

8 June 2017

# ASX ANNOUNCEMENT



## Shallow High Grade Copper Intersections in new Diamond Drilling at Viscaria

ASX: AVI

### Highlights

- **High-grade copper-gold intersected at the southern end of a 3km-long geophysical anomaly at A Zone East within the Viscaria project in Sweden**
- **Assays include 1m at 1.31% copper and 0.2g/t gold**
- **This hole is located 1km southwest of outcropping mineralisation which returned rock chip assays of 1.65% copper and 8.28g/t gold**
- **At B Zone, the latest hole returned assays of up to 1m at 2.21% copper at shallow depths**
- **Further diamond drilling assay results expected within the coming weeks**

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Avalon Minerals Limited (“**Avalon**” or “**Company**”) (**ASX:AVI**) is pleased to provide results from recently completed diamond drill holes at the Viscaria Copper Project in northern Sweden.

Drill hole **VDD 197** was drilled into ‘Target 3’ (see ASX release dated 20 Feb 2017), also referred to as A Zone East. The A Zone East target comprises a string of magnetic anomalies over a strike length of 3km (Figure 1) with minor copper mineralisation reported from historical drill holes.

The hole intersected two zones of **copper-gold** mineralisation which appear to correlate with outcropping copper-gold mineralisation of similar style 1km to the north east. Outcropping mineralisation has returned samples with **1.65% Cu and 8.28g/t Au**, and **1.55% Cu and 0.52g/t Au** from altered and veined rocks adjacent to granites. The zones in VDD 197 comprises graphite-magnetite-sulphide brecciated rock and chalcopyrite-veined rock within domains adjacent to a granite intrusive.

VDD 197 intersected a peak interval of **1m at 1.31% Cu and 0.2g/t Au**, within 4m at 0.43% Cu and an interval of 6.1m at 0.27% Cu, including **1.1m at 0.68% Cu and 0.45g/t Au**.

Importantly, this mineralisation is potentially related to that defined to the south at Nihka prospect (see ASX announcements dated 9<sup>th</sup> April and 13<sup>th</sup> May 2015), and to the north at Bahpagobba and West Nukutus (see ASX announcement dated 10<sup>th</sup> June 2015) where copper-gold domains have been defined with limited drilling in altered rocks that show similarities to Iron Oxide Copper Gold systems, and similar to the Pahtohavare-style mineralisation located 8km south within the same belt.

**VDD 198** was drilled into the B Zone and A Zone footwall targets to further understand the potential for additional mineralisation within the proposed open pit at the southern end of A Zone and B Zone.



Peak copper in VDD 198 was within the B Zone horizon where the drill hole intersected **1m at 2.21% Cu and 15.9g/t Ag** within 4.6m at 1% Cu in a shallow interval starting from just 49.6m down hole.

The B Zone horizon at Viscaria is considered to be prospective for structurally-controlled high grade zones that have yet to be fully defined as shoots (because of limited drilling), within a broader lower grade domain (see Mineral Resource table below for the current B Zone resource figure). High grade shoots (>2% Cu) are consistent with recent structural studies at D Zone and A Zone. High grade shoots within B Zone will significantly upgrade the mineral resource potential to be captured within the planned open pits.

Avalon Managing Director Malcolm Norris said:

*“The copper-gold results at A Zone East open a potentially new target style in the immediate Viscaria area. In addition, the high grade shallow copper at B Zone in VDD 198 has great potential to enhance the metrics for potential open pit planning to be considered in the pre-feasibility study. This recent drilling program is delivering success as expected in target areas adjacent to the main orebodies at Viscaria.”*

