73	9.6	174	3.55	3.74	9.8
Indicated	695	3.50	3.69	38.7	695	3.50	3.69	38.7
Inferred	1,199	3.26	3.53	60.4	1,199	3.26	3.53	60.4
Total	2,065	3.36	3.60	108.7	2,068	3.36	3.60	109.0

Ore Reserves

Category	December 2016				June 2016			
	Tonnage (millions)	4E (g/t)	6E g/t	Pt oz (millions)	Tonnage (millions)	4E (g/t)	6E g/t	Pt oz (millions)
Proved	66.2	3.25	3.43	3.4	51.3	3.31	3.50	2.7
Probable	102.9	3.26	3.45	5.4	60.1	3.31	3.49	3.2
Total	169.1	3.26	3.44	8.8	111.5	3.31	3.50	5.9

Competent Persons

The information in this report was prepared in accordance with the 2012 Edition of the JORC Code by Competent Persons who are full-time employees of the Company and who possess the required five years' experience relevant to the style of mineralisation and type of deposit (the Main Sulphide Zone) 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	The Australasian Institute of Mining and Metallurgy	991294

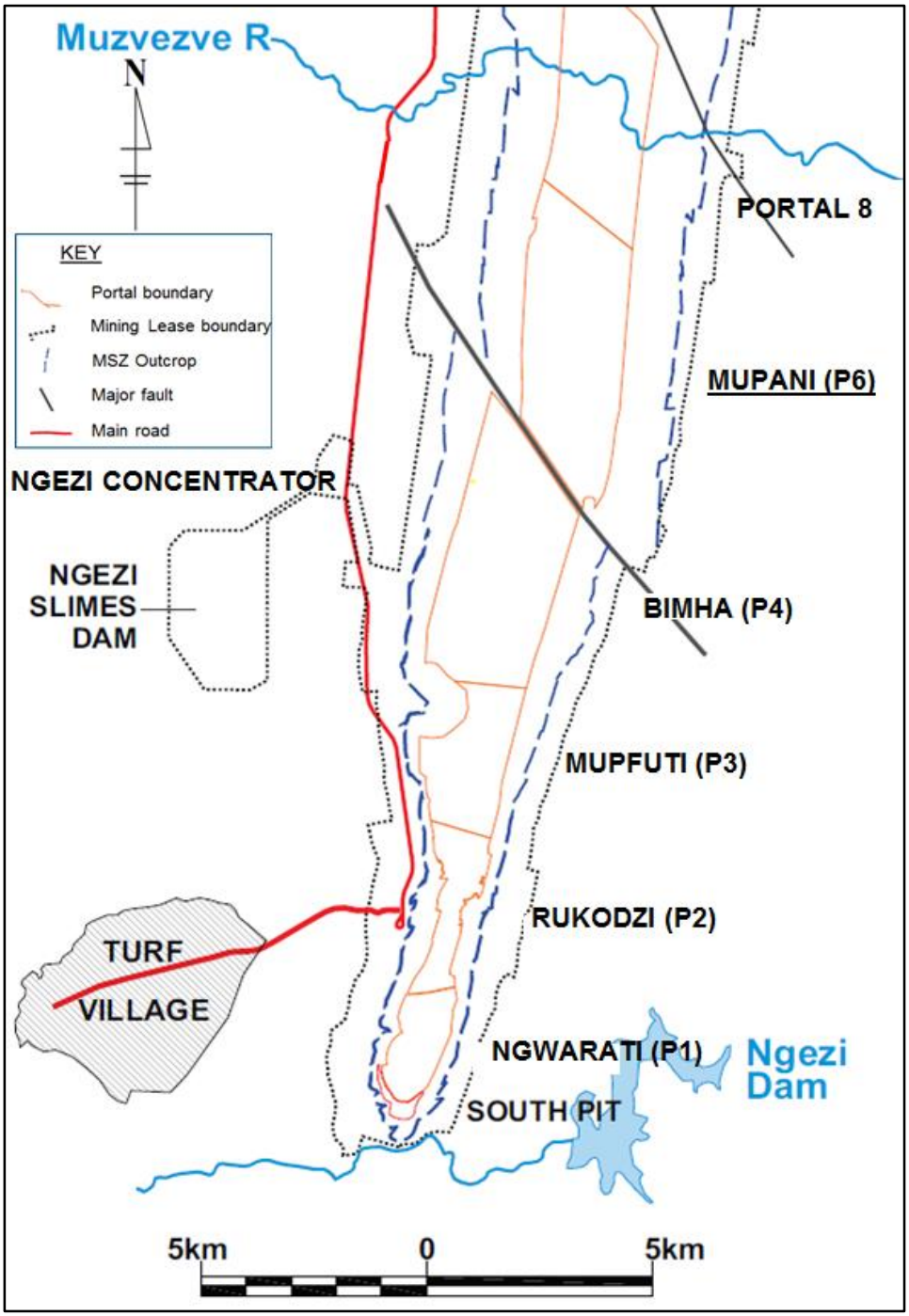


Figure 1: Location Map for Ngezi Mine Portals and the South Pit

Geology

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). Rocks 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 Main Sulphide Zone (MSZ).

The platinum-group metal (PGM)-bearing MSZ lies 5m to 50m below the base of the mafic sequence. It 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.

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.

