

## Operational review

**Metorex is focused on the base metals industry,** primarily copper and cobalt production in the central African Copperbelt.





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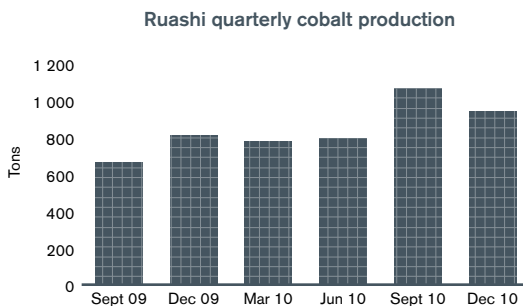
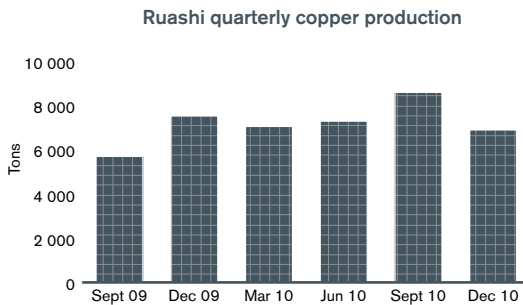
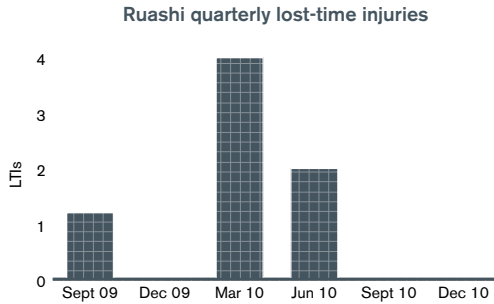
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# Operational review continued

## Ruashi



Magnesium removal circuit at Ruashi



The safety culture and commitment at Ruashi is showing pleasing improvements. All of the initiatives previously reported on such as hazard identification and risk assessments and the implementation of the safe production rules are becoming an entrenched way of working. The introduction of a new integrated SHEC management system for reporting and control has augmented the safety effort. Total lost-time injuries for the six months ended 31 December 2010 (“current period”), were zero, compared to six in the six months to June 2010 (“June 2010”). The lost-time injury-frequency rate for the 12 months to December 2010 (lost-time injuries expressed as a proportion of man-hours worked) was the same as the rate for the year to June 2009 when the mine was in construction and ramp-up. This is a pleasing result as the level of complexity has increased substantially since then.

Milling volumes increased by one percent for the current period when compared to June 2010. Both periods were constrained because of the transformer and rectifier issues experienced at Ruashi. These issues have been extensively reported on during the relevant periods in separate market releases. Problems with the rectifier and transformers caused by external power surges and substandard transformer design and manufacture, eventually led to a decision to redesign and replace all of the transformers. This is in progress and production levels have since stabilised.

The copper and cobalt headgrades remained substantially constant for the previous six-month period. The confidence levels in the geological model continued to improve through the period due to continued infill drilling and grade control measures. The grades experienced in the current period are expected to persist into the next financial year.

Copper recoveries improved to 84 percent for the current period and are a function of both the acid solubility of the plant feed material and operating efficiencies. The improvements to the geological model allow Ruashi to control and predict its feed sources better, while operating efficiencies are subject to a process of continuous improvement. In addition to the continuous improvement efforts, the reduced throughput due to the transformer and rectifier problems allowed for a greater residence time in the leach section as well as better operational control, both of which had a positive influence on recoveries. Cobalt recoveries improved by 20 percent for the current period to 65 percent. Cobalt recoveries also benefited as per the copper discussion above, however, cobalt recoveries are very sensitive to feed grade. The higher grade cobalt fed to the plant therefore also contributed to the improved cobalt recoveries. Cobalt recovery improvements will be more modest off the current base.

Notwithstanding the production pressures caused by the rectifier and transformer issues, copper and cobalt production improved by eight percent and 28 percent respectively over the two halves of 2010.

