

**AVALON MINERALS LTD**

**Viscaria Copper Project**

**November 2013**

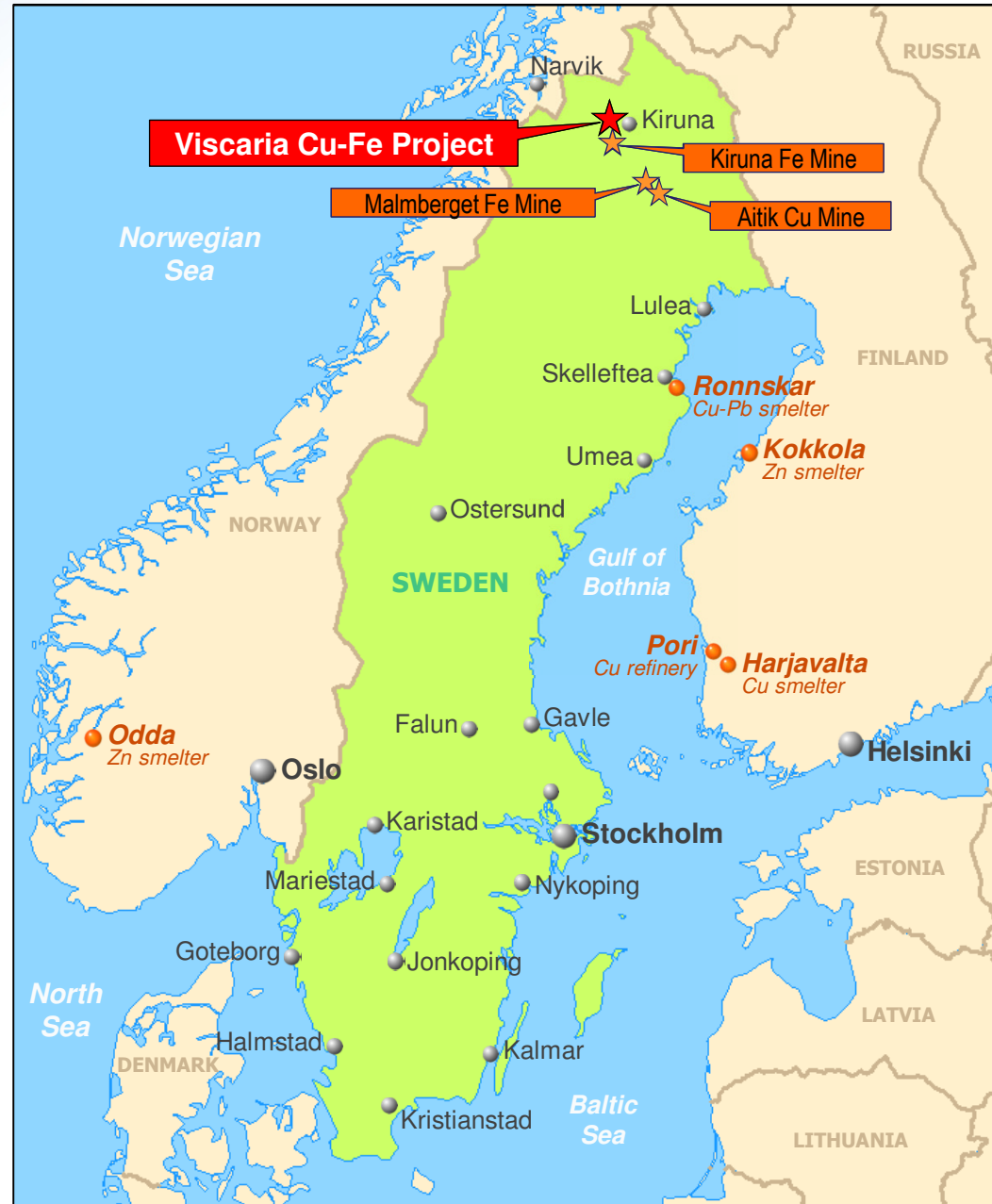
**Annual General Meeting**



**AVALON**  
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# AVALON MINERALS

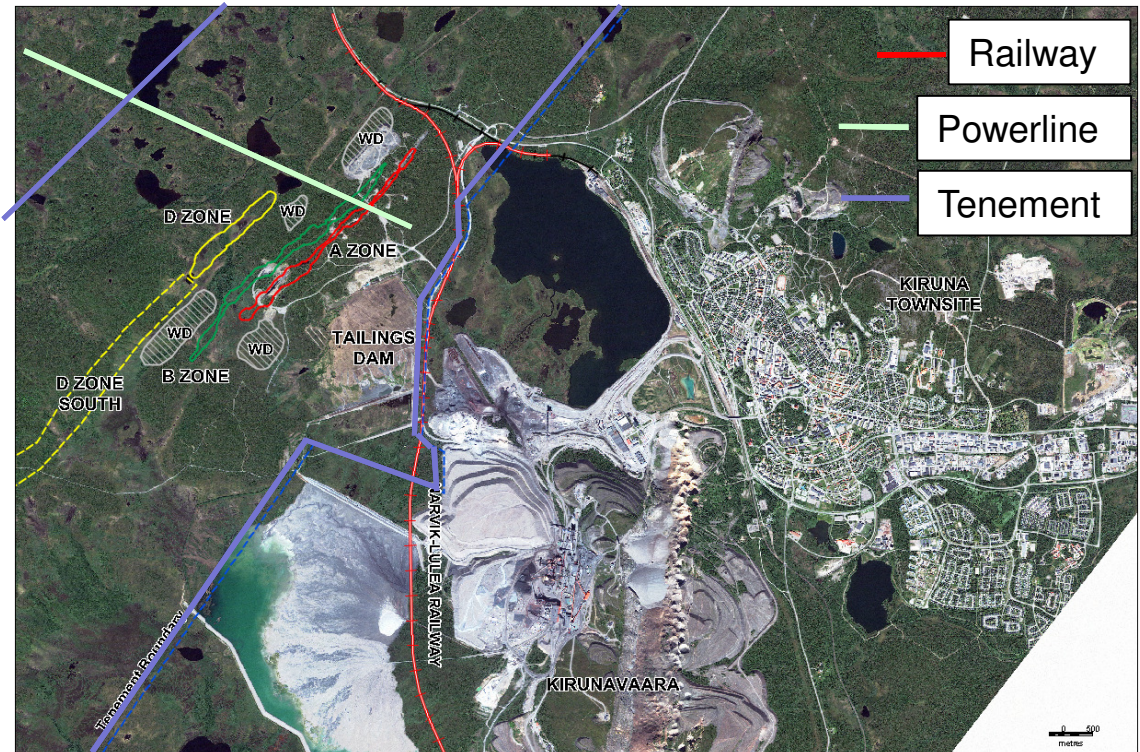
- Scandinavian focused copper exploration and mineral resource development company
- Key Assets:
  - Viscaria Copper Project (100%)
  - Viscaria Regional Exploration (584sqkm)
- Active strategy to acquire additional and complementary assets to add further value to Viscaria Project economics