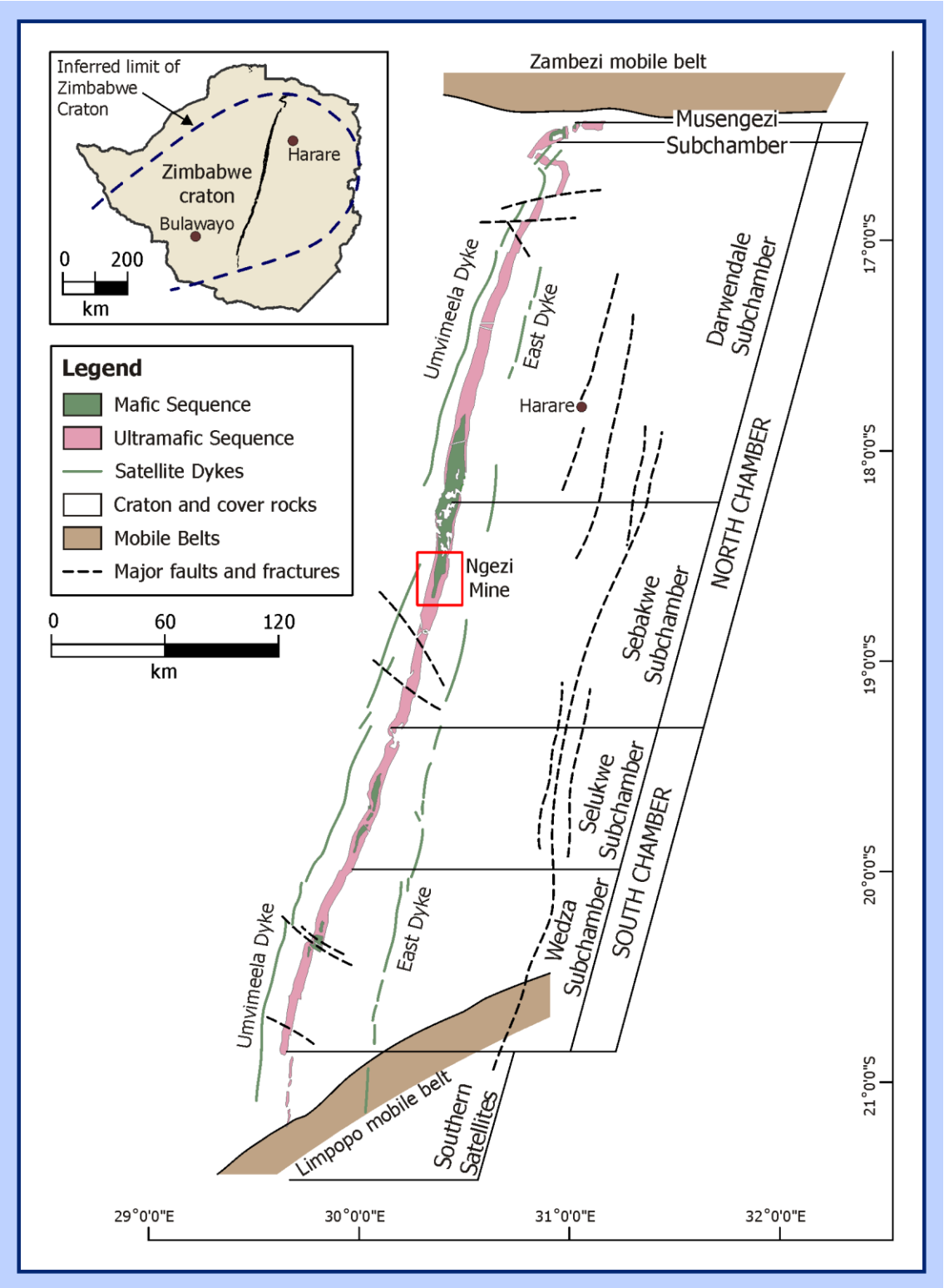


Figure 1: Regional Geology of the Great Dyke

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 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 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-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-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 1-5 areas. 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. Although Mineral Resources are reported at 2.5m evaluation cut, a mining width of 3m is planned for the Ngezi South Open Pit.

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

- Zimplats' standard is to report Mineral Resources inclusive of Ore Reserve.
- The Ore Reserves figures are estimated based on the diluted grades delivered to the processing plants.
- The boundaries of the ore envelope are gradational, particularly in the footwall, such that the choice of economic mining cut is affected by operational costs and economic factors. The price of the suite of metals that is produced from the Main Sulphide Zone has fluctuated considerably in the last few years. It is, however, evaluated that the choice of mining cut is robust under a wide range of mineral commodity pricing conditions.
- The maximum depth of these Mineral Resources is 1 250m and, with no part being more than 5km down dip from outcrop location, any part of the Mineral Resources is theoretically accessible to mining within a 10-15year time frame.
- Zimplats' Mineral Resources are 100% owned by Zimplats through the main operating subsidiary and is held under Special Mining Lease 1, with a 25 year duration which expires in 2019. The Mining Agreement relating to the Special Mining Lease 1 allows for two extensions of ten years each.
- On 13 January 2017, the Government of Zimbabwe issued, through a Government Gazette Extraordinary, a preliminary notice in terms of which the Government has given fresh notice that it intends to compulsorily acquire land measuring 27 948 hectares within the operating subsidiary's special mining lease area. The new notice has repealed all previous notices issued by the Government of Zimbabwe in respect to its proposed compulsory acquisition of this portion of the operating subsidiary's mining lease area. The operating subsidiary lodged an objection to the proposed compulsory acquisition. Zimplats is engaging the Government of Zimbabwe on the matter.
- The Mineral Resource and Ore Reserve estimates 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 Resource.
    - The quality of the methodologies employed.
    - Geological interpretation and the judgment of the individuals involved.
    - Economic conditions and commodity prices.
    - 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 Group appoints independent 3rd parties to review the Mineral Resources and Ore Reserves estimates on a regular basis and mining project feasibilities studies are subject to independent review prior to applying to the Board for capital approval.
    - Mineral Corporation Consultancy (Pty) Limited (The Mineral Corporation) of South Africa completed an audit of the Mupani Mine estimates and concluded that there were no key issues identified with respect to the Mineral Resource or Ore Reserve estimates.
    - Rounding-off of numbers may result in minor computational discrepancies.
    - Zimplats' Mineral Resources and Ore Reserves are also reported on in the Implats Integrated Annual Report and its Mineral Resource and Mineral Reserve supplement.

