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Australian Securities Exchange
Company Announcements Office

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ANNUAL TORMIN MINERAL RESOURCE AUDIT UPDATE

Mineral Commodities Ltd (ASX: MRC) ("the Company" or "MRC") provides the below in respect to its annual Tormin Mineral Sands Operation ("Tormin") resource audit.

A summary of all material information is set out below.

The original Tormin Resource was contained within the quarterly activities report released on 31 October 2011. The Tormin beach deposit is an active placer beach sand deposit limited in extent on its eastern side by coastal cliffs and to depth by bedrock contact. The resource is open towards the ocean and surf zone on its western side, as well as along the coastline towards the north and south. Vertical composite channel sampling took place during November 2017 to January 2018 from 119 test pits dug by excavators. Sampling was subject to XRF and grain counting analysis. No drilling took place.

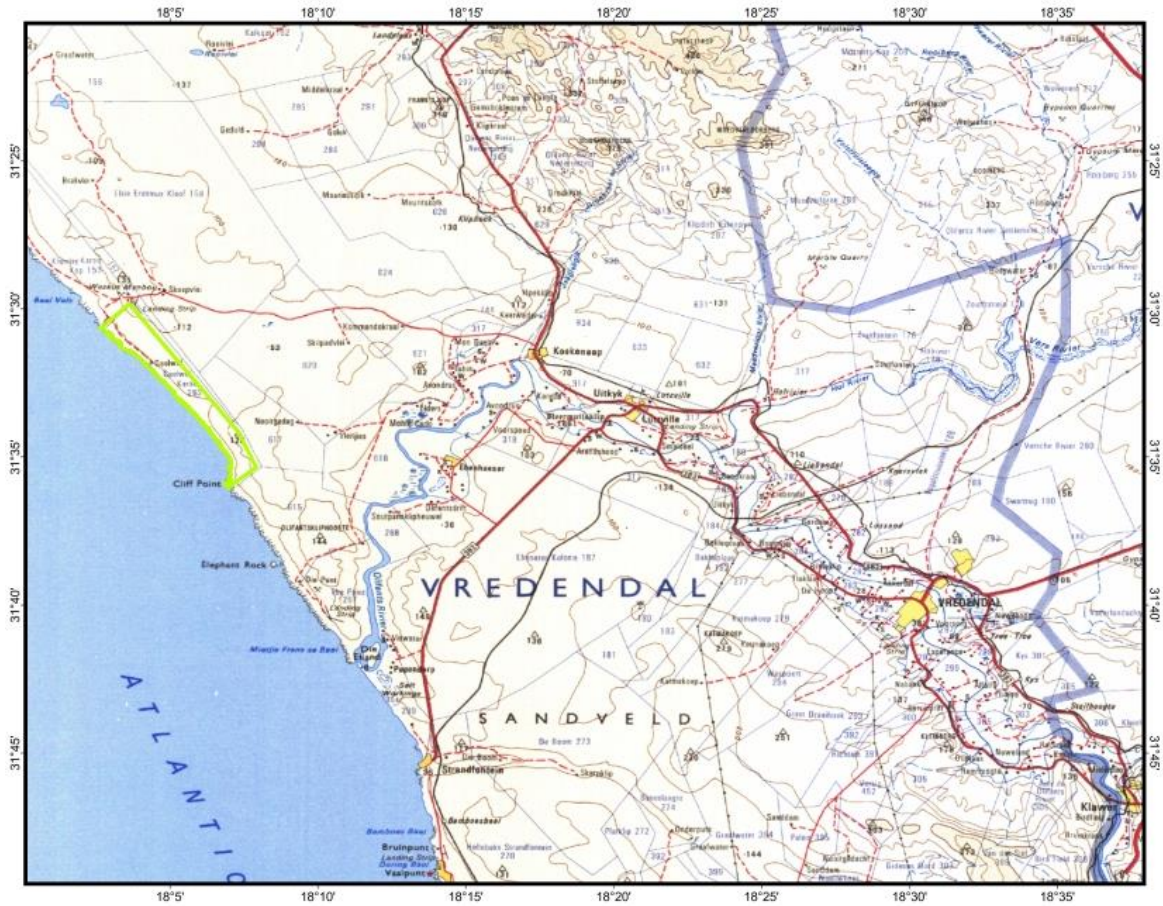

Figure 1 – Location of Tormin beach deposit highlighted in green

There were 3,428 grade control analyses undertaken during the year from the 2017 mined blocks and 119 resource control pit samples taken (50m spacing along strandline) at the end of 2017. Due to the low density of resource control samples and unstable nature of the resource, the deposit was again classified into the inferred resource category during the resource audit assessment.

The inferred mineral resource was estimated on the basis of limited geological evidence and sampling. The geological evidence in this case from historical mine data (3,428 samples) and updated sampling (119 pits) is sufficient to imply but not to verify the geological and grade continuity.