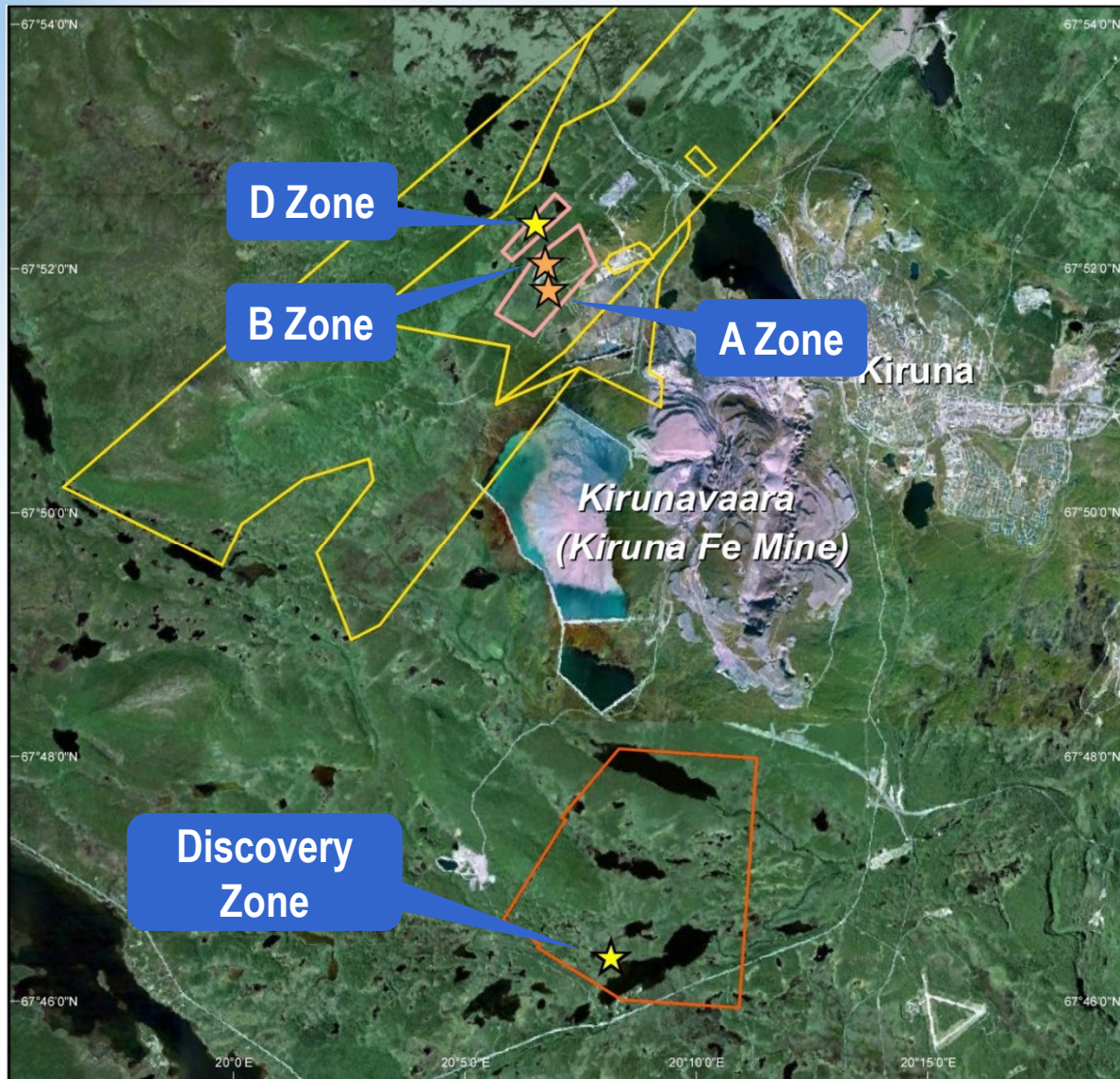
# SWEDEN – UNIQUE INVESTMENT OPPORTUNITY

- **Low sovereign risk (Ranked 2<sup>nd</sup> in World)**
  - Politically and economically stable
  - Favourable mining regulations
- **Highly Prospective/Under Explored**
  - 1000 year mining history
  - Largest iron ore producer in Europe
  - A leading producer of base & precious metals
  - Minor modern exploration
- **Other Factors**
  - Established Mining culture
  - Excellent infrastructure
  - Low cost power
  - 22% company tax rate
  - No production royalties





# VISCARIA COPPER PROJECT MINERAL RESOURCES



## A ZONE

21.6Mt @ 1.5% Cu

## B ZONE

19.7Mt @ 0.8% Cu

## D ZONE

13.6Mt @ 1% Cu,  
25.6Mt @ 26.3% Fe

## DISCOVERY ZONE

10.9Mt @ 0.3% Cu & 38.7% Fe

## TOTAL\*

65.8Mt @ 1% Cu,  
36.5Mt @ 30.3% Fe



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\*JORC Mineral Resource breakdown presented on page 17  
and JORC Competent Person Statement page 18

# VISCARIA PROJECT GOALS FOR 2013

- Define Mineral Resources to support a Project NPV of +\$300M
  - Increase A and D Zone Resources through drilling
  - Acquire the Discovery Zone Prospect
- Demonstrate project potential to be a mid-tier copper producer
- Begin DFS and the process to Permit Project for Development

