



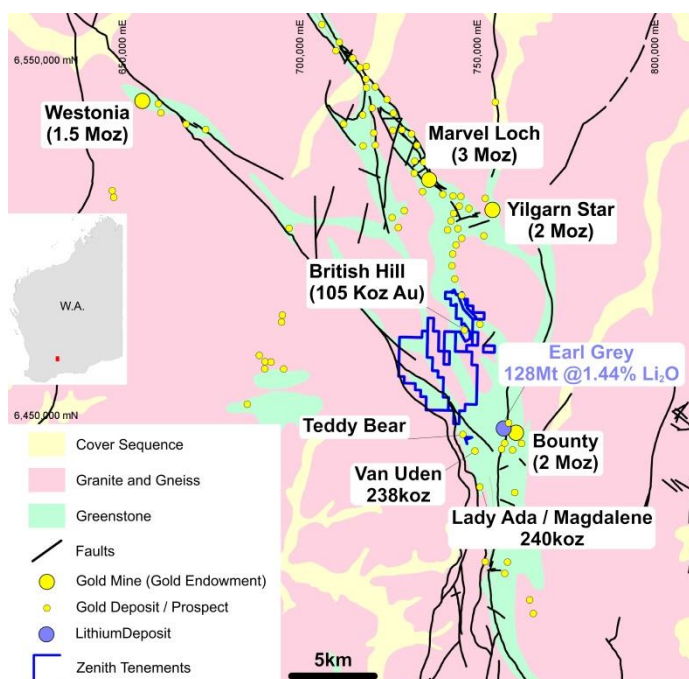
14<sup>th</sup> September 2017

## Split Rocks – Sampling Confirms Large Scale Gold Targets

- ◆ Zenith sampling confirms and extends two gold auger soil anomalies on recently granted 100% owned tenure situated in a regionally gold mineralised shear zone:
  - Mawson Target- auger soil anomaly is 1.4km long, >10ppb Au with individual soil results up to 1g/t Au, coincident with major jog in the regional shear zone;
  - Casey Target - auger anomaly now 3km long x 500m wide, > 10ppb Au with soil results up to 0.12g/t Au, also associated with major jog in regional shear zone;
- ◆ Four new gold soil anomalies were also generated in areas where no or limited previous exploration has been completed, these anomalies remain open-ended and require further sampling to define the limits of the gold rich zones;
- ◆ All of these targets are untested by drilling, and Zenith plans initial RAB drilling following completion of permitting;
- ◆ Lithium suite analyses will now be carried out on sample pulp residues commencing in mid-September.

Zenith Minerals Limited (“Zenith” or “the Company”) is pleased to advise that systematic surface geochemical sampling has confirmed and extended two high-order gold auger anomalies at the Split Rocks project in the Forrestania area of Western Australia. In addition four new gold soil anomalies were also generated that remain open-ended and require further sampling to define the limits of the gold rich zones.

Zenith’s Split Rocks exploration licences are located approximately 10km northwest of Kidman Resources Limited (ASX:KDR) Earl Grey lithium pegmatite deposit containing 128Mt @ 1.44% Li<sub>2</sub>O (KDR ASX Release 5<sup>th</sup> Dec 2016) and 15km northwest of the Bounty Gold mine (Figure 1).



**Figure 1: Split Rocks Project Tenure and Regional Gold Endowment**

### Corporate Details

#### ASX: ZNC

Issued Shares (ZNC)	189 M
Listed options (ZNC)	24 M
Unlisted options	3.5M
Mkt. Cap. (\$0.10)	A\$19 M
Cash (Jun 2017)	A\$2.0 M
Debt	Nil

### Directors

**Michael Clifford:**  
Managing Director

**Mike Joyce:**  
Non Exec Chairman

**Stan Macdonald:**  
Non Exec Director

**Julian Goldsworthy:**  
Non Exec Director

### Major Shareholders

HSBC Custody, Nom.	6.6%
City Corp Nom	6.2%
Nada Granich	6.1%
Abingdon	4.1%
Miquilini	4.1%