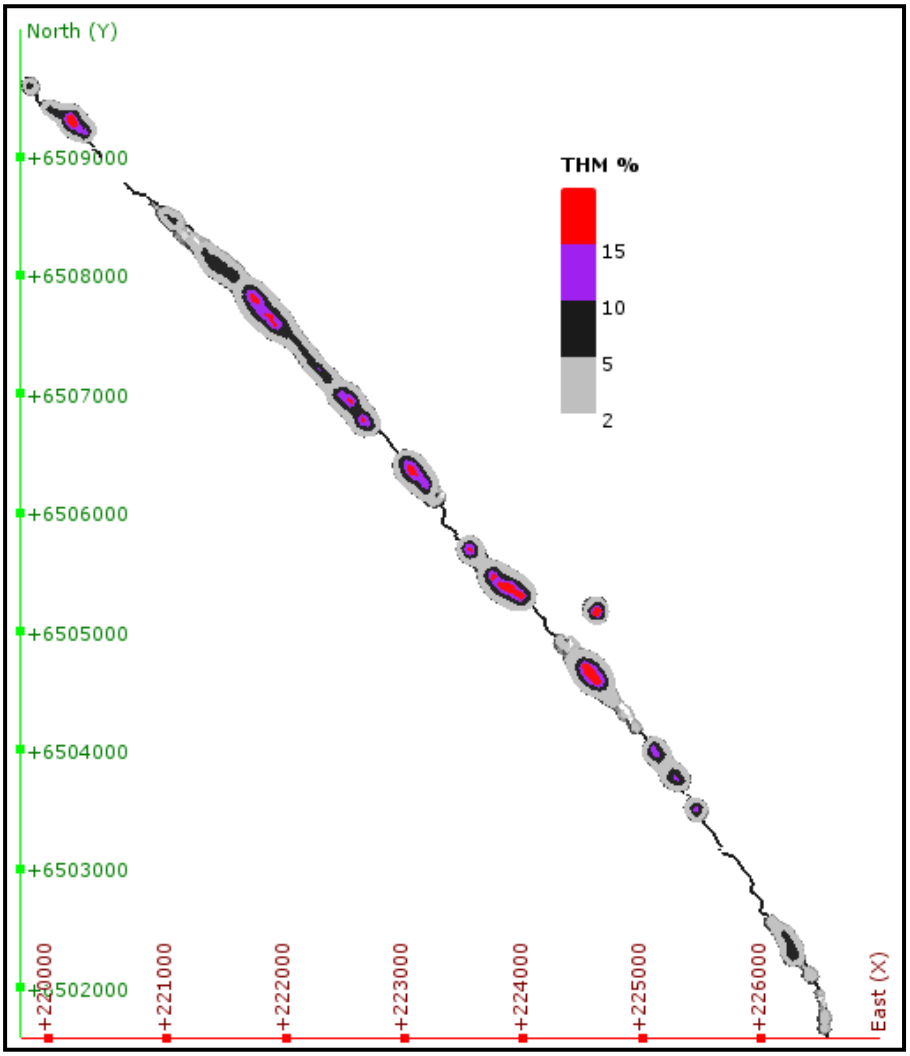

Figure 2 – General plan view of 2018 Leapfrog model

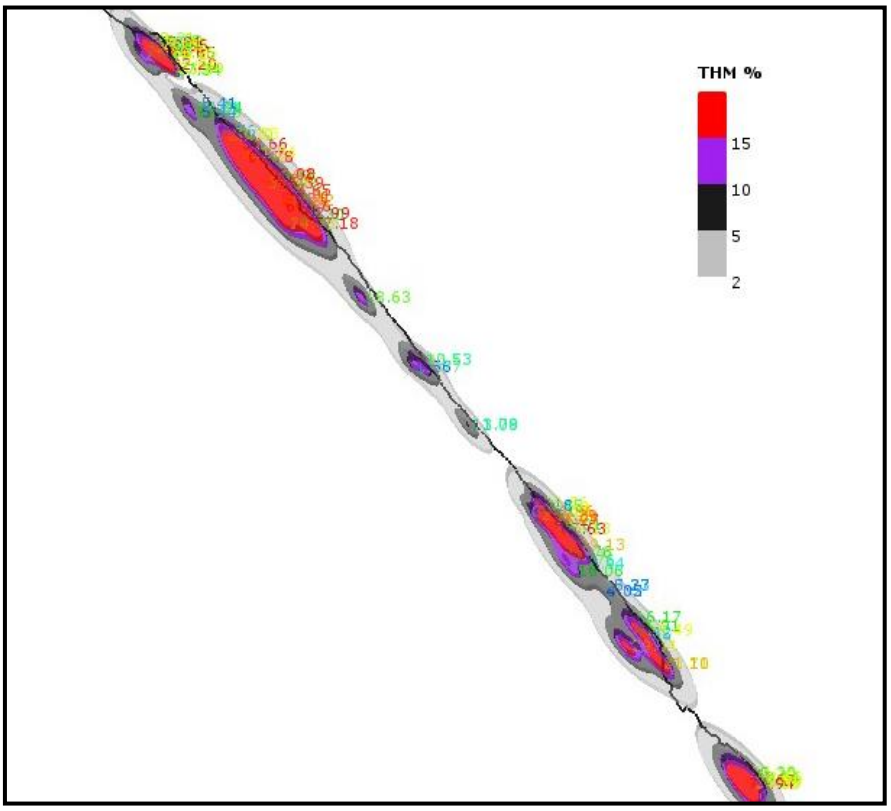

Figure 1 – Detailed view of resource grades and sample locations

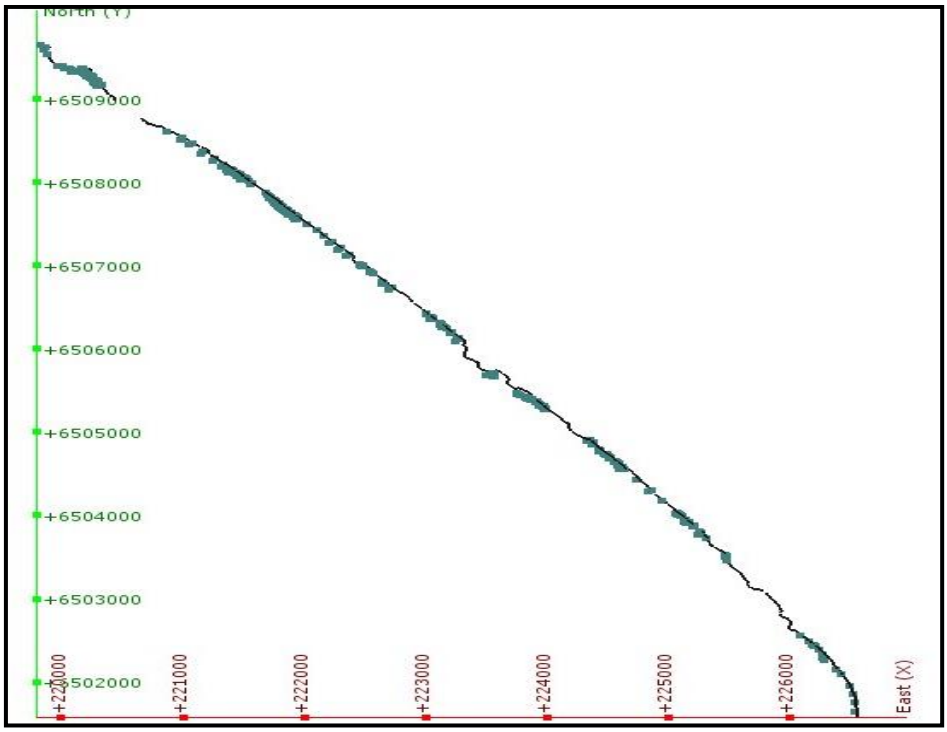

Figure 2 – Areas sampled and used in the resource audit

The mine production data has been used to confirm the replenishment nature and remaining resource volumes. As the mining rate is faster than the replenishment rate, the resource grade has been steadily declining over the past four years (Figure 5).

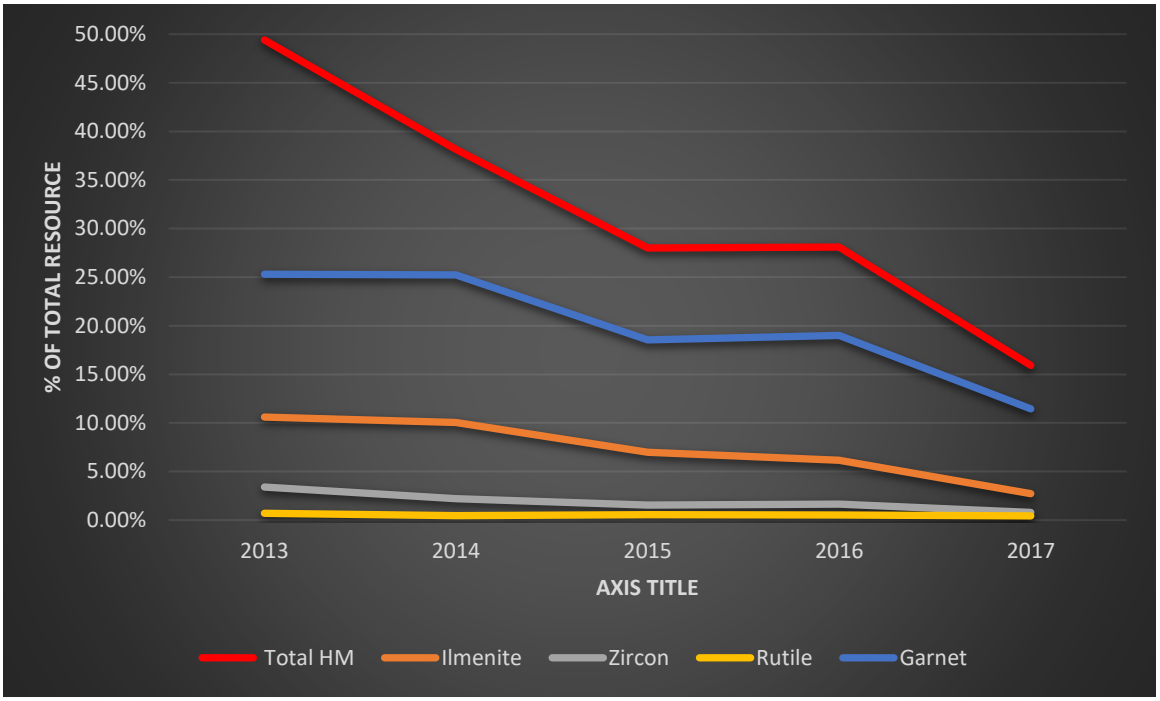

Figure 5 – Graph of resource grades over 4 years

Resource reconciliation indicates a very low correlation between resource grade and mined grade per resource block but a very high correlation between total/annual resource grades and mined grades (refer Figure 6 below). Resource blocks on the beach are not stable due to disturbance in blocks that are not fully mined and then backfilled and replenish during high tide or storms. In addition, material from adjacent blocks get moved by the amphibious excavator and tailings from the process plant that is returned to the beach also adds to unpredictable grade changes.

- The maximum distance that the resource is extrapolated beyond all sample points is 50m.
- 22% of the resource volume is based on extrapolated data outside the immediate 119 grade control pit samples.
- The extrapolated resource is based on current and historical mine data including 3428 mine samples taken during 2017.
- Resource models and plans are indicated in attached figures.
- The criteria used for the low resource class classification are the unstable nature of the resource, the limited amount of resource pit samples (119) taken over a resource strike distance of ~9000m, the variable nature of the surface topography which changes even within a weekly period and the fact that the resource is actively being mined.

- The resource estimate methodology used was Dual Kriging through Fast Radial Base functions in Leapfrog interpolation implicit modelling software.
- The reasons for the changed tonnage and grade estimates from 2016 are that 2.05 million tonnes of the inferred resource of 1.8 million tonnes were mined and processed during 2017. The resource remains due to the replenishment nature of the resource.