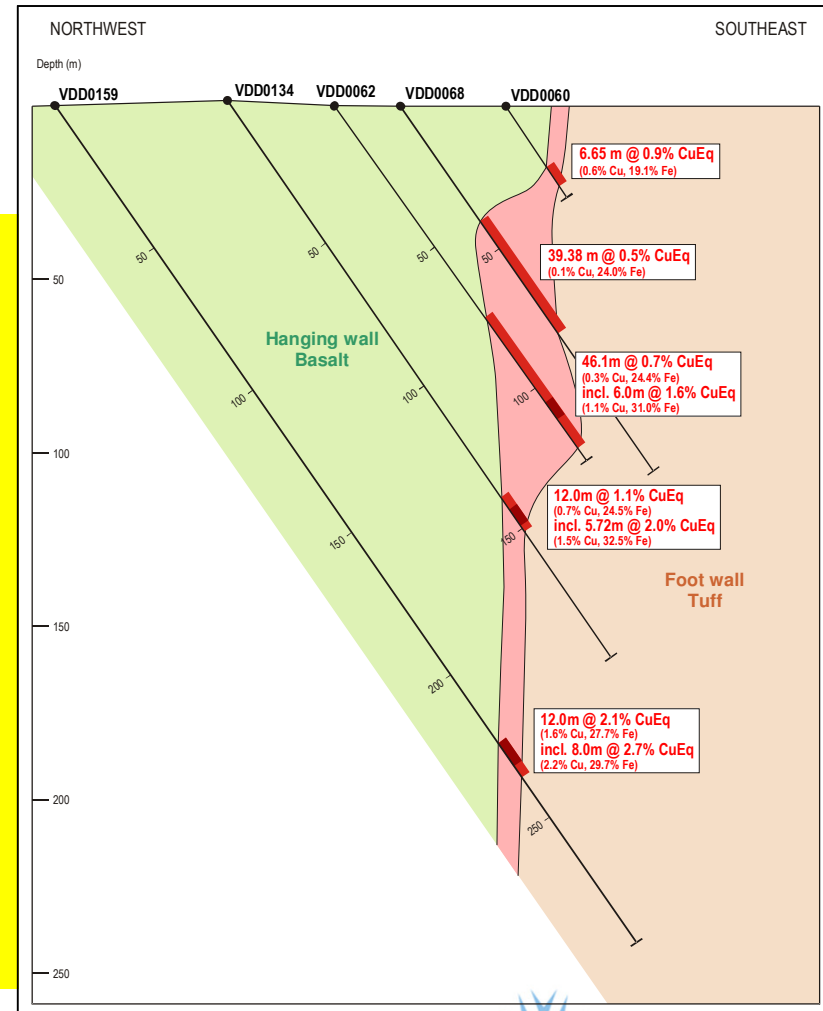


# D ZONE PROSPECT



# 2012-2013 ASSAY RESULTS – D ZONE

<u>Hole</u>	<u>Interval (down hole m)</u>	<u>Cu %</u>	<u>Fe %</u>	<u>CuEq %</u>
VDD0128	8.1	1.5%	39.2%	<b>2.1%</b>
VDD0129	9.0	1.8%	23.0%	<b>2.2%</b>
VDD0133	13.4	1.5%	32.5%	<b>2.0%</b>
VDD0159	8.0	2.2%	29.7%	<b>2.7%</b>
VDD0161	10.7	1.7%	42.4%	<b>2.4%</b>
VDD0165	8.0	1.8%	28.9%	<b>2.2%</b>
VDD0128	<b>68.5</b>	0.6%	28.2%	<b>1.0%</b>
VDD0146	<b>28.3</b>	0.6%	26.4%	<b>1.0%</b>







# 2013 D ZONE RESOURCE INCREASE

*Objective of resource extension drill program was to add:  
~45kt of contained Cu and 1.6Mt of recoverable Fe at D Zone*

Cu Resource	Tonnage (Mt)	% Cu	Metal Cu (t)	Increase Cu (t)
Oct 2012	5.4	0.9	48,000	88,000
June 2013	13.6	1.0	136,000	

- **152% increase to the Cu resource tonnage**
- **183% increase in contained copper metal**
- **195% of the objective set prior to drill program**

Fe Resource	Tonnage (Mt)	% Fe	Mass Recovery (%)	Recoverable Fe (Mt)	Increase Fe (Mt)
Oct 2012	14.8	25.8	31.1	3.2	2.5
June 2013	25.6	26.3	31.9	5.7	

- **73% increase to the Fe resource tonnage**
- **78% increase in contained iron metal**
- **156% of the objective set prior to drill program**

# SCOPING STUDY FINAL RESULT (JULY 2013)

Open Pit Mining Scenario	Viscaria Project including upgraded D Zone and Discovery Zone	
Tonnage and grade	33.7 Mt @ 0.61% Cu and 22% Fe	
Optimum Mining Rate	3.5 Mtpa	
Mine Life	10.3 years	
Pre-Production CAPEX	US\$180 M	Includes US\$20.6M pre-strip
Sustaining CAPEX	US\$51 M	Excludes closure costs
NPV <sub>10% REAL</sub> (pre-tax)	<b>US\$373 M</b>	US\$3.00/lb Cu US\$150/t iron ore pellets

