# BEALTONA HE MINING LIMITED

Outokumpu; Finland's most famous mining camp lives again Fennoscandian Exploration and Mining

Conference, Levi, November 2011

#### www.altonamining.com ACN 090 468 018

ASX: AOH FSE: A2O



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The key information on detailed Resource and Reserve statements and feasibility results can be found in Vulcan Resources Limited ASX releases dated 16 November 2009 and Altona Mining Limited ASX releases dated 21 October 2009, 11 January 2010, 23 July 2010, 2 August 2010 and 26 July 2011. These and other ASX releases can be found at altonamining.com. Resource and Reserve statements are appended to comply with ASX guidelines but investors are urged to read supporting information in full on the website.

This Presentation contains certain "forward-looking statements". Forward looking words such as, "expect", "should", "could ", "may", "plan", "will", "forecast", "estimate", "target" and other similar expressions are intended to identify forward-looking statements within the meaning of securities laws of applicable jurisdictions. Indications of, and guidance on, future earnings and financial position and performance are also forward-looking statements. Forward-looking statements, opinions and estimates provided in this Presentation are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Such forward-looking statements, opinions and estimates are not guarantees of future performance.

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JORC Compliance information is provided in the Appendix.



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#### A step change in copper markets in 2005



#### What does Altona do?



#### Little Eva Project, Mt Isa Australia

DFS targeting a large scale copper mine and mill development in 2012.



Outokumpu Project, Finland Moving to first production in first quarter 2012.

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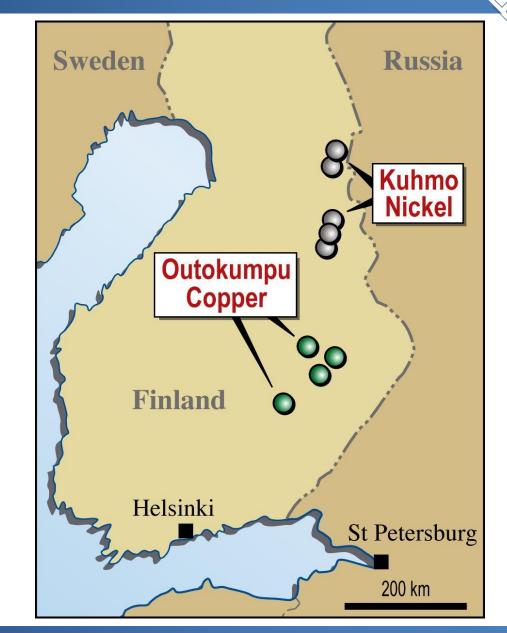
#### **Outokumpu Project**

# Altona's projects are in eastern Finland.

Geology is similar to other Archaean and Proterozoic terrains in Australia and Canada.

Major past producer with excellent regional infrastructure.

Outokumpu is 100% owned by Altona.



#### Early days at Outokumpu

1910: Discovery of copper at Outokumpu 1913: Mining commences

Outokumpu in the 1940's

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#### Outokumpu heydays



1954: Keretti new mill and tallest headframe in Europe
1968: Luikonlahti mine & mill open
1973: Vuonos mine & mill open
1984: Kylylahti discovered