On-mine costs per ton milled decreased by six percent when comparing the current period to June 2010. However, there was an offset due to less stripping of Pit 1 and Pit 2 which decreased the stripping ratio from 5,5 to 3,5. Stripping costs in the new Pit 3 are being capitalised as mine development costs in line with the Group Accounting Policies. This reduced cash operating costs. Copper and cobalt realisation costs increased by five percent and 28 percent respectively when comparing June 2010 to the current period. These costs were both impacted by an incremental US\$60/t export charge effective February 2010. Cobalt realisation charges were also significantly higher in the current period due to concentrate moisture levels rising to, as high as, 70%. This was due to the change to a magnesium oxide-based process as well as problems experienced in commissioning the cobalt drying circuit. Extensive modifications to the cobalt drying circuit are being planned. The mode of export was also changed towards the end of the year as it was found that transporting on the rail system was substantially more expensive than by road.

Total cash costs of copper sold net of cobalt credits improved by 14 percent over the first half of the year. The increased cobalt sales contributed to this cost indicator falling to US\$2 228 per ton of copper in the current period. The overall cash mining profit of US\$73,6 million was a substantial increase of 179 percent over June 2010. Capital expenditure amounted to US\$24 million in the current period. The overburden stripping at Pit 3 is being capitalised. These stripping operations will ramp up in the F2011 year and expenditure is expected to reach US\$23 million for the 12-month period. The completion of the acid plant is proceeding according to plan and accounted for US\$6,8 million in the current period. Capital spend in the coming year includes US\$6 million to complete the acid plant, US\$4 million on exploration drilling and US\$20 million in ongoing capital expenditure.

Ruashi Mine will be stabilising production levels at approximately 3 000 tons of copper per month for the coming year. Production efficiencies and strategic initiatives should have the effect of somewhat offsetting certain cost increases such as power, diesel, taxes and wages. Brownfields drilling will improve the oxide and sulphide resource base of Ruashi and should continue to extend the life of the mine as well as increase ore reserve flexibility.

## Key results

Ruashi	Unit	Six months Dec 2010	Six months June 2010	12 months Dec 2010	12 months June 2010	12 months June 2009
Tons milled	(t)	605 735	600 437	1 206 172	1 232 301	485 360
Headgrade – copper	(%)	3,0	3,0	3,0	2,9	2,8
– cobalt	(%)	0,5	0,5	0,5	0,5	0,5
Recovery – copper	(%)	84	81	83	78	76
– cobalt	(%)	65	55	60	54	27
Copper produced	(t)	15 467	14 323	29 790	27 531	10 378
Copper sold – total	(t)	15 297	14 702	29 999	27 740	10 351
– into hedgebook	(t)	8 100	11 700	19 800	16 992	<sup>1</sup>
– at spot price	(t)	7 197	3 002	10 199	10 748	<sup>1</sup>
– hedgebook price achieved	(US\$/t)	5 972	3 900	4 748	3 900	<sup>1</sup>
– average spot price achieved	(US\$/t)	8 275	6 163	7 653	6 633	<sup>1</sup>
Cobalt produced	(t)	2 008	1 572	3 580	3 050	720
Cobalt sold	(t)	1 933	1 709	3 642	3 192	326
On-mine cost per ton milled, net of ore stock movement	(US\$/t)	100	106	103	101	<sup>1</sup>
Copper realisation costs per ton of copper sold	(US\$/t)	670	637	653	615	<sup>1</sup>
Cobalt realisation costs per ton of cobalt sold	(US\$/t)	6 384	4 996	5 731	4 518	<sup>1</sup>
Total cash cost/ton of copper sold, net of cobalt credits	(US\$/t)	2 228	2 598	2 407	2 831	<sup>1</sup>
Capital expenditure	US\$m	23	21	44	32	<sup>1</sup>