Appendix 1: JORC 2012 Table 1 Reporting

Zimplats Table 1

Criteria	Commentary
Sampling techniques	• 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 drillhole 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. • 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. • The platinum-group metal (PGM) and base metal mineralization is associated with macroscopic sulphide mineralization. Sampling of diamond drilled core in by cutting and analysing 25cm samples that straddle the peak sulphide mineralization provides the necessary data for Mineral Resource estimation
Drilling techniques	• All drillhole 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	• 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 drillholes with poor recovery of the mineralised zone are either redrilled or the relevant data is excluded from the Mineral Resource estimation database. • 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. 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	• 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 drillcores 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. • Quantitative logging is completed to cm accuracy. All core is photographed before and after sampling. • Close to 60 000m of core is employed in the Mineral Resources of which 100% has been lithologically logged, and of which approximately 2 700m has been assayed.
Sub-sampling techniques and sample preparation	• 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). • Sample preparation is conducted at the Genalysis Laboratory where samples are entered into its management system, crushed and pulverized. • Core is cut along the line joining the top or bottom of the igneous layering, ensuring a representative sub-sample. • The core is sampled throughout the mineralized interval, ensuring its representivity in terms of the in-situ material • The use of half-core, from either NQ or BQ drilling, is considered acceptable for the style of mineralisation.

<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td>Quality of assay data and laboratory tests</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). Table 3 contains the method of analysis per element by Genalysis, utilizing the methods described in the table alongside
These analytical methods are appropriate for the elements and mineralization style present.

<table>
<tr><th>Element</th><th>Method</th><th>Detection Limit</th></tr>
<tr><td>Pt</td><td>Fire Assay – NiS collection & mass spectrometry</td><td>2ppb</td></tr>
<tr><td>Pd</td><td>Fire Assay – NiS collection & mass spectrometry</td><td>2 ppb</td></tr>
<tr><td>Au</td><td>Fire Assay – NiS collection & mass spectrometry</td><td>2 ppb</td></tr>
<tr><td>Rh</td><td>Fire Assay – NiS collection & mass spectrometry</td><td>1 ppb</td></tr>
<tr><td>Ir</td><td>Fire Assay – NiS collection & mass spectrometry</td><td>1 ppb</td></tr>
<tr><td>Ru</td><td>Fire Assay – NiS collection & mass spectrometry</td><td>1 ppb</td></tr>
<tr><td>Ni</td><td>Total acid attack & optical emission spectrometry</td><td>1 ppm</td></tr>
<tr><td>NiS</td><td>Golden dumps leach & atomic absorption</td><td>1 ppm</td></tr>
<tr><td>Cu</td><td>Total acid attack & optical emission spectrometry</td><td>1 ppm</td></tr>
<tr><td>SG</td><td>Gravimetric technique</td><td>None</td></tr>
</table>

No geophysical measuring tools were used for the determination of element abundance as this is unnecessary. The mineralised zone can be identified through logging and metal contents are confirmed through laboratory analytical methods identified above.
Standards, blanks and duplicates were inserted, for the purpose of determining whether acceptable levels of accuracy, sample preparation and precision have been established.
Analysis of the standards indicated that 11 batches of samples from the mining lease should be re-sampled. Analysis of the duplicate results showed that some 40 samples indicated one of: wrong results pairing, abundance of metal close to the detection limits or spurious results.
Analysis of the blank results indicated that 16 batches should be re-analyzed for either their precious metal or base metal abundances.
Overall the error deviation or mean deviation biases are low and therefore the laboratory analyses are suitable inputs for Mineral Resource estimation. Global means are likely to be materially biased one way or the other.

</td></tr>
<tr><td>Verification of sampling and assaying</td><td>

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 is no historical data utilised in the current Mineral Resource estimate there has not been any requirement for twinning of drillholes in the Portal 1-6 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.
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, downhole 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.
The drillhole data is stored in the Sable™ database, which houses Zimplats' current and historical drillhole 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.
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.

</td></tr>
<tr><td>Location of data points</td><td>

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 drillhole collars have been surveyed by qualified surveyors using total stations referenced to a network of base stations around the site.
Downhole surveys were completed for approximately 10% 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 (87°).
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 0.9992.
This 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.

</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td>Data spacing and distribution.</td><td>

Drilling spacing ranges from 250m by 250m, up to 1000m by 1000m.
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.
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.

</td></tr>
<tr><td>Orientation of data in relation to geological structures</td><td>

With the synformal shape and 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 drillhole 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.
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.

</td></tr>
<tr><td>Sample security</td><td>

All drillcore from Mineral Resource evaluation drillholes is stored at a core yard facility at Selous Metallurgical Complex (SMC). Zimplats' policy is to keep all exploration drillcores 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 UTi Couriers in Harare for onward transmission to Genalysis.

</td></tr>
<tr><td>Audits or reviews</td><td>

Zimplats carries out Mineral Resources and Ore Reserve management audit after every two years. The last audit was carried out in 2016 and no material issues were raised.

