



## Positive Results from Initial Metallurgical Test Work on Roche Dure Resource Samples

*PHASE 1 CHARACTERISATION TEST WORK IS ALMOST COMPLETE AND PHASE 2 CONFIRMATORY TEST WORK IS BEING PLANNED FOR EARLY COMMENCEMENT.*

### HIGHLIGHTS:

- Test work indicates Roche Dure material has similar comminution characteristics and rock strengths to other well-known lithium pegmatite ores.
- Randomly selected drill core interval grade variability ranging from unmineralised pegmatite (will be treated as waste) to over 4% Li<sub>2</sub>O, confirms that the average grade of the bulk sample is extremely close to the overall grade of the Roche Dure orebody JORC estimate.
- Heavy liquid separation (HLS) test work is underway on a 200kg Bulk Sample sub-set prepared using core intervals from four metallurgical PQ diamond drill holes. Early results are summarised in table below:

Crush Size (mm)	Grade Li <sub>2</sub> O (%)	Recovery Li <sub>2</sub> O (%)
10.5	5.8	62*
5.6	6.2	66*
3.35	Results pending	Results pending

*\*does not include flotation recovery*

- HPGR (High Pressure Grinding Roll) amenability test work will be conducted in first week of August.
- DMS (Dense Media Separation) test run carried out before end of July to confirm HLS recovery assumptions. Results pending.
- Mineralogical investigations underway to ascertain target and gangue mineral department.
- Ore sorting test work samples have been shipped to an equipment supplier for amenability testing.

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### Directors

Managing Director: Nigel Ferguson  
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Non-Executive Director: Rhett Brans  
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Non-Executive Director: Peter Huljich

### Market Cap

\$124 M

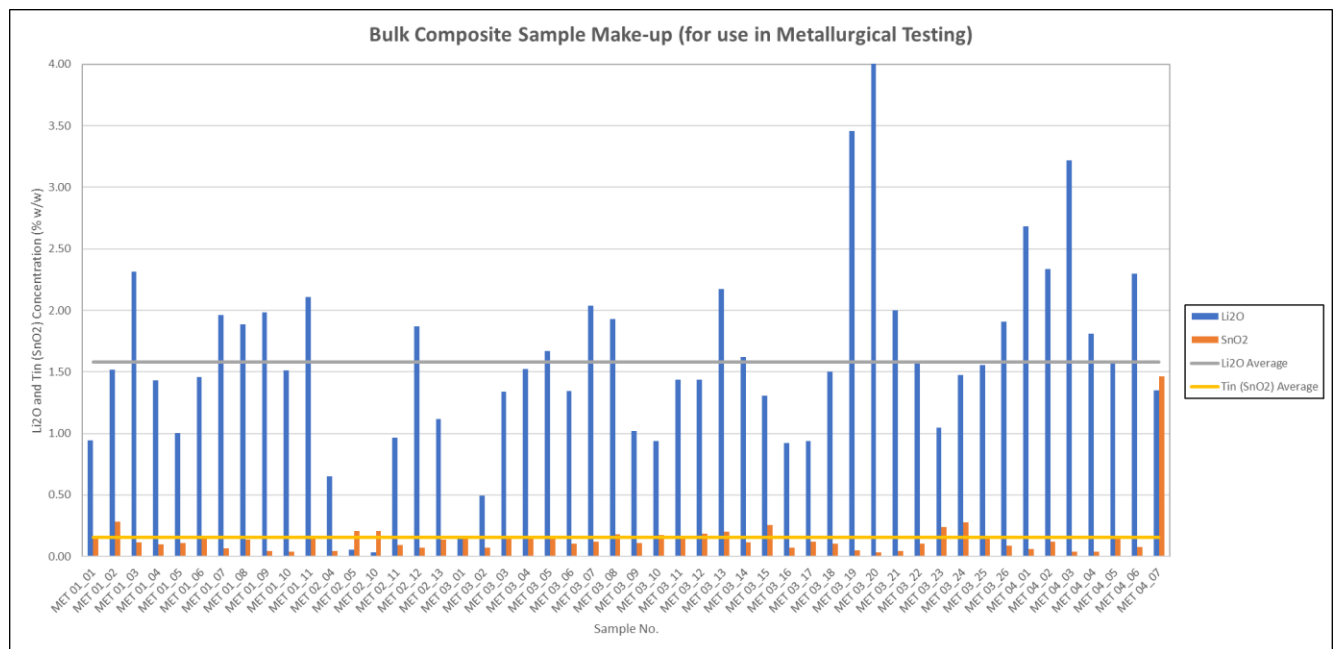
ASX Code: AVZ

**AVZ's Managing Director, Mr. Nigel Ferguson said:** "Metallurgical test work study results are now starting to come through from our test laboratories with encouraging results from the Phase 1 program. Average assay results for the initial bulk sample are within acceptable ranges for the deposit with Li<sub>2</sub>O reported at 1.58%, SnO<sub>2</sub> at 0.158%, Ta<sub>2</sub>O<sub>5</sub> at 0.005% and Fe<sub>2</sub>O<sub>3</sub> at 0.34%. It is very pleasing to see the continued upgrading of confidence in the Mineral Resource at Roche Dure. Further results will be released as they come to hand. The process is to now take theoretical data characterisation results from HLS work and apply those to the Roche Dure prospect material."

**AVZ Minerals Limited (ASX: AVZ)** is pleased to advise that it has completed some initial metallurgical test work within the more comprehensive metallurgical test work program designed to increase confidence levels in the Manono Lithium and Tin Project ("Manono Project") in the Democratic Republic of Congo's ("DRC") Tanganyika Province.

