



27 January 2010

## ASX Announcement

### New Nickel-Cobalt resource upgrade boost for Metallica's flagship NORNICO project

- Resource upgraded to a Total Measured + Indicated + Inferred Mineral Resource of 16.3Mt @ 0.67% Ni & 0.12% Co containing approximately 109,000t of Ni and 19,500t Co, (Table 1).
- Following the addition of 449 holes for 10,700 m
- 36% increase in the Total Mineral Resource
- 150% increase in the combined Indicated and Measured Resource, up from 5.2 Mt to 13 Mt
- A higher grade nickel – cobalt zone (Mona) and a scandium rich area (Wild Honey) drilled out to Measured status
- Defined a Measured Sc resource of 327 Kt @ 201 g/t Sc within a total Meas+Ind+Inf resource of 9 Mt @ 109 g/t Sc (see table 3). Note partial overlap with Ni-Co resource stated.

Metallica Minerals Ltd (MLM) is pleased to announce that an updated independent resource estimate has been completed for the Kokomo Nickel – Cobalt – Scandium Laterite deposit, which is located 40 km north of the Township of Greenvale in North Queensland.

The combined Measured, Indicated and Inferred Mineral Resource for the entire Kokomo Ni – Co – Sc laterite project now stands at 16.3 Mt @ 0.67% Ni and 0.12% Co (using a 0.70% NiEq cut-off) this is an increase of 4.1 Mt from the 2008 resource estimate which had similar grades with a major increase in the Measured and Indicated categories, which have increased to 13 Mt (up from 5.2 Mt). A comparison between the 2008 and 2010 resource estimates and a break-down of the resource categories is presented in Table 1 below.



**Table 1 Comparison at a 0.7% NiEq cut-off of the previous 2008 and current 2010 Resource Estimates**

Resource Estimate	Classification	Mt	Ni %	Co %	Fe %	Mg %	Sc g/t
Dec-08	Indicated	5.2	0.69	0.13	23.5	3.7	38
	Inferred	7.0	0.66	0.11	20.3	3.7	36
	<b>Total</b>	<b>12.2</b>	<b>0.67</b>	<b>0.12</b>	<b>21.7</b>	<b>3.7</b>	<b>37</b>
Jan-10	Measured	1.3	0.81	0.17	20.4	4.6	59
	Indicated	11.7	0.66	0.12	21.9	3.2	34
	Inferred	3.2	0.63	0.10	19.1	3.0	30
	<b>Total</b>	<b>16.3</b>	<b>0.67</b>	<b>0.12</b>	<b>21.2</b>	<b>3.3</b>	<b>36</b>

The scandium resource within the Kokomo Laterite deposit is subject to a Joint Venture (JV) agreement with Straits Resources Exploration Limited, under the terms of the JV all scandium resources are to be mined or stockpiled separately and kept for later processing by the Scandium JV. Laterite resources are classified as either Ni-Co ore or Sc ore under a formula laid out under the terms of the Scandium JV agreement. As a result of this the total Kokomo resource is separated into two mutually exclusive parts.

The greater Ni-Co resource is 100% owned by Metallica and is reported as a Nickel equivalent grade of 0.70% NiEq<sup>1</sup> and is included as Table 2.

**Table 2: Kokomo Ni-Co Resource estimate (using 0.7% NiEq cut-off), excluding the Scandium Resource in Table 3**

Classification	Mt	Ni %	Co %	Fe %	Mg %	Sc g/t	Ni Metal (t)	Co Metal (t)
Measured	1.2	0.83	0.18	20.0	4.8	45	10,000	2,200
Indicated	10.9	0.66	0.12	21.0	3.2	26	72,000	13,300
Inferred	3.0	0.64	0.10	19.0	3.0	25	19,000	3,000
<b>Total</b>	<b>15.1</b>	<b>0.67</b>	<b>0.12</b>	<b>21.0</b>	<b>3.3</b>	<b>28</b>	<b>101,000</b>	<b>18,500</b>

The Scandium resource as defined by the JV is currently owned 80% by Metallica and 20% by Straits. The Scandium resource does contain some isolated zones of higher grade Ni-Co resource excluded from the Ni-Co resource stated above in Table 2. The Scandium resource presented in Table 3 below has been estimated using a 70 g/t Sc cut-off grade.

