

# QUARTERLY REPORT

June 2011

**ASX/Media Release** 

29 July 2011

# AVALON MINERALS LTD JUNE 2011 QUARTERLY REPORT

#### Avalon Minerals Ltd ABN 68 123 184 412

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ASX Code: AVI 217.6 million shares 8 million unlisted options

#### **Directors**

David McSweeney Executive Chairman Andrew Munckton Managing Director Tan Sri Abu Sahid Bin Mohamed Non-Executive Director Stephen Stone Non-Executive Director Amro Al-Khadra Non-Executive Director

#### Mineral Resources:

A Zone: 17.3mt @ 1.84%Cu B Zone: 27.4mt @ 0.73% Cu D Zone: 9.0mt @ 0.55% Cu & 27% Fe Tailings Dam: 12.5mt @ 0.25% Cu

For a total of 66.2mt @ 0.9% Cu and 600,000 tonnes of copper metal

## HIGHLIGHTS

Viscaria Copper Iron Ore Project, Sweden (Avalon - 100%)

- Significant ore grade intersections returned from resource drilling at D Zone, including:
  - o 27m @ 1.3% Cu and 31% Fe;
  - o 37m @ 0.7% Cu and 26% Fe; and
  - o 16m @ 1.0% Cu and 38% Fe in deep drilling.
- Significant widths of ore grade mineralisation returned from resource drilling at B Zone, including:
  - 25m @ 0.9% Cu
  - 9m @ 1.2% Cu.
- Additional drilling at D Zone and B Zone commencing in the September Quarter to further expand resources.
- Bankable Feasibility Study completion deferred to 2012 following successful drilling campaigns.
- Resource estimation and pit design update has commenced at A Zone following receipt of the geotechnical report.
- EIA and Mining Lease applications are progressing satisfactorily.

#### **Corporate**

- \$10.8M share placement announced, with Tranche 1 completed comprising the issue of 8.36M shares at \$0.18/share raising \$1.5M.
- Tranche 2 placement, comprising the issue of 51.63M shares at \$0.18/share to raise \$9.29M, fully underwritten by the Company's largest shareholder and Non Executive Director, Tan Sri Abu Sahid Bin Mohamed shareholder approval to be sought in September Quarter.



### VISCARIA COPPER-IRON PROJECT

The 100%-owned Viscaria Copper-Iron Project in northern Sweden is the Company's primary focus and underpins Avalon's plans to become a mid-tier copper producer. The 2010 Viscaria Pre-Feasibility Studies laid the foundation for the further drilling and Bankable Feasibility Studies on the Project which are expected to be completed in 2012.

### 2011 Drilling Program

During the June Quarter, a major program of drilling was completed at the Viscaria Project prior to the onset of the melt period in May. The key objectives of this program were to:

- upgrade and expand the existing D Zone resource;
- confirm the continuity of mineralisation at depth in D Zone; and
- confirm the continuity of near-surface copper mineralisation at B Zone.

The drilling program commenced on 11 November 2010 and continued until 25 April 2011. Further drilling at both D Zone and B Zone is planned as part of the Bankable Feasibility Study (BFS) and is expected to commence in the September Quarter.

#### D Zone

The D Zone ore body contains overlapping copper and magnetite iron ore mineralisation. Test work conducted to date indicates that the two metals can be effectively separated using conventional processing techniques.

Avalon's drilling during the June Quarter focused on both resource in-fill drilling and potential depth extensions to the D Zone mineralisation. Resource in-fill assay results received to the end of June included:

- 29m @ 0.6% Cu and 35% Fe from 160m
- 37m @ 0.7% Cu and 26% Fe from 96m
- 27m @ 1.3% Cu and 31% Fe from 74m
- 35m @ 0.8% Cu and 24% Fe from 163m

Drilling results are shown in Appendix 1 and assay results and locations of drill intersections are shown in Figure 1 below.

Drilling within the current resource envelope continues to return wide, medium and low grade copper intersections within the surrounding envelope of magnetite mineralisation. The mineralisation is now well understood and predictable in terms of both location and grade by the Company's geological team, reinforcing Avalon's confidence in the potential of the D Zone mineralised horizon to host a significant copper and iron ore resource.

The results from this Quarter are consistent with Avalon's interpretation of a zone of higher grade copper mineralisation within the D Zone ore body, which sits within a broader zone of magnetite and lower grade copper mineralisation approximately 20-30 metres in width and 1,200 metres long.