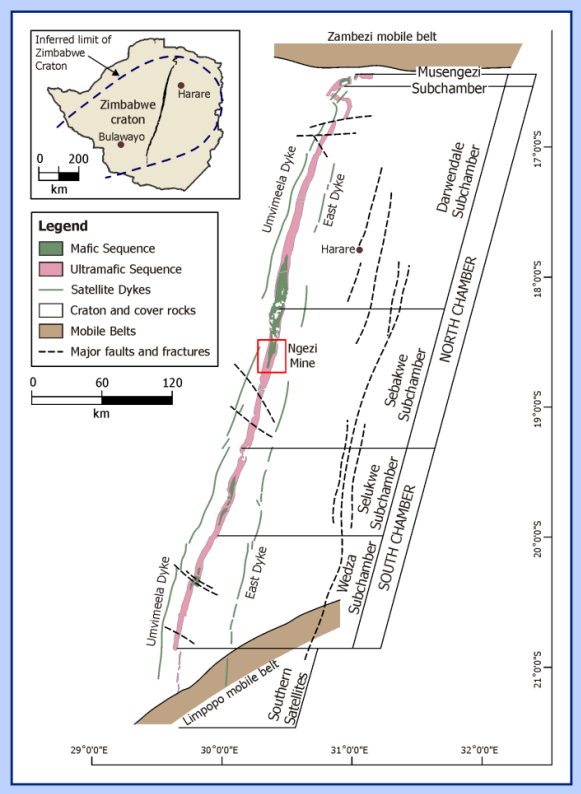
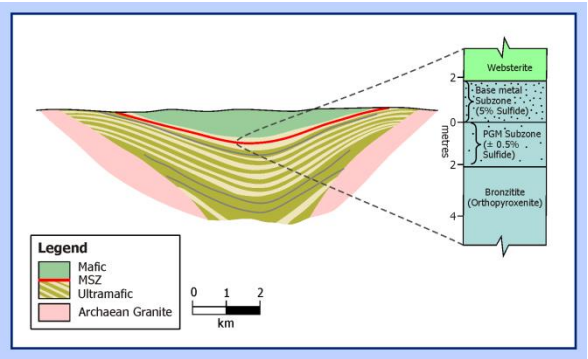
</td></tr>
<tr><td>Mineral tenement and land tenure status</td><td>

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.

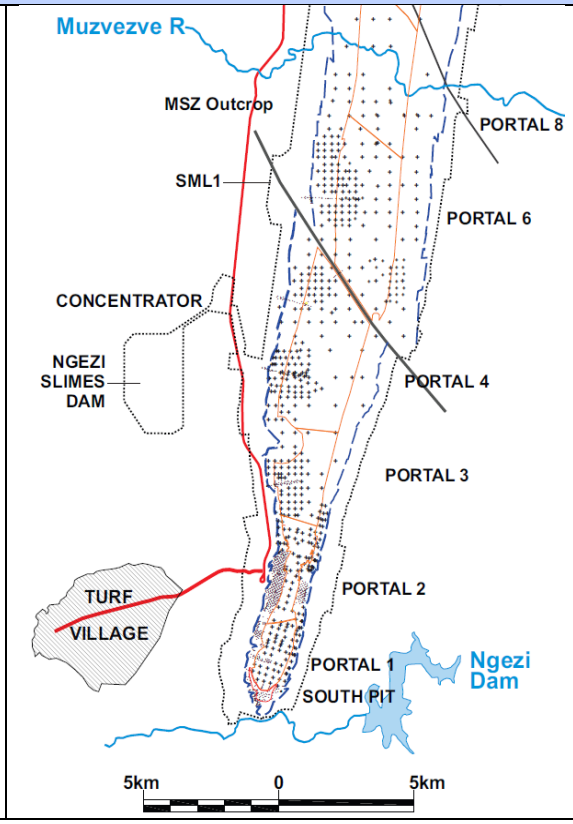
<table>
<tr><th>Claim Number</th><th>Claim Name</th><th>Area (ha)</th><th>Registration Date</th><th>Expiry Date</th></tr>
<tr><td>Site22</td><td>Football Pitch</td><td>5</td><td>05/11/2004</td><td>05/11/2017</td></tr>
<tr><td>Site 31</td><td>Water site</td><td>32</td><td>22/11/2004</td><td>22/02/2017</td></tr>
<tr><td>Site32</td><td>Water site</td><td>31</td><td>22/11/2004</td><td>22/02/2017</td></tr>
<tr><td>Site 33</td><td>Residential</td><td>26</td><td>22/11/2004</td><td>22/02/2017</td></tr>
<tr><td>Site62</td><td>attach to 2802BM</td><td>30</td><td>31/08/2004</td><td>31/08/2017</td></tr>
<tr><td>Site 64</td><td>contractor camp</td><td>39</td><td>14/08/2005</td><td>31/08/2017</td></tr>
<tr><td>Site 65</td><td>Water site</td><td>26</td><td>14/08/2005</td><td>31/08/2017</td></tr>
<tr><td>Site 66</td><td>Water site</td><td>29</td><td>14/08/2005</td><td>31/08/2017</td></tr>
<tr><td>Site 67</td><td>Water site</td><td>37</td><td>14/08/2005</td><td>31/08/2017</td></tr>
<tr><td>Site 68</td><td>contractor camp</td><td>26</td><td>14/08/2005</td><td>31/08/2017</td></tr>
<tr><td>Site 76</td><td>Water site</td><td>18</td><td>12/08/2006</td><td>31/08/2017</td></tr>
<tr><td>Site 97</td><td>Sewerage Ponds</td><td>6</td><td>20/02/2007</td><td>20/02/2017</td></tr>
<tr><td>Site 114</td><td>Air Strip</td><td>44</td><td>30/01/2008</td><td>30/01/2017</td></tr>
<tr><td>Site 295</td><td>Road &Overland conveyor access</td><td>4</td><td>20/01/2014</td><td>20/01/2017</td></tr>
<tr><td>Site 296</td><td>Road &Overland conveyor access</td><td>7</td><td>20/01/2014</td><td>20/01/2017</td></tr>
<tr><td>SML1</td><td>Special Mining Lease No 1</td><td>48000 535</td><td>16/12/2009</td><td>24/08/2018</td></tr>
<tr><td>9134BM</td><td>BEE163</td><td>18</td><td></td><td>16/03/2015</td></tr>
</table>

