25th November 2019

Robust Gold Drill Target Defined at Red Mountain Project - QLD

- **New infill surface sampling extends and refines robust, high-order gold drill target at the Red Mountain project in QLD;**
- **New high-grade soil results up to 1300ppb Au (1.3 g/t Au) supporting previous results of 2210 ppb Au (2.2g/t Au) 1600ppb Au, 550ppb Au and 320ppb Au define a 450m x 50m >100ppb Au gold soil anomaly, with the southern end of the anomaly grading >500ppb (0.5 g/t Au) over 150m;**
- **The high-grade surface gold results form a core to a much larger zone of gold anomalism (>10ppb Au) extending over an area 1200m x 150m on the western margin of the Red Mountain felsic volcanic breccia system;**
- **Gold and silver in rock sample results up to 2.01 g/t Au and 114 g/t Ag;**
- **Trace elements distinctly zoned with a Cu-Mo-S-Ba-Mn core lying predominantly over the felsic rocks surrounded by an annular shaped gold-silver-Pb-Zn-As-Te-Bi-Sb-Se-Ni-Co +/- Hg-Mn-U anomaly that is generally close to the felsic rock – granite contact;**
- **IP chargeability anomaly (likely to be associated with disseminated sulphides and/or clay alteration) occurs below and adjacent to zones of high-grade gold in surface results;**
- **Based on mapping, sampling and geophysical surveying it appears that gold mineralisation is focused on the margins of a previously unrecognized felsic volcanic breccia system; and**
- **Drill planning is in progress to test the gold target.**

Zenith Minerals Limited ("Zenith" or "the Company") is pleased to announce that it has received results from infill surface sampling conducted at the Company's 100% owned Red Mountain gold-silver project located in central Queensland (Figures 1-2). The Red Mountain project is located within ~100km of operating gold mines at Cracow and Mount Rawdon (Figure 3).

A zone of gold and silver mineralisation has been discovered by Zenith at Red Mountain in what is now known to be a previously unrecognised felsic volcanic breccia complex. The maiden exploration program returned rock chip sample results up to 0.69 g/t gold and 114g/t silver. Further field work by Zenith to follow-up these results returned highly encouraging gold and silver rock chip sample results up to 2.01 g/t gold and 52.5 g/t silver about 800 metres north of the best results from initial sampling. In addition, systematic geochemical sampling outlined a large 2km by 1.5km zoned soil anomaly with peak soil gold result of 2.2 g/t Au, refer to ZNC ASX release 24 Sep 2019 and (Figure 1).

A geophysical survey completed in October 2019 by consulting group Planetary Geophysics at Red Mountain defined multiple medium strength chargeability (10mv/v) anomalies, likely to be caused by the presence of sub-surface disseminated sulphides or clay alteration zones, coincident with the margins of the felsic volcanic breccia complex (Figure 2) as announced to the ASX on 25 Oct 2019.

Results have now been received from an infill geochemical program completed to define the limits of the high-grade western gold zone outlining a robust drill target. New high-grade soil results up to 1300ppb Au (1.3 g/t Au) supporting previous results of 2210 ppb Au (2.2g/t Au)

Corporate Details

ASX: ZNC

Issued Shares (ZNC)	240.5M
Unlisted options	4.15M
Mkt. Cap. ($0.06)	A$13M
Cash (30th Jun 19)	A$1.1 M
Debt	Nil

Directors

Michael Clifford:
Managing Director

Mike Joyce:
Non-Exec Chairman

Stan Macdonald:
Non-Exec Director

Julian Goldsworthy:
Non-Exec Director

Graham Riley:
Non-Exec Director

Major Shareholders

(% reflect position prior to recent rights issue)

HSBC Custody. Nom.	13.4%
J P Morgan	6.8%
Nada Granich	5.4%
Miquilini	4.3%
Abingdon	4.1%

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1600ppb Au, 550ppb Au and 320ppb Au define a 450m x 50m >100ppb Au gold soil anomaly, with the southern end of the anomaly grading >500ppb (0.5 g/t Au) over 150m of strike.

The high-grade surface gold results form a core to a much larger zone of gold anomalism (>10ppb Au) extending over an area 1200m x 150m on the western margin of the Red Mountain felsic volcanic breccia system.