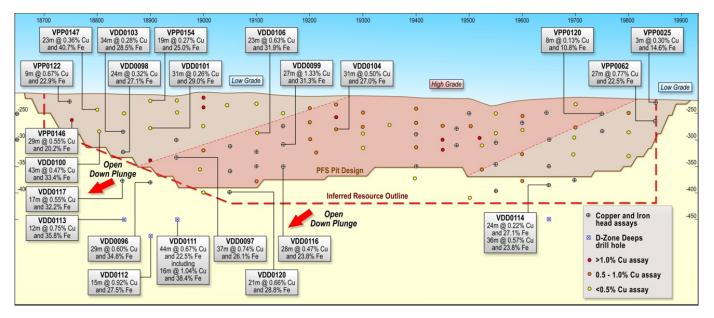


Figure 1 – D Zone Copper and Iron Results

Drilling during the Quarter also targeted potential depth extensions below the portions of the D Zone which can be extracted via open pit in the belief that some deeper sections of the deposit may support future underground mining if mineralisation of sufficient grade can be demonstrated.

Mineralisation below 200 vertical metres was targeted in three drill holes at the southern end of the D Zone mineralisation, returning the following results:

- 16.5m @ 1.0% Cu and 38% Fe from 209m and 7.6m @ 1.0% Cu and 39% Fe from 243m;
- 15.3m @ 0.9% Cu and 27% Fe from 282m; and
- 12.1m @ 0.8% Cu and 36% Fe from 256m.

The results have demonstrated the continuity of the higher grade copper and magnetite mineralisation over widths which would be conducive to underground mining. Further drilling is required to demonstrate the consistency of the mineralisation along strike below the base of the current pit design.

In addition to the excellent copper intersections, Davis Tube Recovery (DTR) test work was conducted on a number of drilled holes to evaluate the quality of magnetite concentrate that can be achieved from magnetic separation of the magnetite mineralisation within the D Zone Resource. Results received to date have confirmed excellent weight recovery and upgradeability, with best results including:

- 28m @ 35% Wt Rec, 70.6% Fe and 0.7% SiO<sub>2</sub> from 127m;
- 42m @ 37% Wt Rec, 71.0% Fe and 0.8% SiO<sub>2</sub> from 147m;
- 68m @ 38% Wt Rec, 70.2% Fe and 1.2% SiO<sub>2</sub> from 192m; and
- 34m @ 39% Wt Rec, 71.2% Fe and 0.6% SiO<sub>2</sub> from 234m.



DTR results are summarised in Appendix 2 and DTR results and locations of reported drilling are shown in Figure 2 below.

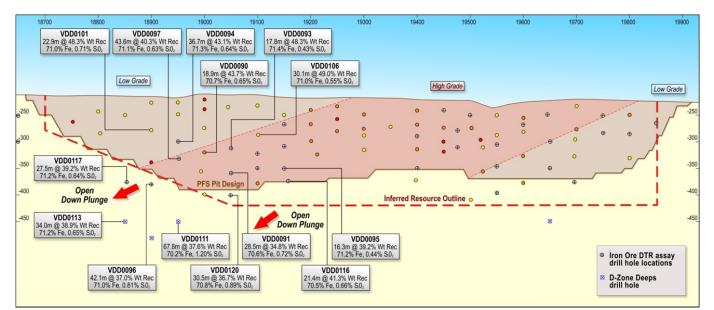


Figure 2 – D Zone DTR Results

The results continue to indicate that the magnetite mineralisation within the D Zone resource can be effectively upgraded to achieve a high-quality iron concentrate from both the shallow and deeper portions of the deposit.

The significance of these excellent concentrate specifications is that the Viscaria concentrate matches the quality specification stipulated by LKAB for provision of supply to their nearby Kirunavarra pellet making facility. This has positive implications for the potential to negotiate a future off-take agreement with LKAB for Viscaria magnetite concentrate.

#### B Zone

Drilling conducted at B Zone is designed to in-fill Inferred Resources within the current pit design, which has a maximum depth of approximately 75 metres.

Results from this drilling received during the Quarter are summarised below and listed in Appendix 3. The mineralisation is a combination of disseminated copper and other sulphide and stringers and steeply-dipping copper-sulphide zones.

Test work to date has demonstrated that B Zone material is not suitable to co-mingle with D Zone material due to the presence of magnetic pyrrhotite associated with the copper mineralisation.