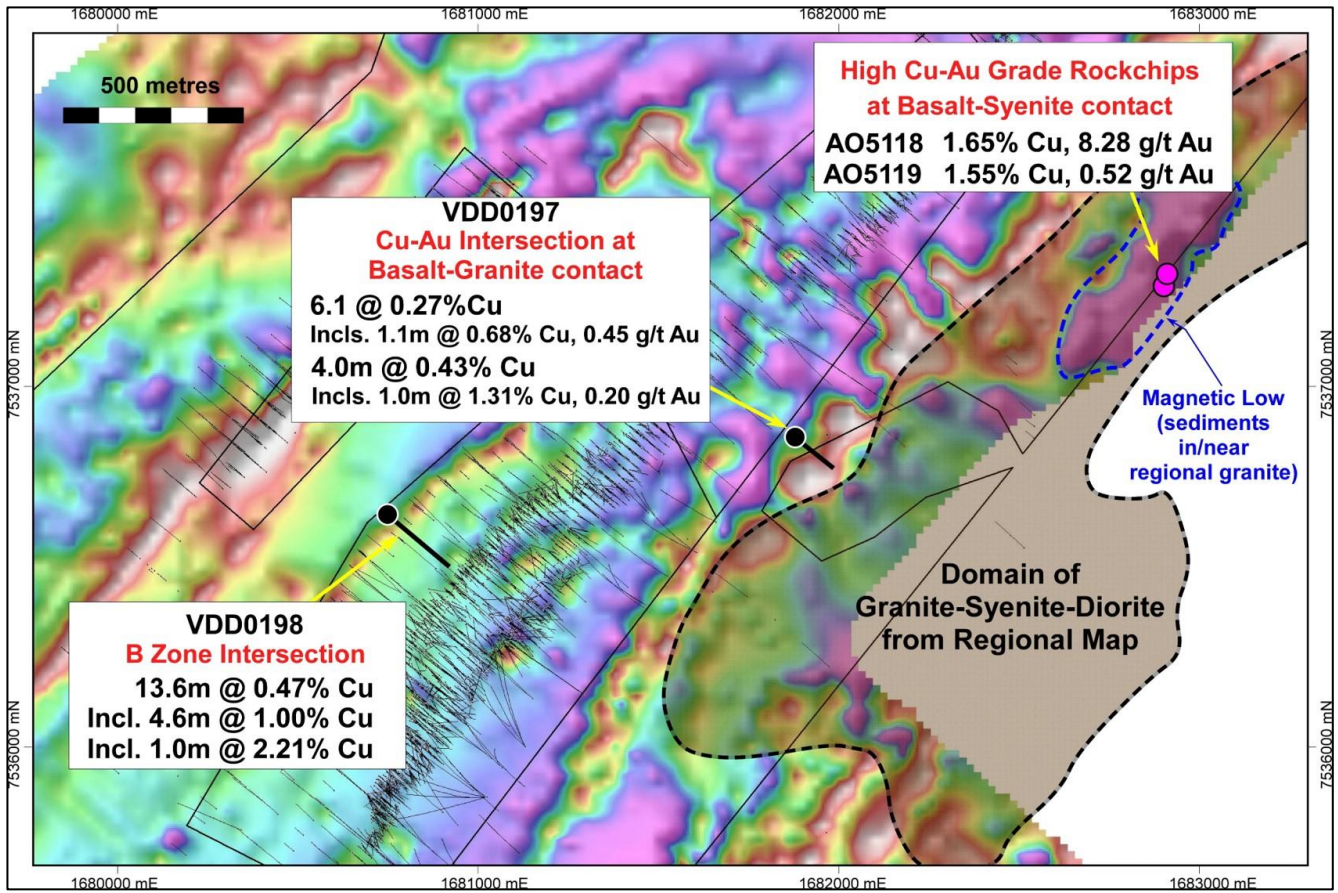
	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)	Ag (g/t)	Notes
<b>VDD 197</b>							
<b>A Zone East</b>	5.9	12.0	6.1	0.27	0.13		anomalous Mo & Co
<i>includes</i>	5.9	7.0	<b>1.1</b>	<b>0.68</b>	<b>0.45</b>		
	157.0	161.0	4.0	0.43	0.08		
<i>includes</i>	158.0	159.0	<b>1.0</b>	<b>1.31</b>	<b>0.20</b>		
<b>VDD 198</b>							
<b>B Zone</b>	49.6	55.2	5.6	0.88		5.63	
<i>includes</i>	51.2	52.2	<b>1.0</b>	<b>2.21</b>		<b>15.90</b>	
	49.6	67.2	17.6	0.40		2.34	anomalous Co
	103.8	106.8	3.0	0.48		1.93	anomalous Co
	193.0	196.0	3.0	0.14			A Zone Footwall