Kylylahti mine

Vuonos mine and mill

View from Keretti mine toward Kylylahti

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1980's: Mines close

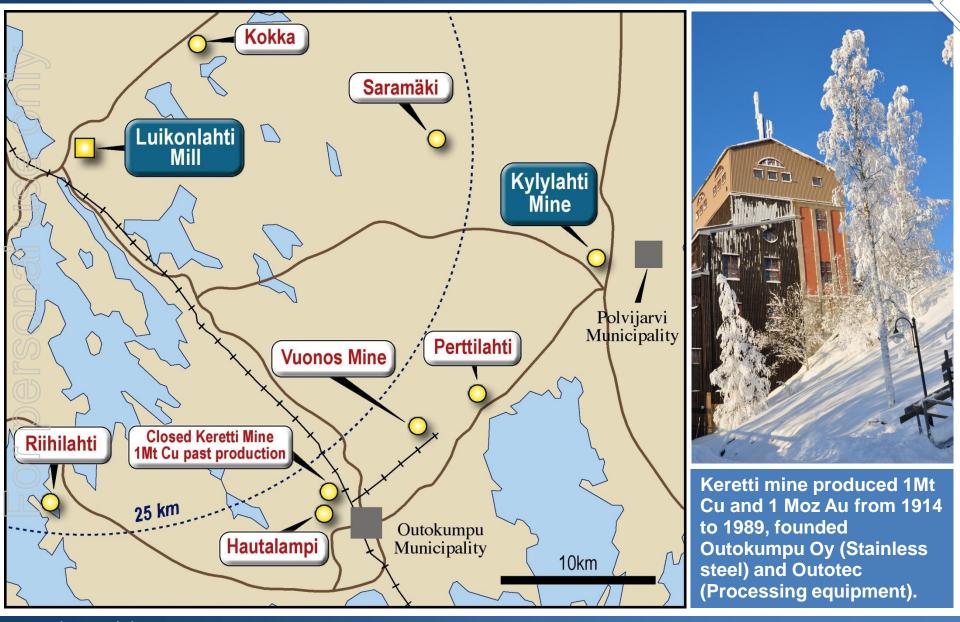
**2003:** Outokumpu completes exit from copper business

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#### Altona (Vulcan) acquires Kylylahti in 2005

2005-2008 drilling and feasibility
2008: Financial crisis stops development
2010: Acquisition of Luikonlahti mill
2010: Project financed and commences

#### Our assets in the historic Outokumpu field



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#### Luikonlahti mill – Excellent infrastructure

100% owned Luikonlahti plant, 42km from Kylylahti mine

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#### Luikonlahti mill – Processing hub



#### Luikonlahti mill - Refurbishment nearing completion

Plant treated Outokumpu type ores for 15 years.

Mill commissioning in January 2012.

Three stage crushing, rod and 2 pebble mills, flotation.

### **Primary crusher**



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#### Mill installation and refurbishment



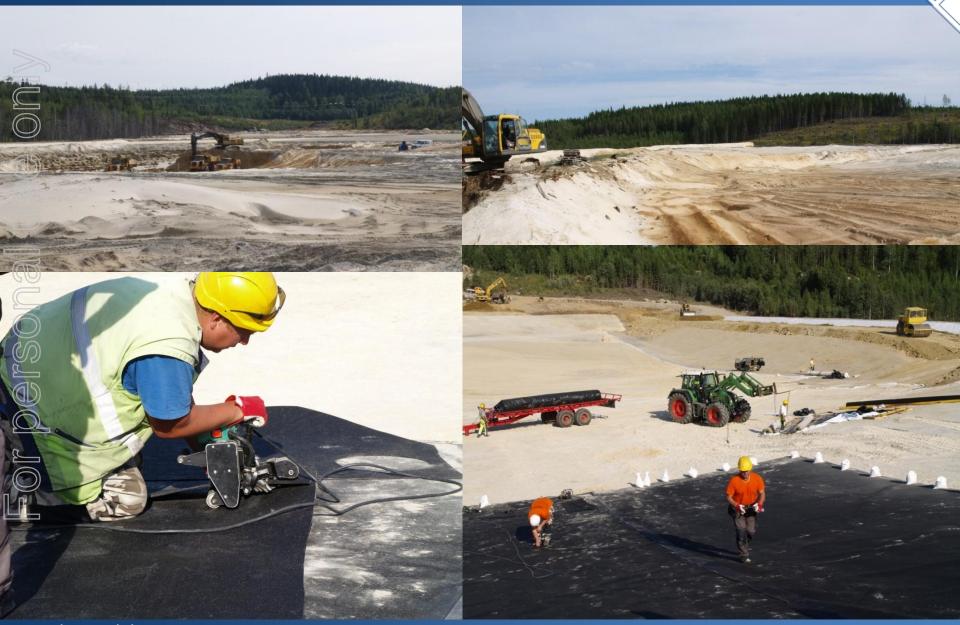
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#### **New flotation cells**





#### **Tailings extension and concentrate dam lining**



#### **Cobalt-nickel concentrate storage dam**



#### Kylylahti mine site 2005



#### 10 months from first blast to first underground ore



#### **Environmental mitigation at the mine**



## Installing the lined base of the ROM pad

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#### Kylylahti mine site August 2011

Roads, power in place. Fully permitted to 0.8Mtpa production. Skilled local workforce.