Results have shown medium grade (0.6% to 1.0%) copper and sulphide mineralisation over the target horizon. The intersections encountered to date at the southern end of the deposit have been significantly wider than the



September 2010 resource model indicated and therefore further follow up drilling is warranted at B Zone to confirm the continuity of mineralisation below the current pit design.

Significant results include:

- 29m @ 0.7% Cu and 2.1% S from 8m
- 31m @ 0.6% Cu and 1.7% S from 10m
- 22m @ 0.7% Cu and 2.2% S from 15m
- 28m @ 0.7% Cu and 3.3% S from 44m
- 25m @ 0.9% Cu and 3.0% S from 31m

#### Forward Program

Planning is complete for the resumption of drilling in the September 2011 Quarter. This upcoming program is targeting the completion of the resource drilling at all three zones in preparation for the finalisation of the Bankable Feasibility Study (BFS) of the Viscaria Project.

The program includes resource drilling at D and B Zones and further metallurgical and geotechnical drilling at A Zone. The program is scheduled to extend into the March 2012 Quarter.

#### **Bankable Feasibility Study**

The Bankable Feasibility Study (BFS) of the Viscaria Copper-Iron Project commenced in October 2010. The BFS includes all approval and engineering elements of the project. The scheduled completion date of the BFS has been deferred until the March 2012 Quarter in response to the successful drilling campaign conducted so far at both D Zone and B Zone, both of which now require further drilling as outlined above.

#### Engineering

The Engineering Study for process plant and infrastructure is being completed by MSP Engineering Pty Ltd. Metallurgical test work is being completed by Ammtec under MSP's supervision. This work will provide a detailed flowsheet, plant design and capital and operating cost estimate for the processing facility and associated infrastructure.

During the Quarter, final metallurgical test work reports were received from Ammtec and reviewed by MSP engineering. The conclusions from the metallurgical review included;

- A Zone and B Zone materials are metallurgically similar but significantly different from D Zone materials in their crushing, grinding, flotation and magnetic separation performance.
- Co-mingling of A Zone, B Zone and D Zone material will result in sub-optimal flotation performance and significant contamination of magnetite concentrate (principally sourced from D Zone ore) with sulphur and residual copper sourced from A Zone and B Zone ores.



- The circuit design should accommodate separation of A Zone and B Zone material from D Zone material until copper flotation (for A and B Zone material) and magnetic separation (D zone material) has been completed.
- A 15% increase in capital cost of the processing plant is likely if the above recommendations are adopted. The project capital cost estimate in the 2010 PFS was US\$160 million inclusive of a 20% contingency.

Engineering is currently approximately 50% complete and further test work programs have been commenced to determine the optimal configuration of the processing plant to accommodate the separation of A Zone and B Zone materials from D Zone. These additional test work programs are scheduled to be completed in the December 2011 Quarter.

#### Mining

The Mining Engineering study includes the geotechnical, optimisation and mine design of the three open pit mines associated with the project. This work will result in the optimal pit design and mining schedule that satisfies the needs of the Project and the expected processing plant ore demand.

During the Quarter, the geotechnical consultants concluded their recommended design parameters for all three zones following a site visit and geotechnical assessment. The new design parameters at A Zone and B Zone are generally in line with those used during the September 2010 PFS. However, at D Zone the BFS design parameters are likely to be more conservative than those used in 2010 in response to the generally deeper pit design and knowledge of the rock strength gained since the PFS.

The more conservative design parameters are expected to be offset by improved ore widths and grade defined by the 2011 drilling program.

The updated A Zone geological model and design parameters are currently undergoing optimisation at CSA Global to complete the pit design, mining cost and ore reserves for the A Zone mineralisation.

#### Approvals (MEC)

The Mining Exploitation Concession (MEC) for the Viscaria Project was submitted to the Bergsstaten (Mines Department) in 2010. Information was requested by the Kiruna County Administration Board regarding the potential land use conflicts with the Kiruna-Narvic railway line reserve (see Figure 3) in January 2011.

Further information was also requested regarding the potential impact of mining upon the six power generation windmills which are located within and adjacent to the A and B Zone MEC in February 2011.

Amendments to the MEC application and management plans have been submitted to the Bergsstaten in response to these requests.

The amended MEC application – which now excludes the railway reserve but includes provision for altering the land use specification in the event that the windmills are required to be removed – was submitted in April 2011 and is currently being considered by the Bergsstaten.