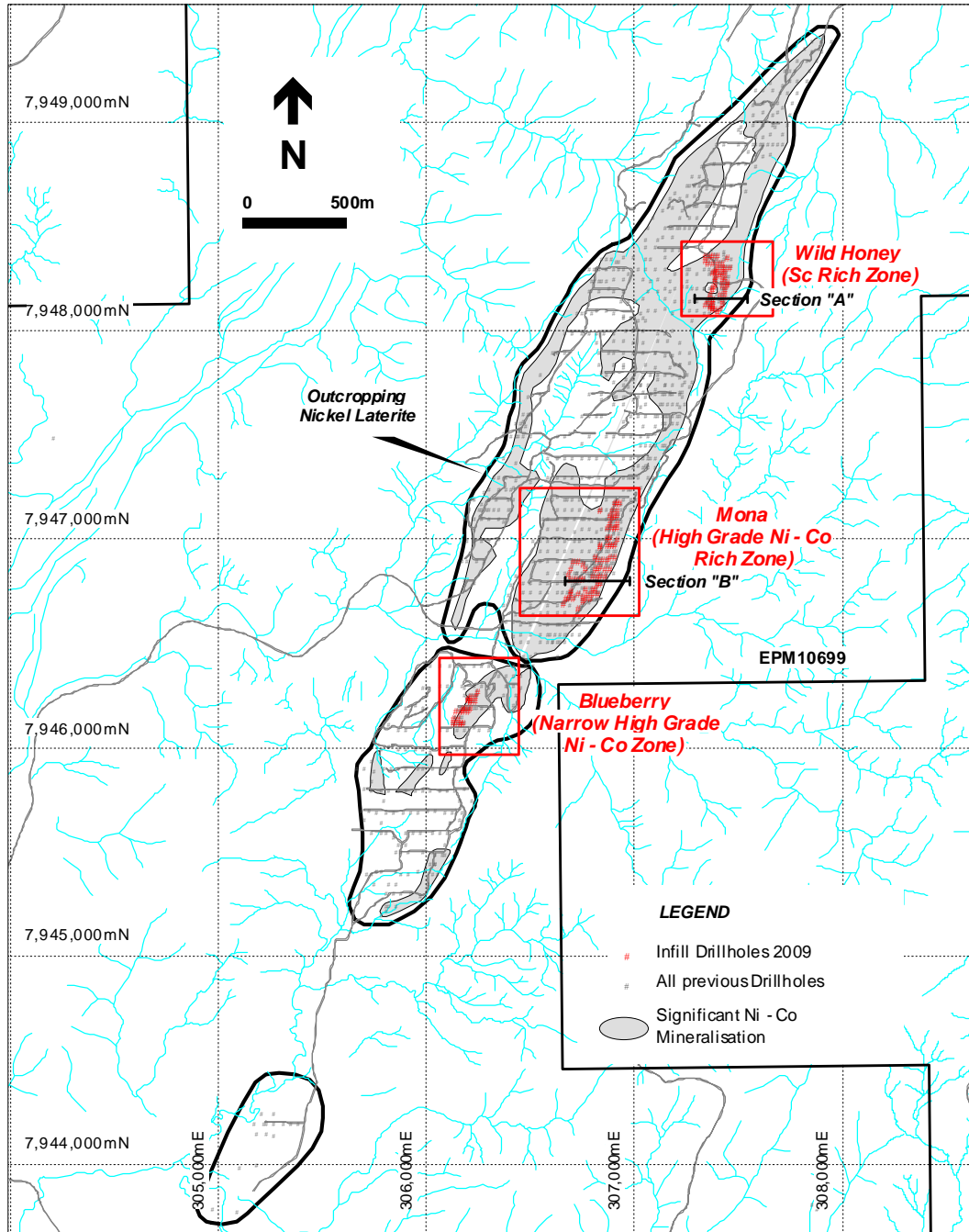
**Table 3: Kokomo Scandium Resource Estimate (using a 70 g/t Sc cut-off), excluding the Ni-Co Resource in Table 2**

Classification	Mt	Sc g/t	Ni %	Co %	Fe %	Mg %
Measured	0.7	154	0.22	0.03	36	0.6
Indicated	3.8	121	0.32	0.05	29	2.1
Inferred	4.4	91	0.18	0.02	13	6.0
<b>Total</b>	<b>9.0</b>	<b>109</b>	<b>0.24</b>	<b>0.03</b>	<b>22</b>	<b>4.0</b>

<sup>1</sup> The NiEq value equates to Ni+3xCo, this was based on a Nickel values of \$7/lb and a Co value of \$21/lb in 2008 when the Kokomo resource was first estimated, these values have been retained for the present resource so a direct comparison of the two resources can be made.