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 has enabled it to establish mining and residential infrastructure required for mining. These are summarised Table 1.
The current Mineral Resource and Ore Reserve estimates are reported on the basis of a Special Mining Lease for Platinum Group Metals (SML1), which is valid until 24 August 2019 with an option to extend it by a further 2 terms of 10 years each up to 2039.
On 13 January 2017 the Government of Zimbabwe issued, through a Government Gazette Extraordinary, a preliminary notice in terms of which the Government has given fresh notice that it intends to compulsorily acquire land measuring 27 948 hectares within the operating subsidiary's special mining lease area. The new notice has repealed all previous notices issued by the Government of Zimbabwe in respect to its proposed compulsory acquisition of this portion of the operating subsidiary's mining lease area. The operating subsidiary lodged an objection to the proposed compulsory acquisition. Zimplats is engaging the Government of Zimbabwe on the matter.

</td></tr>
</table>

Criteria	Commentary	
Exploration done by other parties	Historical exploration work since the 1970s, primarily by the former owners, BHP, 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	• 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 platinum-group metal (PGM)-bearing 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. • Rocks 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 and 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	• The MSZ is a stratiform PGM deposit, with nickel and copper 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 • 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%. 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.	

Criteria	Commentary
	• The borehole distribution which informs this estimate is shown in the Figure on the right. Approximately 787 boreholes have been utilized. • Reporting of all of these drilling results in this report is impractical.
	• 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.
Data aggregation methods	• 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 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. • The sampling protocol is aligned with the compositing protocol, and each layer is modelled individually. • No metal equivalent calculations were derived or used - individual PGM and base metal elements have been evaluated separately.
Relationship between mineralisation widths and intercept lengths	• Holes are drilled vertically, and thus the intersection angle is usually less than 20° and is often near-orthogonal to the mineralization. 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 diagrams have been shown in the relevant sections of this table.
Balanced reporting	• No exploration results were included in the statement. All material is classified as per Implats protocol for reporting Mineral Resources and Ore Reserves.
Other substantive exploration data	• Structural interpretations have been provided in this table as this is material to the interpretation which informs the Mineral Resource estimates.
Further work	• The five year forecast for exploration drilling is mainly on targeted investigations of known reef disruptions and infill drilling at the existing projects.



<table>
<tr><th>Criteria</th><th>Observations</th></tr>
<tr><td rowspan="2">Database integrity</td><td>• 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, downhole 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>• Unexpected grades are double checked with drill logs to see if these are the result of intrusions; harzburgite, pegmatites, dolerites, fine or coarse-grained bronzititie lenses. 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>• The Competent Person for Mineral Resources is a full-time employee of Zimplats and is based at the operation.</td></tr>
<tr><td>Geological interpretation</td><td>In the Portal 1-6 area 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 drillholes and the aerogmagnetic data in areas earmarked for mining in the short and medium term is general sufficient to demonstrate and/or assume continuity of the MSZ.

For Mineral Resource estimation Zimplats uses data only from surface drillholes with assays from Genalysis based on the 6E NiS collection method. The drillhole data selected for the current Mineral Resource estimate underwent screening based on several criteria noted below:

• Surface drill holes bounded within the region Portal 1 to Portal 5 south.
• 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 drillholes with anomalous profiles were excluded. Notably drill holes associated with Mulota hill in Portal 3 were excluded as these have disrupted mineralisation profiles.
• The Manzamunyama fault in Portal 5 marks the northern boundary of the sampling zone used in this estimation. While the rest of the boundary is derived from the margins of the MSZ, defining the shell of the domain.

A summary of the boreholes removed from the database, and the explanation thereof, is provided.

• Sufficient exploration data is available to ensure that limited alternative interpretations are available, and these would not be considered material to the estimates.

• The ore body is identified visually on the sulphide content (MSZ) as well as via laboratory assaying and chemical analysis.

<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 drillhole</td></tr>
<tr><td>ML0046</td><td>Portal 4</td><td>Geotech drillhole</td></tr>
<tr><td>ML0047</td><td>Portal 4</td><td>Geotech drillhole</td></tr>
<tr><td>ML0048</td><td>Portal 4</td><td>Geotech drillhole</td></tr>
<tr><td>ML0049</td><td>Portal 4</td><td>Geotech drillhole</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>
<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>Dimensions</td><td>• Portals 1-3 have strike lengths of 3km. Portals 4 and 6 have strike lengths of 6km.

• The depth to reef increases from 80m at Portal 1 to 360 at Portal 6.</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>Observations</th></tr>
<tr><td>Estimation and modelling techniques</td><td>

Quality grids for all layers generated in Isatis were imported into Vulcan. Quality grids were also generated in Vulcan and used to form Horizon Adaptive Rectangular Prism (HARP) models, which were compared with those generated in Isatis. HARP models are essentially a combination of the quality grids and structural grids.
The table on the right summarizes the modelling method and parameters utilised for quality modelling (estimation) for all layers.