#### **Environment Impact Assessment (EIA)**

The Project EIA is a technical description of the expected project impact on the community, land and environment surrounding the project. It is a comprehensive document which covers all consultation and baseline technical data on the existing land, air and water uses and community expectations of the project.

The document must be submitted to the Environmental Court of Sweden (ECS), the government regulator, which triggers a formal project assessment process, and if approved, results in a licence to operate with conditions issued by the Government of Sweden.

During the Quarter, the Viscaria EIA was formally submitted to ECS. The ECS has distributed the document to affected parties and sought submissions and comments from them. Comments are required by July 2011. The Company through its advisors in Sweden (Hifab) have prepared responses to queries already raised and will be submitting its formal response once final comments have been received.

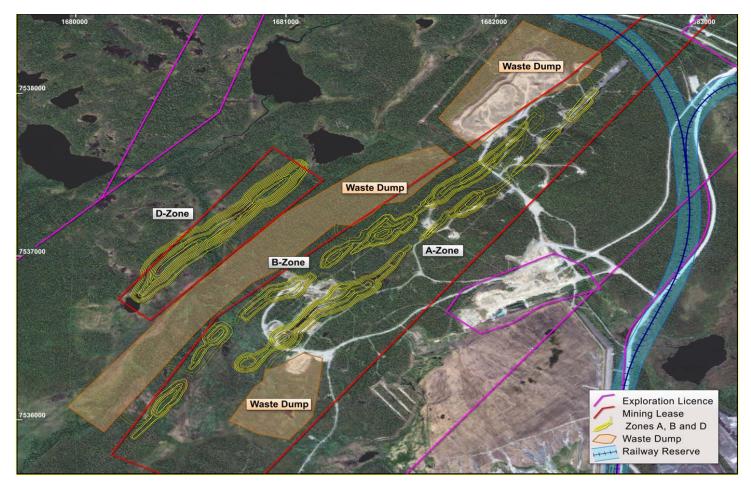


Figure 3: Granted Tenure and Applications on Air Photo showing preliminary pit designs for A Zone, B Zone and D Zone



#### Customers

Discussions continued during the Quarter with Boliden AB and LKAB for off-take agreements for copper and magnetite concentrates respectively. In the Quarter, a bulk concentrate sample was prepared at SGA in Germany in preparation for conducting pellet making tests on Viscaria magnetite concentrates, and on a blend of Viscaria and LKAB iron ore concentrate. Test work on this sample is now expected to commence in the September Quarter due to current very high demands on the test work facility.

#### **Costs and Progress**

During the Quarter, cash outflow totalled \$5.3 million reflecting the conclusion of the drilling program in April and the clearing of the considerable backlog of samples at Viscaria and assay laboratories. Metallurgical test work, engineering and design work was also concluded prior to the metallurgical review.

### **EXPLORATION – OTHER PROJECTS**

#### **Regional Exploration**

Avalon continued with the collection of historical data for its recently acquired exploration tenure in preparation for the 2011 field season. Geophysical, geochemical and geological data sets are now complete. Further historical data, principally from the Swedish geological survey and privately available data, are being integrated for analysis.

New geophysical interpretations were concluded over the five priority targets to further define the size, shape and position of the prospective geophysical anomaly.

Field work will commence in the September Quarter in preparation for the 2011/12 drilling season.

#### Adak Copper-Zinc Project

The Adak Copper Project contains five historical mines – Adak, Lindskold, Brannmyran, Karlsson (the Adak Dome Mines) and Rudtjebacken – covering an area of 26.71km<sup>2</sup>, located in the world-class Skelleftea VMS mining district of Northern Sweden.

During the Quarter, Avalon completed technical studies of remaining mineralisation from the flooded underground mining positions. No other exploration was undertaken.

A number of groups are currently evaluating the Adak Project with a view to either joint venture or sale and purchase.



## CORPORATE

### **Capital Raising**

On 22 June 2011, the Company announced a Share Placement to professional and sophisticated investors of up to 60,000,000 shares at \$0.18/share, to raise \$10.8 million, with the proceeds to be used to support the continued exploration and development of the Viscaria Copper-Iron Project.

The Placement was underwritten by Avalon Non-Executive Director and existing major shareholder, Tan Sri Abu Sahid Bin Mohamed, and was managed by Indian Ocean Capital Pty Ltd.

The Placement was undertaken in two tranches. Tranche 1 comprised the issue of 8,362,222 fully paid ordinary shares at \$0.18 per share to clients of Indian Ocean Capital and Black Swan Equities, and was completed utilising the Company's 15% placement capacity. Of these shares, 6,500,000 were allotted on 30 June and the balance of 1,862,222 were allotted in early July.