## Price Sensitivity

Project NPV <sub>10% real</sub> (Pre-Tax)		Fe Price (for 69% Fe iron ore pellets)		
		US\$130/t	US\$150/t	US\$170/t
Cu Price	US\$3.50/lb Cu	\$371	\$474	\$578
	US\$3.25/lb Cu	\$321	\$423	\$527
	US\$3.00/lb Cu	\$270	<b>\$373</b>	\$477
	US\$2.75/lb Cu	\$219	\$323	\$426



# 2013 ACHIEVEMENT

Parameter	Unit	July 2013 Scoping Study (with D Zone upgrade and Discovery Zone)	October 2012 Scoping Study*
Tonnage in open pit shells	Mt	33.7	11.0
Mining Production Rate	Mtpa	3.5	2.1
Mine Life	Years	10.3	5.5
Annual Copper Production	kt	15-22	9
Annual Fe Conc. Production	kt	~1000	400
Project NPV <sub>10% REAL pre-tax</sub> @ \$3.00/lb Cu & \$150/t Fe pellets	\$US	<b>\$373M</b> (\$423M @ \$3.25 lb Cu)	<b>\$25M</b> (\$61M @ \$3.25 lb Cu)

\* Note: July 2013 NPV also includes some revised cost/revenue assumptions:

- Reduced mining costs (now \$4/t of ore instead of \$4.55/t of ore)
- Increased pit slopes (now 60° instead of 55°)
- Reduced copper recovery assumptions (now 85% instead of 90%)
- Increased TC/RC costs (doubled)
- Increased royalties to include Discovery Zone Royalty

# PATH TO DELIVERING ON VISCARIA PROJECT POTENTIAL

- **Complete DFS**
  - Drilling all mineral resources to JORC Indicated-Measured (~40,000m)
  - Various Studies: Mining, Metallurgy, Geotechnical, Hydrological, Social Impact
  - Detailed Design of Project Infrastructure
- **Complete Project Permitting**
  - Get northern A Zone Mining Exploitation Concession granted
  - Get Discovery Zone Mining Exploitation Concession granted
  - Resubmit Environmental Impact Assessment (EIA) for greatly expanded project scope
- **Complete Discovery Zone purchase**





# Potential Additional Value Opportunities

- Scoping Study also indicated additional ~\$40M of potential value from mineral resource at D Zone that could potentially be extracted by underground mining methods and still open at depth.
- Regional exploration work has identified two excellent new prospects:
  - Tjarro: Drilling has uncovered over 200m of anomalous copper and gold mineralisation
  - Tjavelk: Completed a ground EM survey to produce Drill Ready Targets



# SUMMARY

- **Sweden is a Top 5 mining destination with excellent infrastructure**
  
- **Viscaria Project value has significantly increased with NPV now \$373M up from \$25M 12 months ago (Scoping Study).**
  
- **Clear path to deliver on Viscaria Project potential**
  - Complete DFS
  - Get outstanding Mining Exploitation Concessions granted
  - Resubmit EIA
  - Finalise purchase of Discovery Zone
  
- **Potential Additional Value opportunities**

# APPENDIX: PRICE OF IRON ORE PELLETS



# VISCARIA PROJECT JORC MINERAL RESOURCES BREAKDOWN

Resource Name	Classification	Tonnes (t)	Cu Grade (%)	Cu Metal (t)
A Zone*	Measured	14,439,000	1.7	239,687
	Indicated	4,690,000	1.2	57,218
	Inferred	2,480,000	1.0	25,544
	<b>Subtotal</b>	<b>21,609,000</b>	<b>1.5</b>	<b>322,449</b>
B Zone*	Measured	123,000	1.3	1,636
	Indicated	4,118,000	0.7	29,650
	Inferred	15,410,000	0.8	118,657
	<b>Subtotal</b>	<b>19,651,000</b>	<b>0.8</b>	<b>149,943</b>
D Zone Cu Resource	Indicated**	5,100,000	1.1	54,570
	Inferred**	8,500,000	1.0	81,600
	<b>Subtotal</b>	<b>13,600,000</b>	<b>1.0</b>	<b>136,170</b>
Discovery Zone Cu Resource	Inferred***	10,900,000	0.3	31,200
<b>Overall Cu</b>	<b>Total</b>	<b>65,760,000</b>	<b>1.0</b>	<b>641,262</b>