### Bulk Sample Selection

A 200kg Phase 1 Bulk Sample was prepared using core intervals from four of five metallurgical test PQ diamond drill holes. Selected intervals were crushed to 25mm sub-samples for assay and further subsample for the composite. The core was selected in longer intervals to include lithia grade variation expected during mining. Composite make-up interval grades are shown in *Figure 1* and analysis results in *Table 1* below. With selected drill core interval grade variability ranging from non-mineralised pegmatite (which would be treated as waste) to 4% Li<sub>2</sub>O, the average grade of the bulk sample is extremely close to the overall grade of the Roche Dure orebody.



**Figure 1. Bulk Sample Make up and Li<sub>2</sub>O grades**

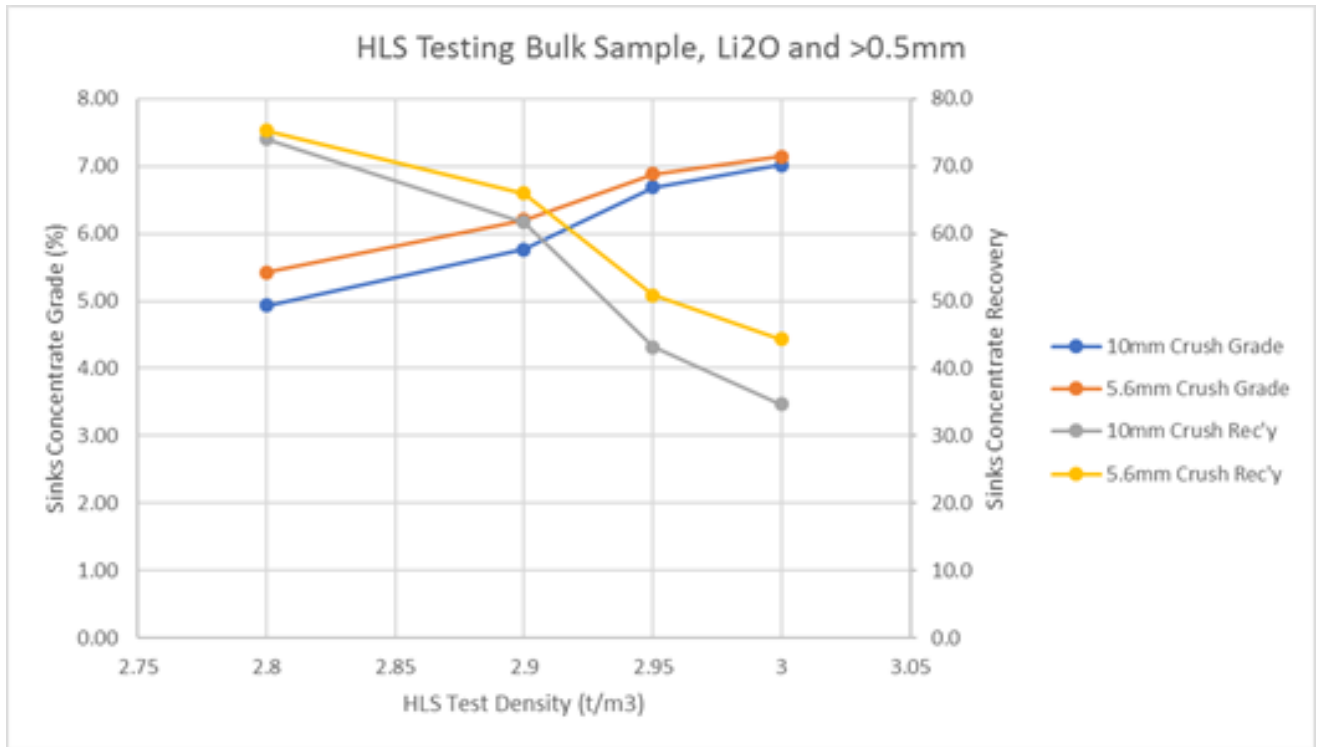
Li <sub>2</sub> O (%)	SnO <sub>2</sub> (%)	Ta <sub>2</sub> O <sub>5</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> (%)
1.579	0.154	0.005	0.340

**Table 1. Average sample analysis results for the Bulk Metallurgical test work sample**

The first data coming through, whilst incomplete, are indicating excellent results so far. Due to the large crystals of spodumene observed throughout the drill core, we have initially focused on coarse 10mm and 5.6mm crush sizes with results reported in *Figure 2* below. Finer crushing test work will also be undertaken presently.

HLS test results are theoretical in nature and Dense Media Separation (DMS) processing results are expected to be lower in recovery for equivalent grades. HLS testing does however, provide a very good indication of how the material performs, and in this case, very much supports the initial test work completed by Nagrom in 2018.

In addition to HLS testing, a confirmatory DMS test at 5.6mm crush size is scheduled to ascertain the extent of downgrading from HLS to DMS testing. The HLS grade-recovery curves shown below in *Figure 2* indicate a slight improvement in recovery and grade at finer crush size and as a result, AVZ will investigate a finer crush size to examine what additional recovery and grade improvement is theoretically and realistically possible. It is expected that a finer crush will see an increase in Li<sub>2</sub>O grade, but more material loss to fines.



