

10 MAY 2017

### **COBALT EXPLORATION TARGET DEFINED FROM** HISTORIC DRILLING AT THE PINNACLES PROJECT

- Compilation of historic drilling highlights multiple zones of shallow cobalt mineralisation over 15km of strike with potential for extensions with further drilling.
- Multiple flat lying, near surface cobalt zones including: PN44 16m @ **0.27% Co**, >1% Ni, 0.58% Mn from 18m PN100 8m @ **0.29% Co**, 0.73%Ni, 2.09% Mn from 10m; including: 2m @ 0.8% Co, >1% Ni, 4.6% Mn from 14m PN168 30m @ **0.16% Co**, >1.0 % Ni, 0.86 Mn from 10m
- Exploration Target defined from the historic drilling data as a precursor to a mineral resource estimate now underway.
- The mineral resource will be used to identify the higher grade, spatially coherent cobalt zones for follow up work.
- Project extends Montezuma's technology metal thrust targeting the manganese<sup>1</sup>, lithium<sup>2</sup> and cobalt markets.

Montezuma Mining Company Ltd ("Montezuma" or "Company") is pleased to advise that an ongoing historic data review has further confirmed the potential for high grade cobalt associated with manganese-nickel oxide mineralisation at the Pinnacles Project.

The Project was extensively drilled for lateritic nickel mineralisation until 2004. 632 aircore, 23 RC and 3 DD holes were completed for 33,228m on a nominal spacing of approximately 200 by 80 metres.

The historic drilling has been digitised and polygonal wireframes created with 0.03% cobalt cut-off. Volumes were calculated and an assumed specific gravity value of 1.9 was used to estimate an **Exploration Target of:** 

13 to 14 Mt @ at 0.075% to 0.085% Co and 0.75 and 0.8% Ni.

Independent mining consultants Entech have been engaged to undertake a JORC compliant mineral resource estimate wich will be reported to the market on completion.

Note: the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to estimate a Mineral Resource and that it is uncertain if further exploration will result in the estimation of a Mineral Resource.

### ABOUT MONTEZUMA MINING

Listed in 2006, Montezuma Mining Company Ltd (ASX: MZM) is a diversified explorer primarily focused on gold and manganese. The Company's primary objective is to achieve returns for shareholders through selected strategic acquisitions and targeted exploration.

Montezuma has 100% interests in the Yamarna Gold Project in the Yamarna Greenstone Belt, the Holleton Gold Project in the Wheat Belt region and the Butcherbird Manganese/Copper Project in the Murchison region, all located in Western Australia.

#### MARKET DATA

ASX code: MZM Share price: \$0.125 Shares on issue: 83.5M Market capitalisation: \$10.4M ~\$4.3M Cash (at 31 March): Listed Investments: ~\$8M

#### **BOARD AND MANAGEMENT**

Chairman **Executive Director** Non-Executive Director **Exploration Manager** 

**Seamus Cornelius** Justin Brown John Ribbons Dave O'Neill



Company information, ASX announcements, investor presentations, corporate videos and other investor material on the Company's projects can be viewed at

www.montezuma.com.au

<sup>&</sup>lt;sup>1</sup> Company ASX release dated 13 February 2017

<sup>&</sup>lt;sup>2</sup> Company ASX release dated 22 February 2017

This data set will now be used to generate a JORC compliant mineral resource estimate which will form the basis of commercialisation studies to determine the best pathway forward to generate shareholder value from the project.

As a result of the historic work being focussed on the nickel rather than the cobalt mineralisation, the Company also believes there is potential for further work to better define the higher grade cobalt zones within the greater lateritic nickel orebody.

The addition of cobalt to the Company's project portfolio strengthens Montezuma's strategic position as it expands into the technology metal space to take advantage of increasing metal prices resulting from strong projected demand growth as the world moves from a fossil fuel energy system to one which is based on renewable energy production and battery storage<sup>3</sup>. Most key battery technologies use lithium with manganese and/or cobalt, the target commodities for the Company's Butcherbird, Lake Johnston and Pinnacles Projects.