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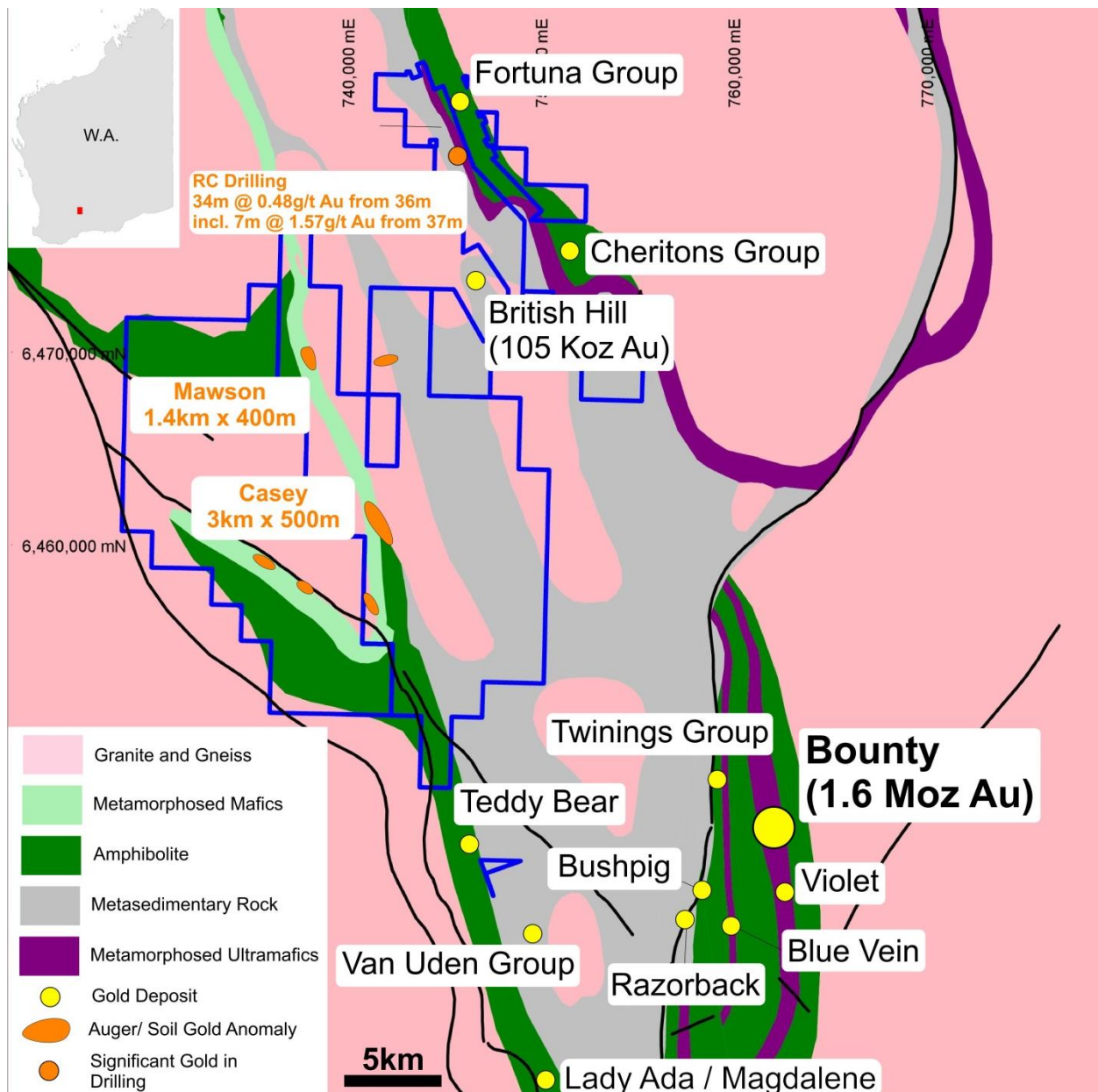
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The Southern Cross-Forrestania region is host to several gold deposits with gold endowment (resources plus past production) exceeding 1 million ounces, including: Bounty Gold Mine, Marvel Loch Gold Mine, Yilgarn Star Gold Mine and the Westonia-Edna May Gold Mine.

