Zenith Minerals Limited
ABN 96 119 397 938

7th June 2016

Lithium Exploration Update

New Lithium Project - San Domingo

- **New 100% owned state mineral exploration leases and federal mineral claim applications submitted over the San Domingo pegmatite field in the mining friendly state of Arizona, USA;**
- **'Lithia King', one of the largest outcropping lithium rich pegmatites in the district, secured 100% by purchase agreement. Spodumene crystals up to 3 metres in length are recorded from the Lithia King mine;**
- **Abundant other known lithium bearing pegmatite dykes within Zenith's new lease applications, which cover almost the entire pegmatite field stretching over an area 9km by 1.5km;**
- **Initial continuous rock chip sampling by Zenith's consultants has returned very encouraging results up to 5m @ 1.97% Li_2O including 2.4m @ 2.49% Li_2O from spodumene rich pegmatites;**
- **Lithium as spodumene and amblygonite concentrates along with tantalum was produced from pegmatites within the district during the period 1947 – 1952;**
- **The only information on drill testing of the pegmatites that has been uncovered in due diligence to date are anecdotal reports of limited diamond drilling for lithium in 1952 of only 4 pegmatites and a 1980-82 drilling program for tantalum and niobium focussed outside Zenith's claims; and**
- **Additional surface mapping and sampling to precede planned drill testing.**

Mt Alexander & Smith Bore Projects

- **Sampling by Zenith has also confirmed high-grade lithium at the 100% owned Mt Alexander Project in WA, with rock chip assay results up to 2.94% Li_2O;**
- **Initial reconnaissance sampling at the 100% owned Smith Bore Project in WA has also confirmed the presence of lithium mineralisation with surface rock chip results up to 0.63% Li_2O; and**
- **The Company is assessing several new lithium opportunities internationally.**

Zenith Minerals Limited (Zenith or the Company) is pleased to advise that a wholly owned subsidiary has secured a 100% interest in a new lithium exploration project in Arizona, USA. The San Domingo project is in an adjoining state to Tesla's lithium ion battery production facility (Gigafactory) that is under construction in Nevada.

The project covers a **9km by 1.5km** lithium-bearing pegmatite dyke swarm that intrudes Proterozoic mafic gneiss host rocks that are in turn locally overlain by Tertiary age volcanic and sedimentary rocks.

Initial mapping and sampling by Zenith's consultants to date has identified 10 lithium

Corporate Details

ASX: ZNC

Issued Shares (ZNC)	172.9 m
Listed options (ZNCO)	22.1 m
Unlisted options	1.1 m
Mkt. Cap. ($0.12)	A$ 20.8m
Cash 31st Mar 16	A$1.9M
Debt	Nil

Directors

Michael Clifford:
Managing Director

Mike Joyce:
Non Exec Chairman

Stan Macdonald:
Non Exec Director

Julian Goldsworthy:
Non Exec Director

Major Shareholders

City Corp Nom	7.09%
HSBC Custody. Nom.	6.66%
Nada Granich	6.12%
GDR PL.	4.27%
Miquilini	3.49%

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bearing pegmatite dykes ranging in outcrop size up to 60m in width and up to 600m in length within the area subject to Zenith's tenements. Initial continuous rock chip sampling conducted within the new applications has returned very encouraging results up to **5m @ 1.97% Li_2O** including **2.4m @ 2.49% Li_2O**, and sampling of Lithia King workings returned up to **1.44% Li_2O** over a 3 metre composite. A further 3 lithium bearing pegmatite dykes are known to occur at least partly within small claims that are believed to be excised from the land recently applied for by Zenith.

Zenith rock chip sample locations and assay results are shown in Figure 1 and are further described in JORC tables appended to this release.

The pegmatite dykes show clear zonation, with lithium enrichment within the inner ''core'' zones. Historical records refer to spodumene crystals up to 11 feet long at the Lithia King pegmatite (held by Zenith).