**Table 1:** Key intersections in VDD 197 and 198

HOLE ID	East (m)	North (m)	RL (m)	Azimuth (deg)	Azimuth (deg)	Dip (deg)	Final Depth (m)	Zone
	RT90 gon 2.5 V	RT90 gon 2.5 V		(RT90)	(Magnetic)			
<b>VDD0197</b>	1681880	7536857	556.0	130	125.17	-50	211.40	A Zone East
<b>VDD0198</b>	1680748	7536644	520.5	130	125.17	-41	298.40	B Zone, A Zone FW

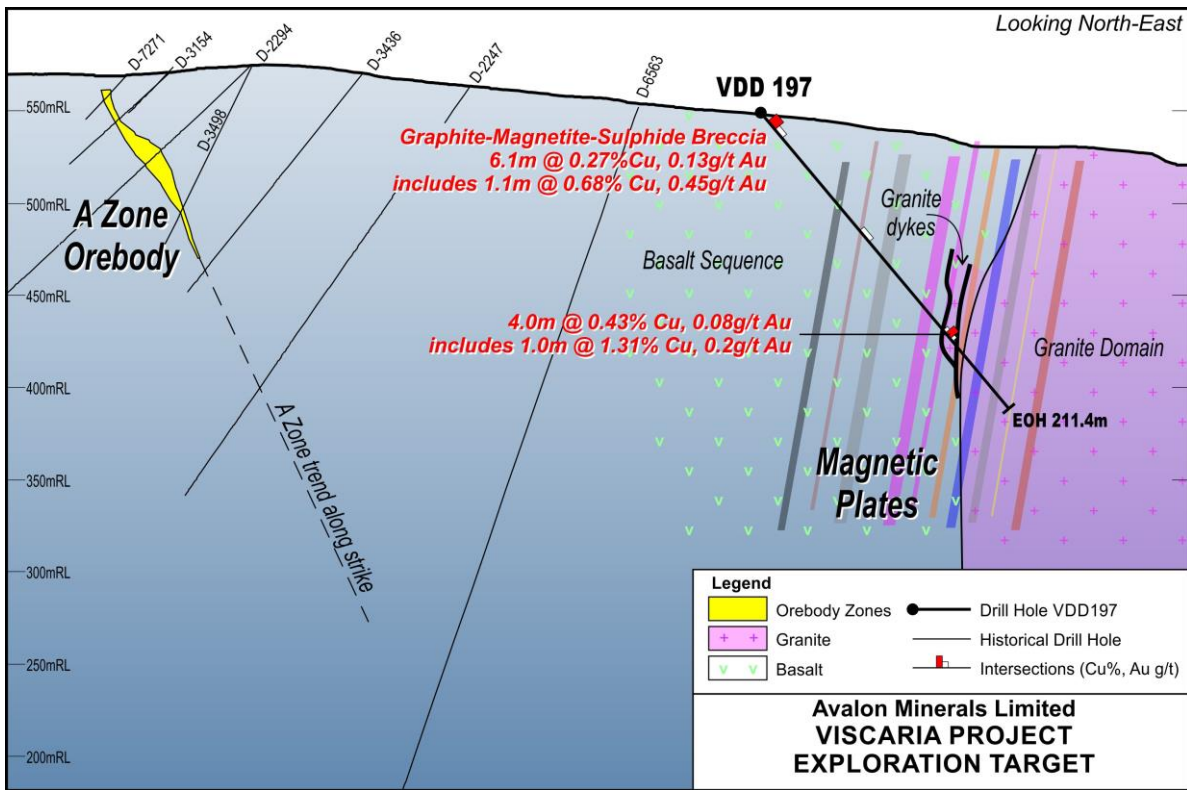
**Table 2:** Drill hole statistics



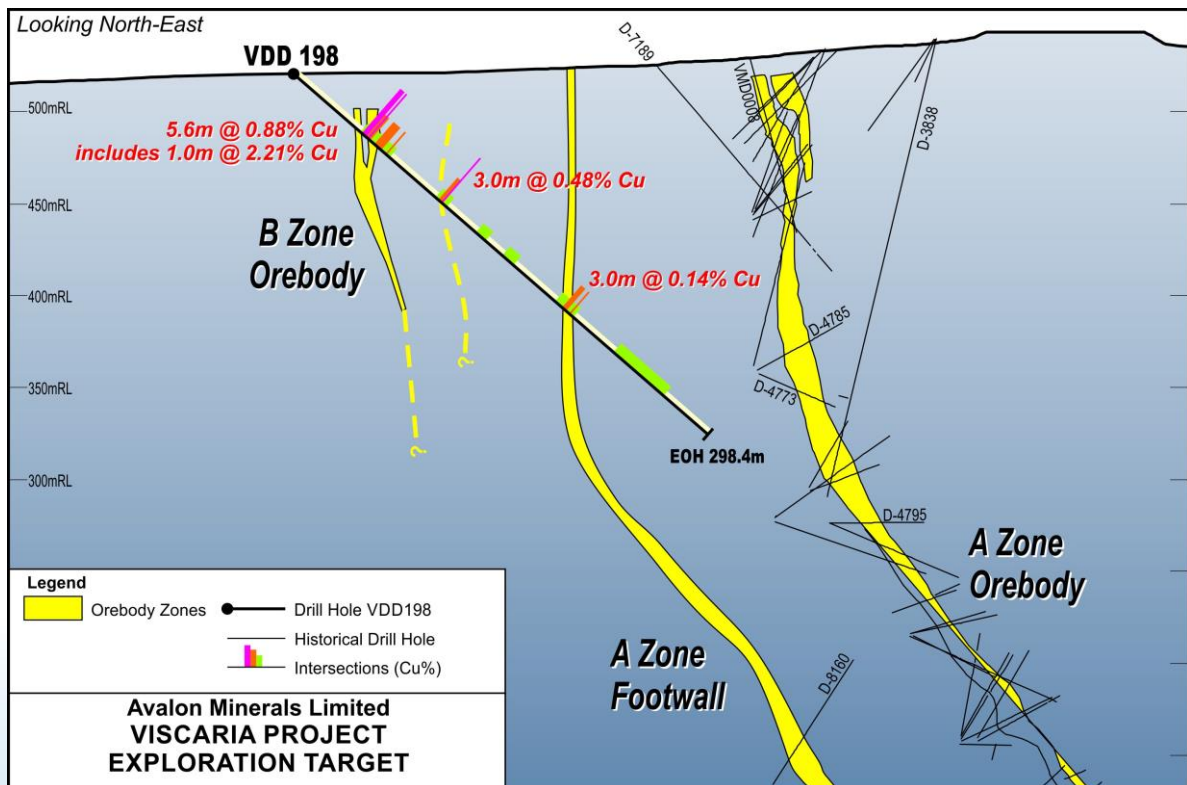


**Figure 1:** Plan view showing location of drill holes VDD 197 and 198. VDD 197 intersected a mineralised zone on the margin of a granite. The shape of the granite domain will be modified as the magnetics are further interpreted. VDD 198 drilled into B Zone to further target high grade shoots.





**Figure 2:** Cross section through VDD 197 showing the relationship between modelled magnetic plates, the granite margin zone, and mineralisation.



**Figure 3:** Cross section through VDD 198 showing the B Zone intersection, a new intermediate copper horizon, and Cu anomalism associated with the A Zone footwall interval.