Figure 1: Kokomo Drill Hole Location Map



**EPM 10699 - KOKOMO  
DRILL HOLE LOCATIONS**

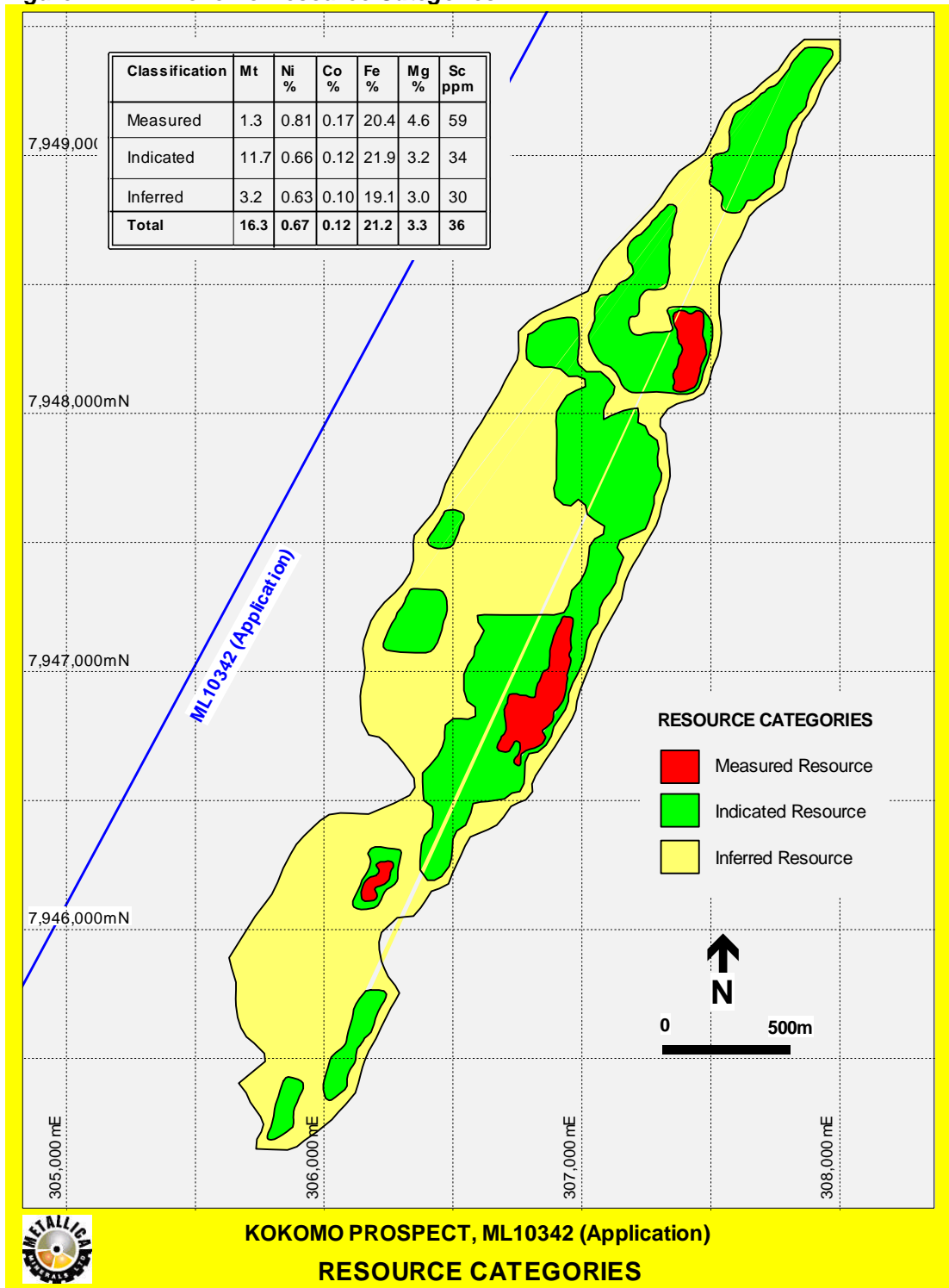
The Ni-Co and scandium resources are near surface (<50 m depth) and are appropriate for a selective open pit mining scenario studies; however the resources do not account for mining dilution.