Lithium (as spodumene and amblygonite concentrates) along with tantalum was produced from small scale mining of the pegmatites within the district during the period 1947 – 1952, historic production of lithium from two small scale mines within Zenith's claims produced amblygonite concentrates grading from 7.4 to 8.5% Li_2O (Arizona Bureau of Mines Bulletin 1952). However the area has been subject to sparse systematic exploration for lithium. No drilling for lithium appears to have been completed since the early 1950s when diamond drilling on 4 of the pegmatite bodies and associated minor surface and underground exploration is mentioned in historical documents. Very little detail on this work has been sighted by the Company, other than partial results from one drillhole and anecdotal information mentioning "..considerable thicknesses of spodumene-bearing pegmatite.." penetrated in several other holes reported by a 3rd party. Since hole locations, sampling details and assay methodology are not known the Company considers the results not to be reportable under the JORC Code. A third party reference to a 1980-82 exploration program for tantalum and niobium does not mention lithium analyses.

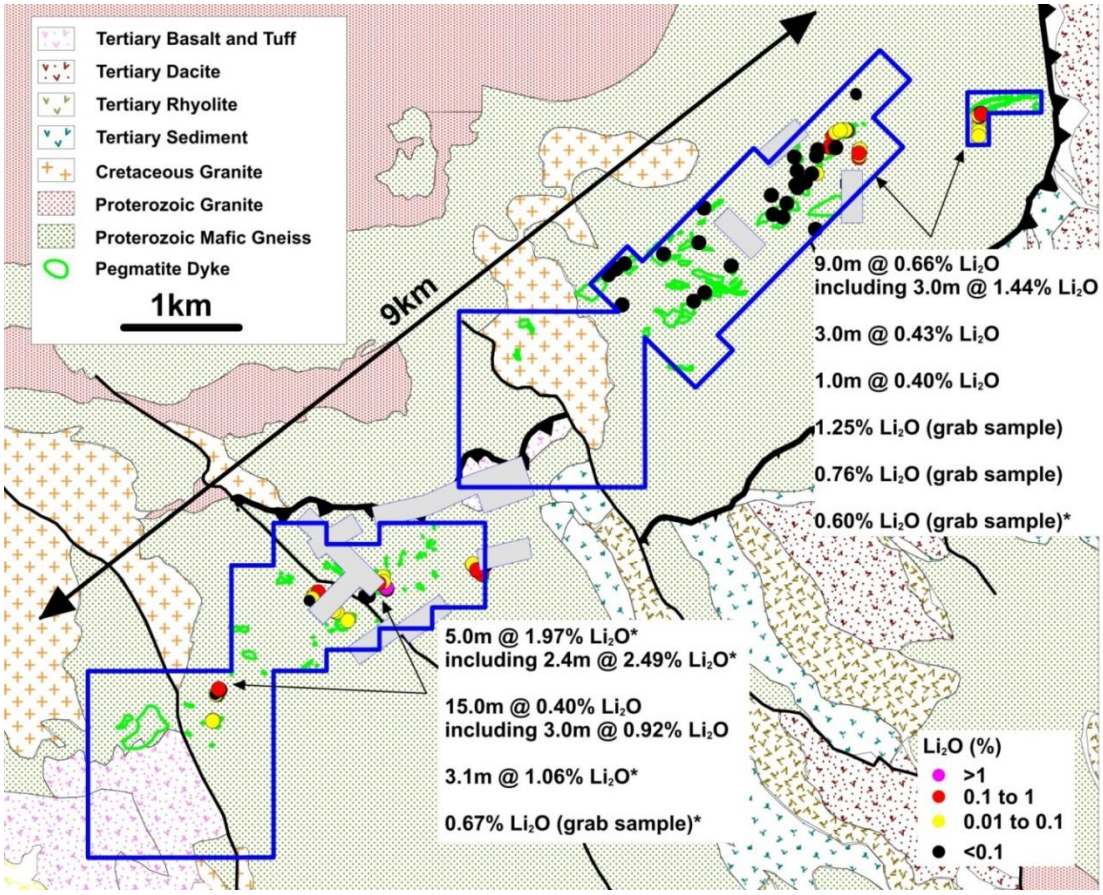
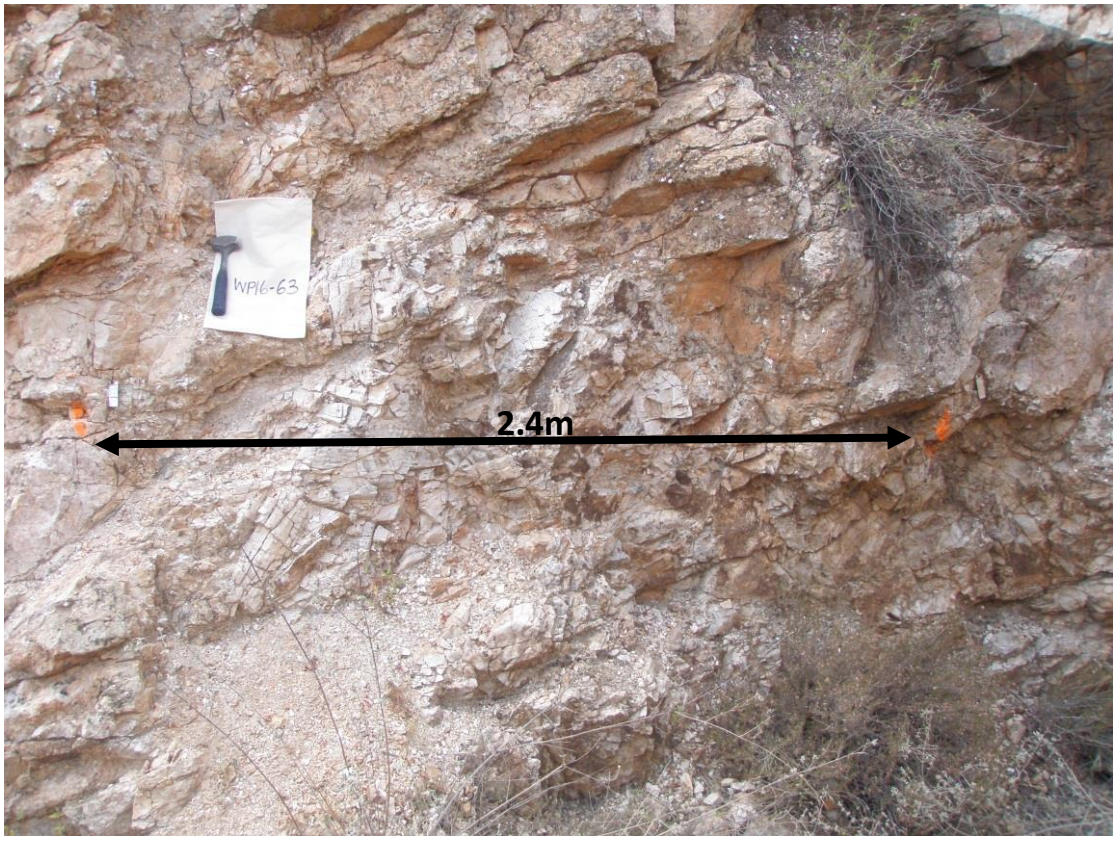