**Figure 2. HLS Test work on Roche Dure Bulk Sample**

AVZ is considering an operation with a DMS plant only, to reduce capital and operating costs, which will likely result in lower lithium recoveries than a more conventional higher capital and operating cost processing alternative ie: a dense media separation plant followed by a flotation circuit. Higher mining rates will be required to meet concentrate production rates using the lower cost option but resource size is capable of adopting this strategy. AVZ will continue to thoroughly investigate this scenario through further extensive test work to maximise the Project's economics.

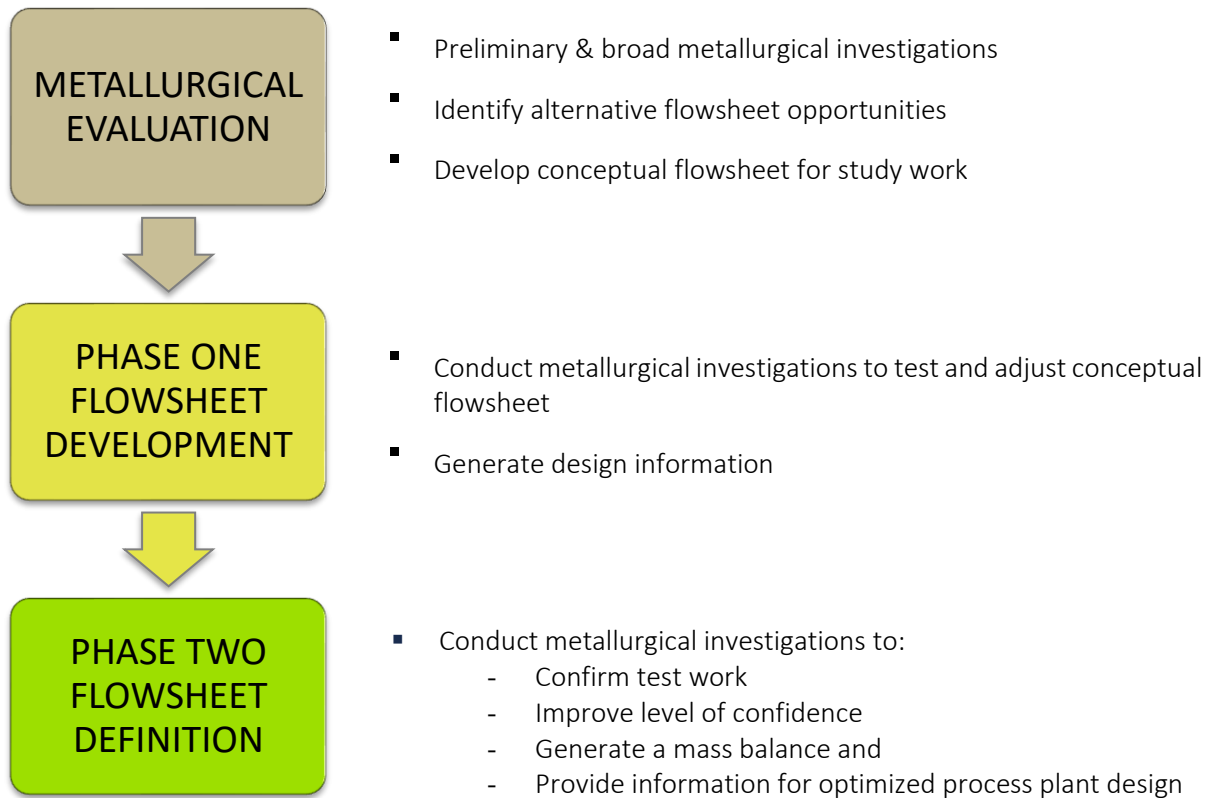
Tin, in addition to lithium, is being monitored during metallurgical testing. Initial observations are that the tin follows the lithium in the HLS process due to its greater density and strengthens any opportunity to produce a tin concentrate by-product. Other elements concentrating in the process are also being investigated for potential economic benefit.

Analyses of HLS concentrates have indicated iron concentrations that are within chemical lithium concentrate grade limits but outside higher value ceramic grade limits. Mineralogical investigations are underway to ascertain the source of potential iron contamination to determine if further reduction in product iron concentration is possible.

Updates will be provided to the market as the finer crush size HLS test and the 5.6mm DMS test results come to hand.

In the interim, AVZ is pleased to provide below, an overview of the study program for metallurgical test work for the core now logged into the laboratories.

## AVZ PROCESS DEVELOPMENT FRAMEWORK



### PHASE 1 METALLURGY – TESTWORK FOCUS

Work will focus on samples from five metallurgical test work drill holes (*Figure 3*) completed specifically to provide a good representation of ore that is expected to be mined at Manono. Drill hole locations are shown below in relation to the Roche Dure pegmatite.