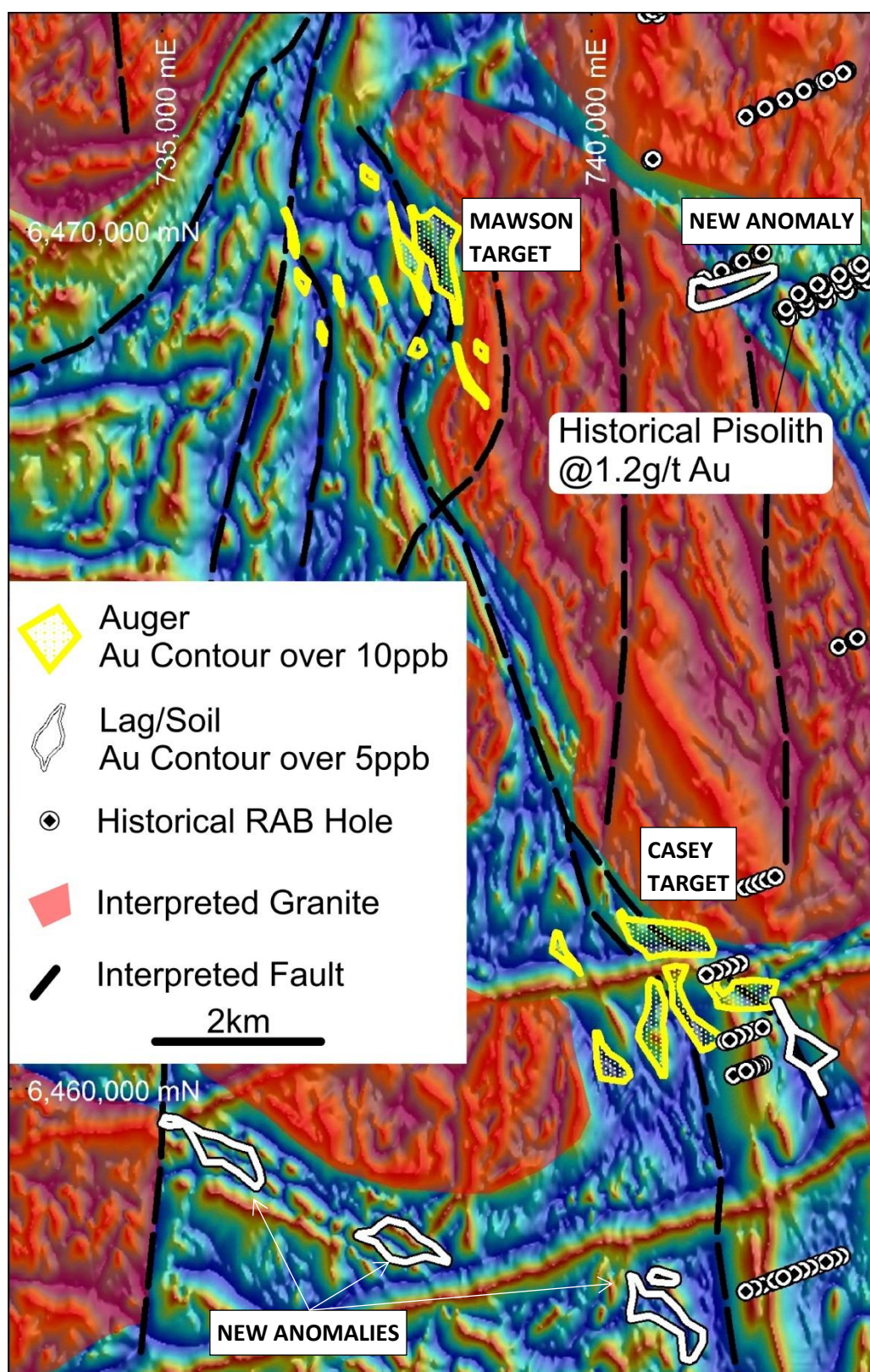
The Van Uden Shear Zone can be traced for over 15km within Zenith's current tenure. To the south of Zenith's tenure this shear trend hosts the Lady Ada and Lady Magdalene gold deposits (Mineral Resource of 5.9 Mt at 1.25 g/t for 240,000 ounces of gold) being explored by ASX:CLZ as well as the Teddy Bear and Van Uden Group gold deposits held by ASX:KDR (Figure 2).