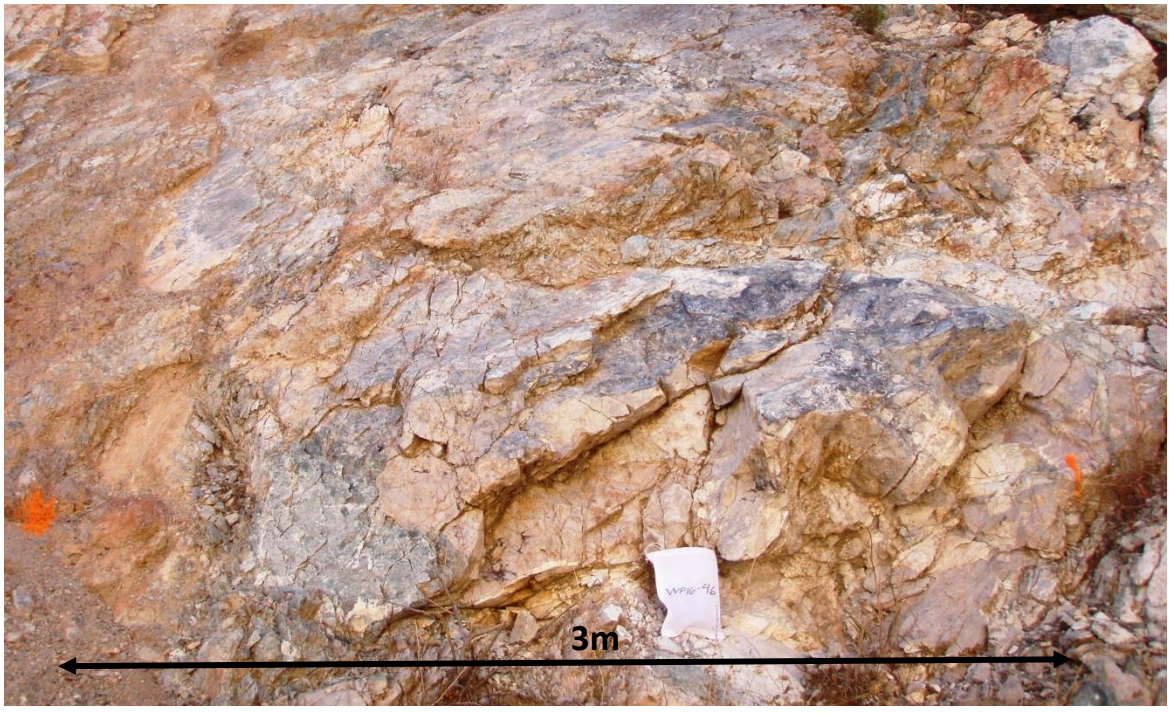
Figure 1: San Domingo Lithium Project- Due Diligence Surface Rock Sampling Results

(Blue box – outline of Zenith claims and lease applications, Grey boxes - approximate area of excised claims,

** indicates sample close to boundary of excised claim with poorly constrained location)*



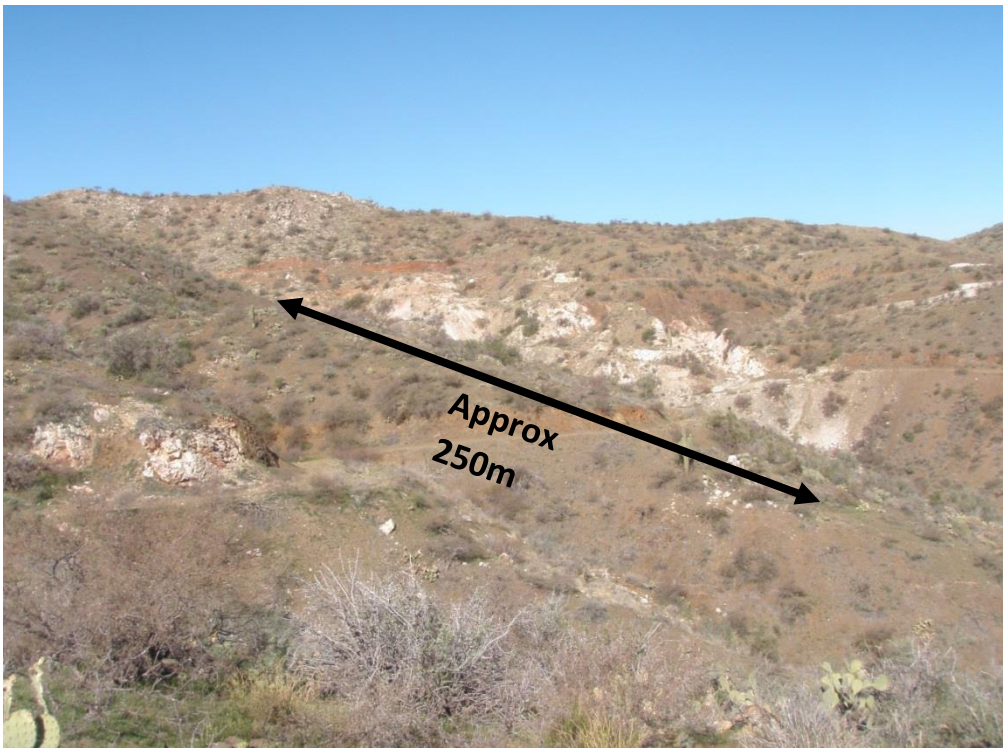
Spodumene Rich Outcrop Sample
(Horizontal continuous rock sample returned 2.4m @ 2.49% Li_2O).