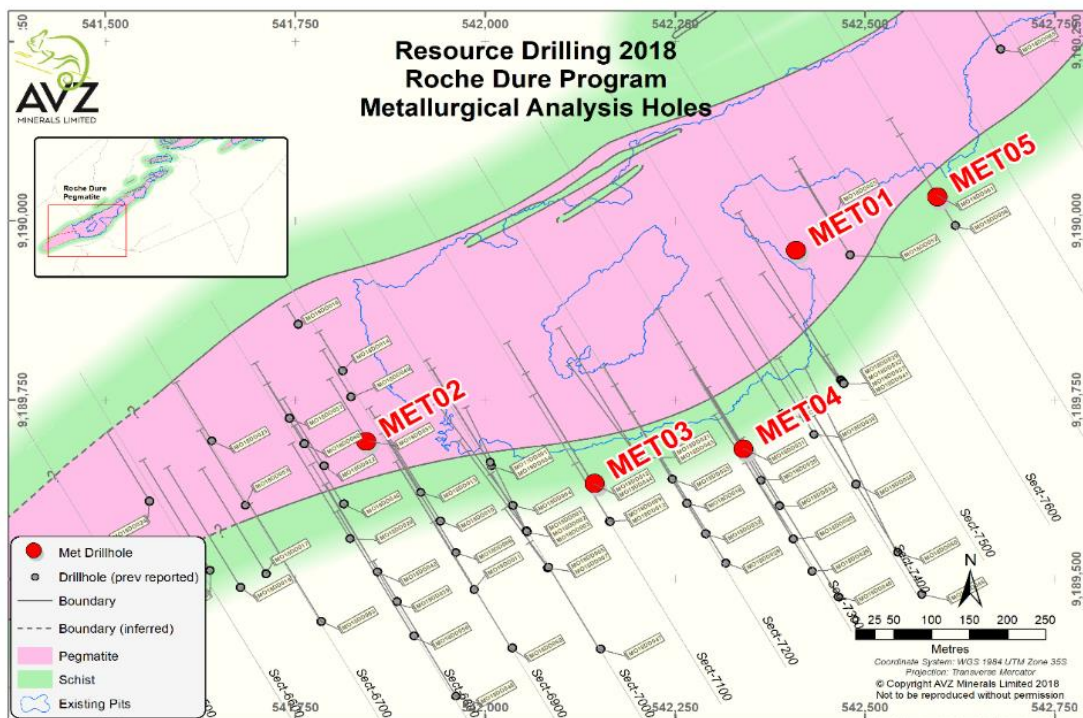
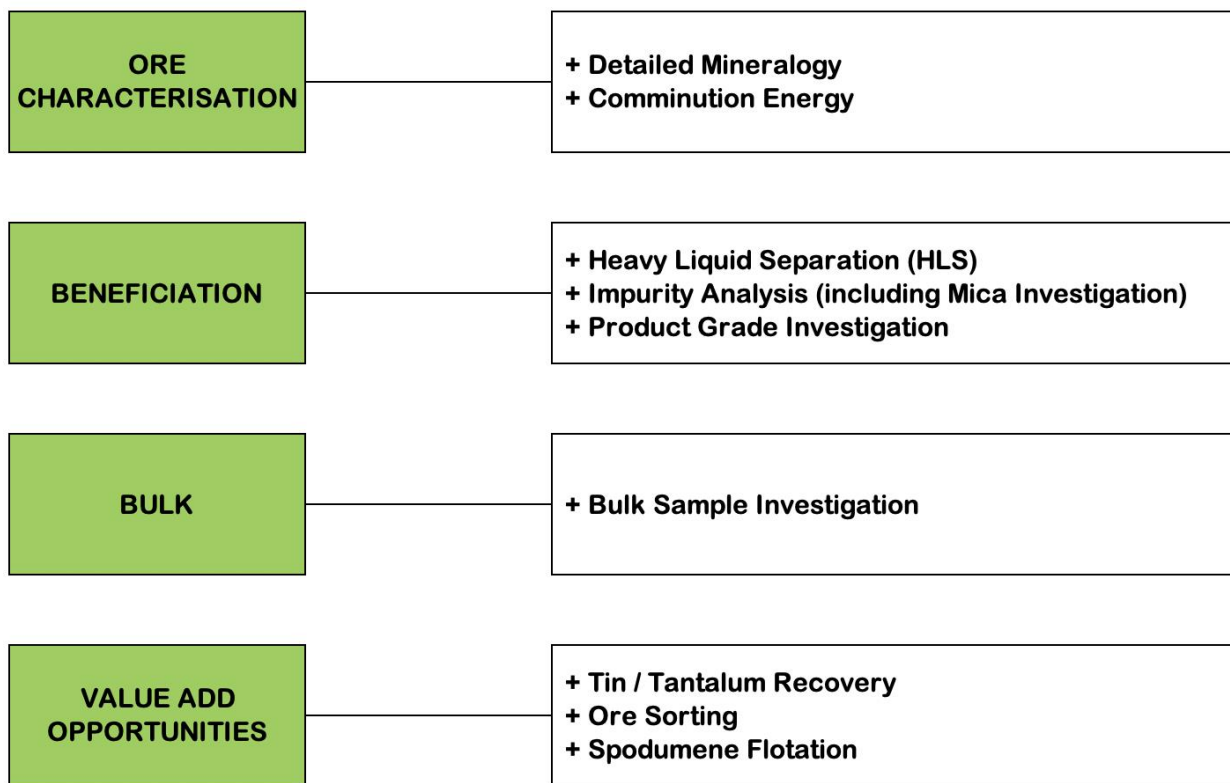