**Figure 2: Split Rocks Project Tenure and Gold Anomalies**

The auger sampling program completed by Zenith has both confirmed and significantly extended two gold auger anomalies defined by previous sampling over a small portion of the Van Uden Shear Zone (Figure 3). In addition four new gold soil anomalies were also generated in areas where no or limited previous exploration has been completed, these anomalies remain open-ended and require further sampling to define the limits of the gold rich zones.

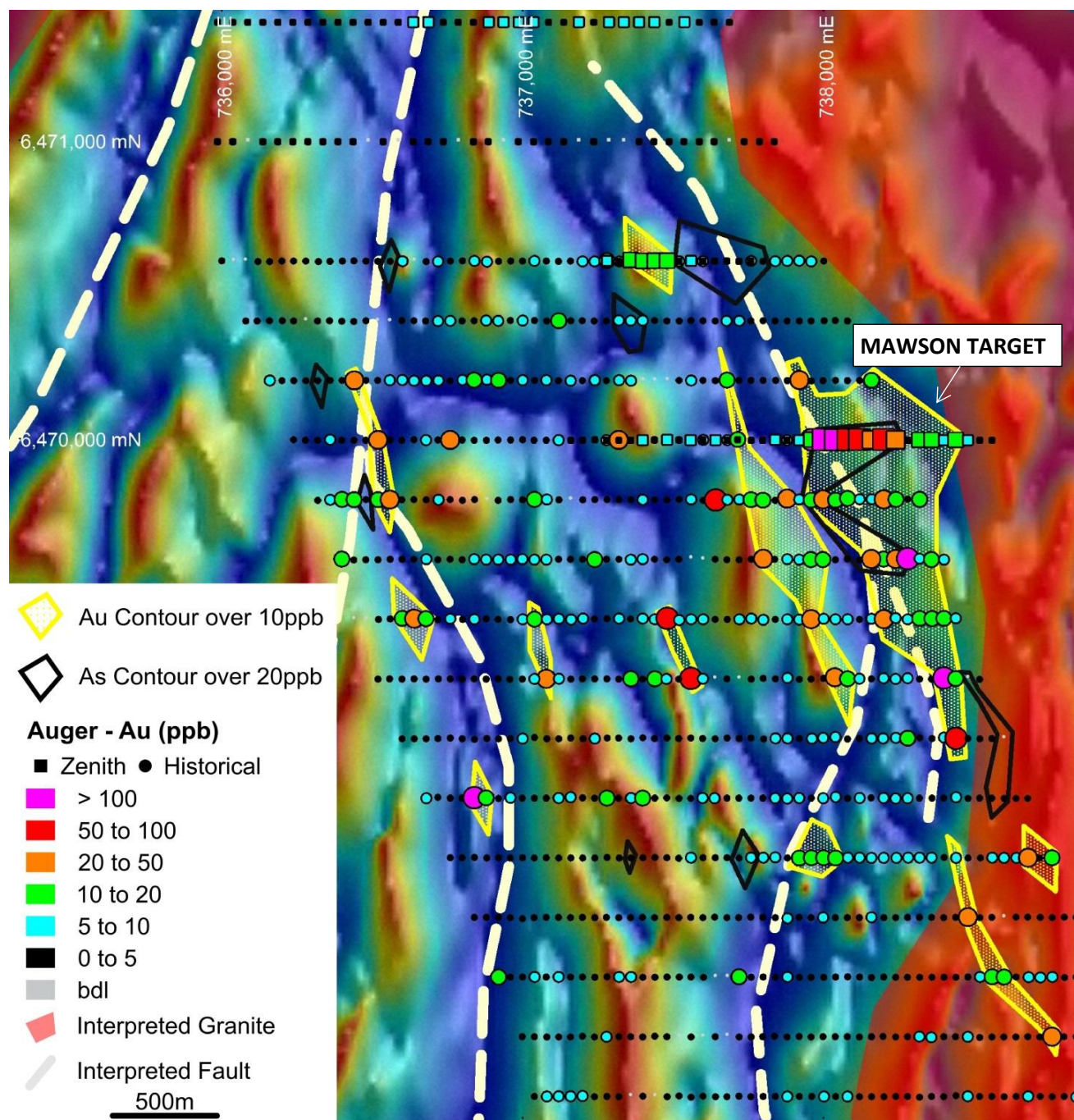




**Figure 3: Split Rocks Geochemical Targets**

The northern gold auger anomaly, now named **Mawson** has been extended to 1.4km long and has an average width of 400m (>10ppb Au) with individual soil results up to 1g/t Au, coincident with a major fault jog interpreted from aeromagnetic data (Figures 2, 3 & 4). The high-gold zone at Mawson has a coincident high-order arsenic anomaly (individual values to 210 ppm As) a trace element commonly associated with gold deposits hosted in amphibolite facies metamorphic rocks such as those found within the Split Rocks region.