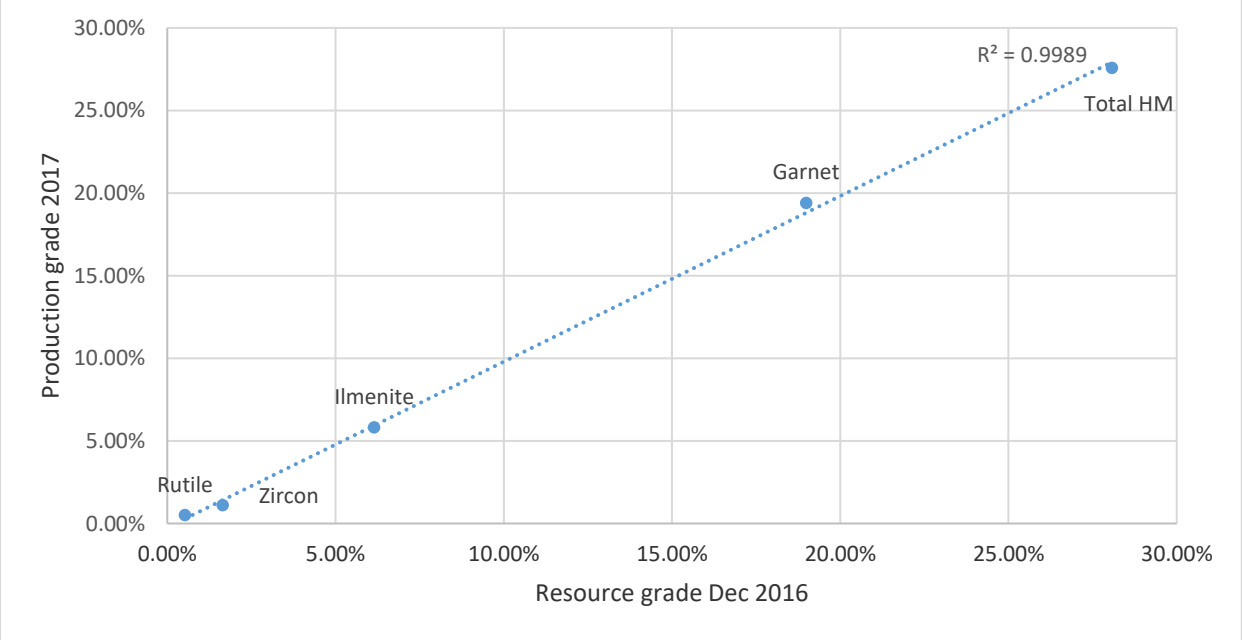

Figure 6 – Correlation between Mined Grade 2017 and Resource Grade 2016

The cut-off grade used was 5% Total Heavy Mineral content. Cut-off grade is based on the economic criteria established by the ongoing mining operations. No modifying factors outside the cut-off grade were applied as the whole resource is actively being mined and the inferred resource cannot be converted to a mineral reserve.

Executive Chairman Mark Caruso said, *"There continues to be a strong correlation between the inferred resource and the material mined to date. The 2017 Mined Resource demonstrates a continued volumetric natural replenishment with in excess of 6.55MT having been mined to date against the initial indicated resource of 2.7MT. Furthermore, processing optimisations in 2017 have resulted in additional recovery of VHM which was formerly being returned to the beach as tailings and enhancing the resource grade.*

Notwithstanding the reduction in the inferred resource grade, the Tormin Mine remains a World Class Resource and the Company remains confident that in conjunction with the granting of the current Prospecting and Mine Extension Applications, the resource will underpin MRC operations into the future."

Updated Tormin Resource Table

Category	Resource Million Tonnes	Total* HM%	Ilmenite (%HM)	Zircon (%HM)	Rutile (%HM)	Garnet (%HM)
Indicated Resource – Dec 2013	2.70	49.4%	10.6%	3.4%	0.7%	25.3%
Inferred Resource – Dec 2014	2.70	38.14%	10.05%	2.21%	0.46%	25.22%
Inferred Resource – Dec 2015	2.70	28.01%	6.97%	1.56%	0.55%	18.54%
Inferred Resource – Dec 2016	1.80	28.08%	6.15%	1.65%	0.53%	18.99%
Material Mined 2017	2.05	27.57%	5.81%	1.10%	0.50%	19.40%
Inferred Resource – Dec 2017 5% THM cut-off	1.8	15.92%	2.72%	0.79%	0.43%	11.45%

* Includes other valuable heavy minerals e.g. Leucoxene and Magnetite

The December 2017 inferred resource is based on the reasonable prospect for the economic extraction of the material, as has occurred over the past 4 years. Note that individual minerals are reported as a percentage of the total resource.

Typical Resource Audit Samples Taken (Full table of results included at end of release)

Hole ID	N	E	Z	Dip	From	To	TOTAL HM	GC Garnet	GC Ilmenite	GC Zircon	XRF Zircon	GC Rutile	GC Leucoxene	GC Others	GC Magnetite
PIT34B	6508466	221070.3	-0.156	90	0	0.4	80.19%	16.55%	1.66%	1.66%	0.72%	0.49%	0.46%	80.19%	0.09%
PIT65B	6503730	225304.5	0.095	90	0	0.3	76.29%	17.76%	4.01%	1.00%	0.94%	0.45%	0.42%	76.29%	0.07%
PIT70B	6509352	220074.9	0.355	90	0	0.4	89.24%	7.87%	0.80%	1.20%	1.17%	0.36%	0.33%	89.24%	0.20%
PIT71B	6509395	219960.2	0.482	90	0	0.4	94.45%	4.09%	0.61%	0.31%	0.29%	0.27%	0.25%	94.45%	0.02%
PIT16T	6506713	222699.3	0.577	90	0	3	80.05%	16.67%	1.80%	0.45%	0.45%	0.40%	0.37%	80.05%	0.24%
PIT36B	6508529	220991.3	0.759	90	0	0.3	81.23%	15.76%	1.54%	1.54%	0.82%	0.46%	0.43%	81.23%	0.07%
PIT38 B	6508529	220991.3	0.759	90	0	0.6	88.27%	9.20%	1.06%	1.06%	0.39%	0.47%	0.44%	88.27%	0.02%
PIT11T	6506109	223258.4	1.982	90	0	3	94.48%	3.26%	1.38%	0.28%	0.23%	0.25%	0.23%	94.48%	0.14%
PIT22T	6507268	222207.8	2.313	90	0	3	78.86%	16.06%	3.57%	0.51%	0.46%	0.46%	0.42%	78.86%	0.12%
PIT17T	6507132	222369.2	2.784	90	0	2	81.13%	14.42%	2.78%	0.56%	0.80%	0.50%	0.46%	81.13%	0.16%
PIT17	6507132	222369.2	2.784	90	0	3	72.68%	21.30%	4.42%	0.55%	0.91%	0.49%	0.46%	72.68%	0.10%
PIT19GNT	6507203	222293.2	3.033	90	0	0.4	43.96%	42.81%	9.70%	2.53%	2.43%	0.38%	0.35%	43.96%	0.28%
PIT30T	6508191	221319.1	3.207	90	0	2.2	81.80%	15.82%	0.96%	0.48%	0.45%	0.43%	0.40%	81.80%	0.12%
PIT19T	6507207	222298.8	3.558	90	0	2.5	79.49%	12.90%	5.04%	1.26%	1.08%	0.56%	0.52%	79.49%	0.23%

Mining has now been ongoing for four years and a total of 6.55 million tonnes of material has been processed. The tonnage processed is more than the original declared resource tonnage (2.7 Mt) which is indicative of the replenishment nature of the resource where resource blocks gets mined more than once per year.

The inferred resources tonnage remains at 1.8 million tonnes. Resource replenishment is occurring but at a rate that is slower than the mining rate. The Company is unable to report a replenishment grade or quantity under the 2012 JORC code. The Company continues to conduct grade reconciliation and sample grading on a daily basis as part of the mining operation to correlate between stated resource and actual resource in terms of quantity, grade and replenishment.

The resource grade has lowered and total heavy mineral content is now 15.92% at a cut-off grade of 5% Heavy Mineral ("HM").

The nature of the resource replenishment is typical of modern day beach placer deposits found along the West Coast of South Africa and the Southeastern Tamil Nadu coast of India.

- ENDS -

For enquires regarding this release please contact:
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Competent Persons Statement

The work in this report was prepared by Adriaan du Toit who is a Member of the Australian Institute of Mining and Metallurgy (AusIMM) who is an independent consultant to MRC. Mr du Toit is the Director and Principle Geologist of AEMCO Pty Ltd. He has over 26 years of exploration and mining experience in a variety of mineral deposits and styles. Mr du Toit has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined by the 2012 JORC Edition. The information from Mr du Toit was prepared under the JORC Code 2012 Edition. Mr du Toit consents to inclusion in the report of the matters based on this information in the form and context in which it appears.

