

ASX RELEASE 27th APR 2016

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# **Lavra Drilling Update**

#### **Potential for Stacked Mineralisation Demonstrated**

#### **Highlights**

- Drilling has demonstrated the possibility of stack lodes at Lavra
- Stacked lodes will significantly increase the potential for further mineralisation at the Lavra project
- Level of depletion by artisanal miners appears to be low at shallow depths, providing confidence towards minimal depletion at depths
- Drilling has been put on hold early due to faulty equipment, and is planned to be restarted as part of a significantly larger program in the near future
- Peak intercept from limited assays to date is 2m @ 7.1gpt from surface

Cleveland Mining Company Ltd (ASX: CDG) is pleased to provide an update of the progress of the small drilling program that was previously announced to have commenced at the Company's Joint Venture O Capitão Lavra project in Goias State, Brazil.

Drilling has been instigated to extend the current Inferred Resource of 134 kt @ 11.14 g/t Au for 48 kOz. Currently two pits are optimised containing a maximum of 44,000 t @ 14.4 g/t gold, for 20,400 Ozs gold (assuming no artisanal depletion). However, there remains a zone between the pits known as the Saddle Area that could not be added to the mine plan due to a lack of drilling, as shown on Figure 1 (circled area).

A program of 18 holes has been designed, and drilling was expected to be completed in less than 1 week. Unfortunately, drilling has been slower than expected due to significant shortcomings with the RC rig's compressor. As a result, drilling has temporarily been suspended and will recommence as part of a significantly larger program which is planned for the near future.

To date, 9 out of 18 holes have been completed and assay results coming through have included 2m @ 7.1g/t Au from 0m (ground surface) in hole CGPRC00007. In addition, the Company's conceptual interpretation of Lavra's lode geometry has advanced as a result of this drilling and the concepts, if proved, will have significant, positive economic ramifications.



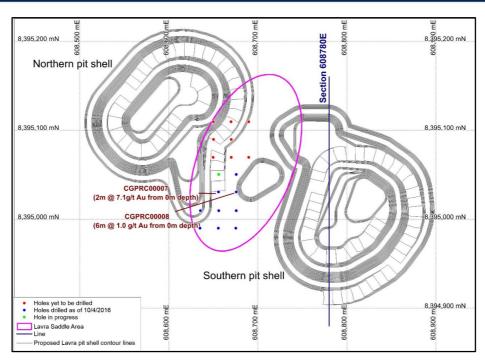


Figure 1, Collar locations and hole status, Saddle Area, pit shells & position of Section 608780E

The Saddle Area offers the potential for 47 to 94 kt @ 6 to 11 g/t Au for approximately 9 to 33 kOz, assuming mineral grade and width is consistent with the grade and width of the neighbouring and adjoining resource.

Each hole so far drilled has either intersected mineralisation at two levels, or intersected 'fill' (spoil left after artisanal mining) or voids (artisanal underground workings) where mineralisation would otherwise have been expected. Drilling has tested the area to a maximum depth of 24m and, even at this modest depth, is intersecting consistent mineralisation (or artisanal workings) at two levels; one being near surface (0 – 5m depth) and another located between 15 and 20m depth.

At this stage of drilling, the grade trend appears to be increasing as drilling progressively moves northward, with holes CGPRC00007 and CGPRC00008 returning intersections of 2m @ 7.1g/t Au from 0m depth and 6m @ 1.0 g/t Au from 0m depth, respectively.

Company geologists report that the drilling results have reflected a much improved understanding of the extent of garimpo depletion. They estimate that, based on drilling so far, approximately 70% of the mineralisation in this area is still intact. Given that the drilling was into the shallowest area, and thus the easiest for artisanal miners to access, the observations provide confidence that depletion should be further reduced at depth.

Garimpeiros who previously worked at Lavra but who are now helping with the drilling say that they, in fact, worked multiple levels at Lavra down to and beyond 120m depth. Drilling so far certainly indicates 2 levels of mineralisation within the top 24m, somewhat validating the garimpeiro claims.

The current Lavra model consists of a single lode system, but now it appears Lavra is probably multilayered, and if so offers significant, positive, economic ramifications, as the outcome would be



enhanced ore potential, compared with the current single lode model, and subsequently a reduced strip ratio.