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Modelling Algorithm</td><td>Krige</td></tr>
<tr><td>Model Name</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>

The Mineral Resources for Zimplats are updated annually, and a 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 statistics.
Cu and Ni are recovered as co-products. The recovery of these products is well understood, on the basis of previous production results.
There are no deleterious elements from the ore
Zimplats' estimation involves the creation of quality and structure (layer) grids initially for the PK layer and subsequently for other layer in Isatis and Vulcan. The grids are employed to generate HARP models, which contain the grade estimates. Unlike block models, HARP models are based on grids with nodes within which estimates of variables are stored. For Ngezi Mine, the estimates were interpolated using the Ordinary Kriging technique with search distances of between 325m and 3m x 100m. Zimplats compares estimates from the Isatis and Vulcan HARP models as a validation measure.
The Mineral Resources are reported at a fixed width of 2.5m, which takes into consideration the minimum mining width and potential dilution. The block size used for the estimates is appropriate for the variability of the PGM grade, and the selective mining unit is significantly smaller than this block size.
No correlation between variables is considered in the Mineral Resource estimates, with the exception of checking for potentially erroneous assay results.
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.
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 were excluded from both the variogram modelling and kriging dataset.
Open pit and underground mining since 2001 has increased confidence in the resource estimate
Regular underground channel sampling is carried out and the results are used for calculating the mill head grade and for grade control purposes. Month by month hoisted tonnages and grades are used for resource model reconciliation and this has shown show reasonable agreement. The target monthly Mine Call Factors have been attained.

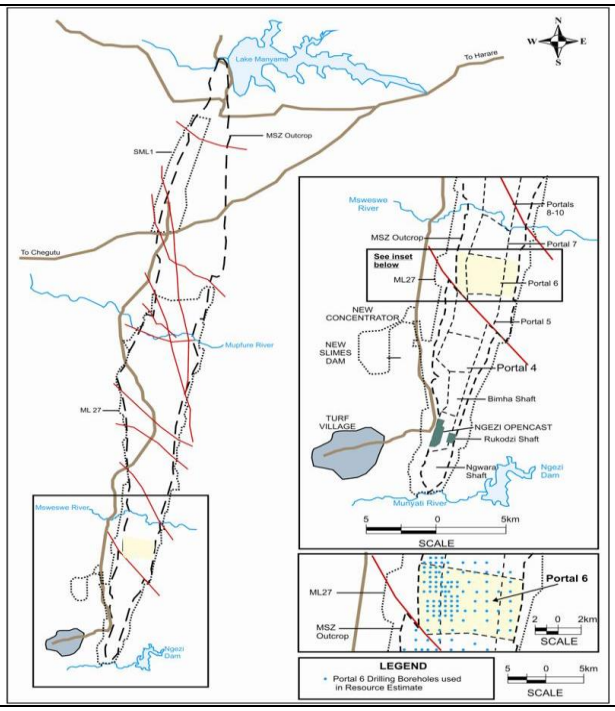
</td></tr>
<tr><td>Moisture</td><td>Tonnages are reported on a dry basis, and moisture content in this setting is not considered a material issue.</td></tr>
<tr><td>Cut-off parameters</td><td>Inputs to the calculation of cut-off grades for Zimplats operations are based on historical production experience and include mining costs, metallurgical recoveries, treatment and refining costs, general and administration costs, royalties, and commodity prices.</td></tr>
<tr><td>Mining factors or assumptions</td><td>The mining method at Ngezi mine is predominantly mechanised room and pillar. The mining layout currently consists of 7m wide rooms separated by 4m square pillars. Each mining section consists of twenty rooms. Ventilation holings are mined on dip between rooms within the mining sections also 6m wide. The spacing of ventilation holings is a function of depth below surface and hence the required strike length of the pillars varies.
Given the difficulty of visually locating the MSZ underground, 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.</td></tr>
<tr><td>Metallurgical factors or assumptions</td><td>Recovery of PGMs and base metals is achieved from the use of froth flotation following a conventional crushing and grinding circuit.
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 and average 81%.
For the estimation of Mineral Resources it has been assumed that the mineralization will be amenability to extraction through Zimplat's existing metallurgical processing facility. No material change in the metallurgical characteristics of the deposit is anticipated.</td></tr>
<tr><td>Environmental factors or assumptions</td><td>Consideration of the environmental factors is made in the estimation of the Mineral Resources. These are described within Section 33 (Reporting of Ore Reserves).</td></tr>
</table>

Criteria	Observations
Bulk density	• Described in the Notes accompanying the statement of Mineral Resources and Ore Reserves • Void spaces are not prevalent in the MSZ (host rock is a bronzitite – a hard rock), and bulk density is considered to be essentially the same as SG.
Classification	• 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 resource categories based primarily on drillhole 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
Audits or reviews	• 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. • In 2014 and 2016, The Mineral Corporation completed an Implats Group-wide audit, which included Zimplats, with a specific scope of work for the respective areas. The Mineral Corporation concluded that the Mineral Resource estimates were representative of the mineral deposit and that the methodology used for estimating and reporting Mineral Resources and Ore Reserves was reasonable and followed the principles and guidelines of the SAMREC code, the JORC code and the Implats Code of Practice.
Discussion of relative accuracy/ confidence	• This is guided by Implats Protocol on Resources and Reserves. Included in the Notes accompanying the statement of Mineral Resources and Ore Reserves • Only the proportion of Mineral Resources for which there is Board approval and a mine plan inform Ore Reserves. • The Competent Person is satisfied with the quality of data utilised for Mineral Resource estimation. Furthermore, the geological models and Mineral Resource estimates are a true reflection of the tonnage and grade estimates for the MSZ.
Mineral Resource estimate for conversion to Ore Reserves	• The Mineral Resource estimate used as a basis for conversion to an Ore Reserves is described in Mineral Resources and Ore Reserve statement, and this relates to only Portals 1-6 and the South Pit. • Mineral Resources estimates are reported inclusive of Ore Reserves
Site visits	• The Competent Persons for Mineral Resources and Ore Reserves are full-time employees of Zimplats, and are permanently based on site.
Study status	• 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 appropriate level of study has been undertaken to enable the consideration of all of the material Modifying Factors. This is particularly the case as five of the operations are currently in production. • Feasibility study for Portal 6 was completed and approved by the board of directors for Zimplats and Implats.
Cut-off parameters	• Zimplats mines a multi metal PGM deposit. Downhole metal profiles are consistent across significant strike lengths (km). Therefore, a technical mining cut-off of 2.5m, which is the optimised mining cut-off is utilised for Portal 1-6. Zimplats constantly reviews this cut-off to take into account changes in metal prices.
Mining factors or assumptions	Underground Mining Method • Zimplats employs mechanised bord and pillar mining to extract ore from stopes 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 paddock pillar system which incorporates barrier pillars that improve regional ground stability has also been applied to the deeper portals (Portals 3 – 6). A combination of roof bolts and tendons is integral to the support design. The overall extraction rate is 79%.