## About Avalon

Avalon has an advanced portfolio of exploration and development projects in Scandinavia and Ecuador. The portfolio comprises:

1. **The Bramaderos Gold-Copper Project** where Avalon has signed an earn-in agreement with TSXV listed Cornerstone Capital Resources (see ASX announcement dated 10<sup>th</sup> April 2017). The Bramaderos gold-copper project is located in Loja province, southern Ecuador, and is considered to be highly prospective for the discovery of large copper-gold systems. Historical results from drilling at Bramaderos include wide intervals such as 260m at 0.6g/t Au and 0.14% Cu. Trenching results at the West Zone breccia include intersections at surface of up to 42m at 3.7g/t Au. These results, together with the distribution of alteration, and large coincident gold-copper-molybdenum surface anomalies indicate a fertile mineralised system with significant discovery potential.
2. **The Viscaria Copper Project** in northern Sweden has a completed Scoping Study (see ASX announcements dated 16<sup>th</sup> December 2015 and 5<sup>th</sup> April 2016) and is moving towards PFS and permitting to allow for mine development. The project has a mineral resource estimate of 52.4 Mt at 1.2% Cu (see Table 1 below). Considerable exploration upside exists and low technical risk drill targets continue to be tested.
3. **The Southern Finland Gold Project**, which includes the Satulinmäki and Riukka gold prospects. These prospects have received shallow diamond drilling by the Geological Survey of Finland (GTK) and Avalon Minerals has now completed a 7-hole diamond drilling program. Intersections from GTK include 18m @ 4.1g/t Au from 50m downhole, including 3m @ 9.3g/t Au, and 4m @ 10.3g/t Au in drill hole R391 at Satulinmäki. Intersections by Avalon include 23.5m at 3.3g/t in SMDD007 and 2m at 10.5g/t in SMDD005. The Satulinmäki and Riukka gold prospects are part of an earn-in JV with Canadian company Nortec Minerals, where Avalon can earn up to an 80% interest (see ASX announcement dated 19<sup>th</sup> May 2016). Avalon has already earned a 51% interest, and has also acquired a significant land position, in its own right, in the district.



**Table 1** Total combined resource figure for A Zone, B Zone and D Zone at Viscaria

Resource Area	Classification	Tonnes (Mt)	Cu Grade (%)	Contained Cu (kt)
A Zone	Measured	14.44	1.7	240.0
	Indicated	4.69	1.2	57.2
	Inferred	2.48	1.0	25.5
	<b>Subtotal</b>	<b>21.61</b>	<b>1.5</b>	<b>322.7</b>
B Zone	Measured	0.12	1.3	1.6
	Indicated	4.12	0.7	29.7
	Inferred	15.41	0.8	118.7
	<b>Subtotal</b>	<b>19.65</b>	<b>0.8</b>	<b>149.0</b>
D Zone	Indicated	3.11	0.81	25.2
	Inferred	0.01	0.32	0.02
	<b>Subtotal</b>	<b>3.11</b>	<b>0.81</b>	<b>25.2</b>
	Indicated	7.26	1.37	99.8
	Inferred	0.78	1.57	12.2
	<b>Subtotal</b>	<b>8.03</b>	<b>1.39</b>	<b>111.9</b>
<b>Overall Cu</b>	<b>Total</b>	<b>52.4</b>	<b>1.2</b>	<b>608.9</b>

Note: D Zone subtotals represent open pit at an average grade of 0.81% copper, and underground at an average grade of 1.39% copper.

Refer to Annual Report released 16 August 2016 for the Competent Persons Statement in relation to the estimates of mineral resources. The Company confirms that it is not aware of any new information or data that materially affects the information and all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

### Competent Persons Statement

The information in this report that relates to exploration results is based upon information reviewed by Dr Bruce Rohrlach who is a Member of the Australasian Institute of Mining and Metallurgy. Dr Rohrlach is a full-time employee of Avalon Minerals Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dr Rohrlach consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

For further information, please visit [www.avalonminerals.com.au](http://www.avalonminerals.com.au)

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## APPENDIX 1

The following Table and Sections are provided to ensure compliance with the JORC Code (2012 Edition)