Based on the multilayered concept and past and new drilling information, company geologists now tentatively interpret at least three mineralised horizons within 60m of ground surface, as shown on Figure 2; being the Upper Target, Lower Target and the Fill Zone.

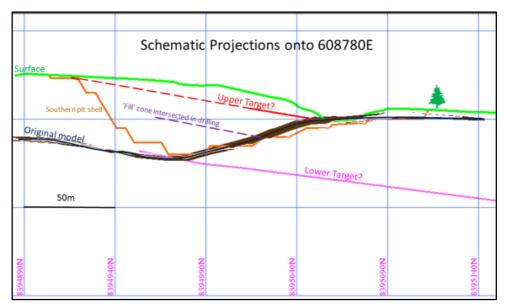


Figure 2, Section 608780E

The Fill Zone was intersected in the current drilling as artisanal workings presumed to have originally been occupied by mineralised material that was removed and replaced by backfill, but which still probably retains mineral potential away from the current drilling down dip or along strike.

It must be emphasised that the multilayered model is conceptual and requires substantiation by drilling in addition to that currently in progress.

Cleveland would like to make clear that this suspension of drilling was not an issue caused by the drilling company, who despite that poor quality compressor, still managed to complete half the program. Cleveland decided to terminate the program early, to ensure funds were not wasted on having idle machinery and people. The Company is still working to undertake a major drilling program and will complete the remainder of this small program as part of that campaign.

#### **ENDS**

**Further Information:** 

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#### **About Cleveland Mining Company Ltd**

Cleveland Mining Company Ltd is an Australian-managed, ASX-listed minerals company squarely focused on developing projects into mines.

The Company's management team has a track-record for building billion-dollar projects from the ground up, providing Cleveland with the expertise to secure and build robust projects.

Cleveland has gold and iron ore assets in Brazil in areas with excellent mining credentials:

- Mining and production are underway at Cleveland's Premier 50/50 Gold Mine JV in Goias State in central Brazil. The Company is working to add throughput from the O Capitão project, which is less than 10km from the Premier Mine.
- The companies have signed binding Option Agreements with the Brazilian private company Bahmex covering multiple iron projects.

Cleveland has a different approach to project selection with project economics driving target selection. Projects are chosen according to their likelihood of generating returns at the bottom of the economic cycle.

#### **Forward-looking Statements**

Forward-looking statements can be identified by the use of terminology such as 'intend', 'aim', 'project', 'anticipate', 'estimate', 'plan', 'believe', 'expect', 'may', 'should', 'will', 'continue' or similar words. These statements discuss future expectations concerning the results of operations or financial condition, or provide other forward looking statements. They are not guarantees or predictions of future performance, and involve known and unknown risks, uncertainties and other factors, many of which are beyond our control, and which may cause actual results to differ materially from those expressed in the statements contained in this ASX update. Readers are cautioned not to put undue reliance on forward looking statements

#### **Competent Person's Statement**

The information in this report that relates to Exploration Results is based on information reviewed by David Mendelawitz, who is a Fellow of the AusIMM. Mr Mendelawitz has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Mendelawitz consents to the inclusion of the matters based on his information in the form and context in which it appears. Mr Mendelawitz is employed by Cleveland Mining Company Ltd.

Rick Stroud - Non-Executive Director

Glenn Simpson - Non-Executive Director



(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.	Sampling at Lavra was by RC drilling.  Drilling was completed by Infogeo Drilling contractors and sample collection by Cleveland Premier employees.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Drill hole collars are picked-up by company surveyors. Drill samples were logged for lithology, weathering, wetness and contamination by company geologists. Sampling was carried out under Cleveland protocols and QAQC procedures as per industry best practice.
		Certified standards and blanks were inserted into the sampling sequence at a nominal rate of 1 standard in every 20 samples and 1 duplicate in every 60 samples. Results from the QAQC sampling were considered acceptable.
	Aspects of the determination of mineralisation that are Material to the Public Report.	Drill samples are collected directly from a riffle splitter bucket fed from the cyclone outlet.
	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.	All samples were prepared and assayed at the Premier mine laboratory by aqua regia digest. Select samples were submitted to SGS Belo Horizonte for fire assay. All samples are crushed, dried and pulverised (total prep) to produce a sub sample. Aqua regia was by 30gm digest with an AAS finish. Fire assay was by 30gm charge and AAS finish.
Drilling techniques	Drill type (e.g. 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, facesampling bit or other type, whether core	Drilling was to a depth of between 15 and 34m using a face sampling hammer bit. No downhole surveying was conducted.