Criteria	Observations
	• The roadways are 6m wide and 3.2 m high to accommodate the 30 t trucks. The dip rooms are developed down dip to facilitate LHD mucking. A mining section is made up of two stopes (nine rooms and one roadway). 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 30 t 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 the impact breaker and grizzlys which in turn either feed crushers or conveyor belts. 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.
	Open Pit Mining Method • An open pit is planned at Ngezi South with a planned production rate of 105 000 tpm which, allowing for ore losses, supplies 100 000 tpm to the processing facilities. Drilling and blasting are performed on 12m benches. Ore drilling commences from the interpreted top of the MSZ and is blasted and loaded in separate flitches from the waste. Other parameters that have been included in the design include 5m wide safety berms and bench face angles of 60 degrees, which is typical for a mine of this nature. • The rock is drilled and blasted using traditional open pit mining methods. The broken rock is uploaded onto trucks using hydraulic shovels and is either hauled to the waste dump or crushers depending on the rock type. The payload for the hauling dump trucks is nominally 40t. In the case of the ore it is discharged from the trucks into the main crusher. From this point the crushed rock is delivered to the silo which in turn feeds the processing facilities.
	Underground Access • Underground mining infrastructure is accessed through declines from for existing surface four portals and based on historical performance is deemed as appropriate for the nature of the planned mining operation
	Open Pit Access • The open pit operation is accessed via a haul road and a 30m wide ramp with an inclination of 6°, which are regarded as sufficient to allow for the access and movement of the planned key mining units (Truck, Shovel, Drill Rigs and Service Units).
	Underground Geotechnical Parameters • The geotechnical design results from a geotechnical logging programme, laboratory testing and underground support requirements. • Maximum stable panel spans are 7.0m with hanging-wall stability essentially governed by structural discontinuities which are supported. Bords and pillar holings are 7.0 m wide and 2.65 m high. The mining height is based on a planned extraction width which also accounts for 15 cm of overbreak. The minimum pillar width on dip is 7.0 m in accordance with the approach for Ngezi, with the lengths varying between 5m and 6.5m depending on the mining depth below surface. • 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 does not to exceed the depth below surface. Two mining sections (sets of ten Bords) are enclosed between successive strike barrier pillar • The decline spines comprise of seven 6.0 m wide roadways. The five inner roadways are separated internally by four pillars 21 m (dip width) x 20 m (strike length). The outer two roadways are separated by a 7.5 m wide (strike length) pillar.
	Open Pit Geotechnical Parameters • The geotechnical investigation and the recommendations of the optimal pit slope design parameters have been carried out by the Rock Mechanics section at Zimplats. This work was also informed by previous technical studies and learning points from the open pit mining operation that was closed in 2008. • Slope angles were determined from the Haines and Terbrugge design chart and suggest overall slope angles between 50° and 55°. For the pit optimisation exercise, an overall pit slope angle of 50° was applied. This yields a safety factor of above 1.5. • The Mineral Resource available for open pit mining takes into consideration the 30m geotechnical pillar required between the start of the open pit and the underground workings.
	• The ultimate pit which indicated 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.