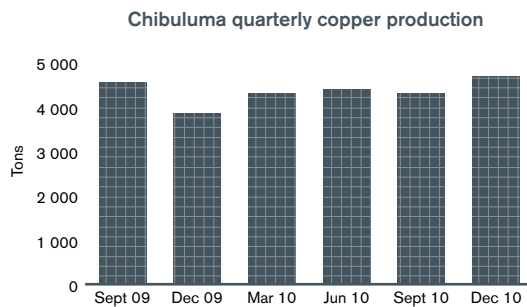
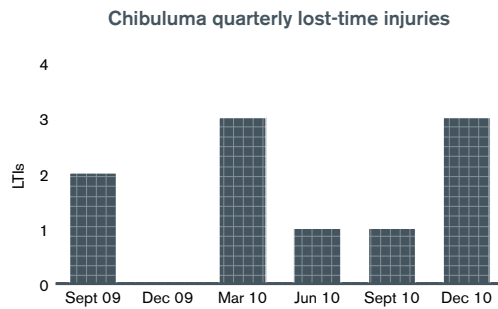
<sup>1</sup>Project capitalised during 2009.

## Operational review continued

### Chibuluma



Crushing circuit at Chibuluma



The introduction of hazard identification and risk assessment, especially before commencing any tasks at the mine, has led to an improvement in most safety-related measures. The introduction of the new integrated SHEC management system for reporting and control has augmented the safety effort. Total lost-time injuries during the six months ended 31 December 2010 ("current period") remained constant relative to the six months to June 2010 ("June 2010") at four.

The volume of ore through the plant increased by 12 percent for the current period. This was as a result of improved mining performance, a successful plant debottlenecking process and fewer electrical power interruptions. The mine completed the installation of additional on-site generating capacity towards the end of the period so as to minimise the risk of further electrical interruptions at a capital cost of US\$1 million.

Copper headgrades decreased for the current period compared to June 2010. This is due to the mining having moved into a close-out area where mining stresses are particularly high causing scaling of the hangingwall and subsequent dilution. This area will be mined out by the end of the first quarter of 2011. Within the usual bounds of variability the ore body grade does improve with depth.

Plant recoveries improved by two percent to 92 percent. Management has focused on improving recoveries and numerous interventions, primarily related to ensuring constant flow through the float plant and improving the crushing circuit, have resulted in good improvements.

Copper produced and sold for the current period increased by three percent to a record 8 990 tons. All copper for the period was sold to the Chambishi Copper Smelters under contract. The terms are more favourable than international pricing after taking into account the newly imposed export tax on concentrates.

On-mine costs per ton milled were well controlled and remained flat at US\$59 per ton, assisted by the increased volumes mined and milled. Realisation charges also decreased by six percent per ton sold following less smelter penalties incurred. Stated in terms of cash costs per ton of metal sold, Chibuluma had a credible performance for the current period as costs rose by three percent. The increase in cash costs per ton of metal sold to US\$2 932 when compared to June 2010 was due to the lower grades despite the higher volumes mined and milled.

Capital expenditure remained relatively constant and amounted to US\$13,3 million as a result of the purchase of new mining fleet vehicles (US\$3,2 million) needed to maintain production levels as well as increased capital spend on engineering items required to upgrade the quality of capital equipment at Chibuluma. In addition, Chibuluma commenced with an exploration programme aimed at increasing the life of the mine (US\$0,6 million). Mining development remains a large proportion of the capital spending (US\$3,5 million). For the

current period the Chibuluma Mine increased its cash mining profit by 34 percent to US\$47,1 million. This was driven off the back of higher copper production, higher copper prices received and cost control. The average copper price received increased from US\$6 436 per ton to US\$8 112 per ton.

The Chibuluma Mine is well set to maintain mining and milling volumes in the coming period. Volume restrictions, given the increasing depth of mining and erratic power supply, will be mitigated through careful planning and strategic interventions, and the depth-related increases in grade will assist in maintaining production levels. In addition, the dilution due to the close-out areas should reduce by the end of the first quarter of 2011. Various cost pressures will be experienced during the coming year, mainly in the form of wages, power and diesel costs. Capital expenditure levels are expected to remain similar in the coming year. However, additional expenditure will be incurred on exploration activities targeted at extending the life of the mine.