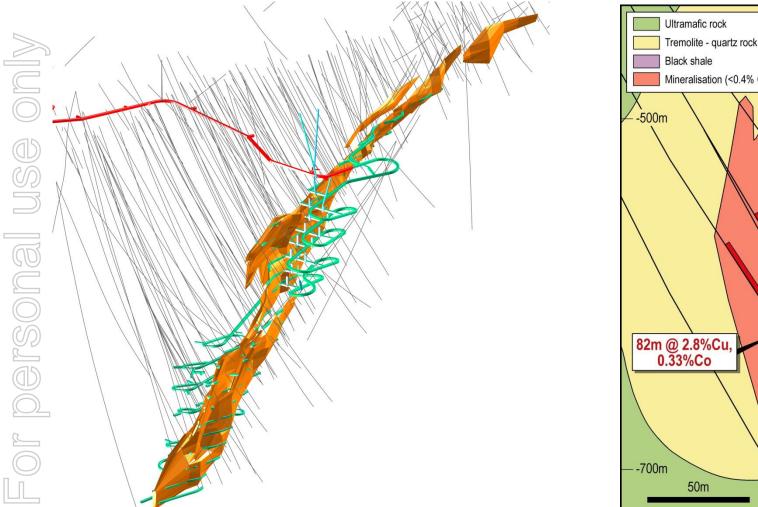
All rock waste will be used as fill, treated water disposed into lake.

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#### Kylylahti mine open at depth



Mineralisation (<0.4% Cu) 806 27m @ 3.0%Cu, 0.54%Co 69m @ 2.1%Cu, 0.28%Co 796 909B 909 808 810

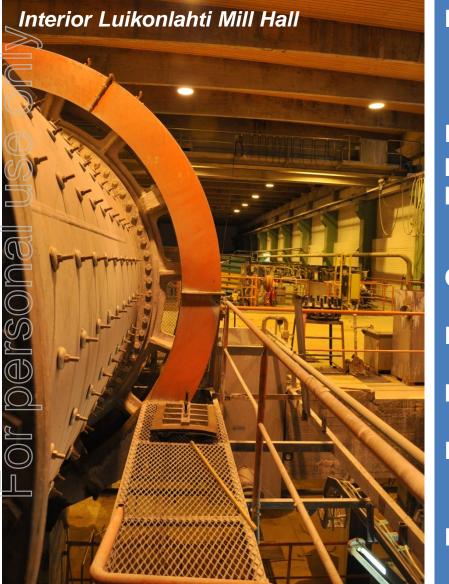
Simple sulphide orebody; robust geometry up to 50m thick. 65km of diamond drilling
 High-grades open at depth

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#### **Outokumpu Project video**

### To view Altona movies go to www.altonamining.com

#### **Outokumpu Project: Key details**



**Products** Copper-gold concentrate Zinc concentrate Sold to domestic smelter DFS Ore: 550,000tpa production Copper: 8,000tpa 8,400ozpa Gold: plan Zinc: 1,600tpa **Capital costs** €36M **DFS cash cost** US\$1.33/lb **Mine life** 8-9 years 4.3Mt @ 1.6% Cu, 0.7g/t **Reserves** Au, 0.5% Zn Resources 8.4Mt @ 1.3% Cu, 0.7g/t Au, 0.6% Zn

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#### Outokumpu can grow to 15,000tpa copper equivalent

- . Expand existing operation
  - Increase Kylylahti mine production to 700,000tpa
  - Drill to increase Kylylahti Resources
  - Expand mill capacity up to 800,000tpa
- Investigate developing satellite mines such as Valkeisenranta and Hautalampi
- 3. Increase revenue per tonne of ore; feasibility on cobalt-nickel concentrate treatment



Potential to re-open the Hautalampi nickelcopper-cobalt mine, 40km from Luikonlahti.