Tranche 2 comprises the issue of 51,637,778 fully paid ordinary shares at \$0.18 per share, pursuant to the underwriting agreement, and is subject to shareholder approval. A General Meeting of Avalon shareholders is to be held in the September Quarter to seek this approval.

#### **Cash Resources**

As at 30 June 2011, the Consolidated Entity had cash reserves of \$2.66 million. Of this amount, \$1.38 million related to the portion of the Tranche 1 Share Placement funds discussed above that had been received before the end of the Quarter.

Avalon has no corporate debt.

#### **Shareholder Information**

At 30 June 2011, the Company had 215,738,002 fully paid ordinary shares on issue and approximately 865 shareholders. The top 20 Shareholders held approximately 66% of the Company. Subsequent to Quarter-end, the remaining Tranche 1 shares of 1,862,222 were issued and allotted taking the total shares on issue to 217,600,224.



#### **Competent Person's Statement**

The information in this report that relates to Mineral Resources and Exploration Results is based upon information reviewed by Mr Andrew Munckton BSc (Mining Geology) who is a Member of the Australasian Institute of Mining and Metallurgy.

Mr Munckton 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 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Munckton consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### JORC – Exploration Targets

It is common practice for a company to comment on and discuss its exploration in terms of target size and type. The information relating to exploration targets should not be misunderstood or misconstrued as an estimate of Mineral Resources or Ore Reserves. Hence the terms Resource(s) or Reserve(s) have not been used in this context. The potential quantity and grade is conceptual in nature, since there has been insufficient work completed to define them beyond exploration targets and that it is uncertain if further exploration will result in the determination of a Mineral Resource.

- ENDS -

Released by: Nicholas Read/Paul Armstrong Read Corporate Telephone: +61 (0)8 9388 1474 On behalf of: Mr Andrew Munckton Managing Director Avalon Minerals Limited Mobile: +61 (0)4 3563 5598



### Appendix 1: Drilling Intersections Viscaria D Zone

North	Hole ID	From (m)	To (m)	Interval (m)	Fe%	Cu%
18750	VPP0122	16	25	9	22.9	0.67
	VPP0146	17	46*	29	20.2	0.55
18800	VPP0152	16	19	3	13.2	0.25
	VPP0147	16	39	23	40.7	0.36
	VDD0100	46	89	43	33.4	0.47
18850	VPP0150				NSI	NSI
	VDD0098	104	128	24	27.1	0.32
	VDD0103	57	91	34	28.5	0.28
	VDD0113	256	268	12	35.8	0.75
	VDD0117	165	183	17	32.2	0.55
18900	VPP0154	21	40	19	25.0	0.27
	VDD0096	160	189	29	34.8	0.60
	VDD0101	51	82	31	29.0	0.26
	VDD0112	282	297	15	27.5	0.92
18950	VDD0097	96	133	37	26.1	0.74
	VDD0111	208	252	44	22.5	0.67
	Including	209	225	16	38.4	1.04
19050	VDD0120	166	187	21	28.8	0.66
19100	VDD0106	51	74	23	31.9	0.63
19150	VDD0099	74	101	27	31.3	1.33
	VDD0116	144	172	28	23.8	0.471
	Including	162	172	10	31.2	0.99
19250	VDD0104	64	79	15	18.5	0.66
	and	81	95	14	35.8	0.32
	VDD0092	121	124	3	9.3	0.65
19350	VDD0107	38	55	17	20.1	0.91
19425	VPP0028	9	39	30	5.9	0.72
19650	VDD0114	136	160	24	27.1	0.22
	and	163	198	36	23.8	0.57
19750	VPP0120	14	22	8	10.8	0.13
19850	VPP0062	22	49	27	22.5	0.77
	VPP0025	5	8	3	14.6	0.30
	VPP0027	-	-	-	NSI	NSI

NB: Assays are by XRF and ICP, \* Denotes end of hole, NA = not available, NSI = No significant intersection