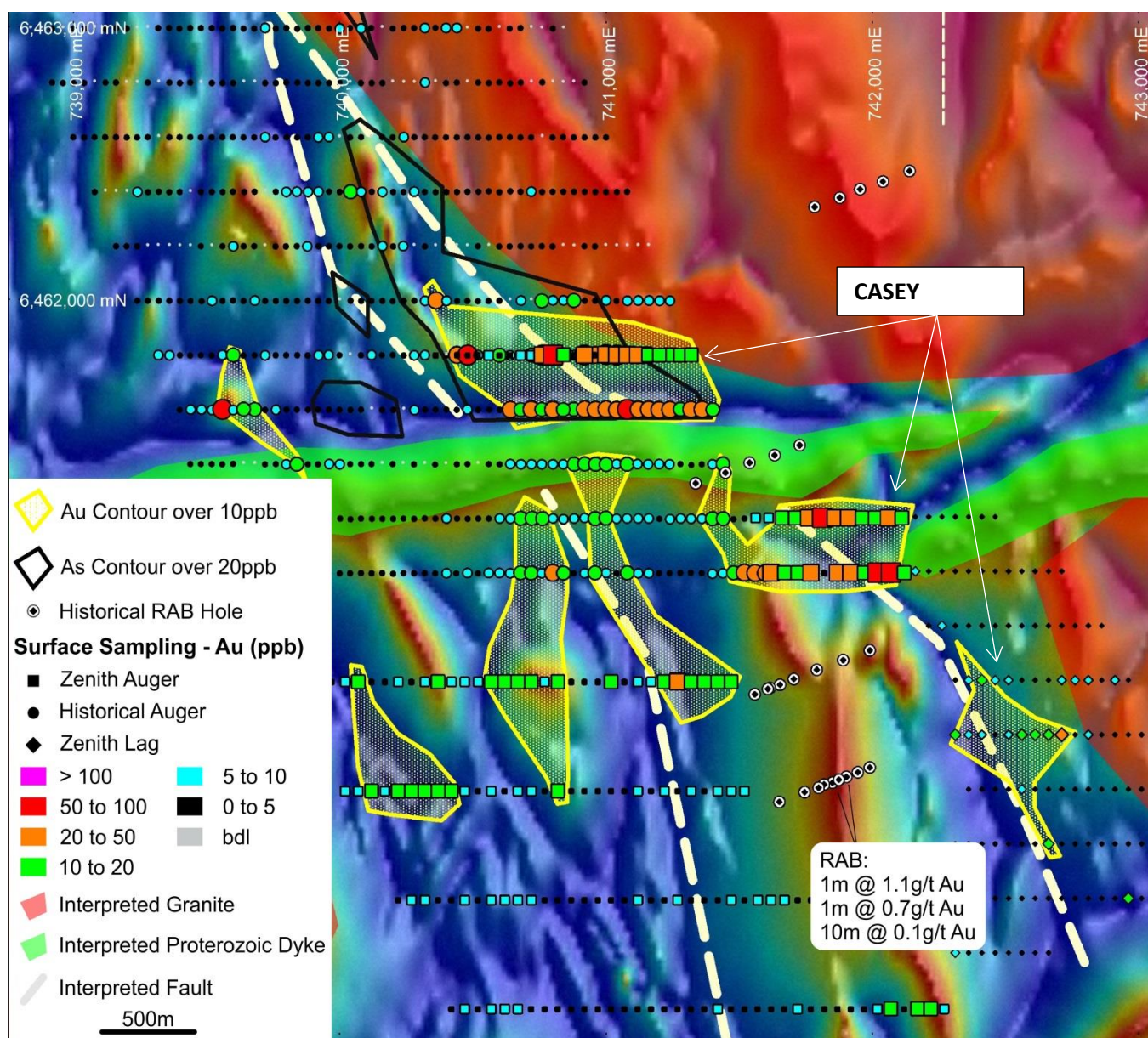




**Figure 4: Mawson Target Gold – Arsenic Anomaly**

The second gold auger anomaly located 8 km to the south, now named **Casey** has been extended to a length of 3km and on average is 500m wide > 10 ppb Au with soil results up to 0.12g/t Au (Figures 2, 3 & 5). As with the Mawson anomaly the gold anomalous zone at Casey also has a coincident high-order arsenic anomaly (individual values to 266 ppm As). Note Zenith auger samples are yet to be tested for arsenic. The anomaly is located along a flexure in the major shear zone adjacent to the south western end of a large granite body.





**Figure 5: Casey Target Gold – Arsenic Anomaly**

Mawson and Casey are significant gold-arsenic auger anomalies located in favourable structural settings that are along strike of known gold deposits. Both anomalies are yet to be drill tested, and Zenith intends to conduct first pass RAB drilling following permitting

## Details of this Surface Sampling Program

Systematic geochemical sampling programs for lithium and gold as outlined in ASX Release 19<sup>th</sup> June 2017 were completed on two recently granted exploration licences that form part of Zenith's 100% owned Split Rocks project. A total of 1715 surface geochemical samples were collected and dispatched to SGS laboratories for analyses (ASX Release 25<sup>th</sup> August 2017).

The field programs focused on the central and western portions of the greenstone belt testing areas where no previous exploration has been conducted as well as infilling and extending gold – arsenic surface geochemical anomalies identified in a comprehensive review of historic exploration data.



Results for laboratory gold analysis are reported in this ASX Release, whilst lithium indicator elements and multi-element analysis will be completed in mid-September when the pulps are returned to the Company.