The following table provides a summary of important assessment and reporting criteria used for the Tormin Mine in accordance with the Table 1 checklist in The Australian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition). Criteria in each section apply to all preceding and succeeding sections.

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JORC TABLE 1
Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
• *Sampling techniques*	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Vertical channel composite sampling within exploration pits. • Sample taken from surface to bedrock. • Mineralisation and grade testwork done according mine control standards within mine site laboratory. Grain counting and XRF.
• *Drilling techniques*	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Test pits by excavator.
• *Drill sample recovery*	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Large composite channel samples were taken and riffled down to a representative samples for grain count identification and XRF scanning.
• *Logging*	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• No logging done as mineral identification is by microscope.
• *Sub-sampling techniques and sample preparation*	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Samples were riffled. • Samples were mostly wet from sea ingress/seepage. • Channel sampling method is only practical method as beach access time is limited due to sea tide activity. • Duplicate samples are taken at random for grade control and also compare with run of mine samples from same location. • Sampled material is run of mine material and therefore representative.
• *Quality of assay data and laboratory tests*	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been*	• Grain counting and XRF has been used as an accurate assay method over the last 4 years of mining the deposit. It complies with industry standards. • Industrial laboratory XRF machines are used by Tormin mine. • No additional duplicates or blanks were used.

Criteria	JORC Code Explanation	Commentary
	established.	
• *Verification of sampling and assaying*	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• All sampling was done by mine site personnel overseen by a qualified and experienced mine site geologist. • No twinned pits were excavated but numerous sites sampled are actively being mined with mine grade control samples taken. • Resource audit grade samples are subject to the standard mine grade control quality procedures. • No adjustment to assay data results were done.
• *Location of data points*	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Pit sample locations were determine with DGPS accurate to within centimetres. • UTM coordinate system is used. • Topographical control is highly problematic due to constant changes in surface levels after daily high tides and monthly storm events which average 10 events per month.
• *Data spacing and distribution*	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Target sampling points is on a 50m spacing subject to beach access due to tides or active mining activity. • Data spacing is sufficient for an inferred resource classification on a resource that has been mined over the past 4 years. • Samples have been composite over the depth of the pit.
• *Orientation of data in relation to geological structure*	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Geological structure not relevant or applicable to an active placer beach sand deposit.
• *Sample security*	• *The measures taken to ensure sample security.*	• Samples are taken directly from the sampling site to the mine laboratory where quality control procedures apply.
• *Audits or reviews*	• *The results of any audits or reviews of sampling techniques and data.*	• No external audits of sampling have been done but a regression analysis between resource audit grades and annual mine grades were done for 2017 results. An average correlation of 90% were found.

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Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section)

Criteria	Explanation	Commentary
• *Mineral tenement and land tenure status*	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The resource is owned by Mineral Sand Resource (Pty) Ltd, a subsidiary of ASX listed Mineral Commodities Ltd (ASX:MRC). • The resource is being mined under two active mining rights 30/5/2/2/2/162 & 163. • The current mining rights will lapse on 26/11/2018 and applications for renewal will be lodged at least 90 days before this date.
• *Exploration done by other parties*	• *Acknowledgment and appraisal of exploration by other parties.*	• This is fully reported on under Section 3.
• *Geology*	• *Deposit type, geological setting and style of mineralisation.*	• Deposit is a heavy mineral sand deposit located on an active place beach strandline undergoing continues erosion, deposition and replenishment from oceanic storm and wave activity.
• *Drill hole Information*	• *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.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• A summary of the latest 119 pit sample results is attached in table format at the end of this report.
• *Data aggregation methods*	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• The total percentage valuable heavy mineral content was determined from the individual mineral components and modelled. A 5% cut-off grade was applied to the inferred resource volume. • Composite grade was determined.
• *Relationship between mineralisation widths and intercept lengths*	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Composite grade over total depth sample was determined as the resource is mined and processed from surface to bedrock contact. • Mineralisation is enriched sedimentary layers semi-parallel to the bedrock contact and beach slope angle. • Channel composite sample represent down hole length and true width is not known.
• *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.*	• Plan view of area sampled along coastal cliff line is provided in report.
• *Balanced reporting*	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• As the deposit have been mined numerous times grade continuity and natural placer enrichment has been disturbed to such a degree that grade continuity cannot be assumed to a level higher than inferred.
• *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.*	• Grade correlation indicates a resource progressively lowering in grade and volume as replenishment is slower than the current mining rate.

Criteria	Explanation	Commentary
• *Further work*	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Offshore sampling to determine the source of grade replenishment is planned.

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Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• All field and lab results obtained and entered into the onsite database is verified by a supervisor. All results are double checked and verified. A standard is made on the site and sent to the laboratory with each batch of samples as a quality check. External calibration is done every 6 months. • The current mine grade database for 2017 consist of 3,428 grades analyses suites for mined blocks and 119 grade control samples taken (50m x 50m grid) to verify remaining grades over the resource area during December 2017 to January 2018.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• No site visits was undertaken for this resource audit although the Competent Person ("CP") did visit the mine on a number of occasions during 2016 and 2017 and is therefore familiar with the site and resource conditions.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• Resource reconciliation from 2017 production data indicates that production grades were very close (average of 90%) to the resource grade. This is due to strict grade control procedures on the mine site. The mine also actively targets replenishment areas after high storm or tide surges that contains grades higher than the background resource grade. • The variable, unstable and replenishment nature of the resource makes it impossible to classify the resource in any category higher than inferred. • The overall trend in the grade mined from 2014 to the end of 2017 is negative as the original resource of 2.7 Mt has now been mined at least 3 times (total tonnage mined/processed of 6.55 Mt up to December 2017). • Replenishment of the resource is still taking place but at a slower than mining rate. • The bottom of the resource (being a placer deposit) is limited by the bedrock contact and coastal cliffs. The resource is open towards the ocean and surf zone.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The deposit has a strike length along the coastline within the mining lease of ~9000m and an average width from the cliff to within the surf zone of 123m. It is developed from surface to a maximum depth of 6.25m. The average resource thickness used to be 3.5m but is only about 2.6m currently resulting in a narrower dry beach zone during low and high tide.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.*	• The 2007 Steemson resource was interpreted using the data and results from 236 hand auger holes (402.3m) and 336 reverse circulation holes (1049.35m) drilled during 1989 to 1991 by Trans Hex. The original resource was signed off on 31 October 2011 by Mr Allen Maynard as the competent person. Mr Maynard is the director and principle geologist of Al Maynard & Associates Pty Ltd (Perth, WA). • All original analyses were conducted by MINTEK using microscopic point counting, x-ray and scanning electron microprobe techniques. • Bulk sampling done by MSR in 2005 were sent to SGS Johannesburg for grain counting. Bulk sampling was used to confirm the historical Trans Hex drill data and results. The bulk sample results were generally the same or better than the Trans Hex drilling results. • An analysis cut off of 0.1% zircon (MINTEK) was used and a resource cut-off grade of 0.3% zircon (Steemson, 2007). • Original resource modelling was done using only Reverse Circulation ("RC") drilling results using a polygonal method. Resource blocks were constructed in the southern mining area so that they were orthogonal to the drill traverses. In the northern area, resource block are trapezoidal in plan view. Resource blocks were extended half way between drill lines and 10m from the drill holes in section. • Current resource audit modelling were done using grade control samples taken from 119 test pits excavated during November to January 2018 to verify the remaining in-situ grade. Remaining volumes were based on surveying data done in January 2018 and observed mined depths in 541 mine or test pits from 2017. • Recovery studies (three stage spiral circuit) by Multotec and Mintek in