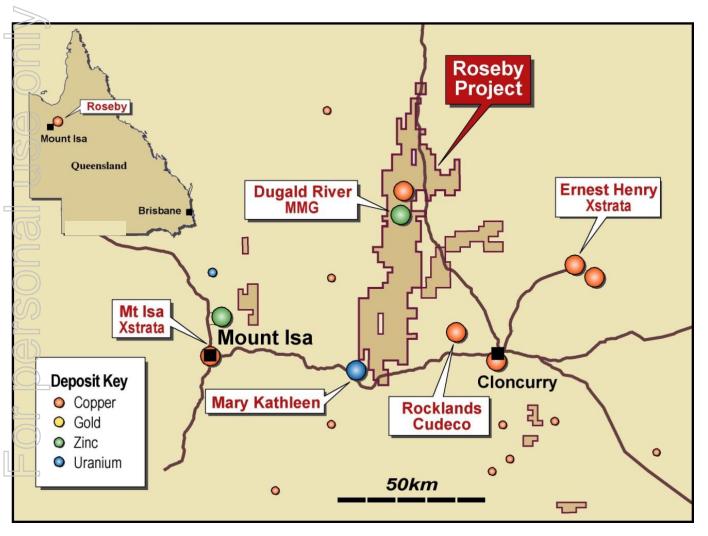
Previously developed by Outokumpu.

#### Growing a plus 1Mt copper Resource in Queensland



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#### Roseby is a strategic asset at Mt Isa



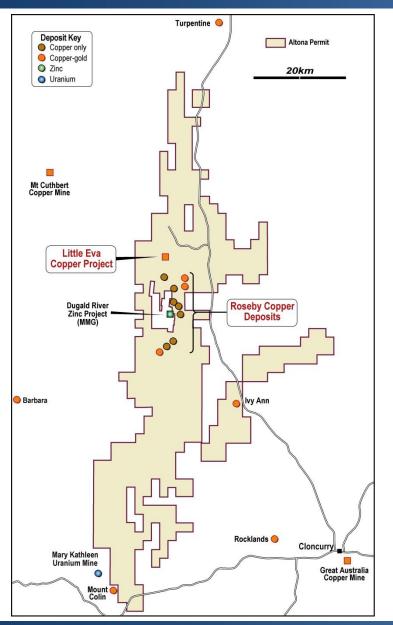
World class copper, zinc, silver-lead and uranium deposits; Xstrata, BHPB, Ivanhoe, CST Mining, Aditya Birla.

Exco's E1 deposit (348kt Cu) sold to Xstrata for A\$175M.

MMG's Dugald River (53Mt @ 16% Zn eq) excised from Altona's ground.

Xstrata option to buy 51% expires June 2012.

#### Altona focused on Little Eva deposit at Roseby



At 1.1Mt contained copper, 300,000 contained ounces of gold, Roseby is one of the largest copper inventories in Australia not in the hands of a major.

Resource of 177Mt at 0.6% Cu, 0.06g/t Au.

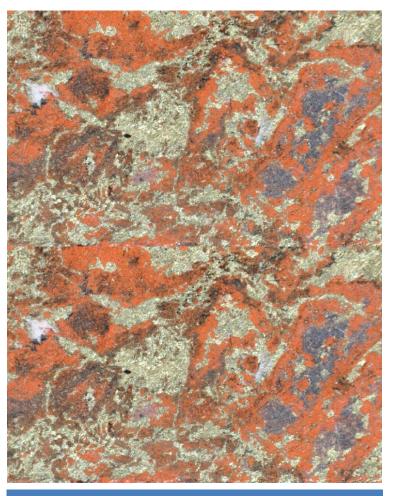
Altona's three-fold strategy:

- DFS on 30ktpa Cu mine at Little Eva
- Expansion to 45ktpa based on Roseby deposits
- Resource expansion and exploration

#### Little Eva Feasibility Study



- 5-6Mtpa open pit mine at Little Eva, 10 year minimum life
- High recovery ore; 96% copper and 90% gold. Coarse grind, rapid flotation
- 5-6Mtpa conventional copper concentrator at Little Eva producing copper-gold concentrate
- Potential annual production of 30-32,000tpa copper and 15-17,000 ounces of gold
- Definitive Feasibility Study to be completed by April 2012
- Mining licence and environmental permits progressing



High grade Little Eva copper sulphide ore (chalcopyrite), approximately 8% copper

#### **Rapid growth**



By FEM 2013 we will have moved quickly to achieve:

- Profitable full scale production at Outokumpu
- Expansion of Outokumpu production
- Roseby resource exceeding 1.5Mt of copper
- Little Eva Mine and mill in construction
- Closing in on our production target of 50,000 tonnes of copper equivalent per annum