## **Background on the Split Rocks Lithium-Gold Project Western Australia**

### **Gold Potential**

There are two main gold trends in the Forrestania Greenstone Belt an eastern gold trend that includes the Bounty gold mine and associated smaller scale gold deposits extending north to Southern Cross where the large gold mines at Marvel Loch have been exploited. A second gold trend lies on the western side of the greenstone belt and includes deposits that have been mined at Van Uden and Teddy Bear as well as those under assessment by ASX:CLZ at Lady Ada and Lady Magdalene (240k oz gold). Zenith's new Mawson and Casey anomalies lie along this western trend within an area of dense scrub vegetation that has historically limited access and resulted in historically lesser exploration activity.

On the eastern gold trend historic shallow RC drilling completed in 2005 north east of the British Hill gold deposit, which is located between Zenith's new licence applications, intersected significant gold mineralisation with results including: 34m @ 0.48g/t gold (Au), including 7m @ 1.57 g/t Au from 37m depth, open to the south west (as previously reported in ZNC - ASX Release 16<sup>th</sup> August 2016). Nine of the thirteen drill holes returned 1m intercepts greater than 0.5 g/t Au ranging up to 1m @ 8.6 g/t Au. Mineralisation is hosted within saprolite clays and weathered ultramafic rocks with associated quartz veining and minor pyrite. This gold mineralised zone remains open to the south and was not followed up by previous explorers.

### **Lithium Potential**

The 100% owned Split Rocks Project covers a large portion (total area >500sqkm) of the Forrestania Greenstone Belt of Western Australia. This emerging lithium district is host to the new Earl Grey lithium deposit containing 128Mt @ 1.44% Li<sub>2</sub>O (KDR ASX Release 5<sup>th</sup> Dec 2016).

Zenith's northern Split Rocks exploration licences are located 10km northwest of the new Earl Grey lithium pegmatite discovery whilst exploration licence applications in the southern portion of the Forrestania Greenstone belt are located 2km west and 5km northwest, respectively, of the South Iron Cap Lithium Prospect where resampling by Western Areas (ASX:WSA) of historic nickel drilling has returned results including 50m @ 0.95% Li<sub>2</sub>O.