**TABLE 1 – Section 1: Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>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 downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</li> </ul>	<ul style="list-style-type: none"> <li>The results announced here are from diamond drill core samples. The sampling was carried out using half core, generally at one meter intervals except where adjusted to geological boundaries.</li> </ul>
	<ul style="list-style-type: none"> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	<ul style="list-style-type: none"> <li>Core recovery was good and core aligned prior to splitting.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Diamond drilling was used to obtain ~1m samples (see first point above) from which 3-5 kg was sent to the laboratory to be pulverised to produce a 250g sample. Then a 50g portion of this sample was used for multi-element analysis.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>Drill type (eg 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).</li> </ul>	<ul style="list-style-type: none"> <li>The diamond core was HQ (63.5mm) and NQ (47.6 mm) in size (diameter).</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	<ul style="list-style-type: none"> <li>Diamond core recovery data for this drilling was measured for each drill run and captured in a digital logging software package. The data has been reviewed and core recovery was approximately 100% throughout.</li> </ul>
	<ul style="list-style-type: none"> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	<ul style="list-style-type: none"> <li>Core recovery from drill logs at B Zone was good, no extra measures were taken to maximise sample recovery.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>No relationship between sample recovery and grade has been established.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Logging</b>	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> </ul>	<ul style="list-style-type: none"> <li>Drill samples were logged for lithology, weathering, structure, mineralogy, mineralisation, colour, geotechnical attributes, and other features. Logging and sampling was carried out according to Avalon's internal protocols and QAQC procedures which comply with industry standards.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> </ul>	<ul style="list-style-type: none"> <li>Drill samples are logged for lithology, weathering, structure, mineralogy, mineralisation, colour, geotechnical attributes and other features. Core is photographed both wet and dry.</li> </ul>
	<ul style="list-style-type: none"> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>All drill holes are logged in full from start to finish of the hole.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> </ul>	<ul style="list-style-type: none"> <li>Half core was used to provide the samples that were assayed and reported here. Half core is left in the core trays.</li> </ul>
	<ul style="list-style-type: none"> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> </ul>	<ul style="list-style-type: none"> <li>Core samples collected.</li> </ul>
	<ul style="list-style-type: none"> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	<ul style="list-style-type: none"> <li>Avalon samples were sent to the ALS Sample Preparation Facility in Pitea, Sweden for sample preparation. The standard ALS sample preparation for drilling samples is: drying the sample, crushing to size fraction 70% &lt;2mm and split the sample to 250g portion by riffle or Boyd rotary splitter. The 250g sample is then pulverised to &gt;85% passing 75 microns and then split into two 50g pulp samples. Then one of the pulp samples was sent to the Vancouver ALS laboratory for base metal analysis.</li> <li>The sample preparation is carried out according to industry standard practices.</li> </ul>
	<ul style="list-style-type: none"> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	<ul style="list-style-type: none"> <li>Avalon used an industry standard QAQC programme involving Certified Reference Materials "standards" (with Cu grades ranging from near cut-off, average resource grades and very high grades) and blank samples, which were introduced in the assay batches.</li> <li>Standards and duplicates were submitted at a rate of 1 in 30 samples or at least one standard and duplicate per hole if the hole has less than 30 samples. Blanks were submitted at a frequency of 1 in 50 samples.</li> <li>The check assay results are reported along with the sample assay values in the preliminary and final analysis reports.</li> </ul>
<ul style="list-style-type: none"> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> </ul>	<ul style="list-style-type: none"> <li>For diamond core, the routine sample procedure is to always take the half/quarter core to the right of the orientation line (looking down hole) or the cut line (in cases where the orientation line was not reliable).</li> <li>Once assay results are received the results from duplicate samples are compared with the corresponding routine sample to ascertain whether the sampling is representative.</li> </ul>	