Figure 3. Location of 5 bulk sample metallurgical drill holes at Roche Dure

**PHASE 1 METALLURGY – TESTWORK ELEMENTS**

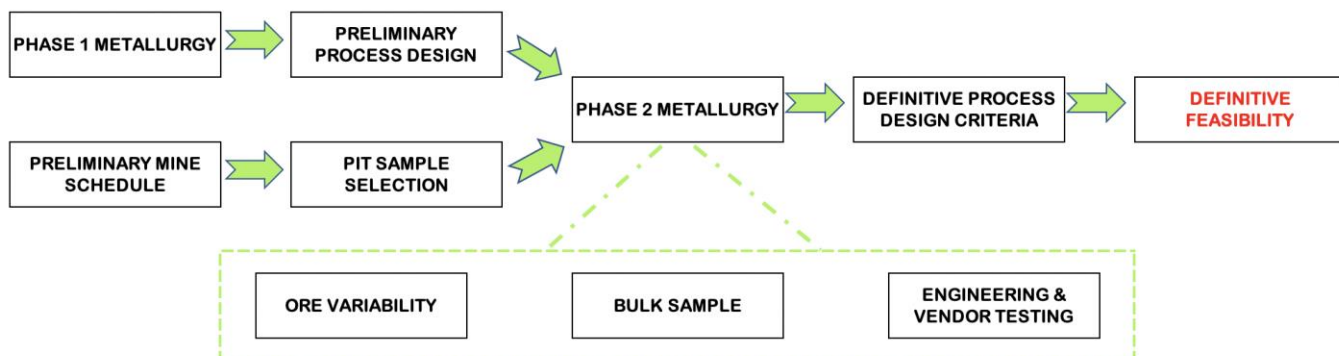


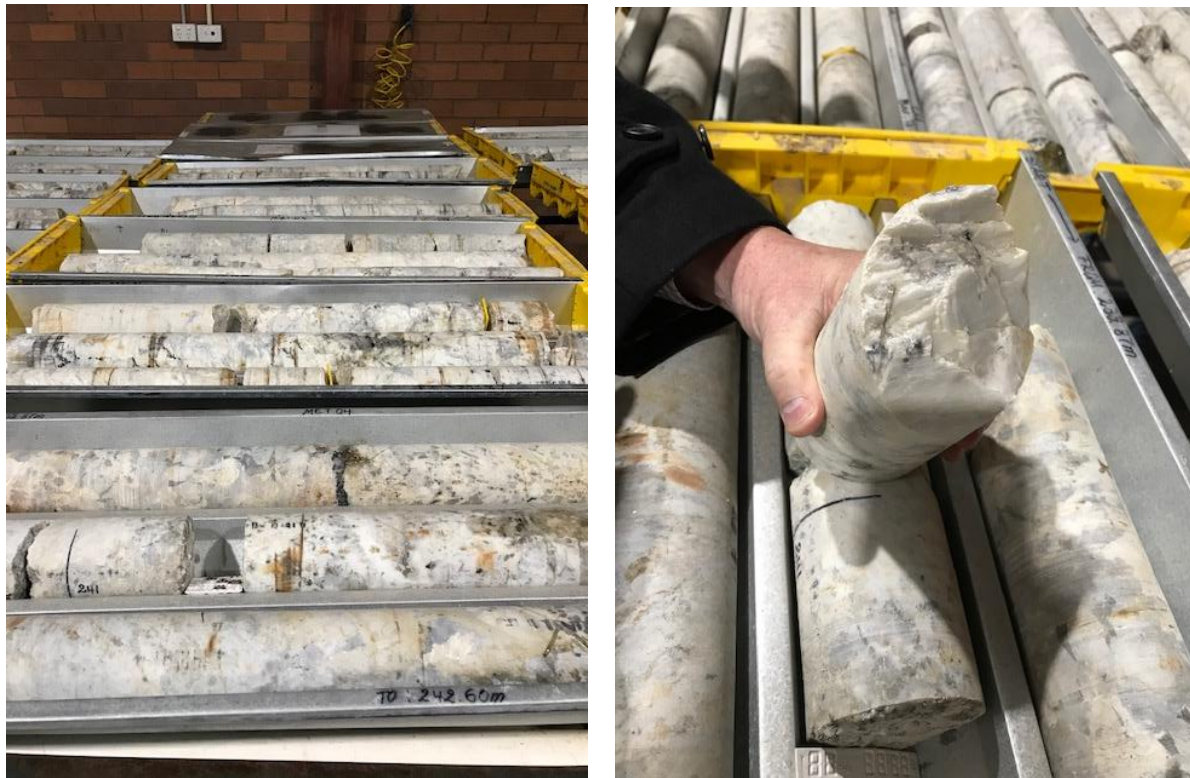
**PHASE 1 METALLURGY – LABORATORIES ENGAGED**

- ALS Metallurgy – Comminution & Mineralogy
  - ALS is the global leader in metallurgical testing and consulting services for mineral process flowsheet development and optimisation.
  - ALS provide all mineralogical (QEMSCAN) and comminution investigations including an onsite High-Pressure Grinding Roll (HPGR), manufactured by Koeppern.
- NAGROM – Spodumene Recovery Test work
  - NAGROM are industry leaders in mineral beneficiation test work specialising in spodumene recovery via gravity and flotation process routes.