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#### **People**, passion and persistence = profits



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#### **Roseby Resource Estimates**

		TOTAL		CONTAINED METAL		MEASURED			INDICATED		INFERRED				
DEPOSIT	STATUS	Tonnes	Gra	ade	Copper	Gold	Tonnes	Gra	ide	Tonne	Grad	de	Tonnes	Grad	le
		million	Cu %	Au g/t	tonnes	ounces	million	Cu %	Au g/t	million	Cu %	Au g/t	million	Cu %	Au g/t
COPPER ONLY	DEPOSIT	S													
Blackard	А	46.3	0.63		291,000		26.3	0.64		17.9	0.63		2.1	0.58	
Legend	А	6.1	0.60		37,000								6.1	0.60	
Longamundi	А	10.4	0.66		69,000								10.4	0.66	
Great Southern	А	6.0	0.61		37,000								6.0	0.61	
Scanlan	А	19.6	0.68		133,000					15.4	0.65		4.2	0.80	
Charlie Brown	А	0.7	0.40		3,000								0.7	0.40	
Caroline	А	3.6	0.53		19,000								3.6	0.53	
Sub-total	А	92.7	0.64		589,000		26.3	0.64		33.2	0.63		33.2	0.63	
COPPER-GOLD	) DEPOSIT	ГS													
Little Eva	В	74.7	0.52	0.09	388,000	205,000	) 27.0	0.61	0.09	9 15.9	0.51	0.09	9 31.9	0.59	0.08
M Ann	С	4.0	0.72	0.12	29,000	15,000	)						4.0	0.72	0.12
Lady Clayre	А	3.7	0.88	0.51	33,000	61,000	)						3.7	0.88	0.51
Bedford	А	1.8	0.93	0.24	16,000	14,000	)						1.8	0.93	0.24
Sub-total		84.2	0.55	0.11	466,000	296,000	) 27.0	0.61	0.09	9 15.9	0.51	0.09	9 41.4	0.64	0.13
		176.9	0.60	0.06	1,055,000	296,000	53.3	0.62	0.05	5 49.1	0.60	0.03	3 74.5	0.64	0.07

A - Estimates made by McDonald Speijers and disclosed in ASX release dated 26 July 2011. Note that gold grades for native copper mineralisation have been set at zero as grades estimated are at detection limits and any implied gold content is an artifice of the resource modelling process.

B - Estimates made by Altona and reported in ASX release dated 26 July 2011.

C - Estimates made by Altona and disclosed in ASX release dated 20 January 2006.

(See ASX release 11 January 2010)

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#### Kylylahti Resources & Reserves

	Tonnes (m)	Cu (%)	Co (%)	Ni (%)	Zn (%)	Au (g/t)
RESOURCES						
Measured	0.62	1.35	0.27	0.17	0.47	0.60
Indicated	7.47	1.25	0.24	0.20	0.54	0.70
Onferred	0.31	0.97	0.24	0.18	0.70	0.57
Total	8.40	1.25	0.24	0.20	0.54	0.68
Contained metal (t)		105,000	20,160	16,800	45,360	183,560oz
RESERVES						
Probable	4.34	1.56	0.29	0.17	0.58	0.65
Contained metal (t)		67,850	12,600	6,200	25,200	90,800oz

(See ASX release of 23 July 2010 and 2 August 2010 for details of estimation)

#### **Outokumpu Resource Estimates**

Deposit	Classification	Tonnes Million	Cu eq %	Cu %	Co %	Ni %	Zn %	Au g/t
Kylylahti	Measured	0.62		1.35	0.27	0.17	0.47	0.60
	Indicated	7.47		1.25	0.24	0.20	0.54	0.70
	Inferred	0.31		0.97	0.24	0.18	0.70	0.57
	Total	8.40	2.3	1.25	0.24	0.20	0.54	0.68
Saramäki	Inferred	3.40	1.1	0.71	0.09	0.05	0.63	-
Vuonos	Inferred	0.76	2.3	1.76	0.14	-	1.33	-
	Measured	1.03	-	0.47	0.13	0.47	0.06	-
Hautalamni	Indicated	1.23	-	0.30	0.11	0.42	0.07	-
Hautalampi	Inferred	0.90	-	0.30	0.10	0.40	0.10	-
	Total	3.16	1.8	0.36	0.11	0.43	0.07	-
Riihilahti	Indicated	0.14	2.2	1.69	0.04	0.16	-	-
Valkeisenranta	Indicated	1.54	1.8	0.29	0.03	0.71	-	-
Särkiniemi	Indicated	0.10	1.9	0.35	0.05	0.70	-	-
Sarkalahti	Inferred	0.19	2.2	0.33	-	1.02	-	-
	Indicated	0.08	-	0.33	0.04	1.13	-	-
Niinimaki	Inferred	0.02	-	0.30	0.03	0.89	-	-
	Total	0.08	2.5	0.32	0.04	1.07	-	-
Total		17.77	2.0	0.87	0.16	0.27	0.41	-