Criteria	JORC Code explanation	Commentary			
	<ul style="list-style-type: none"> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Sample sizes are considered to be appropriate and correctly represent the style and type of mineralisation.</li> </ul>			
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> </ul>	<ul style="list-style-type: none"> <li>Avalon used assay method ME-ICP61 (33 elements), which involves sample decomposition by a combination of 4 acids. The solutions were then analysed by ICP-AES. The lower detection limit for copper using ME-ICP61 is 0.0001% and the upper detection limit is 1%. Samples assaying over 1% Cu by ME-ICP61 were analysed by Cu-OG62 (4-acid digestion and ICP or AAS finish).</li> <li>This analysis technique is considered suitable for this style of mineralisation.</li> </ul>			
	<ul style="list-style-type: none"> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> </ul>	<ul style="list-style-type: none"> <li>No other measurement tools/instruments were used.</li> </ul>			
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The values of the standards range from low to high grade and are considered appropriate to monitor performance of values near cut-off and near the mean grade of the deposit.</li> <li>The check sampling results are monitored and performance issues are communicated to the laboratory if necessary.</li> </ul>			
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul>	<ul style="list-style-type: none"> <li>Photographs of sampled intervals are taken and the Competent Person for exploration results for this announcement has viewed photographs of the core.</li> </ul>			
	<ul style="list-style-type: none"> <li>The use of twinned holes.</li> </ul>	<ul style="list-style-type: none"> <li>Twin holes have not been drilled in this area.</li> </ul>			
	<ul style="list-style-type: none"> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> </ul>	<ul style="list-style-type: none"> <li>Avalon sampling data were imported and validated using an Access database package.</li> </ul>			
	<ul style="list-style-type: none"> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Assay data were not adjusted.</li> </ul>			
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> </ul>	<ul style="list-style-type: none"> <li>Surface collar co-ordinates are surveyed by Differential GPS in Swedish co-ordinate system RT90 gon vast (west) 2.5 by qualified local contract surveyors to a high level of accuracy (1-3cm).</li> <li>It has been standard procedure to use the same contract surveyors to survey collar points since Avalon's involvement, so there is high confidence that all the surface drill holes completed by Avalon are supported by accurate location data.</li> <li>High quality down-hole dip and azimuth survey data are recorded.</li> </ul>			
	<ul style="list-style-type: none"> <li>Specification of the grid system used.</li> </ul>	<ul style="list-style-type: none"> <li>RT90 Map projection parameters:</li> </ul> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Reference Ellipsoid</td> <td>Bessel 1841</td> </tr> </tbody> </table>	Parameter	Value	Reference Ellipsoid
Parameter	Value				
Reference Ellipsoid	Bessel 1841				

Criteria	JORC Code explanation	Commentary	
		Semi Major Axis	6377397.155 m
		Inverse Flattening (1/f)	299.1528128
		Type of Projection	Gauss-Krüger (Transverse Mercator)
		Central Meridian:	E 15°48'29.8" (2.5 gon West of the Stockholm Observatory)
		Latitude of Origin	0°
		Scale on Central Meridian	1
		False Northing	0 m
		False Easting	1500000 m
	<ul style="list-style-type: none"> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>RT90 gon vast (west) 2.5 grid north is situated 4.01° to the east of True North.</li> <li>The topographic surface was taken from LIDAR data (airborne laser scanning) that was purchased from Lantmäteriet (the Swedish mapping, cadastral and land registration authority). Data point resolution is 0.5 per metre square and is specified as accurate to 20cm in elevation on distinct surfaces and 60cm in planimetry. The level of accuracy of the LIDAR topographic surface was considered adequate for the purposes of resource estimation. The LIDAR topographic surface has also been verified by the many Differential GPS collar survey co-ordinates.</li> </ul>	
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>The drilling was from surface and intersected a point approximately 50m from the nearest drill hole. Data spacing was sufficient to establish interpreted continuity between drill holes.</li> <li>Diamond drill sampling was generally taken over 1 meter intervals except when adjusted to geological boundaries.</li> </ul>	
	<ul style="list-style-type: none"> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> </ul>	<ul style="list-style-type: none"> <li>Sufficient continuity in both geology and mineralisation has been established to support the classification of the Company's existing Mineral Resources under JORC Code2012.</li> </ul>	
	<ul style="list-style-type: none"> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>No sample compositing was done.</li> </ul>	
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> </ul>	<ul style="list-style-type: none"> <li>Drilling orientations were appropriate for the predominantly high angle of the mineralised intersections providing representative samples.</li> </ul>	
	<ul style="list-style-type: none"> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>The company does not believe that any sample bias had been introduced which could have a material effect on the resource model, particularly given the good correlation of mineralisation between holes.</li> </ul>	