Criteria	JORC Code explanation	Commentary
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	2012 showed that an overall circuit can produce a concentrate of 11.66% Zircon into 60.8% of the feed mass with a Zircon recovery of 86.6%. Metallurgical sizing work was done in 2005 by Bateman Minerals Ltd. • Mine production during 2017 achieved a 70.9% Zircon / Rutile recovery (22,111 tonnes from a head feed containing ~31,200 tonnes) – not taking into consideration processing losses. • Reconciliation of 2017 mine production data (January to December 2017) with the December 2016 resource statement indicates a negligible difference of 0.51% in the total Heavy Mineral Sand ("HMS") grade (27.57% mined against 28.08% inferred).
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• The resource tonnages are based on a dry basis. Most of the material is fully saturated when mined but are free draining.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• In the original Steemson resource, a 0.3% zircon cut-off grade was based on a 70% zircon recovery and a zircon price of US$700/tonne. • A 5% cut-off on total heavy mineral content was applied to the current resource.
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.*	• A definitive feasibility study on the deposit was done in 2006 by K'Enyuka and a Bankable Feasibility Study ("BFS") review by HBH consultants. • The dynamic beach environment results in a cyclic depositional and erosion of the beach surface. Historical studies by Trans Hex have found a weighted average change over 9 months of up to ~9% loss or up to ~7% increase. This variability is also evident in the replenishment rate and grade of material observed. • Mining is opencast using coffer type dams constructed with excavators. The pits generally only remain open during low tide, except where beach conditions allow larger more stable protection bunding to be constructed. Construction and mining methods are similar to that being used for beach diamond mining along the west coast of South Africa and Namibia. • There is no stripping ratio as material is from surface onto bedrock. • Natural replenishment of the resource is taking place as the open pits are filled with HMS material from the surf zone during the next high tide. Data indicates no correlation (R^2=0.04) between the original resource grade and the replenishment grade for the same mine block area. • In general it appears that replenishment is erratic and unpredictable. In some areas zircon grade replenishment may only be 35%, while in other areas there are a 34% increase over and above the original zircon concentration. Replenishment appear to be mainly a function of time and the number of sea storm events. Given enough time between mining events the resources is currently still replenishing although the long term trend is a lowering in grade. • The overall lowering of the beach surface (due to mining) have resulted in the faster movement of large volumes of material between the beach and the surface zone than before mining started. • Over the past 4 years some mining blocks have now been mined up to 20 times or more.

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.*	• Extensive metallurgical testing has been done before the current processing plant that is now in operation were designed. These include the following studies:
		  • 2002 -2003 Spiral test work and trials by Multotec Process Equipment (Pty) Ltd and Mintek – Johannesburg
		  • 2003 Grain analysis by SGS Lakefield including Total Heavy Mineral ("THM"), Magnetic Separation and XRF analyses. Also ilmenite fraction analyses for smelter feedstock
		  • 2003 Magnetic separation work by Diamantina laboratory in Perth
		  • 2005 Bateman Minerals (Pty) Ltd electrostatic separation study
		  • 2007 Processing and recovery tests by Titanatek Pty Ltd - Queensland
		  • 2007 & 2009 Metallurgical testwork by AMMTEC Ltd – Australia
		  • 2007 Metallurgical upgrade test work by Multotec Process Equipment Pty Ltd – Kempton Park, RSA.

Criteria	JORC Code explanation	Commentary

		• Some of the studies done to improve the current recoveries and grades are:
		  • 2014 Processing improvement study by MSP Engineering
		  • 2014 Garnet stripping testwork by R Simmons, N Sibishi & C Moetjie using a twin start Mineral Technology VHG, a Multotec SC20 & SC21 spirals
		  • 2015 Magnetic Mineral Separation plant study by MSP Engineering
		  • 2015 Integrated Mineral Separation Plant study by MSP Engineering

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.*	• The mine has an approved environmental management programme and has been subject to an environmental impact assessments and audits. The mine is currently busy with a Section 24G application to the Department of Mineral Resources (Republic of South Africa) to obtain environmental approval for a number of listed activities that have been constructed. • The mine has also applied for a Section 102 application to increase the mining area substantially. • There is a 10m stability buffer zone between the coastal cliffs and the beach where no mining is allowed. It would appear that the original resource model allowed for at least a 5m buffer zone. • All mining voids get naturally filled with beach sand material during high tide and there is therefore no rehabilitation liability in this regard. • Tailings get dumped onto the beach where it is distributed and settled along the coastline under natural wave and sea current action. There are no pollutants introduced with the tailings and the material is inert.

Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*
	• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*
		• The bulk density is based on an accurate calculation of the specific gravity ("SG") of the silica and heavy mineral sand content fraction of each sample. It is therefore not a fixed density and appears to fluctuate between 1.9 and 2.4 as per the formula below:
		  • SG=1.5+(0.009 x HM)
		  • A conservative SG of 1.9 was applied in the current resource modelling

Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The original resource classification was an indicated resource. • It was based on historical drilling and bulk sampling. • The original resources were signed off in 2011 by Mr Allen Maynard of Al Maynard & Associates Pty Ltd as the competent person on the resource statement. • A review of the resource during 2014 by Mr du Toit of AEMCO resulted in the resource being downgraded into an inferred category due to the impact from mining and replenishment. • Due to the removal of material from mining the current resources volumes have been downgraded to 1.8 million tonnes from the original 2.8 million tonnes resource.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• The original indicated JORC resource of 2.7 million tonnes compares very favourably with the June 1992 Historical Foreign Estimate ("HFE") by A van den Westhuizen and PD Danchin that classified the Geelwal (Steenvas) and Karoo (Geelwal) area into 3,003,881 tonnes proven, 221,088 tonnes indicated and 891 528 tonnes inferred. A total HFE resource of 4.1 million tonnes @ 30% HM. • Another HFE in 1998 by Trans Hex (Barnex – RBM) reported an estimated resource of 6 million tonnes @ 2.78% zircon. • Anglovaal reported in 1983 a resource of 11.8 million tonnes @ 8.4% zircon over 5m depth over the same area. • The last resource audit statement by du Toit in December 2016 has been reviewed and the resource will remain in the inferred category but the grades have been lowered as per the resource table. • Over the past three years 6.55 million tonnes of material have been mined. Some of this material has been replaced through beach replenishment.
Discussion of	• *Where appropriate a statement of the relative accuracy and*	• The Geelwal Karoo HMS deposit have been known and investigated over

Criteria	JORC Code explanation	Commentary
relative accuracy/ confidence	*confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	the past 57 years with the earliest detailed investigation by Trans Hex in 1989. The deposit was first documented in 1931 by Haughton. • The deposit is well understood due to being mined over the past 4 years, but because of the dynamic and replenishment nature of the environment, resource block grades are not stable and change over time. • The current JORC resource audit statement represents the lowest tonnage reported in comparison to HFE and appear to be conservative. Estimated resource grades appear to be realistic as previous production grades of HMS during 2017 was in line with that of the December 2016 inferred resource statement.

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Table of grade control results used during the resource audit