The resource was completed using data from a total of 1,058 drill holes comprising 26,384 individual assays. The bulk of the deposit has now been drilled out on a nominal 50 m (North-South) by 40 m (East-West) grid that is sufficient to classify the resource as predominantly Indicated. Where the drilling has been completed on an



approximate 25 m (North-South) by a 20 m (East-West) grid the resource has been classified as Measured. Figure 1 shows the location of the drill holes, and Figure 2 depicts the limit of extrapolation from drill holes for the resource and polygons depicting the resource categories.

**Figure 2: Kokomo Resource Categories**



**Resource Estimate Methodology**

Ordinary Kriging (OK) for 10 m by 10 m by 1 m blocks was carried out in the mineralised zones using unfolding techniques to represent the paleo-laterite surfaces



between drill holes, the paleo laterite surfaces were wire-framed from sectional interpretations of the considered logged geology and nickel, cobalt, iron, magnesium and manganese assays. A nominal (0.30% Ni only) mineralised envelope was used to constrain the laterite mineralisation and grade estimates using a hard boundary. The mineralised wireframe was then filled with 10 m by 10m by 1m blocks, with the grades of the various elements estimated by ordinary kriging using a three pass search strategy and a maximum of 3 composites selected from any one drill hole. Mineralisation was extrapolated a maximum of 25 m from drill hole intercepts, depending on supporting information. *(Key features of the resource estimate are detailed at the back of this report).*

Grade tonnage data for the Nickel Equivalent (NiEq equates to Ni+3xCo) resource for the Kokomo deposit are presented in Table 4.

**Table 4: Kokomo Nickel – Cobalt deposit Grade Tonnage data**

<b>Cut-off NiEq %</b>	<b>Mt</b>	<b>Ni %</b>	<b>Co %</b>	<b>NiEq %</b>	<b>Sc</b>
0.30	36.4	0.51	0.077	0.74	30.0
0.40	31.1	0.55	0.085	0.81	30.5
0.50	27.4	0.58	0.092	0.86	31.7
0.60	21.9	0.62	0.103	0.93	33.4
0.70	16.3	0.67	0.121	1.03	35.6
0.80	11.9	0.71	0.141	1.13	38.6
0.90	8.5	0.75	0.164	1.25	41.7
1.00	6.2	0.79	0.188	1.36	44.1