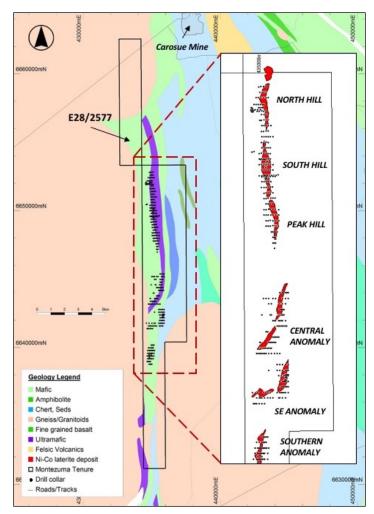
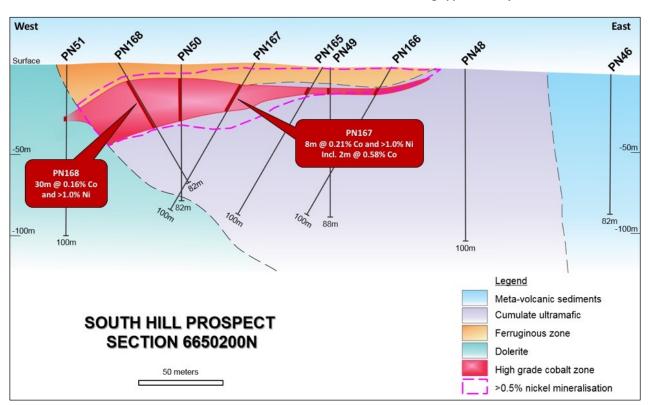


Figure 1: Plan view showing drillhole collar locations and known cobalt mineralised zones along approximately 15km of strike



<sup>&</sup>lt;sup>3</sup> https://www.climatecouncil.org.au/batterystoragereport2015

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Hole ID	Easting (MGA 94 Z51)	Northing (MGA 94 Z51)	RL (m)	Dip (°)	Azimuth (mag <sup>0</sup> )	Total Depth (m)	Depth From	Depth To (m)	Intercept Width (m)	Co (%)	Ni (%)	Mn (%)
PN49	435153	6650383	403.6	-90	0	88	(m) 10	12	2	0.12	0.96	0.43
PN50	435065	6650385	407	-90	0	82	8	32	24	0.11	0.92	0.53
					Includ	ing	8	10	2	0.27	0.62	2.00
PN51	434997	6650383	405	-90	0	100	28	30	2	0.05	0.07	0.18
PN165	435148	6650365	403.8	-60	270	100	12	16	4	0.16	0.76	0.59
PN166	435189	6650365	403.8	-60	270	100	12	16	4	0.22	>1.0	0.88
PN167	435109	6650366	406.5	-60	270	100	14	22	8	0.21	0.78	0.52
					Includ	ing	14	16	2	0.58	>1.0	1.35
PN168	435028	6650367	407	-60	090	82	10	40	30	0.16	>1.0	0.83

Table 1: Selected drilling intercepts from the Pinnacles Cobalt Project<sup>4</sup>. Intervals show selected zones with >0.1% average grade from drillholes illustrated on Figure 2. All intersections are downhole widths. In the case of vertical drillholes, widths are interpreted as being approximately true width.

#### FOR MORE INFORMATION...

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**Executive Director** 

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Email: jbrown@montezuma.com.au Company information, ASX announcements, investor presentations, corporate videos and other investor material on the Company's projects can be viewed at:

http://www.montezuma.com.au.

The information in this report that relates to Exploration Results, Exploration Targets, Mineral Resources and Mineral Reserves is based on information compiled by Mr David O'Neill who is a member of the Australasian Institute of Mining and Metallurgy. At the time that the Exploration Results, Exploration Targets, Mineral Resources and Mineral Reserves were compiled, Mr O'Neill was an employee of Montezuma Mining Company Ltd. Mr O'Neill is a geologist and 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 O'Neill consents to the inclusion of this information in the form and context in which it appears in this report

Please note with regard to exploration targets, the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the determination of a Mineral Resource.

<sup>&</sup>lt;sup>4</sup> Paterson, P 1998, 'Combined Annual Mineral - Exploration Report December 12<sup>th</sup> – April 30<sup>th</sup> 1998 E28/589, 590, 680'. WAMEX Item A 55268

<sup>&</sup>lt;sup>5</sup> Kanowna Lights NL ASX Release 28 October 1998 'First Quarter Activities Report'.