Criteria	JORC Code explanation	Commentary
<b>Sample security</b>	<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>Avalon sampling procedures indicate individual samples were given due attention.</li> <li>ALS is an internationally accredited laboratory that has all its internal procedures heavily scrutinised in order to maintain their accreditation.</li> </ul>
<b>Audits or reviews</b>	<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>Avalon's sampling techniques and data have been audited multiple times by independent mining consultants during the process of reporting a JORC Compliant Mineral Resource on the various mineral deposits that make up the Viscaria Copper Project (A Zone, B Zone, and D Zone). These audits have always resulted in the conclusion that Avalon's sampling techniques and data are industry standard and suitable for the purposes of reporting a JORC Compliant Mineral Resource.</li> <li>All historical data has been validated and migrated into an access database. Checking was carried out at the data entry stage for interval error and any significant data issues were resolved. Procedures exist to standardise data entry and senior geological staff from Avalon regularly vetted sampling procedures.</li> </ul>

**TABLE 1 – Section 2: Exploration Results**

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<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> </ul>	<ul style="list-style-type: none"> <li>The B Zone Prospect is covered by Exploration Permit Viscaria nr 101. The B Zone Mineral Resource is also covered by Exploitation Concession Viscaria K nr 3.</li> </ul>
	<ul style="list-style-type: none"> <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>Exploration Permit Viscaria nr 101 is valid as is Exploitation Concession Viscaria K nr 3.</li> </ul>
<b>Exploration done by other parties</b>	<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>The historic drilling at the B Zone Prospect was completed by Viscaria AB (owned by Outokumpu OY) during the period 1985 to 1997.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Geology</b>	<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 B Zone deposit is interpreted to be a volcanic hosted massive sulphide-type (VHMS) ore system. This deposit has subsequently been deformed by shearing associated with a lower amphibolite facies metamorphic event. Subsequent to the lower amphibolite facies metamorphism and associated deformation, these rocks have been overprinted by locally constrained shear zones displaying retrograde, greenschist metamorphic mineralogy (chlorite, epidote, actinolite, and talc).</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li><i>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:</i> <ol style="list-style-type: none"> <li><i>easting and northing of the drill hole collar</i></li> <li><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li><i>dip and azimuth of the hole</i></li> <li><i>down hole length and interception depth</i></li> <li><i>hole length.</i></li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Details of the drill holes discussed in this announcement are in the body of the text.</li> </ul>
	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Information included in announcement.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Weighted Averaging method was used to calculate drill hole intersections for copper grade based on the assay results received, and the down hole width of the assayed interval.</li> </ul>
	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>The results in the announcement show both aggregated intercepts and specific higher grade intercepts within the broader interval. The aggregated intervals are identified on the basis of the presence of chalcopyrite within altered rock and delivering an aggregated assay of greater than or equal to 0.5% Cu. The specific higher grade intervals are identified based on continuity of mineralisation.</li> </ul>
	<ul style="list-style-type: none"> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>Metal Equivalents have not been applied.</li> </ul>
<b>Relationship between mineralisation</b>	<ul style="list-style-type: none"> <li><i>If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.</i></li> </ul>	<ul style="list-style-type: none"> <li>The orientations of VDD 197 and VDD 198 are at moderate and acceptable angles to the mineralization at the A Zone East and B Zone Prospects respectively. The mineralised interval, from other nearby drilling, is sub-vertical indicating that the estimated true width of the mineralized intersection is approximately 60% of the down hole thickness of the mineralization.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>widths and intercept lengths</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>See above – estimated true widths are approximately 60% of intersected widths.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>See Figures for maps and cross-sections showing distribution of drill collars.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Figures 2 and 3 above show the geological interpretation on cross section of drill holes VDD 197 and VDD 198 relative to surrounding drill holes.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Figures 2 and 3 above show the geological interpretation on cross section of drill holes VDD 197 and VDD 198 relative to surrounding drill holes.</li> </ul>
<b>Further work</b>	<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> </ul>	<ul style="list-style-type: none"> <li>Exploration for further extensions of the B Zone Mineral Resource will be undertaken in future.</li> </ul>
	<ul style="list-style-type: none"> <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>See Figure 1 which shows areas for further drilling surrounding these drill holes.</li> </ul>