#### Appendix 2 – DTR Results Viscaria D Zone

North	Drill Hole	From (m)	To (m)	Interval (m)	Wt Rec %	Fe %	SiO₂ %	Al <sub>2</sub> O <sub>3</sub> %	Cu %	Р%	S %
19100	VDD0090	93.5	112.4	18.9	43.7	70.7	0.65	0.09	0.013	0.011	0.030
19050	VDD0091	126.8	155.3	28.5	34.8	70.6	0.72	0.03	0.013	0.013	0.033
19150	VDD0093	94.7	112.5	17.8	48.3	71.4	0.43	0.02	0.029	0.011	0.031
18950	VDD0094	61.3	98.0	36.7	43.1	71.3	0.64	0.06	0.009	0.009	0.026
19150	VDD0095	124.9	141.2	16.3	39.2	71.2	0.44	0.02	0.027	0.004	0.022
18900	VDD0096	147.3	189.4	42.1	37.0	71.0	0.81	0.09	0.010	0.006	0.018
18950	VDD0097	85.0	128.6	43.6	40.3	71.1	0.63	0.07	0.009	0.006	0.020
18900	VDD0101	58.3	81.2	22.9	48.3	71.0	0.71	0.05	0.005	0.007	0.009
19100	VDD0106	51.1	81.2	30.1	49.0	71.0	0.55	0.04	0.022	0.010	0.031
18950	VDD0111	192.2	260.0	67.8	37.6	70.2	1.20	0.12	0.472	0.006	0.057
18850	VDD0113	234.0	268.0	34.0	38.9	71.2	0.65	0.07	0.001	0.004	0.009
19150	VDD0116	147.8	169.2	21.4	41.3	70.5	0.66	0.04	0.010	0.003	0.018
18850	VDD0117	155.0	182.5	27.5	39.2	71.2	0.64	0.06	0.007	0.005	0.006
19050	VDD0120	156.7	187.2	30.5	36.7	70.8	0.89	0.04	0.003	0.007	0.016

NB: DTR results are for Davis Tube Recovery using a75micron screen. Approximate fineness of sample is P₅₀ of 45microns. Assays are by XRF. Assay results are prior to Copper and Sulphur flotation.



North

Hole ID

#### Interval (m) Fe % From (m) To (m) 20250 VRC0045 46 0.43 3.06 51 5 15.5 20150 VRC0046 32 39 7 14.2 0.38 1.17 42 48 6 14.2 0.48 1.31 and 20100 VRC0104 54 62 8 15.5 1.02 1.71 68 75 7 15.5 0.56 2.66 and VRC0103 17 26 9 16.7 0.95 2.99 20000 VRC0102 19900 40 56 16 17.0 0.45 1.32 19850 VRC0099 ---NSI NSI NSI VRC0100 40 51 11 13.8 0.41 1.45 VRC0101 NSI NSI NSI ---19750 VRC0098 NSI NSI NSI ---19700 VRC0097 NSI NSI NSI -\_ \_ 19650 VRC0095 7 29.4 3 4 0.43 2.87 VRC0094 14 24 10 17.5 0.94 1.62 81 76 17.1 2.10 VRC0096 5 0.84 VRC0093 15 10 15.8 0.81 5 1.60 and 51 67 16 16.0 0.59 2.78 19550 VRC0091 8 37 29 16.3 0.66 2.05 VRC0092 21 36 15 15.4 0.78 1.66 and 50 72 22 17.1 0.41 2.50 19500 VRC0090 10 41 31 15.7 0.61 1.66 VRC0089 33 51 0.45 18 19.6 3.42 VRC0088 19400 25 47 22 14.8 0.53 1.89 19350 VRC0087 19 38 19 16.0 0.49 1.73 19300 VRC0072 15 37\* 0.73 2.20 22 16.6 19200 VRC0070 44 72 28 17.4 0.67 3.28 19150 VRC0069 18 31 13 15.5 0.48 4.14 31 25 19050 VRC0047 56\* 15.1 0.87 2.96 19000 VRC0048 27 61 34 14.5 0.42 1.57 18950 VRC0049 NSI NSI NSI ---18750 VRC0053 36 47 11 14.8 0.42 1.79 18600 VRC0055 36 53 17 14.2 0.74 2.16 18550 VRC0056 26 50 24 17.5 0.70 2.65 18350 VRC0059 NSI NSI NSI -\_ -18300 VRC0061 62 78 16 14.6 0.68 2.75 18250 VRC0062 14 51 37 16.0 0.51 1.86 18150 VRC0064 10 19 9 14.7 1.19 2.55 VRC0063 22 13.5 0.23 18100 18 4 1.58

#### Appendix 3 – Drilling Intersections Viscaria B Zone

S %

Cu %

NB: Assays are by ICP, \* Denotes end of hole