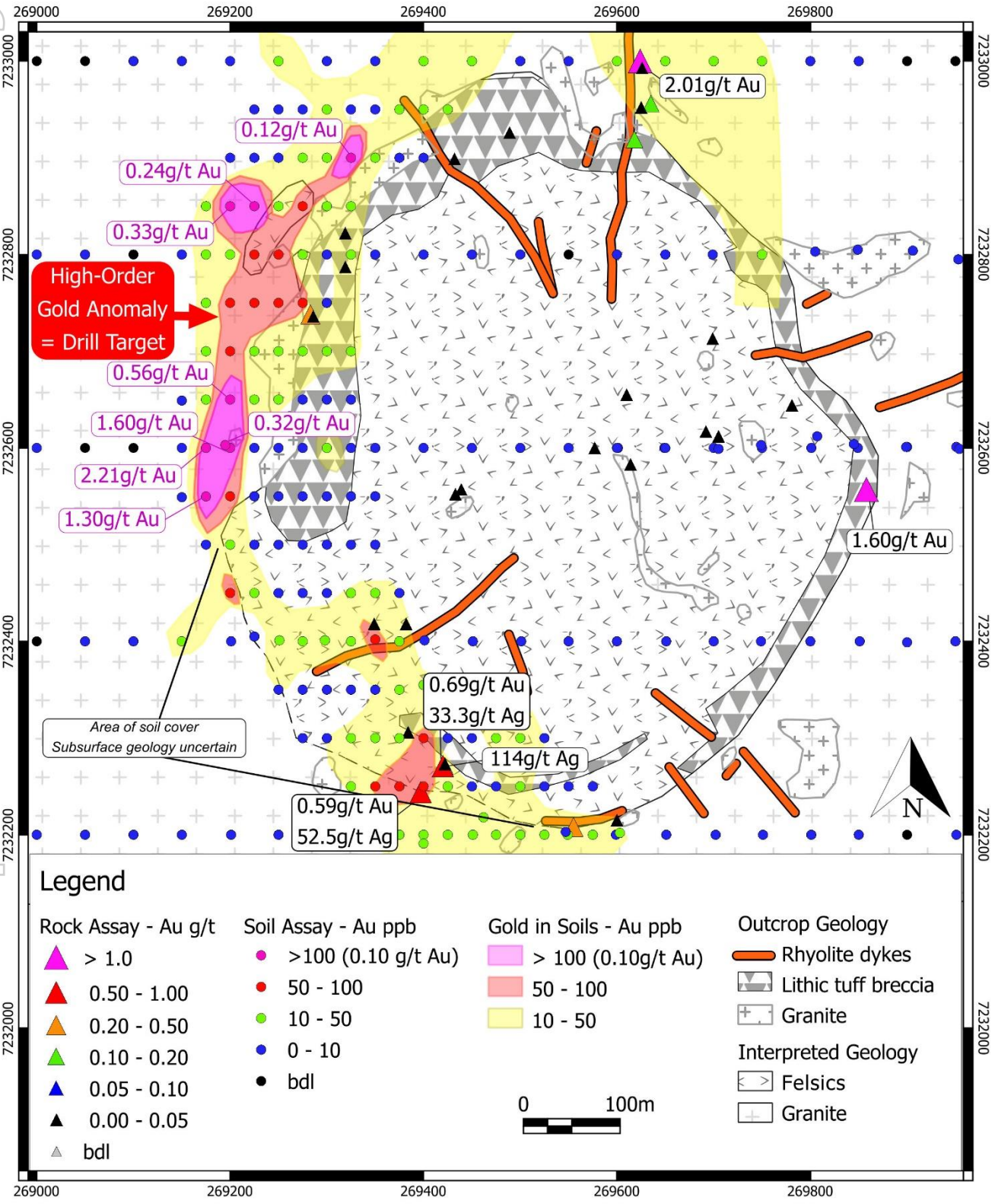

Figure 1- Plan of Red Mountain Soil and Rock Results with Geological Interpretation (High-Order Gold Anomaly = Drill Target)