## Key results

Chibuluma	Unit	Six months Dec 2010	Six months June 2010	12 months Dec 2010	12 months June 2010	12 months June 2009
Tons milled	(t)	301 659	269 431	571 090	552 051	568 187
Headgrade – copper	(%)	3,2	3,6	3,4	3,5	3,1
Overall recovery – copper	(%)	92	90	91	90	90
Copper produced	(t)	9 008	8 721	17 729	17 140	15 940
Copper sold – total	(t)	8 990	8 702	17 692	17 181	15 907
– into hedgebook	(t)	3 000	4 200	7 200	7 275	–
– at spot price	(t)	5 990	4 502	10 402	9 906	15 907
– hedgebook price achieved	(US\$/t)	7 692	5 308	6 301	4 912	–
– average spot price achieved	(US\$/t)	8 322	7 488	7 964	7 239	3 876
On-mine cost per ton milled, net of ore stock movement	(US\$/t)	59	59	59	55	52
Copper realisation costs per ton of copper sold	(US\$/t)	924	987	960	946	917
Total cash cost/ton of copper sold	(US\$/t)	2 932	2 840	2 898	2 783	2 793
Capital expenditure	US\$m	13	12	25	18	16

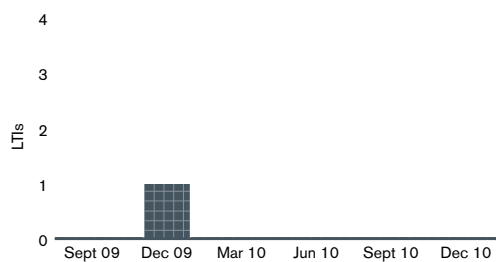
## Operational review continued

### Sable Zinc

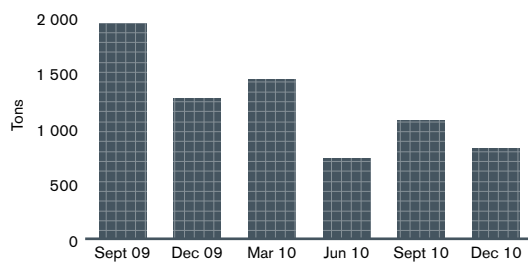


Sable copper electro-winning tankhouse

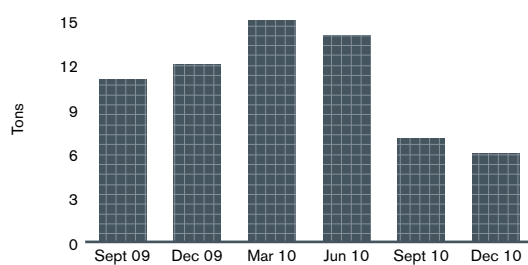
Sable quarterly lost-time injuries



Sable quarterly copper production



Sable quarterly cobalt production



Improvements in safety and health practices, specifically the introduction of hazard identification and risk assessments at the plant, led to an improvement in all safety-related measures over the last 12 months. Total lost-time injuries have reduced to zero over the last 12 months after having had six in the previous year to June 2009.

The volume of ore purchased and processed through the plant continues to be a constraint. Ore flow to Sable is constrained by government interventions in the DRC which make it difficult to import materials that have not been beneficiated. Therefore there has been a change in mix of ore towards local Zambian sources which are typically lower grade and have very little associated cobalt, although they are cheaper to purchase.

Recoveries remained high notwithstanding the lower feed grades as the portion of the zinc plant infrastructure which was converted into a leach section to retreat rejected material continued to pay dividends. The quality of the Sable copper remained London Metal Exchange "A" grade material.

Sable produced 1 883 tons of copper for the six months ended 31 December 2010 ("current period") which is a 13 percent decrease on that achieved for the six months to June 2010 ("June 2010"). Cobalt production more than halved to 13 tons from 29 tons on the back of increased Zambian-sourced ores which have a lower cobalt grade than DRC-sourced ores.