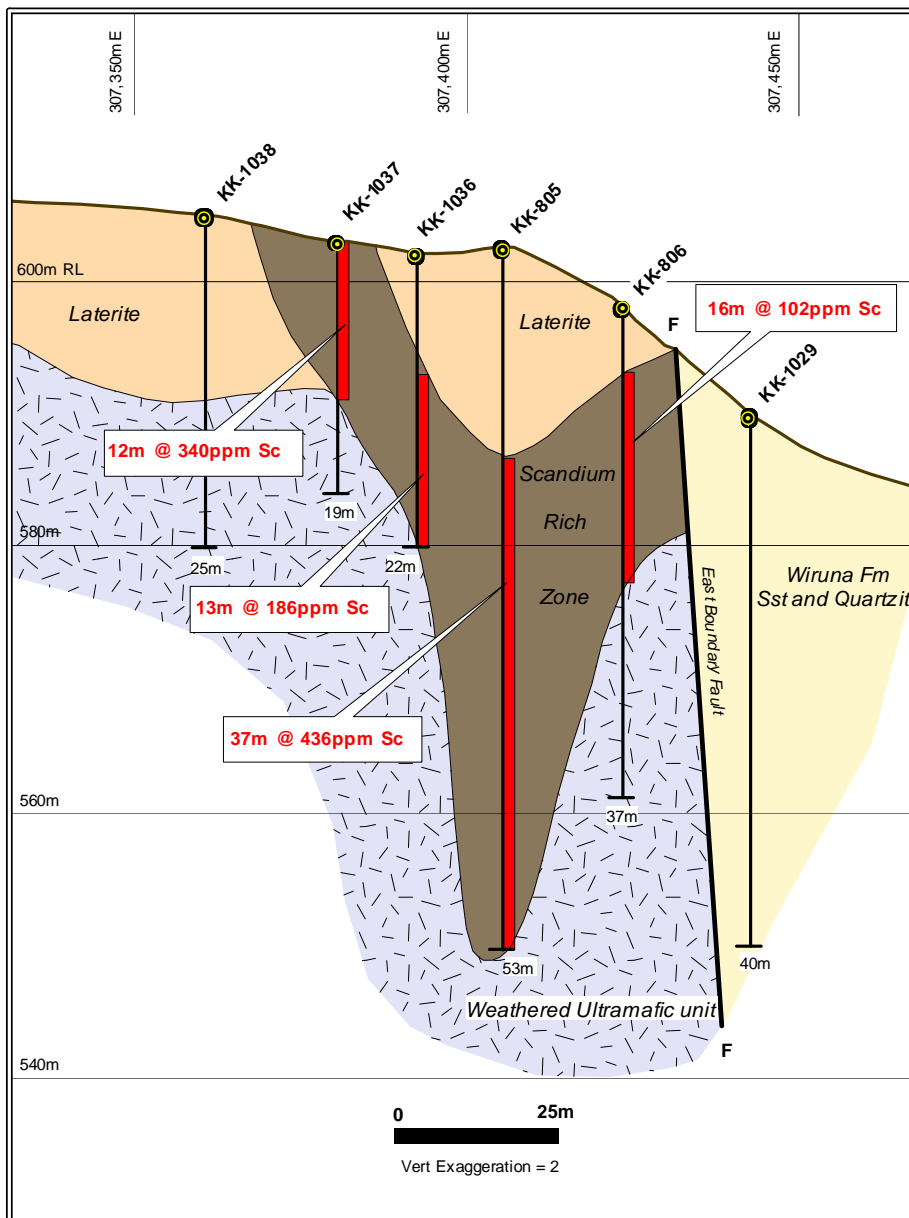
Three areas of the Kokomo deposit have been subjected to close spaced drilling which have resulted in Measured Resources, these areas are referred to as Wild Honey (scandium rich zone), Mona (nickel-cobalt rich zone) and Blueberry (narrow nickel-cobalt rich zone). A break-down of the resources at Wild Honey and Mona are presented in tables 5 and 6 below and idealised cross sections across Wild Honey and Mona are included as Figures 3 and 4.

**Table 5: Wild Honey Scandium Resource using a 70 g/t Sc cut-off**

<b>Class</b>	<b>Kt</b>	<b>Sc (g/t)</b>	<b>Ni (%)</b>	<b>Co (%)</b>	<b>NiEq (%)</b>
Measured	372	201	0.24	0.041	0.37
Indicated	20	239	0.33	0.062	0.52
Inferred	83	140	0.18	0.035	0.29
<b>Total</b>	<b>475</b>	<b>192</b>	<b>0.24</b>	<b>0.033</b>	<b>0.36</b>