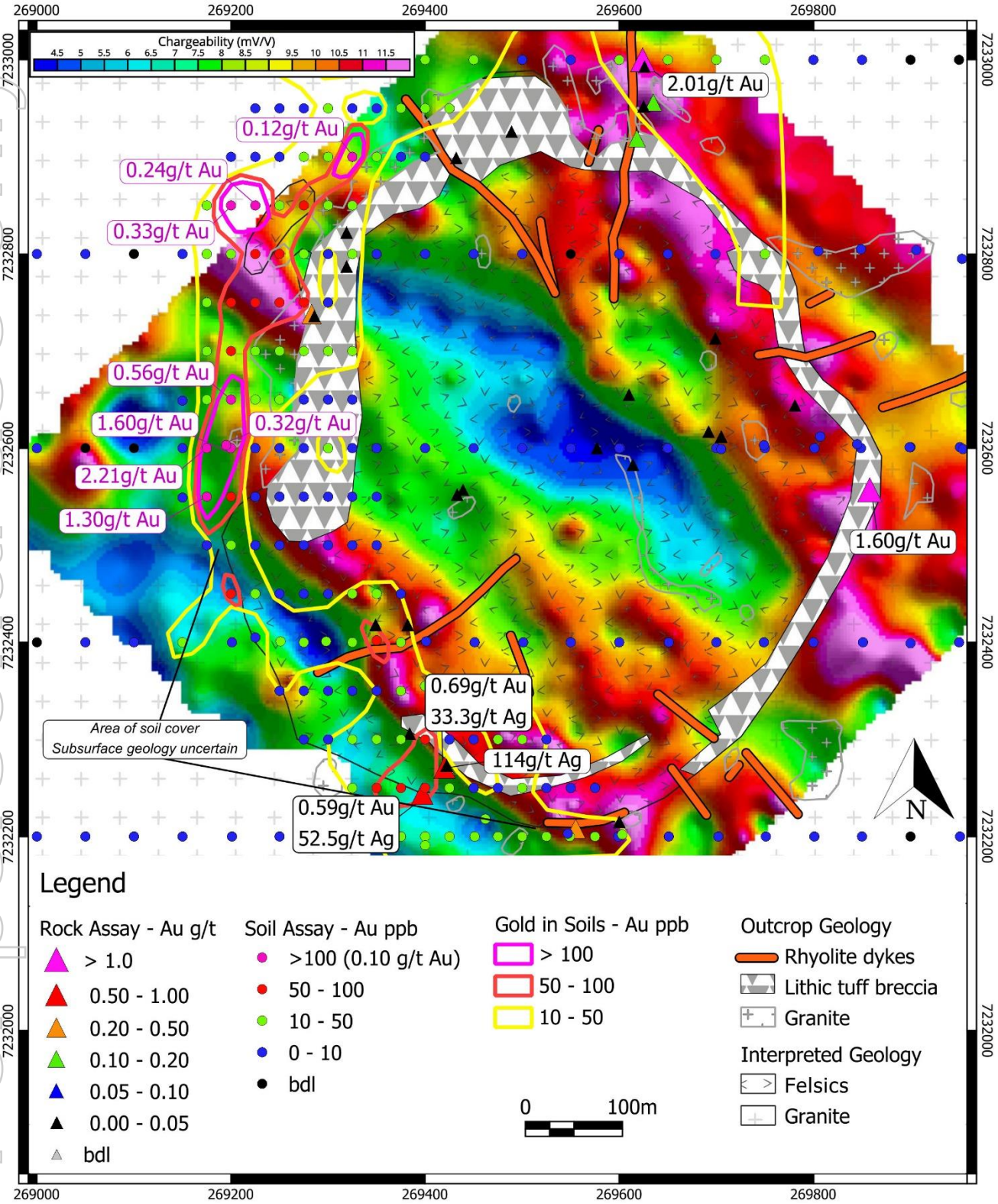

Figure 2: Plan of Red Mountain Soil and Rock Results with Geological Interpretation over IP Chargeability Image

Background on Red Mountain

The Red Mountain project is located between two Evolution Mining gold mines Cracow and Mount Rawdon (Figure 2). Cracow is a low sulphidation epithermal gold deposit whilst Mount Rawdon is described in the literature as an epizonal intrusion-related gold deposit (Howard, 2015).