Collar ID_from	X-from	Y-from	Z-from	Dip	Azimuth	From	To	Depth	Total HM	GC Garnet	GC Ilmenite	GC Zircon	Zircon XRF	GC Rutile	GC Leucoxene	GC Others	GC Magnetite	Date	Bedrock
PIT 35B	6,508,446.31	221,054.75	0	-90	0	0	3.5	3.5	15.09%	11.64%	1.97%	1.97%	0.72%	0.44%	0.41%	84.91%	0.13%	20/12/2017	gravel, sea shell and yellowish sand
PIT 7T	6,509,589.02	219,848.18	1.883	-90	0	0	4	4	28.67%	23.25%	3.94%	0.49%	0.43%	0.44%	0.41%	71.33%	0.14%	24/10/2017	orange sand and gravel
PIT10B	6,506,094.58	223,238.14	-0.375	-90	0	0	4	4	7.31%	4.84%	1.12%	0.28%	0.26%	0.25%	0.23%	92.69%	0.60%	14/11/2017	schist and gravel
PIT10T	6,506,094.58	223,238.14	1.795	-90	0	0	3.7	3.7	12.15%	5.60%	4.58%	1.02%	1.06%	0.45%	0.42%	87.85%	0.07%	14/11/2017	
PIT11T	6,506,109.36	223,258.38	1.982	-90	0	0	3	3	5.52%	3.26%	1.38%	0.28%	0.23%	0.25%	0.23%	94.48%	0.14%	14/11/2017	schist and gravel
PIT12B	6,506,122.87	223,275.44	-0.406	-90	0	0	1.5	1.5	22.96%	14.71%	5.61%	0.93%	0.89%	0.83%	0.78%	77.04%	0.10%	14/11/2017	schist and clay
PIT12T	6,506,123.33	223,274.71	2.549	-90	0	0	4	4	4.38%	2.21%	1.05%	0.35%	0.41%	0.31%	0.29%	95.62%	0.15%	14/11/2017	
PIT13T	6,506,277.02	223,144.50	2.28	-90	0	0	4	4	14.39%	8.83%	2.80%	0.93%	0.89%	0.84%	0.78%	85.61%	0.21%	14/11/2017	clay
PIT14B	6,506,263.95	223,127.85	-1.522	-90	0	0	4	4	24.90%	16.65%	3.78%	3.02%	3.05%	0.67%	0.63%	75.10%	0.15%	14/11/2017	orange clay and gravel
PIT14T	6,506,264.95	223,128.25	1.33	-90	0	0	4	4	8.30%	4.81%	2.29%	0.38%	0.34%	0.34%	0.32%	91.70%	0.16%	14/11/2017	
PIT15B	6,506,730.40	222,718.48	-1.652	-90	0	0	4	4	20.23%	17.13%	1.01%	1.01%	1.14%	0.45%	0.42%	79.77%	0.21%	5/12/2017	reddish clay and gravel
PIT15T	6,506,730.73	222,716.58	2.186	-90	0	0	4	4	26.56%	22.97%	2.21%	0.44%	0.58%	0.39%	0.37%	73.44%	0.18%	5/12/2017	
PIT16T	6,506,712.65	222,699.27	0.577	-90	0	0	3	3	19.95%	16.67%	1.80%	0.45%	0.45%	0.40%	0.37%	80.05%	0.24%	5/12/2017	reddish sand
PIT17	6,507,132.11	222,369.16	2.784	-90	0	0	3	3	27.32%	21.30%	4.42%	0.55%	0.91%	0.49%	0.46%	72.68%	0.10%	18/12/2017	clay
PIT17T	6,507,132.11	222,369.16	2.784	-90	0	0	2	2	18.87%	14.42%	2.78%	0.56%	0.80%	0.50%	0.46%	81.13%	0.16%	18/12/2017	
PIT18B	6,507,116.60	222,348.92	0	-90	0	0	3.6	3.6	24.94%	20.32%	1.99%	1.32%	1.57%	0.59%	0.55%	75.06%	0.17%	18/12/2017	clay
PIT19	6,507,207.23	222,298.83	3.558	-90	0	0	4	4	48.86%	39.03%	6.84%	1.71%	1.60%	0.51%	0.47%	51.14%	0.30%	18/12/2017	
PIT19GNT	6,507,202.78	222,293.19	3.033	-90	0	0	1.5	1.5	56.04%	42.81%	9.70%	2.53%	2.43%	0.38%	0.35%	43.96%	0.28%	18/12/2017	
PIT19T	6,507,207.23	222,298.83	3.558	-90	0	0	2.5	2.5	20.51%	12.90%	5.04%	1.26%	1.08%	0.56%	0.52%	79.49%	0.23%	18/12/2017	
PIT1T	6,509,323.88	220,076.52	1.538	-90	0	0	4	4	1.91%	1.03%	0.22%	0.22%	0.11%	0.19%	0.18%	98.09%	0.07%	24/10/2017	rock
PIT20GRVL	6,507,183.74	222,276.81	0	-90	0	0	3.4	3.4	21.82%	16.33%	3.95%	0.49%	0.48%	0.44%	0.41%	78.18%	0.18%	18/12/2017	gravel
PIT20T	6,507,183.74	222,276.81	1.674	-90	0	0	3.1	3.1	15.03%	12.44%	1.05%	0.53%	0.30%	0.47%	0.44%	84.97%	0.11%	18/12/2017	
PIT20TT	6,507,183.74	222,276.81	1.674	-90	0	0	3.1	3.1	4.67%	2.48%	0.53%	0.53%	0.08%	0.47%	0.44%	95.33%	0.23%	18/12/2017	

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Collar ID_from	X-from	Y-from	Z-from	Dip	Azimuth	From	To	Depth	Total HM	GC Garnet	GC Ilmenite	GC Zircon	Zircon XRF	GC Rutile	GC Leucoxene	GC Others	GC Magnetite	Date	Bedrock
PIT21T	6,507,279.87	222,230.02	3.279	-90	0	0	4	4	18.73%	12.70%	2.78%	2.22%	2.19%	0.50%	0.46%	81.27%	0.07%	19/12/2017	orange clay
PIT22 GRVL	6,507,267.97	222,207.79	0	-90	0	0	4	4	23.92%	17.96%	4.35%	0.54%	0.65%	0.49%	0.45%	76.08%	0.13%	19/12/2017	gravel and sea shells
PIT22T	6,507,267.97	222,207.79	2.313	-90	0	0	3	3	21.14%	16.06%	3.57%	0.51%	0.46%	0.46%	0.42%	78.86%	0.12%	19/12/2017	
PIT23B	6,507,349.78	222,158.78	0.338	-90	0	0	1.5	1.5	18.93%	13.27%	2.25%	2.25%	2.18%	0.50%	0.47%	81.07%	0.20%	19/12/2017	orange clay
PIT23T	6,507,350.88	222,159.42	3.254	-90	0	0	4	4	23.23%	15.52%	5.97%	0.60%	0.72%	0.53%	0.50%	76.77%	0.11%	19/12/2017	
PIT24T	6,507,430.07	222,097.56	3.339	-90	0	0	3	3	19.66%	14.24%	3.91%	0.49%	0.52%	0.44%	0.41%	80.34%	0.17%	19/12/2017	
PIT25B	6,507,499.27	222,022.68	0	-90	0	0	4.2	4.2	29.66%	21.66%	3.24%	3.78%	3.89%	0.48%	0.45%	70.34%	0.06%	19/12/2017	white clay
PIT25T	6,507,499.27	222,022.68	3.372	-90	0	0	3	3	24.37%	20.38%	2.35%	0.59%	0.62%	0.53%	0.49%	75.63%	0.04%	19/12/2017	
PIT26B	6,508,140.89	221,419.85	0	-90	0	0	4	4	23.63%	17.22%	4.27%	1.07%	1.14%	0.48%	0.44%	76.37%	0.15%	19/12/2017	gravel and orange sand
PIT26T	6,508,140.89	221,419.85	3.794	-90	0	0	3	3	24.92%	21.05%	2.48%	0.50%	0.68%	0.44%	0.41%	75.08%	0.04%	19/12/2017	
PIT27B	6,508,212.27	221,334.46	0	-90	0	0	3.8	3.8	16.85%	9.35%	5.94%	0.54%	0.52%	0.48%	0.45%	83.15%	0.10%	19/12/2017	white clay
PIT27T	6,508,212.27	221,334.46	3.033	-90	0	0	3.4	3.4	15.81%	10.25%	3.72%	0.62%	0.75%	0.55%	0.51%	84.19%	0.16%	19/12/2017	
PIT28B	6,508,278.20	221,260.74	0	-90	0	0	4.2	4.2	19.69%	13.41%	4.41%	0.63%	0.70%	0.56%	0.52%	80.31%	0.15%	19/12/2017	white clay
PIT28T	6,508,278.20	221,260.74	2.601	-90	0	0	4	4	6.23%	4.84%	0.79%	0.20%	0.18%	0.18%	0.16%	93.77%	0.06%	19/12/2017	
PIT29B	6,508,122.27	221,402.02	0	-90	0	0	4.3	4.3	34.95%	24.78%	5.14%	3.85%	0.54%	0.57%	0.53%	65.05%	0.07%	19/12/2017	gravel and orange sand
PIT29GNT	6,508,122.27	221,402.02	0	-90	0	0	1.5	1.5	33.85%	23.42%	5.83%	3.50%	3.24%	0.52%	0.48%	66.15%	0.09%	19/12/2017	
PIT29T	6,508,122.27	221,402.02	2.748	-90	0	0	3.6	3.6	17.60%	12.85%	3.16%	0.53%	0.44%	0.47%	0.44%	82.40%	0.16%	19/12/2017	
PIT2T	6,509,364.11	220,022.67	1.713	-90	0	0	4	4	2.80%	1.73%	0.44%	0.22%	0.12%	0.20%	0.18%	97.20%	0.03%	24/10/2017	rock
PIT30B	6,508,190.87	221,319.09	0	-90	0	0	4	4	7.90%	5.98%	0.51%	0.51%	0.39%	0.45%	0.42%	92.10%	0.03%	19/12/2017	gravel
PIT30GNT	6,508,190.87	221,319.09	0	-90	0	0	1.5	1.5	17.15%	13.28%	2.25%	0.56%	3.77%	0.50%	0.47%	82.85%	0.09%	19/12/2017	
PIT30T	6,508,190.87	221,319.09	3.207	-90	0	0	2.2	2.2	18.20%	15.82%	0.96%	0.48%	0.45%	0.43%	0.40%	81.80%	0.12%	19/12/2017	
PIT31B	6,508,256.96	221,245.78	0	-90	0	0	4	4	10.28%	8.23%	0.52%	0.52%	0.18%	0.47%	0.43%	89.72%	0.10%	19/12/2017	white clay and orange sand
PIT31GNT	6,508,256.96	221,245.78	0	-90	0	0	1.5	1.5	22.05%	17.73%	2.20%	1.10%	1.12%	0.49%	0.46%	77.95%	0.07%	19/12/2017	
PIT31T	6,508,256.96	221,245.78	3.096	-90	0	0	3.2	3.2	12.82%	10.21%	1.08%	0.54%	0.32%	0.48%	0.45%	87.18%	0.05%	19/12/2017	
PIT32GNT	6,508,341.74	221,150.44	0	-90	0	0	4.2	4.2	45.85%	37.30%	6.83%	6.83%	0.88%	0.41%	0.38%	54.15%	0.02%	20/12/2017	