Large Spodumene Crystals at the Lithia King Mine
(Horizontal continuous rock sample returned 3m @ 1.44%Li_2O)

Large altered Spodumene Crystals at the Lithia King Mine

Sampling of Typical San Domingo Pegmatite exposure (height of geologist approximately 1.75m), (Horizontal continuous rock sample of highly weathered pegmatite in historic working returned 3m @ 0.9% Li_2O).



Overview of the Lithia King Mine Pegmatite Looking Northwest

Planned Programs at San Domingo

Following grant of the state leases (anticipated in June) and federal claims, the Company will conduct additional mapping and sampling prior to planned drill testing. In addition, negotiations are in progress with holders of several of the excised claims.

Understanding the size, shape and zoning of the pegmatites, along with distribution, weathering and alteration of lithium bearing minerals will be a focus of Zenith's future exploration of the district. Mapping and sampling by Zenith and past academic research has noted that surface weathering and alteration of the spodumene crystals occurs in the district, locally reducing their lithium content, at least in the near surface.

The Company advises that there is some uncertainty over the locality of several of the excised claims and the Company is awaiting notification from the US Bureau of Land Management as to the exact position of those claims, which may require survey monuments to be reinstated. So that Zenith does not transgress onto 3rd party claims in the meantime, the Company will focus its immediate exploration activities targeting lithium pegmatites that are away from the excised claim boundaries.

Mt Alexander Project

Follow-up sampling at Mt Alexander confirms the presence of high-grade lithium mineralisation (previously announced to the ASX on 16th February 2016). New rock chip samples of the known lithium rich lepidolite pegmatite dyke returned an assay result of 2.94% Li_2O.

A further 58 samples taken from the Mt Alexander project area returned anomalous results including up to 530ppm tin and 0.75% beryllium but less than 700ppm Li_2O. Five samples returned tantalum results greater than 100ppm. When sample results for discriminant elements (Cs, Rb, K) are plotted several of the Mt Alexander samples plot in the highly fractionated fertile field for LCT (Lithium Caesium Tantalum) pegmatites, however many lie in less fertile fields suggesting these pegmatites are located too close to the source granite. LCT pegmatites are generally thought to form ~3 to 4km from their source intrusion. Future pegmatite prospecting at Mount Alexander will

focus on areas further from the Mortgage Monzogranite stock, as the recent round of sampling was concentrated in the area 1-2km from the interpreted source intrusion.

Smith Bore Project

Initial reconnaissance mapping and sampling at the Smith Bore project has also confirmed the presence of lithium mineralisation, with one sampling returning 0.63% Li_2O from a dark mica- rich rock zone interpreted to be the lithium rich mica - zinnwaldite. The sample was taken in an area of relatively poor outcrop interspersed with soil cover, making the interpretation of size potential difficult.

A further 29 rock chip samples taken throughout the tenement returned results up to 0.15% tin and a maximum of 800ppm Li_2O.

Further follow-up mapping and sampling will be conducted once the exploration licence is granted.

Given the outstanding early stage surface sample results from spodumene rich pegmatites at the newly announced San Domingo project described above, the Company will re-focus its immediate lithium exploration efforts to that project.

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.