**PHASE 2 – PROCESS DEFINITION OBJECTIVES**

- To verify phase 1 process flowsheet and design parameters needed to support a Definitive Feasibility Study
- Examine ore variability and its effects on economic performance
- Generate Spodumene concentrates for marketing assessment and value adding test programme





*Figure 4. Roche Dure Spodumene Rich Pegmatite as yet unassayed*

For further information, visit [www.avzminerals.com.au](http://www.avzminerals.com.au) or contact:

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#### Competent Persons Statement

The information in this report that relates to metallurgical test work results is based on, and fairly represents information compiled and reviewed by Mr Nigel Ferguson, a Competent Person who is a Fellow of The Australasian Institute of Mining and Metallurgy and Member of the Australian Institute of Geoscientists. Mr Ferguson is a Director of AVZ Minerals Limited. Mr Ferguson has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves". Mr Ferguson consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

## JORC TABLE 1

<p><b>Section 1 Sampling Techniques and Data</b> (Criteria in this section apply to all succeeding sections.)</p>
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Criteria	JORC Code explanation	Commentary
<p><i>Sampling techniques</i></p>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>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></li> </ul>	<ul style="list-style-type: none"> <li>• Metallurgical samples: Comminution testwork consisting UCS, Bond Indices, SMC and Impact testing were conducted on Comm 1, Comm 2 and Comm 3. Comm1 sample representing the upper zone ore and Comm 2 and Comm 3 representing middle and deeper sections in the ore zone.</li> <li>• These samples consisted of continuous intervals of full PQ core and include spodumene containing and waste intervals identified from core logging records.</li> <li>• Specifically Comm 1 sample consists of approximately 15m from Met01, Comm 2 sample approximately 15m from Met02 and Comm 3 sample approximately 15m from Met03.</li> <li>• Comm sample weights were each 115kg.</li> <li>• Metallurgical samples: Spodumene concentrate testwork to date has been conducted using a single bulk composite, Bulk01, 200kg mass.</li> <li>• This composite was prepared from sub-samples of crushed intervals of full PQ drill core. Each approximate 1m interval was crushed to 25mm with a sub-sample submitted for analysis and a further sub-sample collected for the composite. The final Bulk01 composite sample contained low grade and high grade intervals as well as waste intervals from 4 of the 5 met holes to target a grade close to expected mining lithium grade.</li> <li>• Specifically Bulk01 contains sub-samples from intervals originating from Met01, Met02, Met,03 and Met04.</li> <li>• All met hole core intervals were shipped to Nagrom laboratories in Australia. From here core has been shipped to ALS laboratories, Australia.</li> <li>• HLS test results reported in this release were conducted on sub-samples of Bulk01 with a head grade of 1.58% Li<sub>2</sub>O.</li> <li>• Head grades have a reporting accuracy of ±0.1%.</li> </ul>
<p><i>Drilling techniques</i></p>	<ul style="list-style-type: none"> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• The drilling was completed using diamond drilling rigs with PQ used from surface to sample through weathered to fresh-rock and HQ sized drill rods used after the top-of-fresh-rock had been intersected. Most holes are angled between 50° and 75°. All collars were surveyed after completion. All holes were downhole surveyed using a digital multi-shot camera at about 30 m intervals. Apart from drillholes MO17DD001, MO17DD002, MO18DD001 and MO18DD008, all cores were orientated.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <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 material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drill core recovery attained &gt;99% in the pegmatite.</li> <li>• Based upon the high recovery, AVZ did not have to implement additional measures to improve sample recovery and the drill core is considered representative and fit for sampling.</li> <li>• For the vast majority of drilling completed, core recovery was near 100% and there is no sample bias due to preferential loss or gain of fine or coarse material.</li> </ul>
<i>Logging</i>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drillhole cores were logged by qualified geologists using a data-logger and the logs were then uploaded into Geobank which is a part of the Micromine software system. The cores were logged for geology and geotechnical properties (RQD &amp; planar orientations). A complete copy of the data is held by an independent consultant. The parameters recorded in the logging are adequate to support appropriate Mineral Resource estimation.</li> <li>• All cores were logged, and logging was by qualitative (lithology) and quantitative (RQD and structural features) methods. All cores were also photographed both in dry and wet states, with the photographs stored in the database.</li> <li>• The entire length of all drillholes were logged for geological, mineralogical and geotechnical data.</li> </ul>