Criteria	JORC Code explanation	Commentary
	is oriented and if so, by what method, etc).	
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	All samples were weighed immediately upon recovery from the cyclone. The sample weight was recorded and captured in the company database.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Rock chip recoveries within oxide material are lower than the fresh material. Drillers are instructed to reduce the penetration rate in an attempt to increase recovery.
		Cyclone and sample buckets are cleaned between rod-changes and after each hole to minimise downhole and/or cross-hole contamination.
	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.	Cleveland protocols and QAQC procedures are followed to preclude any issue of sample bias due to material loss or gain. No significant bias is expected and any potential bias is not considered material at this stage of resource development.
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.	Sample logs record lithology, mineralogy, mineralisation, weathering, colour, lithology, grainsize, texture, contamination, oxidation, weathering and wetness of the samples. Chip trays are photographed and the rock density of select samples estimated as part of the assaying process.
		Logs are recorded graphically and entered into Cleveland database.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Samples were photographed within chip trays.
	The total length and percentage of the relevant intersections logged.	All drill holes were logged in full to end of hole.
Sub- sampling	If core, whether cut or sawn and whether quarter, half or all core taken.	Not applicable.



Criteria	JORC Code explanation	Commentary
techniques and sample preparation	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Samples were riffle split immediately from the cyclone discharge. On the rare occasion of a sample being wet, then it was grab sampled from numerous positions around and within the coarse sample.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Preparation of exploration samples was performed at the Premier mine assay laboratory. Samples were dried, crushed to 80% passing 10 mesh (i.e. 2mm), homogenized, riffle split (primary split) and pulverized to 95% passing of 200 mesh (75 microns).
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Cleveland Mining quality control procedures included submission into the sampling sequence certified reference material, field duplicates (check sampling of coarse rejects) and check assaying of 1 in every 20 samples such that blanks are inserted at the rate of 1 in every 60 assay samples, standards inserted 1 in every 60 assay samples and duplicates inserted 1 in every 60 assay samples.
		Laboratory quality control procedures include the submission of blanks, duplicates and standard reference material. Typically, for every 34 to 36 samples, a pulp duplicate, coarse reject duplicate, reagent blank and an aliquot of certified reference material is inserted into the sample stream. All QC results are reported within the final assay report.
	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.	Duplicates were taken at a rate of 1 in every 60 samples and submitted into the sample sequence.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample size is deemed appropriate relative with the grain size based on industry standards of similar mineral styles and sampling methods.
Quality of assay data and	The nature, quality and appropriateness of the assaying and laboratory	For all samples, gold assays were determined by aqua regia using 30gm solution and AAS finish. Select samples were analysed by fire assay with a 30g



Criteria	JORC Code explanation	Commentary
laboratory tests	procedures used and whether the technique is considered partial or total.	charge and AAS finish. Both methods were deemed appropriate being consistent with industry standards.
	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.	No geophysical tools have been applied,
	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	Field QAQC procedures include the insertion of field duplicates, blanks and commercial standards. Results are generally satisfactory demonstrating acceptable levels of accuracy and precision for resource development.
	have been established.	Laboratory QAQC involves the use of internal laboratory standards using certified reference material, blanks, duplicates as per laboratory procedures.
		Sample preparation checks for fineness were carried out by the laboratory as part of their internal procedures to ensure the grind size of 95% passing 75 micron was being attained.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Several company staff based within Brazil or off shore review and verify significant intersections either physically on site or from photographs of the intersections.
	The use of twinned holes.	Twinned holes have not been drilled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic)	Sample logging is conducted at the drill site. Graphical logs are used to record the geological information.
	protocols.  Discuss any adjustment to assay data.	Geologists and data entry personnel enter the graphic logs into standard Excel templates generated from the company SQL database. The Excel templates contain validation routines to ensure standard codes are enforced.
		All graphical logs are scanned and email to head office in Perth for digital capture. Perth personnel review and validate the data entry process on a batch-by-batch basis.