The net margin on copper production after acquisition and process costs increased from five percent to 12 percent. The improved margin is as a direct result of the lower cost of the Zambian ores as well as cost control related to the direct processing costs. The slight recovery improvement also contributed to the margin increase.

The average copper price received increased from US\$6 353 per ton to US\$7 042 per ton and the cash mining profit from operations increased by 175 percent to US\$2,012 million for the current period.

There were no major capital works programmes at the operating plant.

The Sable Zinc operation is wholly reliant on third-party ores, and with the challenge of exporting ore from the DRC one can expect production throughput to remain constrained. However, the strategies to source more local Zambian ores and continue with its efforts at sourcing DRC ores that management have put in place are showing signs of paying dividends.

## Key results

<b>Sable Zinc</b>	<b>Unit</b>	<b>Six months Dec 2010</b>	<b>Six months June 2010</b>	<b>12 months Dec 2010</b>	<b>12 months June 2010</b>	<b>12 months June 2009</b>
Copper produced	(t)	1 883	2 167	4 050	5 380	4 889
Copper sold	(t)	1 995	2 088	4 083	5 294	5 588
Cobalt produced	(t)	13	29	42	52	151
Cobalt sold	(t)	12	32	44	54	252
Acquisition cost of contained copper feed (% of LMB price)	(%)	72	71	71	72	59
Overall copper process recovery	(%)	94	94	94	95	94
Net margin on copper production after acquisition and process costs	(%)	12	5	9	6	4
Capital expenditure	US\$m	0,1	–	0,1	0,1	0,3

## Growth projects

The Group has adopted a risk-based approach to determine the appropriate financial strategy required to fund future projects. The funding requirements by project, considered in relation to the Group's financial position, will determine the timelines and sequence of new project development. The second half of 2010 was very productive for the Metorex Growth Projects team and good progress was made towards completion of feasibility studies for each of the projects.

### Kinsenda Project

#### Introduction

The Kinsenda copper mine is located in the DRC close to the Zambian border town of Kasumbalesa, and is the focus of a bankable feasibility study ("BFS") to bring the mine back into production.

#### Activities over the last 18 months

During the period June 2009 to December 2010, Metorex continued to advance the BFS along with appointed consultants. An infill drilling programme was completed in August 2010, and an updated geological resource model for the western portion of the mine has been completed by Snowden Mining Industry Consultants ("Snowden"). Snowden has recommended a further drilling programme beyond the western section of the mine at 75 metre drillhole spacings to confirm historical drilling and this recommendation is under consideration. A SAMREC-compliant resource of 23 Mt at 4,1 percent copper has been declared as at 31 December 2010.

Snowden has also delivered mining infrastructure and mining method designs for an envisaged ore mining rate of 40 000 tons per month from 270 metres below surface down to an ultimate depth of 600 metres. A backfill study is underway to cater for the drift-and-fill mining method. Metallurgical testwork is ongoing and MDM Engineering is designing a metallurgical plant which comprises conventional crushing and milling followed by flotation of sulphide and oxide copper minerals to produce both sulphide and oxide copper concentrates. Metallurgical test work thus far indicates an overall recovery of copper from run-of-mine ore to concentrate of 90 percent yielding approximately 22 000 tonnes of copper contained per annum.

Metago and rePlan have substantially completed the environmental and social impact assessment ("ESIA") studies respectively and wet season studies are underway. Golder

Associates was appointed to complete the tailings storage facility site selection and design, and this work is substantially completed. Groundwater remains a key risk for the project and mine inflows have been estimated to be between 28 000 m<sup>3</sup>/d to 45 000 m<sup>3</sup>/d when the mine is fully developed. The actual inflow will depend on how the aquifers respond to pumping from the deeper levels, and water handling and pumping infrastructure requirements are in planning. Power reticulation studies have also largely been completed.