Criteria	JORC Code explanation	Commentary
<p><i>Sub-sampling techniques and sample preparation</i></p>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <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></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Cores were cut longitudinally in half and sampled at a nominal 1 m length.</li> <li>• All the exploration drilling was carried out using diamond core drilling.</li> <li>• The sample preparation for drillhole core samples incorporates standard industry practice. The half-core samples were prepared at ALS Lubumbashi and the ALS sample preparation facility on site at Manono, with holes from MO18DD021 onwards being prepared at Manono.</li> <li>• At AVZ's onsite sample preparation facility the half-core samples of approximately 4-5 kg are oven dried, crushed to -2 mm with a 500 g sub-sample being split off. This 500 g sub-sample is then pulverised to produce a pulp with 85% passing -75um size fraction. A 120 g subsample is then split from this. The certified reference material, blank and duplicate samples are inserted at appropriate intervals and then the complete sample batch is couriered to Australia for analysis.</li> <li>• Standard sub-sampling procedures are utilised by ALS Lubumbashi and ALS Manono at all stages of sample preparation such that each sub-sample split is representative of the whole it was derived from.</li> <li>• Duplicate sampling was undertaken for the drilling programme. After half-core samples were crushed at the ALS Lubumbashi and ALS Manono preparatory facility, an AVZ geologist took a split of the crushed sample which was utilised as a field duplicate. The geologist placed the split into a pre-numbered bag which was then inserted into the sample stream. It was then processed further, along with all the other samples. The drilling produced PQ and HQ drill core, providing a representative sample of the pegmatite which is coarse-grained. Sampling was mostly at 1 m intervals, and the submitted half-core samples typically had a mass of 3-4 kg.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p>Quality of assay data and laboratory tests</p>	<ul style="list-style-type: none"> <li><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li><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></li> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Diamond drillhole (core) samples were submitted to ALS Lubumbashi and ALS Manono (DRC) where they were crushed and pulverised to produce pulps. These pulps were couriered to Australia and analysed by ALS Laboratories in Perth, Western Australia using a sodium peroxide fusion of a 5g charge followed by digestion of the prill using dilute hydrochloric acid thence determination by AES or MS, i.e. methods ME-ICP89 and ME-MS91. Samples from the drilling completed in 2017 i.e. MO17DD001 and MO17DD002, were assayed for a suite of 24 elements that included Li, Sn, Ta &amp; Nb. Samples from the drilling completed in 2018 were assayed for a suite of 12 elements; Li, Sn, Ta, Nb, Al, Si, K, Fe, Mg, P, Th and U, with Li reported as Li<sub>2</sub>O, Al as Al<sub>2</sub>O<sub>3</sub>, Si as SiO<sub>2</sub>, K as K<sub>2</sub>O, Mg as MgO, Fe as Fe<sub>2</sub>O<sub>3</sub> and P as P<sub>2</sub>O<sub>5</sub>.</li> <li>Peroxide fusion results in the complete digestion of the sample into a molten flux. As fusion digestions are more aggressive than acid digestion methods, they are suitable for many refractory, difficult-to-dissolve minerals such as chromite, ilmenite, spinel, cassiterite and minerals of the tantalum-tungsten solid solution series. They also provide a more-complete digestion of some silicate mineral species and are considered to provide the most reliable determinations of lithium mineralisation.</li> <li>Sodium peroxide fusion is a total digest and considered the preferred method of assaying pegmatite samples.</li> <li>For the drilling, AVZ incorporated standard QAQC procedures to monitor the precision, accuracy and general reliability of all assay results from assays of drilling samples. As part of AVZ's sampling protocol, CRMs (standards), blanks and duplicates were inserted into the sampling stream. In addition, the laboratory (ALS Perth) incorporated its own internal QAQC procedures to monitor its assay results prior to release of results to AVZ. The Competent Person is satisfied that the results of the QAQC are acceptable and that the assay data from ALS is suitable for Mineral Resource estimation.</li> <li>AVZ utilised Nagrom in Perth for external laboratory checks to compare results received from ALS Perth. The Competent Person is satisfied that the results from the umpire laboratory are acceptable and that the assay data from ALS is suitable for Mineral Resource estimation.</li> <li>Geophysical instruments were not used in assessing the mineralisation.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> <li><i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li><i>The use of twinned holes.</i></li> <li><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li><i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>MSA observed the mineralisation in the majority of cores on site, although no check assaying was completed by MSA.</li> <li>MSA observed and photographed several collar positions in the field, along with rigs that were drilling at the time of the site visit. <ul style="list-style-type: none"> <li>Twinned holes for the verification of historical drilling, were not required. Short vertical historical holes were drilled within the pit but are neither accessible nor included within the database used to define the Mineral Resource.</li> <li>Drilling data is stored on site as both hard and soft copy. Drilling data is validated onsite before being sent to data management consultants in Perth where the data is further validated. When results are received they are loaded to the central database in Perth and shared with various stakeholders via the cloud. QC results are reviewed by both independent consultants and AVZ personnel at Manono. Hard copies of assay certificates are stored in AVZ's Perth offices.</li> <li>AVZ has not adjusted any assay data.</li> </ul> </li> </ul>
<i>Location of data points</i>	<ul style="list-style-type: none"> <li><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></li> <li><i>Specification of the grid system used.</i></li> <li><i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>The drillhole collars have been located by a registered surveyor using a Hi-Target V30 Trimble differential GPS with an accuracy of +/- 0.02 m.</li> <li>All holes were downhole surveyed using a digital multi-shot camera at approximately 30 m intervals, except MET02 and MET03 which were drilled vertically.</li> <li>AVZ provided high resolution topographic contours, surveyed at 50 cm elevation differences. .</li> <li>For the purposes of geological modelling and estimation, the drillhole collars were projected onto this topographic surface. In most cases adjustments were within 1 m (in elevation).</li> <li>Coordinates are relative to WGS 84 UTM Zone 35M.</li> </ul>
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li><i>Data spacing for reporting of Exploration Results.</i></li> <li><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></li> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Drillhole were completed on sections 100 m apart, and collars were 50 to 100 m apart on section where possible. In situations of difficult terrain, multiple holes were drilled from a single drill pad using differing angles for each drillhole.</li> <li>In the Competent Person's opinion, the spacing is sufficient to establish geological and grade continuity consistent with Measured, Indicated and Inferred Mineral Resources.</li> <li>Samples were composited to 1 m intervals, since it was the most occurring sample length.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• The drillhole orientation was designed to intersect the Roche Dure Pegmatite at, or nearly at, 90° to the plane of the pegmatite.</li> <li>• No material sampling bias exists due to drilling direction.</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• When utilizing ALS Lubumbashi, chain of custody was maintained by AVZ personnel on-site to Lubumbashi. Samples were stored on-site until they were delivered by AVZ personnel in sealed bags to the laboratory at ALS in Lubumbashi. The ALS laboratory checked the received samples against the sample dispatch form and issued a reconciliation report.</li> <li>• At Lubumbashi, the prepared samples (pulp) were sealed in a box and delivered by DHL to ALS Perth.</li> <li>• ALS issued a reconciliation of each sample batch, actual received vs documented dispatch.</li> <li>• The ALS Manono site preparation facility was managed independently by ALS who supervised the sample preparation. Prepared samples were sealed in boxes and transported by air to ALS Lubumbashi and were accompanied by an AVZ employee, where export documentation and formalities were concluded. DHL couriered the samples to ALS in Perth.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The sampling techniques were reviewed by the Competent Person during the site visit.</li> <li>• The Competent Person considers that the exploration work conducted by AVZ was carried out using appropriate techniques for the style of mineralisation at Roche Dure, and that the resulting database is suitable for Mineral Resource estimation.</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Manono licence was awarded as Research Permit PR13359, issued on the 28<sup>th</sup> December 2016 to La Congolaise d'Exploitation Miniere SA (Cominiere). It is valid for 5 years. On the 2<sup>nd</sup> February 2017, AVZ formed a joint-venture (JV) with Cominiere and Dathomir Mining Resources SARL (Dathomir) to become the majority partner in a JV aiming to explore and develop the pegmatites contained within PR 13359. Ownership of the Manono Lithium Project is AVZ 60%, Cominiere 30% and Dathomir 10%.</li> <li>• All indigenous title is cleared and there are no other known historical or environmentally sensitive areas.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Within PR13359, exploration of relevance was undertaken by Gecamines which completed a programme of drilling between 1949 and 1951. The drilling consisted of 42 vertical holes drilled to a general depth of around 50 - 60 m. Drilling was carried out on 12 sections at irregular intervals ranging from 50 - 300 m, and over a strike length of some 1,100 m. Drill spacing on the sections varied from 50 - 100 m. The drilling occurred in the Roche Dure Pit only, targeting the fresh pegmatite in the Kitotolo sector of the project area.</li> <li>• The licence area has previously been mined for tin and tantalum through a series of open pits over a total length of approximately 10 km excavated by Zairetain SPRL. More than 60 Mt of material was mined from three major pits and several subsidiary pits focused on the weathered upper portions of the pegmatites. Ore was crushed and then upgraded through gravity separation to produce a concentrate of a reported 72% Sn. There are no reliable records available of tantalum or lithium recovery as tin was the primary mineral being recovered.</li> <li>• Apart from the mining excavations and the drilling programme, there has been very limited exploration work within the Manono region.</li> </ul>