Resource Name	Classification	Tonnes (Mt)	Fe Grade (%)	Mass Recovery (%)	Contained Iron (Mt)	Estimated recoverable iron (Mt)
D Zone Fe Resource	Indicated****	11.7	27.5	33.4	3.2	2.7
	Inferred****	13.9	25.7	31.0	3.6	3.0
Discovery Zone Fe Resource	Inferred*****	10.9	38.7	49.5	4.2	3.7
<b>Overall Fe</b>	<b>Total</b>	<b>36.5</b>	<b>30.2</b>	<b>37.4</b>	<b>11.0</b>	<b>9.4</b>

\* 2011 Mineral Resources for A Zone and B Zone are reported above a Cut off Grade of 0.4% Cu

\*\* 2013 Copper Mineral Resource for D Zone above Cut off Grade of 0.4% Cu

\*\*\* 2012 Copper Mineral Resource for Discovery above Cut off Grade of 15% Fe

\*\*\*\* 2013 Iron Mineral Resource for D Zone above a Cut off of 15% Mass Recovery

\*\*\*\*\* 2012 Iron Mineral Resource for Discovery above a Cut off Grade of 15% Fe

Note that the total D Zone Indicated and Inferred Mineral Resource reported for the Copper and Iron above 15% Mass Recovery are not mutually exclusive; the Mineral Resource for Iron above 15% Mass Recovery excludes 4.4 million tonnes at 0.89% Cu above a cut-off grade of 0.4% Cu.

Note that the total Discovery Zone Inferred Mineral Resource reported for the Copper and Iron are not mutually exclusive.

Contained iron is tonnes x Fe%, which may include iron content in silicates that could not be recovered. Estimated recoverable iron is based on Davis Tube Recovery test work at a 75 micron grind size. Estimated contained iron is tonnes x mass recovery % x Fe % in concentrate (69% Fe).



## Competent Persons Statement

The information in this report that relates to Exploration Results is based upon information reviewed by Dr Quinton Hills who is a Member of the Australasian Institute of Mining and Metallurgy. Dr Hills 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”. Dr Hills consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Mineral Resource estimate for the D Zone Prospect was compiled and prepared by Matthew Readford (MAusIMM) of Xstract Mining Consultants who is a Competent Person as defined by the Australasian Code for the reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) 2004 Edition and who consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

The Mineral Resource estimate for A and B Zones was compiled and prepared by Dr Bielin Shi (MAusIMM, MAIG) of CSA Global Pty. Ltd. who is a Competent Person as defined by the Australasian Code for the reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) 2004 Edition and who consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

The Mineral Resource estimate for the Discovery Zone is effective from 13 January 2012 and has been prepared by Mr Thomas Lindholm, MSc of GeoVista AB, Luleå, Sweden acting as an independent “Competent Person”. Mr Lindholm is a Fellow of the Australasian Institute of Mining and Metallurgy (Member 230476). Mineral resources of the Rakkuri iron deposits have been prepared and categorised for reporting purposes by Mr Lindholm, following the guidelines of the JORC Code (2004 Edition). Mr Lindholm is qualified to be a Competent Person as defined by the JORC Code on the basis of training and experience in the exploration, mining and estimation of mineral resources of gold, base metal and iron deposits.

The Scoping Study results were compiled and prepared by Tim Horsley (MAusIMM) of Xstract Mining Consultants who is a Competent Person as defined by the Australasian Code for the reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) 2004 Edition and who consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

The Scoping Study referred to in this announcement is based on low level technical and economic assessments and is insufficient to support Ore Reserves or to provide assurance of an economic development case at this stage or to provide certainty that the conclusions of the Scoping Study will be realised.

**Open Pit Mining Scenario** includes some material from Inferred Mineral Resources and therefore, exploration drilling and re-estimation may result in changes to the economically minable portion of the resources.



## Copper Equivalent Formula

\*% CuEq = % Cu + ((%Fe x Fe price US\$/tonne x Fe recovery)/(Cu price US\$/tonne x Cu recovery)

Cu price US\$/tonne = \$7,163.00 (US\$3.25/lb)

Cu Recovery = 90%

Fe price US\$/tonne = \$144.93 (calculated from US\$100 Net Price per tonne of magnetite concentrate containing 69% Fe)

Fe Recovery = 70%

Results from extensive metallurgical test work completed by Avalon Minerals Limited indicates that both copper (Cu) and iron (Fe) have a reasonable potential to be recovered from the mineral resource contained within the Viscaria Project.