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Collar ID_from	X-from	Y-from	Z-from	Dip	Azimuth	From	To	Depth	Total HM	GC Garnet	GC Ilmenite	GC Zircon	Zircon XRF	GC Rutile	GC Leucoxene	GC Others	GC Magnetite	Date	Bedrock
PIT32T	6,508,341.74	221,150.44	3.111	-90	0	0	3.7	3.7	8.38%	6.24%	0.57%	0.57%	0.35%	0.51%	0.47%	91.62%	0.04%	20/12/2017	
PIT33B	6,508,360.21	221,164.61	0	-90	0	0	3.8	3.8	6.78%	4.22%	1.07%	1.07%	0.35%	0.48%	0.44%	93.22%	0.03%	20/12/2017	orange sand and sea shells
PIT33T	6,508,360.21	221,164.61	2.714	-90	0	0	3.5	3.5	12.23%	9.15%	1.58%	1.58%	0.19%	0.47%	0.44%	87.77%	0.06%	20/12/2017	
PIT34B	6,508,465.71	221,070.26	-0.156	-90	0	0	1.5	1.5	19.81%	16.55%	1.66%	1.66%	0.72%	0.49%	0.46%	80.19%	0.09%	20/12/2017	white clay and orange sand
PIT34T	6,508,466.43	221,070.47	2.301	-90	0	0	4	4	18.84%	14.43%	2.22%	2.22%	0.44%	0.50%	0.46%	81.16%	0.12%	20/12/2017	
PIT35T	6,508,446.31	221,054.75	2.635	-90	0	0	4	4	21.17%	18.40%	1.14%	1.14%	0.37%	0.51%	0.47%	78.83%	0.07%	20/12/2017	
PIT36B	6,508,528.91	220,991.31	0.759	-90	0	0	1.5	1.5	18.77%	15.76%	1.54%	1.54%	0.82%	0.46%	0.43%	81.23%	0.07%	20/12/2017	white clay
PIT36T	6,508,530.40	220,991.72	2.96	-90	0	0	4	4	13.02%	10.62%	1.00%	1.00%	0.69%	0.45%	0.41%	86.98%	0.04%	20/12/2017	
PIT37B	6,508,509.21	220,974.76	0	-90	0	0	4.2	4.2	21.30%	18.15%	0.66%	0.66%	1.02%	0.59%	0.55%	78.70%	0.04%	20/12/2017	gravel
PIT37T	6,508,509.21	220,974.76	2.98	-90	0	0	4	4	17.12%	13.98%	1.61%	1.61%	0.43%	0.48%	0.45%	82.88%	0.06%	20/12/2017	
PIT38 B	6,508,528.91	220,991.31	0.759	-90	0	0	1.5	1.5	11.73%	9.20%	1.06%	1.06%	0.39%	0.47%	0.44%	88.27%	0.02%	20/12/2017	white clay
PIT38 T	6,508,602.26	220,870.80	2.474	-90	0	0	4	4	4.11%	2.07%	0.53%	0.53%	0.10%	0.47%	0.44%	95.89%	0.07%	20/12/2017	
PIT39B	6,504,902.95	224,348.78	0	-90	0	0	3.8	3.8	10.29%	8.29%	0.53%	0.53%	0.21%	0.47%	0.44%	89.71%	0.04%	10/01/2018	schist
PIT39T	6,504,902.95	224,348.78	2.156	-90	0	0	4	4	9.84%	7.77%	0.55%	0.55%	0.24%	0.49%	0.46%	90.16%	0.02%	10/01/2018	
PIT3T	6,509,389.46	219,960.50	2.235	-90	0	0	4	4	5.17%	3.80%	0.69%	0.23%	0.20%	0.21%	0.19%	94.83%	0.05%	24/10/2017	rock and orange sand
PIT40B	6,504,886.71	224,326.65	0	-90	0	0	3.8	3.8	25.24%	15.72%	6.99%	1.50%	0.96%	0.45%	0.41%	74.76%	0.17%	10/01/2018	gravel and schist
PIT40T	6,504,886.71	224,326.65	2.208	-90	0	0	4	4	12.03%	9.41%	1.09%	0.54%	0.15%	0.49%	0.45%	87.97%	0.06%	10/01/2018	
PIT41T	6,504,736.78	224,466.56	1.349	-90	0	0	4	4	6.56%	4.43%	0.56%	0.56%	0.09%	0.50%	0.47%	93.44%	0.04%	10/01/2018	
PIT42T	6,504,578.89	224,615.39	1.821	-90	0	0	4	4	15.30%	12.57%	1.14%	0.57%	0.63%	0.51%	0.47%	84.70%	0.04%	10/01/2018	gravel
PIT43B	6,504,561.21	224,597.27	0	-90	0	0	1.8	1.8	24.33%	17.12%	4.66%	1.55%	1.08%	0.46%	0.43%	75.67%	0.10%	10/01/2018	gravel
PIT43T	6,504,561.21	224,597.27	0.734	-90	0	0	4	4	19.86%	16.32%	2.07%	0.52%	1.08%	0.46%	0.43%	80.14%	0.05%	10/01/2018	
PIT44T	6,504,422.61	224,741.30	1.792	-90	0	0	4	4	18.63%	15.51%	1.60%	0.53%	0.52%	0.48%	0.44%	81.37%	0.07%	10/01/2018	
PIT45 B	6504017.501	225056.517	0	-90	0	0	2	2	4.66%	2.24%	1.42%	0.35%	0.39%	0.32%	0.29%	95.34%	0.04%	11/01/2018	gravel
PIT45T	6,504,017.50	225,056.52	1.557	-90	0	0	4	4	8.68%	2.60%	4.40%	0.55%	0.57%	0.49%	0.46%	91.32%	0.19%	11/01/2018	
PIT46B	6,504,028.24	225,067.54	0	-90	0	0	3.5	3.5	11.45%	6.67%	2.61%	1.30%	1.44%	0.29%	0.27%	88.55%	0.31%	11/01/2018	
PIT46T	6,504,028.24	225,067.54	2.105	-90	0	0	4	4	5.18%	2.75%	1.40%	0.35%	0.32%	0.31%	0.29%	94.82%	0.07%	11/01/2018	
PIT47T	6,504,181.86	224,943.62	2.291	-90	0	0	4	4	11.79%	7.63%	2.42%	0.61%	0.58%	0.54%	0.50%	88.21%	0.08%	11/01/2018	
PIT47TB	6,504,181.86	224,943.62	0	-90	0	0	4.2	4.2	13.08%	5.19%	5.77%	1.24%	1.24%	0.37%	0.34%	86.92%	0.18%	11/01/2018	