The Red Mountain host rocks, alteration and geochemical association are interpreted as having similarities to that at the nearby operating Mt Rawdon gold mine based on comparison to research published by Evolution Mining geologist Howard (2015). The similarity is encouraging and provides Zenith with a geological model to assist in targeting gold and silver mineralisation at Red Mountain.

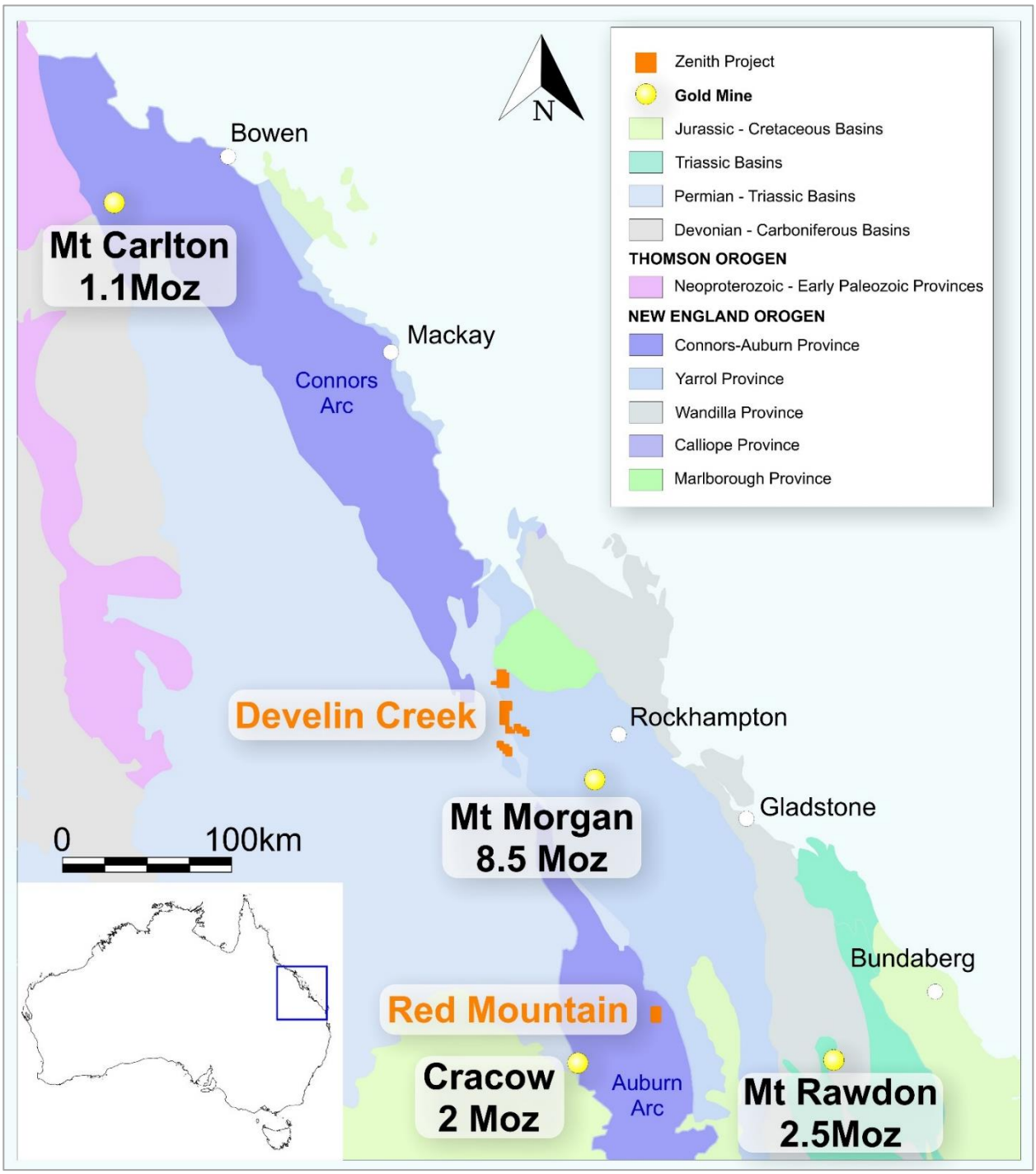

Figure 3: Red Mountain Project – Location Map

References:

Howard., N. 2015: Geochemistry and Hydrothermal Alteration at the Mount Rawdon Gold Deposit. In Mineral Exploration of the Tasmanides www.smedg.org.au

Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Michael Clifford, who is a Member of the Australian Institute of Geoscientists and an employee of Zenith Minerals Limited. Mr Clifford 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 Clifford consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

25th November 2019

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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 (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*	200g of soil samples were sieved to -2mm on 100m x 50m spaced grid lines.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Systematic soil sampling no calibration of tools required.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 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 (e.g. submarine nodules) may warrant disclosure of detailed information.	200g of soil samples were sieved to -2mm on 200m x 50m spaced grid lines.
Drilling techniques	*Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	No Drilling
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	No Drilling
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	No Drilling
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No Drilling

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.*	Rock samples were geologically described
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Qualitative logging
	The total length and percentage of the relevant intersections logged.	No Drilling
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	No Drilling
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	No Drilling
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Samples were analysed at ALS Laboratories in Townsville, the samples were crushed, pulverised and assayed by ICP for trace elements and gold using fire assay
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	~2kg of rock was crushed and pulverised and a sub-sample was taken in the laboratory and sent for analysis. 200g soil samples and pulverised and a sub-sample was taken in the laboratory and sent for analysis.
Sub-sampling techniques and sample preparation - continued	*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.*	Sampling was selective and based on geological observations.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Each sample was 1kg to 2kg in weight which is appropriate to test for the grain size of material.
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.*	The samples were crushed and assayed by ICP for trace elements and gold using fire assay
	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 used this sampling program
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Certified reference material was included in the soil sample batch and internal laboratory samples were included with rock samples
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Two company personnel have observed the assayed samples

	The use of twinned holes.	No drilling
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Field data were all recorded in field note books and sample record books and then entered into a database
	Discuss any adjustment to assay data.	No adjustments were made.
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.*	Sample location is based on GPS coordinates +/-5m accuracy
	Specification of the grid system used.	The grid system used to compile data was MGA94 Zone 56
Location of data points - continued	*Quality and adequacy of topographic control.*	Topography control is +/- 10m.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	All samples are shown on Figure 1.
	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 alone will not be used to estimate mineral resource or ore reserve
	Whether sample compositing has been applied.	No compositing applied
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.*	Rock samples were taken to by a geologist of specific rock types in attempt to characterise mineralisation style, all soil samples on systematic grid lines.
	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.	No drilling
Sample security	*The measures taken to ensure sample security.*	Samples were kept in numbered bags until delivered to the laboratory
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	Sampling techniques are consistent with industry standards

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 Red Mountain Project is located within the 100% Zenith owned exploration permit for minerals EPM 26384. The project is located within private grazing properties.
	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.	All tenements are 100% held by Zenith and are in good standing with no known impediment to future granting of a mining lease.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	South Pine Mines Pty Ltd undertook regional scale reconnaissance rock chip sampling and a systematic stream sediment sampling program focused around the Rossmore silver occurrence from 1981 to 1982. Several companies held the ground in the following decades focusing on the porphyry copper / epithermal potential of the area with Archer Resources Limited the only company to have reported on ground exploration activity on the area of interest being reported herewith by Zenith. Anomalous silver and gold in soils was reported by Archer Resources Limited which has subsequently been confirmed by Zenith.
Geology	*Deposit type, geological setting and style of mineralisation.*	Based on the initial site visit and preliminary evidence the geological setting and geochemical association at Red Mountain is indicative of a gold-silver "carbonate-base metal gold epithermal" system or epizonal intrusion related gold deposit similar to the Mt Rawdon gold mine.
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:*	No drilling
	o easting and northing of the drill hole collar	
	o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	
	o dip and azimuth of the hole	
	o down hole length and interception depth	
	o 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.	
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*	No high-grade cutting

	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.	No aggregation used
Data aggregation methods - continued	*The assumptions used for any reporting of metal equivalent values should be clearly stated.*	No metal equivalents used.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	No drilling
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No drilling
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	No drilling
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 descriptions and diagrams in body of text
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.*	All results reported on Figure 1 &2.
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.*	No other meaningful or material exploration data to be reported at this stage
Further work	*The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*	Drill planning in progress.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Refer to figures in body of report.