The Company notes that the majority of previous exploration activity reviewed to date covering the new exploration licence applications is surface based focused solely on nickel exploration and only limited fresh rock drilling programs, with no evidence of any lithium analyses during past exploration programs. However, several historic exploration drill holes documented in open file reports did intersect pegmatites in areas within Zenith's applications and along strike adding significantly to their lithium prospectivity. Sampling of residual surface spoil samples from selected historic drill holes has to date only returned weakly anomalous lithium results, however additional sampling is warranted given that there are abundant pegmatite dykes, many of which are now being shown to be lithium (spodumene) rich within the Forrestania Greenstone Belt.

Lithium indicator elements and multi-element analysis will be completed on laboratory pulps from samples collected in the systematic surface sampling program reported in this ASX Release once those laboratory pulps are returned to the Company, this is anticipated to occur in mid-September.

### **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.*

**14<sup>th</sup> September 2017**

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***Zenith is advancing its project portfolio of high-quality, gold, lithium and base metal projects:***

**Kavaklitepe Gold Project, Turkey (ZNC 30%, Teck 70%)**

- Recent (2013) grass roots gold discovery in Tethyan Belt
- Continuous rock chip sampling to: 54m @ 3.33g/t gold, including 21.5m @ 7.2 g/t gold
- Initial 2016 drill results include: 9 m @ 5.2 g/t Au from surface, 7.8 m @ 7.3 g/t Au from 3.3 m and 16.4m @ 4.7 g/t Au from 82.1m depth. Drilling to recommence in mid September 2017.

**American Lithium Projects (Bradda Head earning initial 55%)**

**Zacatecas Lithium Brine Project, Mexico**

- New tenure (26,000 acres) over extensive system of salt lakes within an emerging lithium brine district
- Lithium brines to 2.1% lithium reported in sampling conducted by the Mexican Government from solar evaporation ponds for salt production (10km west of Zenith's new tenure).
- Near surface drilling completed - results awaited, electrical geophysical surveys planned

**San Domingo Lithium, Arizona USA**

- 9km x 1.5km lithium pegmatite field, initial surface sampling returned: 5m @ 1.97%Li<sub>2</sub>O including 2.4m @ 2.49% Li<sub>2</sub>O - Surface sampling and mapping prior to drill testing

**Spencer & Wilson Salt Flat Lithium Brine Projects, Nevada USA**

- Two lithium brine targets in producing lithium region - Geophysical surveys & infill sampling prior to drilling

**Burro Creek Lithium, Arizona USA (ZNC option to acquire)**

- Large scale lithium (Li) clay target under exclusive option - Metallurgical testwork to assess ease of extracting lithium – ongoing, permitting for trenching and drilling in progress

**Australian Projects**

**Develin Creek Copper-Zinc-Silver-Gold, QLD (ZNC 100%)**

- 3 known VHMS massive sulphide deposits - JORC resources, 50km of strike of host rocks.
- 2011 drilling: 13.2m @ 3.3% copper, 4.0% zinc, 30g/t silver & 0.4g/t gold - Drilling planned to extend known deposits, geophysics, geochemistry to detect new targets

**Split Rocks Lithium & Gold, WA (ZNC 100%)**

- 100% owned exploration licences covering 500km<sup>2</sup> in emerging Forrestania lithium district - Surface sampling completed (1715 samples) results reported this release.

**Tate River Gold QLD (ZNC earning up to 70%)**

- New gold zone discovery with rock chip sampling results up to 6.74 g/t gold. Trenching completed, results awaited.

**Red Mountain Gold-Silver Project QLD (ZNC 100%)**

- Initial reconnaissance rock chip sampling results up to 114 g/t silver and 0.69 g/t gold, associated with strong, open ended silver soil anomaly. Follow-up sampling planned

**Waratah Well Lithium -Tantalum Project WA (ZNC 100%)**

- Extensive outcropping pegmatites (3km x 2km) in north east of tenure, encouraging lithium rock chip sample results up to 0.34% Li<sub>2</sub>O as well as widespread, high-grade tantalum up to 1166ppm Ta<sub>2</sub>O<sub>5</sub>. Additional copper-zinc target being assessed.