Criteria	JORC Code explanation	Commentary
Geology	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Project lies within the mid-Proterozoic Kibaran Belt - an intracratonic domain, stretching for over 1,000 km through Katanga and into southwest Uganda. The belt strikes predominantly SW-NE and is truncated by the N-S to NNW-SSE trending Western Rift system. The Kibaran Belt is comprised of a sedimentary and volcanic sequence that has been folded, metamorphosed and intruded by at least three separate phases of granite. The latest granite phase (900 to 950 million years ago) is assigned to the Katangan cycle and is associated with widespread vein and pegmatite mineralisation containing tin, tungsten, tantalum, niobium, lithium and beryllium. Deposits of this type occur as clusters and are widespread throughout the Kibaran terrain. In the DRC, the Katanga Tin Belt stretches over 500 km from near Kolwezi in the southwest to Kalemie in the northeast comprising numerous occurrences and deposits of which the Manono deposit is the largest. The geology of the Manono area is poorly documented and no reliable maps of local geology were observed. Recent mapping by AVZ has augmented the overview provided by Bassot and Morio (1989) and has led to the following description. The Manono Project pegmatites are hosted by a series of mica schists and by amphibolite in some locations. These host rocks have a steeply dipping penetrative foliation that appears to be parallel to bedding. There are numerous bodies of pegmatite, the largest of which have sub-horizontal to moderate dips, with dip direction being towards the southeast. The pegmatites post-date metamorphism, with all primary igneous textures intact. They cross-cut the host rocks but despite their large size, the contact deformation and metasomatism of the host rocks by the intrusion of the pegmatites seems minor. The absence of significant deformation of the schistosity of the host rocks implies that the pegmatites intruded brittle rocks. The pegmatites constitute a pegmatite swarm in which the largest pegmatites have an apparent en-echelon arrangement in a linear zone more than 12 km long. The pegmatites are exposed in two areas; Manono in the northeast, and Kitotolo in the southwest. These areas are separated by a 2.5 km section of alluvium-filled floodplain which contains Lake Lukushi. At least one large pegmatite extends beneath the floodplain. The pegmatites are members of the LCT-Rare Element group of pegmatites and within the pegmatite swarm there are LCT albite-spodumene pegmatites and LCT Complex (spodumene sub-type) pegmatites.</li> </ul>

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<i>Drill hole Information</i>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <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> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• See table in Appendix 1.</li> </ul>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>• 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.</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>	<ul style="list-style-type: none"> <li>• Exploration Results are not reported, therefore no data was aggregated for reporting purposes.</li> <li>• No equivalent values are used or reported.</li> </ul>
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <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 (e.g. 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>• Exploration Results are not reported.</li> <li>• There is no relationship between mineralisation width and grade. <ul style="list-style-type: none"> <li>• The geometry of the mineralisation is reasonably well understood however the pegmatite is not of uniform thickness nor orientation. Consequently, most drilling intersections do not represent the exact true thickness of the intersected pegmatite, although intersections are reasonably close to true thickness in most cases.</li> </ul> </li> </ul>
<i>Diagrams</i>	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>• The relevant plans and sections are included in this document and in Appendix 2.</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>• Exploration Results are not reported.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>• No other exploration data is available.</li> </ul>

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<i>Further work</i>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• Diamond drill testing beneath the pit will be carried once the pit has been drained of water.</li> <li>• Further mining studies are planned.</li> </ul>