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Collar ID_from	X-from	Y-from	Z-from	Dip	Azimuth	From	To	Depth	Total HM	GC Garnet	GC Ilmenite	GC Zircon	Zircon XRF	GC Rutile	GC Leucoxene	GC Others	GC Magnetite	Date	Bedrock
PIT48B	6,504,304.32	224,855.11	0	-90	0	0	3	3	33.13%	18.38%	11.27%	2.01%	2.12%	0.36%	0.33%	66.87%	0.78%	11/01/2018	reddish sand and white clay
PIT48T	6,504,304.32	224,855.11	1.808	-90	0	0	4	4	10.53%	6.66%	1.69%	0.85%	0.83%	0.38%	0.35%	89.47%	0.61%	11/01/2018	
PIT49B	6,504,289.77	224,836.70	0	-90	0	0	1.8	1.8	12.77%	5.18%	4.11%	2.47%	2.37%	0.37%	0.34%	87.23%	0.31%	11/01/2018	
PIT49T	6,504,289.77	224,836.70	0.415	-90	0	0	4	4	4.56%	3.15%	0.57%	0.29%	0.08%	0.26%	0.24%	95.44%	0.06%	11/01/2018	
PIT4T	6,509,392.29	220,014.12	3.672	-90	0	0	4	4	20.71%	14.45%	4.59%	0.57%	0.59%	0.51%	0.48%	79.29%	0.11%	24/10/2017	orange sand and shells
PIT51B	6,503,876.42	225,212.21	0	-90	0	0	3	3	5.37%	2.76%	1.40%	0.35%	0.17%	0.31%	0.29%	94.63%	0.25%	11/01/2018	yellow sand
PIT51T	6,503,876.42	225,212.21	1.735	-90	0	0	4	4	7.23%	4.86%	0.69%	1.03%	0.90%	0.31%	0.28%	92.77%	0.06%	11/01/2018	
PIT52b	6,503,865.71	225,198.10	0	-90	0	0	2	2	6.02%	3.54%	1.68%	0.28%	0.17%	0.25%	0.23%	93.98%	0.04%	11/01/2018	
PIT52T	6,503,865.71	225,198.10	0.2	-90	0	0	4	4	4.05%	2.06%	1.16%	0.29%	0.05%	0.26%	0.24%	95.95%	0.04%	11/01/2018	
PIT52T	6,502,554.58	226,079.98	1.268	-90	0	0	4	4	13.60%	8.26%	3.00%	1.50%	1.43%	0.34%	0.31%	86.40%	0.19%	23/01/2018	clay
PIT53T	6,502,488.06	226,155.27	1.723	-90	0	0	4	4	11.73%	4.85%	4.80%	1.37%	1.41%	0.31%	0.28%	88.27%	0.12%	23/01/2018	clay
PIT55T	6,502,434.35	226,199.48	0.417	-90	0	0	4	4	11.95%	9.15%	1.16%	0.58%	0.61%	0.52%	0.48%	88.05%	0.06%	23/01/2018	clay
PIT56T	6,502,440.06	226,203.58	0.975	-90	0	0	4	4	18.90%	10.67%	4.52%	2.71%	2.60%	0.40%	0.37%	81.10%	0.22%	23/01/2018	clay
PIT57T	6,502,155.18	226,381.47	0.751	-90	0	0	4	4	3.94%	1.61%	1.37%	0.34%	0.10%	0.31%	0.28%	96.06%	0.04%	23/01/2018	clay
PIT58T	6,502,098.47	226,422.15	1.148	-90	0	0	4	4	19.91%	11.88%	5.66%	1.42%	1.49%	0.42%	0.39%	80.09%	0.14%	23/01/2018	clay
PIT59T	6,501,945.88	226,497.03	1.085	-90	0	0	4	4	8.34%	3.55%	3.87%	0.32%	0.65%	0.29%	0.27%	91.66%	0.04%	23/01/2018	clay
PIT5T	6,509,364.64	220,063.49	3.371	-90	0	0	4	4	21.35%	16.07%	3.60%	0.60%	0.60%	0.54%	0.50%	78.65%	0.04%	24/10/2017	orange sand
PIT60T	6,501,848.18	226,519.54	1.265	-90	0	0	4	4	5.13%	3.07%	1.06%	0.35%	0.36%	0.32%	0.29%	94.87%	0.04%	23/01/2018	clay
PIT61T	6,501,749.02	226,538.11	1.337	-90	0	0	4	4	13.12%	5.08%	6.46%	0.81%	0.78%	0.36%	0.33%	86.88%	0.07%	23/01/2018	clay
PIT62T	6,501,640.03	226,531.99	1.044	-90	0	0	4	4	11.32%	5.48%	4.29%	0.54%	0.51%	0.48%	0.44%	88.68%	0.10%	23/01/2018	gravel and clay
PIT63B	6,503,520.65	225,469.73	-0.524	-90	0	0	1.5	1.5	15.20%	12.69%	1.04%	0.52%	0.74%	0.46%	0.43%	84.80%	0.05%	24/01/2018	white clay
PIT63T	6,503,523.74	225,467.48	2.123	-90	0	0	4	4	23.38%	19.81%	2.10%	0.52%	0.83%	0.47%	0.44%	76.62%	0.04%	24/01/2018	
PIT64B	6,503,457.20	225,485.05	0	-90	0	0	3.8	3.8	18.76%	11.81%	5.50%	0.50%	0.45%	0.45%	0.41%	81.24%	0.10%	24/01/2018	white clay
PIT64T	6,503,457.20	225,485.05	2.127	-90	0	0	4	4	11.25%	8.52%	1.14%	0.57%	0.48%	0.51%	0.47%	88.75%	0.04%	24/01/2018	
PIT65B	6,503,729.52	225,304.51	0.095	-90	0	0	1.5	1.5	23.71%	17.76%	4.01%	1.00%	0.94%	0.45%	0.42%	76.29%	0.07%	24/01/2018	white clay
PIT65T	6,503,730.18	225,305.17	2.133	-90	0	0	4	4	41.10%	21.35%	15.31%	3.50%	3.68%	0.39%	0.36%	58.90%	0.18%	24/01/2018	

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Collar ID_from	X-from	Y-from	Z-from	Dip	Azimuth	From	To	Depth	Total HM	GC Garnet	GC Ilmenite	GC Zircon	Zircon XRF	GC Rutile	GC Leucoxene	GC Others	GC Magnetite	Date	Bedrock
PIT66 B	6,503,788.15	225,252.75	-0.76	-90	0	0	1.5	1.5	7.32%	5.19%	0.55%	0.55%	0.30%	0.49%	0.46%	92.68%	0.08%	24/01/2018	orange sand
PIT66T	6,503,783.33	225,252.19	1.457	-90	0	0	4	4	7.66%	4.74%	1.20%	0.60%	0.23%	0.54%	0.50%	92.34%	0.08%	24/01/2018	
PIT66T2	6,503,783.35	225,252.18	1.459	-90	0	0	4	4	10.76%	8.61%	0.55%	0.55%	0.38%	0.49%	0.45%	89.24%	0.11%	24/01/2018	
PIT67 B	6,509,172.02	220,330.56	0	-90	0	0	1.2	1.2	16.91%	14.29%	1.11%	0.74%	0.70%	0.33%	0.31%	83.09%	0.13%	26/01/2018	reddish clay
PIT67T	6,509,172.02	220,330.56	0	-90	0	0	4	4	14.89%	11.79%	1.25%	0.62%	0.44%	0.56%	0.52%	85.11%	0.16%	26/01/2018	
PIT68B	6,509,151.08	220,306.98	0	-90	0	0	1.7	1.7	13.09%	9.92%	1.97%	0.39%	0.39%	0.35%	0.33%	86.91%	0.13%	26/01/2018	orange clay
PIT68T	6,509,151.08	220,306.98	0	-90	0	0	4	4	8.16%	6.42%	0.71%	0.35%	0.34%	0.32%	0.29%	91.84%	0.06%	26/01/2018	
PIT69B	6,509,220.91	220,270.78	0	-90	0	0	2	2	12.71%	9.41%	1.63%	0.54%	0.57%	0.49%	0.45%	87.29%	0.19%	26/01/2018	orange clay and gravel
PIT69T	6,509,220.91	220,270.78	0	-90	0	0	4	4	9.11%	7.10%	0.69%	0.69%	0.72%	0.31%	0.29%	90.89%	0.02%	26/01/2018	
PIT6T	6,509,530.36	219,878.15	1.859	-90	0	0	4	4	4.82%	3.72%	0.43%	0.21%	0.21%	0.19%	0.18%	95.18%	0.09%	24/10/2017	orange sand and gravel
PIT70B	6,509,352.06	220,074.92	0.355	-90	0	0	1.5	1.5	10.76%	7.87%	0.80%	1.20%	1.17%	0.36%	0.33%	89.24%	0.20%	26/01/2018	yellowish sand
PIT70T	6,509,353.80	220,072.70	2.964	-90	0	0	4	4	26.00%	19.13%	5.28%	0.53%	0.43%	0.47%	0.44%	74.00%	0.14%	26/01/2018	
PIT71B	6,509,395.32	219,960.20	0.482	-90	0	0	1.5	1.5	5.55%	4.09%	0.61%	0.31%	0.29%	0.27%	0.25%	94.45%	0.02%	26/01/2018	grave, orange and white clay
PIT71T1	6,509,395.58	219,960.83	2.657	-90	0	0	4	4	12.60%	8.44%	2.98%	0.30%	0.24%	0.27%	0.25%	87.40%	0.37%	26/01/2018	
PIT71T2	6,509,398.15	219,961.60	2.744	-90	0	0	4	4	11.20%	7.70%	2.45%	0.31%	0.24%	0.27%	0.25%	88.80%	0.22%	26/01/2018	
PIT8T	6,509,640.51	219,820.62	3.301	-90	0	0	4	4	4.59%	2.89%	0.92%	0.23%	0.21%	0.21%	0.19%	95.41%	0.15%	24/10/2017	schist
PIT9T	6,509,618.89	219,863.16	3.519	-90	0	0	4	4	11.74%	7.20%	3.33%	0.42%	0.49%	0.37%	0.35%	88.26%	0.08%	24/10/2017	orange sand and schist