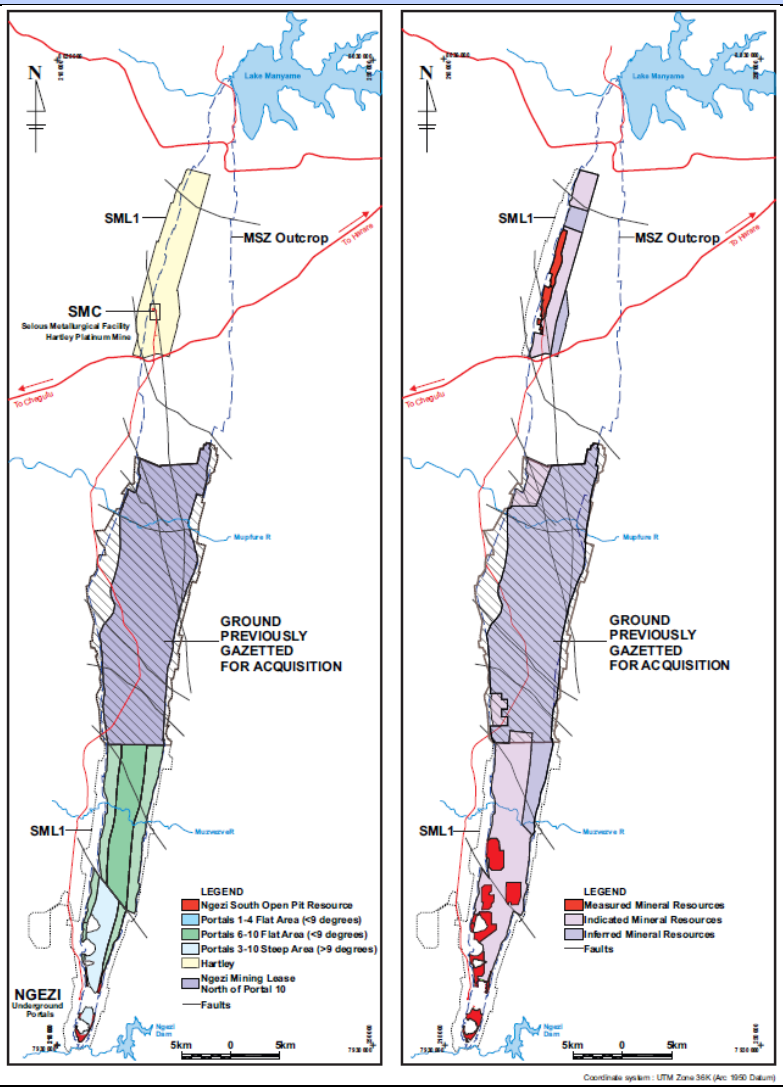
Criteria	Observations
	• The ore production rate is planned at 105 000tpm while the processing rate is planned at 100 000tpm as a result of the planned 5% ore losses mine to mill.
	Underground Mining Dilution Factors • It is assumed that waste mined as ore will have a 1.1% dilution on grade and resource 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.
	Open Pit Mining Dilution Factors • From the experience gained during the mining of the original East Pit (closed 2008), a 5% mining dilution and 95% ore recovery, have been adopted for the development of the mining schedule.
	Underground Mining Recovery Factors • The total mining extraction rate varies with the mining depth below surface, currently it varies between 65% and 81%. • Mining losses, inclusive of geological losses, vary from 3% - 10%. These arise from bad ground conditions, intrusives, coarse grained bronzitite etc.
	Open Pit Mining Recovery Factors • From a Mineral Resource base of 6.2 million tonnes, all in the Measured category and using economic parameters of commodity selling prices, operating costs and slope angles, the optimum pit shell contains some 4.62 million tonnes of ore at an undiluted platinum grade of 1.68 g/t which contains approximately 249 000 of in-situ platinum ounces of which 180 000 ounces will be recovered by the processing facilities. A total of 69 million tonnes of waste are contained within this pit shell which yields a stripping ratio of 14.97.
	Underground Mining Widths • 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 3.2 m high.
	Open Pit Mining Widths • The minimum mining width (bench heights) are planned at 12m while on ore it is planned at approximately 3m flitches depending on the outcomes of the grade sampling process.
	• No Inferred Mineral Resources have been scheduled for mining in either the underground or open pit operations.
	Infrastructure Requirements The following primary infrastructure exists at the Ngezi complex to support mining and processing operations: • Four portals for access to the underground mining operations; • Underground infrastructure includes impact breakers and grizzlys which in turn either feed crushers or conveyor belts. Crushers are either installed on surface or underground based on the particular operations design • Access roads; • Secure water supply from the Zimplats' Ngezi and Chitsuwa dams; • Secure electricity supply from the state-owned ZESA; • 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 • 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. There is sufficient infrastructure on the operational sites to meet the planned production requirements, in terms of ore, concentrate and smelter matte.

Criteria	Observations
Metallurgical factors or assumptions	• 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. • 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. • 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. • No pilot test work is required as the applied recoveries are based on those actually achieved at the two processing facilities and the refinery.
Environmental	The following EIA's (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. • 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	• 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. • An infrastructure layout for Ngezi Mine is provided on the adjacent diagram.



Criteria	Observations
Costs	• Capital expenditure is based on equipment and mine replacement schedules using latest manufacturers' prices escalated by forecast inflation. • The operating cost estimates have been derived from previous / current production data. • The Reuters consensus forecast is used as the basis for the Rand / US Dollar exchange rate and as shown in the integrated Zimplats Annual report • The transport charges are based on established contracts (where applicable) and production data. • Zimplats has established treatment and refining contracts with Implats, and these have been considered in the estimation of net sales proceeds for the Mineral Reserves. • Royalties rates based on current legislation are used for forecasting royalties payable and allowances for these royalties have been made in the cost estimates which inform the Mineral Reserves.
Revenue factors	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 IRS. The price forecasts are shown in the Zimplats integrated Annual Report 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)
Market assessment	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) • Further to this, cognizance is taken of other reputable price forecasts which is compared to the Implats view
Economic	• 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. • 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 extremely robust, returning a positive before tax NPV. • Zimplats has not included the economic assumptions and results of the economic evaluation as these are considered commercially sensitive information.
Social	• From a legal and regulatory perspective, Zimplats has complied with its obligations under the Zimbabwean government's Mines and Mineral Act as well as the conditions for the Special Mining Licence 1. Zimplats also implemented rules and regulations 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 Zimbabwe government.
Other	• 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. • There are no material, unresolved matters dependent upon a third party on which extraction of the reserve is contingent.

Criteria	Observations
	In 2013, 2016 and in 2017, Government gazetted its intention to compulsorily acquire the ground north of Portal 10. Zimplats subsequently submitted an objection to this notice but the matter is yet to be resolved.



Classification	• 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 Mineral Resource estimation that the Mineral Resource classification adequately represents the degree of confidence in the orebody.
Audit and reviews	• The Mineral Corporation of South Africa (TMC) completed an audit in 2014 and 2016 and concluded that there were no material issues that would prevent the declaration and reporting of Mineral Resource or Ore Reserve estimates according to the JORC Code.
Discussion of relative accuracy/confidence	• Reconciliation of actual production to the Mineral Resource model since the commencement of operations indicates that the estimate is representative of the deposit. • Included in the Notes accompanying the statement of Mineral Resources and Reserves • Included in the Notes accompanying the statement of Mineral Resources and Reserves • Explanation required Included in the Notes accompanying the statement of Mineral Resources and Reserves • The Competent Person for Ore Reserves is satisfied with the overall confidence levels of the Mineral Resources estimates for parts of the MSZ at Ngezi Mine for which Ore Reserves have been declared. No Inferred Mineral Resources have been converted to Ore Reserves. Technical parameters used for the conversion of Mineral Resources to Ore Reserves are based on experiences at current operations. Furthermore, the economic inputs and assumptions are considered to be reasonable.