#### Outlook

The schedule for the BFS shows completion by mid-year 2011 at a total expenditure of US\$6,1 million. The feasibility report for the US\$130 to US\$150 million project is almost complete and has been presented to the DRC authorities whereafter it will be presented to the Metorex Board. Funding of the project will be by way of Metorex cash flows supplemented by US\$66 million through debt facilities currently being negotiated with lenders. The details and terms of these arrangements will be announced once finalised with the lenders.

### Ruashi Sulphides Project

#### Introduction

The Ruashi sulphides occur directly below the copper and cobalt oxide pits at Ruashi, and are the focus of a feasibility study to advance the project to a production decision. The benefits of the project include optimising the Mineral Resources and capital investments made at Ruashi.

#### Activities over the last 18 months

The SAMREC-compliant sulphide resource of 7,9 million tons at 3,1 percent copper declared as at 30 June 2009 has been increased to 15,8 million tons at 2,9 percent copper, of which 1,5 million tons at 3,0 percent copper is now at the indicated category.

The Metorex Board has approved an amount of US\$2,3 million to advance the Ruashi Sulphides Project to feasibility status. The feasibility study includes additional exploration, mine design and process design. Metallurgical treatment of the Ruashi sulphides would require the installation of a new crushing and milling circuit and refurbishment of the existing Phase 1 concentrator to produce a bulk concentrate containing both copper and cobalt. The bulk concentrate would be sold to a smelter capable of recovering both copper and cobalt.

## Outlook

The schedule for the feasibility study shows completion by January 2012. Order of magnitude capital costs for the project are estimated between US\$15 and US\$25 million.

## Lubembe Project

### Introduction

The Lubembe deposit is an advanced exploration prospect located in the DRC, and roughly equidistant between the border towns of Kasumbalesa and Mokambo. Lubembe is currently the focus of a new mining concept study.

### Activities over the last 18 months

A SAMREC-compliant mineral resource estimate of 93 million tons at 1,9 percent copper was completed for the Lubembe deposit in March 2011.

Based upon current orebody knowledge and modelling a number of mining scenarios were completed by Snowden Mining Consultants. These studies cover the spectrum of high-volume, low-grade options to low-volume, high-grade options. As a result of these studies it has been decided to drill a number of closely spaced drillholes at 50 metre centres to test the geological continuity of high-grade mineralisation on the southern part of the deposit.

The Metorex Board has approved an additional US\$900 000 to explore the targeted areas and, once completed, the results will be used to further inform the mining scenarios developed by Snowden. Metallurgical testwork is ongoing and, a number of processing scenarios are being advanced. Metago and rePlan were appointed for environmental and social impact studies, which are being run concurrently with the Kinsenda studies.

## Outlook

Metallurgical testwork is ongoing and a number of processing scenarios are being advanced. The schedule for the concept study shows completion by November 2011.

## Dilala East Project

### Introduction

The Dilala East deposit is an advanced copper and cobalt exploration prospect located in the DRC, close to the mining centre of Kolwezi.

## Activities over the last 18 months

A study was completed by Metorex in February 2010, which concluded that the Dilala East Project shows reasonable prospects of being developed into a profitable underground mining operation. This was based on the declared SAMREC-compliant oxide/sulphide resource of 19,1 million tons at 2,9 percent copper and 0,9 percent cobalt. The measured and indicated resource estimate extended to a depth of 460 metres below surface, and was based on the results of 45 drillholes available at the time. An additional 17 drillholes have been completed subsequently, extending the resource to a depth of 600 metres below surface.

The study was submitted to Gécamines in terms of the Ruashi Mining partnership agreement. Metorex and Gécamines are working together to determine the best way forward for the project, the mineral title to which is still held by Gécamines.

## Outlook

Limited exploration drilling activities are ongoing and funded via Ruashi Holdings. This drilling is focused on depth extensions of the sulphide zone. The completion date of the BFS has been extended to accommodate the delays in transfer of the mineral title by Gécamines.