7th June 2016

For further information contact:

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About Zenith

Zenith is advancing its project portfolio of high-quality, gold, lithium and base metal projects whilst building a superior project base of high-quality advanced exploration assets:

Kavaklitepe Gold Project, Turkey (Teck earning 70%)

- Recent (2013) grass roots gold discovery in Tethyan Belt – ("elephant" terrain)
- Large, virtually drill-ready, high order gold soil / IP anomaly >1km strike
- Rock chip traverses to 54m @ 3.33g/t gold, including 21.5m @ 7.2 g/t gold
- Man-portable drilling trial in progress

Develin Creek Copper-Zinc-Silver-Gold, QLD (ZNC initial 51%, option for 100%)

- 3 known VHMS massive sulphide deposits with JORC resources, 50km of strike of host volcanics
- 2011 drilling outside resource; 13.2 metres @ 3.3% copper, 4.0% zinc, 30g/t silver and 0.4g/t gold
    - Drilling to extend known deposits, geophysics, geochemistry to detect new targets

Mt Minnie Gold Project, WA (ZNC 100%)

- Major regional fault. Alteration, geochemistry, rock samples 64.2 and 21.5 g/t Au
    - Drill testing planned 2016

Earaheedy Manganese Project, WA (ZNC 100%)

- New 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

Other

- Evaluating new lithium project opportunities

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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.*	Continuous samples were collected by hand, at the surface, from in-situ outcrops over lengths of 3m or less. These samples are believed to be representative of the global outcrops.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Grab samples are believed to be representative of the outcrops they come from.
	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.	≈2kg rock samples were collected by a geologist, samples were generally broken using a hammer from outcropping pegmatites. Rock samples were crushed in the laboratory and then pulverised before analysis.
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.	Each sample was described in details and sampling sites were photographed.
	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 sent to ALS Tucson, Arizona; the samples were crushed and assayed by ICP-AES / ICP-MS after 4 acid digest.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	No standard was included in the sample batch sent to the laboratory apart from internal laboratory QC samples.

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 across pegmatite bodies and based on geological observations, the composite samples are considered to be representative of the intervals sampled.

	Whether sample sizes are appropriate to the grain size of the material being sampled.	Each sample was about to 2kg in weight and selected to be representative of the whole outcrop.
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-AES / ICP-MS after 4 acid digest (near total digestion).
	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 handheld tools used
	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.	No standard was included in the sample batch apart from laboratory QC samples
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	An independent contractor has observed the assayed sample
	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 on hardcopies and then entered into an electronic 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 coordinates were recorded using a handheld GPS with plus/minus 3m accuracy
	Specification of the grid system used.	The grid system used was Latitude/Longitude WGS84

Location of data points - continued	*Quality and adequacy of topographic control.*	Topography control is limited for these samples, as elevation data from GPS are reliable to plus minus 10m.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	Samples were taken on different prospects which can be up to 8km apart. Several samples were taken in each prospect locality.

	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.	These 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.*	Whenever possible, samples were collected perpendicular to pegmatite bodies strike directions.
	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 San Domingo Project is located in Arizona, USA. It comprises 60, 100% Zenith owned federal lode claims and two State of Arizona exploration leases.
	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 applications are 100% held by a subsidiary company of Zenith with no known impediment to future granting of a mining lease.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The tenements comprise several historical prospects which were explored and/or mined for lithium, feldspar, mica or beryl.
Geology	*Deposit type, geological setting and style of mineralisation.*	The project comprises Lithium and Niobium-Tantalum minerals hosted in pegmatites.
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 reportable
	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 cut-off was applied to the data.
	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	Composite rock chip samples are length weighted average grades.

	examples of such aggregations should be shown in detail.	

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 included in maps in the body of text
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 significant exploration data that is reportable at this stage of the project
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).*	Further rock sampling is warranted to define the lithium prospective pegmatite outcrops. Soil geochemistry could help identify covered pegmatites. Drilling is planned to test subsurface grade continuity and extents.
	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 diagrams in body of text