Copper equivalent calculation detailed on slide 24 See Vulcan ASX release of 16 November 2009 for more details and Altona ASX release 2 August 2010.

#### **Kuhmo Mineral Resources**

Location	Classification	Tonnes Million	Ni %	Cu %	Co %	Pt g/t	Pd g/t
Vaara	Indicated	2.62	0.49	0.04	0.01	0.11	0.28
	Inferred	0.14	0.45	0.04	0.01	0.10	0.24
	Total	2.76	0.49	0.04	0.01	0.11	0.27
	Indicated	0.40	0.63	0.29	0.04	0.28	0.62
Peura-aho	Inferred	0.09	0.48	0.23	0.03	0.21	0.42
, 1 	Total	0.49	0.60	0.27	0.04	0.27	0.58
	Indicated	0.85	0.85	0.44	0.06	0.53	1.25
Hietaharju	Inferred	0.24	0.59	0.27	0.04	0.34	0.89
)	Total	1.09	0.80	0.40	0.05	0.49	1.17
Sika-aho	Inferred	0.17	0.66	0.01	n/a	n/a	n/a
Arola	Inferred	1.50	0.46	n/a	n/a	n/a	n/a
Total		6.01	0.55	Containe	d nickel 33,2	200 tonnes	

Note: For more details see Resource estimate from Vulcan Resources Limited released to the ASX on 23 October 2009.

#### **JORC Compliance**



#### **Competent Person Statement**

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled and reviewed by Dr Alistair Cowden BSc (Hons), PhD, MAusIMM, MAIG, Mr Jarmo Vesanto, MSc, MAusIMM, Mr Seppo Tuovinen MSc, MAusIMM, Mr Maurice Hoyle BSc, MAusIMM and Mr Jani Impola, MSc, MAusIMM, who are full time employees of the Company and have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Messers Cowden, Vesanto, Tuovinen, Hoyle and Impola consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

Metal equivalence is provided to assist investors in assessing the value of polymetallic Resources.

The calculation of metal equivalence requires 3 inputs:

- metal prices assumed
- recoveries to concentrates
- a factor to reflect the potential commercial return from payable metals recovered to various concentrates

Metal prices assumed are copper; US\$ 8,000/t, cobalt; US\$ 37,468/t, nickel; US\$ 17,081/t, zinc; US\$ 1,653/t and gold; US\$ 1,450/oz

Average life of mine recoveries to concentrate at Outokumpu (Kylylahti, Saramaki and Vuonos deposits) are copper 91.5%, gold 72%, zinc 50%, cobalt 48% and nickel 59%. Nickel and cobalt recoveries for the other Outokumpu area resources are 85%, copper recovery is 91.5%. No gold or zinc is recovered from these deposits.

Average life of mine recoveries for Roseby native copper ore is copper 62%. Sulphide ore recoveries are copper 95% and gold 97%. Details were disclosed to ASX on 23 July 2010 in the Outokumpu Definitive Feasibility Study and on 11 January 2010 in the Roseby Definitive Feasibility Study.

Factors applied to reflect concentrate sales terms are copper 90%, gold 90%, zinc 60%, cobalt 60% and nickel 70%.

The calculation formula for metal equivalence is the sum of the product of the three inputs for each metal divided by the product of the reference metal price, recovery and the 'payability' factor.

It is the opinion of the Company that the metal recoveries disclosed in the published feasibility studies for both projects are reasonable and that there is a reasonable potential that revenue will be achieved from recoverable metals.



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