Figure 3: Wild Honey Scandium Resource – Cross Section

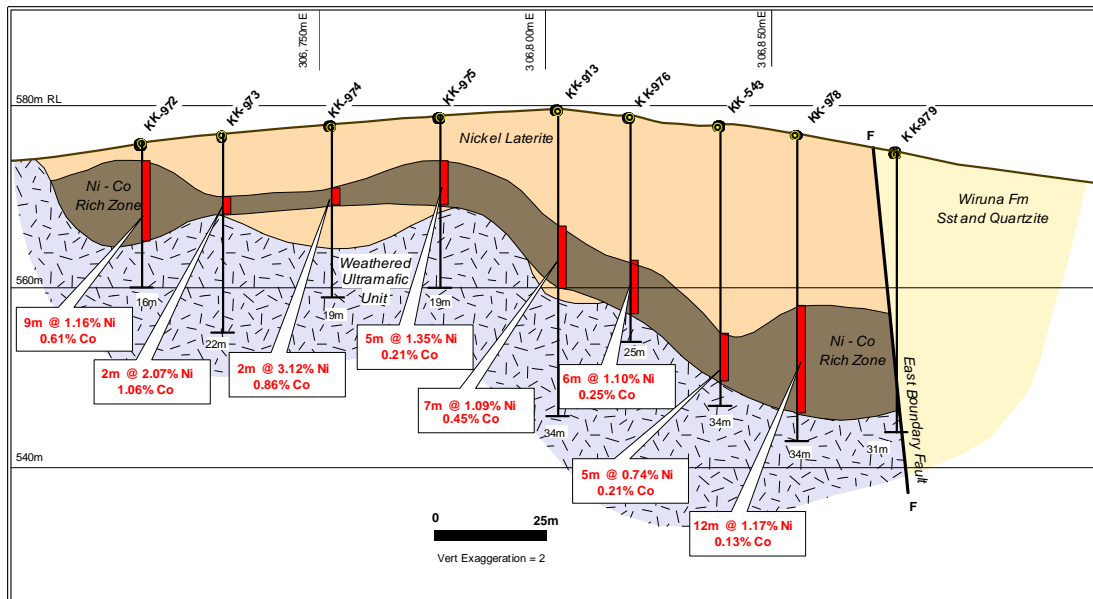


**KOKOMO - WILD HONEY PROSPECT  
DRILL SECTION "A" 7,948,140mN  
(Looking North)**

Table 6: Mona Nickel-Cobalt Resource using a 0.70% NiEq cut-off

Class	Kt	Ni %	Co %	NiEq %	Sc g/t
Measured	905	0.88	0.183	1.43	50
Indicated	101	0.73	0.112	1.07	34
Inferred	21	0.78	0.141	1.20	16
<b>Total</b>	<b>1027</b>	<b>0.86</b>	<b>0.175</b>	<b>1.39</b>	<b>48</b>

**Figure 6**      **Mona Cross Section**



**KOKOMO - MONA PROSPECT  
DRILL SECTION "B" 7,946,820mN  
(Looking North)**

**Future Planned Work at Kokomo**

- Progress permitting of the Kokomo Mining Lease application.
- Complete wet season flora and fauna study.
- Metallurgical test work on scandium and nickel – cobalt rich material from Kokomo is ongoing.
- A scoping study into trucking high grade scandium and nickel – cobalt ore to a possible processing plant located at Greenvale for supplementary feed (NORNICO stage 1).
- Preliminary mine planning and scheduling for a small scale high grade Ni-Co-Sc and mining operation at Kokomo is being considered as an option.
- Negotiations with the Native Title claimants for Kokomo are being initiated.

For further information

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## Kokomo Resource Estimate Details

Key features of the resource estimate completed by Golder Associates Pty Ltd (Golder) include:

- Topography was provided as 2 m contours and 50 m by 50 m spot heights with a stated accuracy of  $\pm 0.22$  m based on a detailed airborne survey by Schlencker Mapping Surveys Pty Ltd.
- Collars of holes drilled by Metallica were surveyed by Rowlands Surveys using a differential GPS with a stated accuracy of  $\pm 20$  mm.
- All but two of drill holes used for resource estimate were drilled vertically. Limited down-hole surveying was carried out. Visual inspection of drill holes indicated no significant down-hole deviations. Due to the shallow nature of the drilling (dominantly  $< 50$  m) it is unlikely that material drill hole deviations would have occurred.
- All drilling used for resource estimation was by face-sample RC.
- Sample recovery in the mineralised zone is believed to be good to excellent.
- The drill holes were sampled predominantly over 1 m intervals by spearing. The integrity of spear sampling was evaluated by a riffle splitting validation program, which indicated no evidence of bias.
- Australian Laboratory Services (ALS) and SGS Laboratories (SGS) in Townsville were used for assaying. Both ALS and SGS used a four acid digest method with an ICP finish.
- The QAQC program for Metallica drilling involved external standards for part of the 2008 and 2009 drilling program and blind field duplicates. Internal standards, blanks and duplicates taken by ALS were provided to Metallica and deemed satisfactory. The QAQC results indicated that the assays for the Metallica drilling program were satisfactory for resource estimation purposes.
- The mineralisation has a surface expression that was observed in places during a field visit by Mr Horton.
- Golder rebuilt the majority of the database from digital assay certificates. Spot checks of earlier drill holes against paper certificates were also performed. The database contained a small number of transcription errors that were corrected prior to resource estimation.
- Drill hole data was composited to 1 m, which was the dominant sample interval.
- Appropriate high-grade cuts to Ni and Co outlier values were applied on a zone by zone basis.
- A wireframe of the paleo-laterite (enrichment) horizon between drill holes was constructed based on sectional interpretations. A nominal 0.3% Ni was the underlying basis of the mineralised wireframe. Laterite profile wireframes were also constructed to constrain major material types based on either geochemistry or logging. Some deeper isolated drill intercepts of Ni  $> 0.30\%$  were estimated separately.
- The mineralised envelope wireframe included a nominal 25 m horizontal extrapolation from the drill holes at the margins of the mineralised zone.
- A computer block model was constructed by filling the mineralised wireframe with 10 m by 10 m by 1 m blocks. Additional blocks were retained to the topography and base of drilling as well as peripheral to mineralisation to permit open pit optimisation. Sub-blocking was not employed, with whole blocks assigned to geological domains on a maximum proportion basis.
- Grades of Ni, Co, Fe, Mg Mn, Al, Ca, Cr, Cu and Sc were estimated by ordinary kriging using a three pass search strategy and a maximum of 3 composites were selected from any one drill hole
- Hard boundaries were used between the Ni-Co mineralized envelope and the laterite domains for all elements except for Sc.
- Unfolding methods were employed during variogram analysis and block grade estimation to represent adequately the paleo-laterite (enrichment) horizon between drill holes.
- Validation included visual observation, statistical checks, swath plots, and evaluation of smoothing.
- Internal dilution has been accounted for, but not dilution at the margins of the mineralised wireframe.
- Drilling was mostly on a reasonably regular pattern of 50 m (NS) by 40 m (EW) for Indicated Mineral Resources, and 25m (NS) by 20m (EW) for Measured Mineral Resources. Inferred Mineral resources were mostly drilled on a reasonably regular pattern of 100m (NS) by 40 (EW), with some small areas at larger spacings.
- Dry bulk densities were assigned to blocks according to nearest neighbour estimates of lithology Bulk density values applied were the averages of a suitable number of samples for each lithology collected by several techniques including Archimedes water displacement, sand replacement of excavated voids and calliper measurement.





- Metallica advises that the 0.70% NiEq (Ni + 3 x Co) cut-off grade is considered appropriate based on ongoing Feasibility studies at the nearby Bell creek nickel laterite deposit. The suitability of this cut-off grade is to be confirmed as economic evaluation and metallurgical test work as the Kokomo scoping study progresses.
- Grades for Sc were estimated using ordinary kriging for a separate high and low Sc zones based on a 70 g/t Sc cut-off
- High Sc and high Ni-Co mineralisation overlap in places and for practicality Resource classification was maintained throughout though Sc displays less lateral continuity. It should be noted that some additional infill drilling may be required to convert Resources based on Sc alone to reserves. This partially relates to the economics of Sc that may only be fully defined during feasibility assessment
- Resource classification is based on target drill spacing of 25 x 20 m for Measured, 50 x 40 m for Indicated and 100 x 80 m for Inferred Mineral resources. This classification is based on the continuity of the principal Ni-Co mineralisation. Sc displays greater variability but can not practicably classified separately for Ni-Co as the two mineralisation zones largely overlap. Golder considers that for economic analysis of selective Sc mining, further drilling may be required to convert the current Indicated Resources to Reserve status

*This Mineral Resource estimates quoted in the release are based upon and accurately reflects data compiled, validated or supervised by Mr John Horton, Principal Geologist, who is a Member of the Australasian Institute of Mining and Metallurgy and a full time employee of Golder Associates Pty Ltd. Mr Horton has sufficient experience that is relevant to the style of mineralisation and the type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2004 edition of the 'Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Horton consents to the inclusion of this information in the form and context in which it appears in this letter.*