Criteria	JORC Code explanation	Commentary
		Data is stored in an SQL server database platform and is managed with a Geological Data Management System; George 7.
		No adjustments were made to any assay information, except for "lower than detection limit" values that are stored within the database as negative values.
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.	Drill hole collar locations are clearly marked in the field. The collar locations are picked-up by company surveyor within an accuracy of ±5mm.  Holes were not downhole surveyed.
	Specification of the grid system used.	The grid system is SAD69, Zone 22 South.
	Quality and adequacy of topographic control.	Company surveyors have surveyed the mark out of each collar position and picked up the position of the hole collar upon completion of drilling using a total station theodolite.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Holes were spaced on 20 x 20m pattern.
distribution.	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data spacing and distribution is sufficient to demonstrate spatial and grade continuity of the mineralised horizon to support the definition of Inferred/Indicated Mineral Resources and to identify Measured Ore Reserves.
	Whether sample compositing has been applied.	Samples were not composited
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.	Holes were vertically drilled at approximately -90 degrees of geological units thus returning intervals with approximately true thickness.
Su dotaro	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.	The drilling orientation is considered not to have introduced sampling bias.



Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	All samples were collected and delivered to the laboratory by company personnel on a daily basis. Samples were never left unattended in public areas.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Field and laboratory QAQC assays are audited regularly by company geologists. QAQC samples from the reported program were deemed satisfactory.
		The last database audit was conducted by Cube Consulting and covered a period of time finishing December 2011. It found that the drill hole database of the O 'Capitão project is well structured and contains no obvious material discrepancies in collar, survey or assay data. Cube considers the drill data to be of an appropriate standard to undertake resource estimation and reporting under the CIM NI-43-101 reporting guidelines.

# **Section 2 Reporting of Exploration Results**

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

Criteria	JORC Code 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.	Lavra prospect is a constituent of the O'Capitão project located on tenements 862739/2011 and 862740/2011 within the central Brazilian state of Goias. The tenement was issued by Departmento Nacional de Producao Mineral. It is owned in 50:50 joint venture between Cleveland Premier Mineracao Ltda (the project operator) and Edifica Participacoes.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	AngloGold Ashanti managed exploration of the O'Capitão project area conducting mapping, drilling and channel sampling.



Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation.	The project is hosted within the Crixas Greenstone Belt, within the volcanic and sedimentary rocks of the Rio Vermelho Formation. Mineralisation is hosted in shallow-dipping (0 - 20 degrees) quartzite, schist and graphitic shale.
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	Azimuth (Degrees 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	holes:	Dip Dip
	easting and northing of the drill hole collar	Depth 18 19 20 20 20 24 17 17 16 16
	elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	RL 449.424 453.089 453.823 450.516 452.075 450.671 450.671 450.244
	dip and azimuth of the hole	
	down hole length and interception depth	Northing 8394989.996 8394990.317 8394990.072 8395009.871 8395009.214 8395030.932 8395031.145 8395050.851
	hole length.	
	If the exclusion of this information is justified on the basis that the information is not Material and this	Easting 608634.452 608655.626 608674.509 608657.351 608657.356 608656.167 608677.287
	exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	hole_id CGPRC00001 CGPRC00003 CGPRC00004 CGPRC00005 CGPRC00006 CGPRC00007 CGPRC00008
Data aggregation		The intersection in CGPRC00004, 1m @ 2.0 g/t Au from 3m depth.
methods		The intersection in CGPRC00005, 1m @ 3.0 g/t Au from 5m depth.
		The intersection in CGPRC00007, 2m @ 7.1g/t Au from 0m depth.
		The intersection in CGPRC00008, 6m @ 1.0 g/t Au from 0m depth.
		Grade intersections averaged uncut assays taken at 1m intervals. Greater than 1g/t Au intersections only.



Criteria	JORC Code explanation	Commentary
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	
Relationship between mineralisatio	These relationships are particularly important in the reporting of Exploration Results.	Drilling intersected mineralisation at high angle and as close as practicable to true thickness.
n widths and intercept lengths	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').	
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.	Refer to figures contained within the announcement body.
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.	Comprehensive reporting of results from drill holes CGPRC00001 to CGPRC00008 & CGPRC00010 has been achieved in this announcement.
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.	There is no other material data to report.



Criteria	JORC Code 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).	Additional drilling is planned to close off mineralisation.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	

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