## JORC Table 1

# **JORC Code, 2012 Edition – Table 1 report – Pinnacles Project**

## **Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul> <li>The data presented herein is sourced from historic reports and as such the sampling technique, and its nature and quality, cannot be determined with certainty.</li> <li>It can be assumed that industry standard methods have been utilised by the previous holders.</li> </ul>
Drilling techniques	<ul> <li>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).</li> </ul>	<ul> <li>Reverse Circulation (RC) Percussion and Air-Core (AC) Drilling was used for the reported program, using a KT42 Schramm Rig and RC42-2T face hammer.</li> <li>3 holes were drilled with a Diamond Drilling Rig (type unknown).</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure</li> </ul>	<ul> <li>Due to the historic nature of the data, recovery cannot be determined with confidence.</li> <li>The relationship between sample recovery and grade has not</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul> <li>representative nature of the samples.</li> <li>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.</li> </ul>	been determined.
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>All logs were hand written and uploaded into a digital database by previous holders.</li> <li>Not all geological data for the drilling is available. Where data is available, it has been compiled into a company database.</li> </ul>
Sub- sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>All samples reported are taken from a 1-4 metre drilling interval.</li> <li>The sample preparation and sample size information is not available due to the historic nature of the data.</li> <li>The methods of core preparation and sampling are not available due to the historic nature of the data.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether</li> </ul>	QAQC protocols are not provided in the historic data.

Criteria	JORC Code explanation	Commentary
	acceptable levels of accuracy (ie lack of bias) and precision have been established.	
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>The historic data cannot be verified and it has been collected from publicly available sources.</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>The survey method for collar co-ordinates is not recorded in the historic data. Visual checks have been applied where possible using aerial photography and/or Google Earth imagery to locate holes correctly if errors are discovered.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Data has been collected at various spacings (&lt;25m in places).</li> <li>Compositing has been applied to selected samples.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul> <li>The historic data is to be used as a guide to future exploration and at face value has been collected in a manner that is sensible with respect to general geological trends and deposit types.</li> <li>More detailed interpretation will be required to assess this further.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Due to the historic nature of the data presented, this cannot be determined.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>No external audits or reviews have been conducted apart from internal company review during the compilation of the historical data.</li> </ul>

## **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	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The Pinnacles Project consists of a single granted exploration license - E28/2577.</li> <li>The tenure is 100% owned by Montezuma Mining Corporation Ltd.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The historical exploration data has been collected by various parties and has been reported to high standards.</li> <li>The methods of exploration and techniques used are considered appropriate for the deposit types sought (Ni, Co, Au)</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The majority of the historical exploration has been focused on the discovery of Archean greenstone derived lateritic nickel and cobalt mineralisation.</li> <li>A minor amount of exploration has been completed for Archean lode style gold mineralisation.</li> </ul>
Drill hole Information	<ul> <li>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:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> </ul>	<ul> <li>Refer to document and associated table.</li> <li>The drilling presented in schematic sections is selective and represents a small portion of the overall drilling database.</li> </ul>

Criteria	JORC Code explanation	Commentary
Data aggregation methods	<ul> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	Results have been presented as collected from historic data sources.
Relationshi p between mineralisati on widths and intercept lengths	<ul> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul> <li>Only downhole lengths are reported.</li> <li>However, due to the nature of the mineralisation and deposit type, these widths are believed to be close to true widths.</li> <li>Further work is required to determine exact orientations.</li> </ul>
Diagrams	<ul> <li>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.</li> </ul>	Refer to document.
Balanced reporting	<ul> <li>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.</li> </ul>	The historic data presented is selective to illustrate trends only.
Other substantive exploration data	<ul> <li>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.</li> </ul>	Refer to document.
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions,</li> </ul>	<ul> <li>Future work will include further compilation and detailed interrogation of the historic data.</li> <li>Based on the outcomes of the above work, follow-up and or</li> </ul>

Criteria	JORC Code explanation	Commentary
	including the main geological interpretations and future drilling	extension work will be carried out on the project.
	areas, provided this information is not commercially sensitive.	