**Earaheedy Manganese Project, WA (ZNC 100%) - Manganese province discovered by ZNC, potential DSO drill intersections (+40%Mn)**

**Mt Alexander Iron Ore, WA (ZNC 100%) - JORC magnetite Resource 566 Mt @ 30.0% Fe close to West Pilbara coast, 50% of target untested - Seeking development partner/ buyer for iron project**





## Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<i>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.</i>	Auger samples were collected at depths ranging from 0.3 – 1.5m depth.  Soil samples were collected at the 20cm below surface and sieved to -2mm.  Lag samples were collected at surface and sieved to +2mm.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	Samples are considered to be representative of the near surface material sampled.
	<i>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.</i>	200g surface samples were collected by a field technician as stated above. Samples were pulverised to -75 micron before analysis.
Drilling techniques	<i>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.).</i>	No Drilling
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	No Drilling
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	No Drilling
	<i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse</i>	No Drilling



	<i>material.</i>	
Logging	<i>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.</i>	All samples were described and descriptions recorded in a digital data base.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i>	Qualitative logging
	<i>The total length and percentage of the relevant intersections logged.</i>	No Drilling
Sub-sampling techniques and sample preparation	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	No Drilling
	<i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i>	No Drilling
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	Samples were analysed at SGS Laboratories in Perth, the samples were pulverised and assayed for gold using fire assay
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	~200g of sample was pulverised and a sub-sample was taken in the laboratory and analysed.
Sub-sampling techniques and sample preparation - continued	<i>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.</i>	Sampling was on systematic grids with lines 200 to 400m apart and samples at 100m along lines.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	Each sample was approximately 200g in weight which is appropriate to test for the grain size of material.
Quality of assay data and laboratory tests	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	The samples were pulverised and assayed for gold using fire assay. The technique is close to a total analysis.
	<i>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.</i>	No XRF or geophysical tools used
	<i>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.</i>	Laboratory standards and blanks were included after every 30 samples in the sample batch returning appropriate levels.





Verification of sampling and assaying	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Company personnel have observed the assayed samples
	<i>The use of twinned holes.</i>	No drilling
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Field data were all recorded in field note books and sample record books and then entered into a database
	<i>Discuss any adjustment to assay data.</i>	No adjustments were made.
Location of data points	<i>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.</i>	Sample location is based on GPS coordinates +/- 5m accuracy
	<i>Specification of the grid system used.</i>	The grid system used to compile data was MGA94 Zone 50
Location of data points - continued	<i>Quality and adequacy of topographic control.</i>	Topography control is +/- 10m.
Data spacing and distribution	<i>Data spacing for reporting of Exploration Results.</i>	Sampling was on systematic grids with lines 200 to 400m apart and samples at 50m along lines.
	<i>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.</i>	The data alone will not be used to estimate mineral resource or ore reserve
	<i>Whether sample compositing has been applied.</i>	No mathematical compositing applied
Orientation of data in relation to geological structure	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	Sampling was on systematic grids with lines 200 to 400m apart and samples at 50m along lines.
	<i>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.</i>	No drilling
Sample security	<i>The measures taken to ensure sample security.</i>	Samples were kept in numbered bags until delivered to the laboratory
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	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 Split Rocks Project is located within 100% Zenith owned exploration licences E77/2386 & E77/2375.  The project is located predominantly in vacant crown land.
	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.	Hannans Reward completed auger sampling within the area of the Mawson and Casey anomalies reported in this release. Zenith's work has both confirmed and extended the previous gold – arsenic anomalies. The targets have not been drill tested to date.
Geology	Deposit type, geological setting and style of mineralisation.	The Forresteria greenstone belt is host to Archaean lode gold mesothermal systems, the area of Zenith's projects has been metamorphosed to amphibolite facies
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.	
Data aggregation methods	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.	
	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





<i>Data aggregation methods - continued</i>	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	No metal equivalents used.
<i>Relationship between mineralisation widths and intercept lengths</i>	<i>These relationships are particularly important in the reporting of Exploration Results.</i>	No drilling
	<i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i>	No drilling
	<i>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').</i>	No drilling
<i>Diagrams</i>	<i>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.</i>	Refer to descriptions and diagrams in body of text
<i>Balanced reporting</i>	<i>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.</i>	Refer to descriptions and diagrams in body of text
<i>Other substantive exploration data</i>	<i>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.</i>	No other meaningful or material exploration data to be reported at this stage
<i>Further work</i>	<i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i>	Follow-up mapping and sampling to define the extents of the gold mineralisation is planned along with drill testing
	<i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i>	Refer to figures in body of report.