

# PHILLIPS RIVER PROCESS FLOW SHEET DELIVERS EXCELLENT RECOVERIES

## Highlights

- Final Process Flow Sheet confirmed
- Metallurgical Recoveries improve upon Scoping Study Results
- Robust flexible plant design
- KUNDIP Gold Copper Recoveries
  - Gold Recovery 89-93%
  - Silver Recovery 70-92%
  - Copper Recovery sulphide 89%, transitional 60%, oxide 38%,
- **TRILOGY** Polymetallic Recoveries
  - Oxide low copper ore gold 73%, silver 87%
  - Oxide high copper ore copper 59%, gold 54%, silver 63%,
  - Copper Sulphide ore copper 75%, gold 58% and silver 59%
  - Polymetallic Ore copper 82-86%, zinc 58-75%, gold 48-64%, silver 62-70%, lead 10-27%,

The company is pleased to announce the completion of the key design details, flow sheet and anticipated metallurgical recoveries for the company's Phillips River Project. This is a major milestone required for the completion of the Definitive Feasibility Study.

The company's lead consultant, GR Engineering Pty Ltd, Peter Munro of Mineralurgy Pty Ltd and AMMTEC's Burnie Research Laboratory, together with the company's key executives have finalised the basis for the process plant design. Also complete is the associated testwork confirming metal recovery parameters for all ore types.

Following a period of refinement aimed at optimising metal recoveries, the company has achieved a flow sheet demonstrating higher recoveries from that previously contemplated. The flow sheet is believed to offer the most cost effective overall process design thus enabling all ore types to be effectively treated. This will ensure the maximum return is achieved from both the Kundip gold copper resource and the Trilogy Poly-metallic resource.

The proposed flow sheet, as shown at the rear of the announcement, has been derived assuming a simple crushing and grinding circuit comprising three stages of crushing and a single ball mill configuration. This approach

#### **Fast Facts**

Cap Structure Issued Shares Market Cap Cash + Investments

362Mil A\$18 4Mil \$1.3Mil

June 2010

#### **Directors**

Hamish Bohannan Chairman Steve Norregaard Managing Dir. Joe Totaro Andrew Czerw Tony Martin

Non-Exec Dir. Executive Dir. Non-Exec Dir.

#### **Company Highlights**

- Substantial resource base
- Diversified commodities
- Aggressive exploration Proven management
- BFS well advanced



#### **PRP Resource Base**

- 13.97 Mt
- 901,000 oz gold
- 9.9 Moz silver . . 89.000 t copper
- 123,000 t lead
- 74 000 t zinc

## **Contact Details**

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will provide opportunities to process ore at a higher rate in oxide ore types, in excess of 1,100,000 tonnes per annum (tpa) and 750,000 to 800,000 tpa in harder ores.

Following grinding and gravity separation ore containing sufficient levels of base metals will be treated through a sequential flotation circuit to produce concentrates of copper and zinc/lead bulk or zinc concentrates dependent on sulphide metal concentrations.

Subsequent leaching will treat all ore types to recover the precious metals and a small proportion of overall copper. In the case of oxide ores with low levels of copper not warranting flotation these report direct to the leach circuit after grinding and gravity concentration.

After leaching copper, silver and a portion of the cyanide consumed in the leach circuit is recovered in the SART process. The SART step involves the acidification of the liquor and addition of a sulphur reagent which has the effect of producing copper sulphide as a precipitate with cyanide released as a gas which is recovered for recycling into the leach circuit. The copper sulphide precipitate carries the bulk of the silver contained in the liquor. The remaining liquor is treated through a final gold recovery step utilising the widely used Merrill Crowe method of gold extraction involving zinc precipitation and subsequent smelting.

## Metallurgical Recoveries

The mineralisation at both Trilogy and Kundip displays oxide, transitional and sulphide components, each requiring a similar process route but with slight modification to optimise recovery. The level of base metal endowment in each category determines whether treatment is by flotation and leaching or leaching only. The following tables define overall recoveries for all ore types

DESCRIPTION	UNITS	Oxide Low Cu	Oxide High Cu	Transition Low Cu	Transition High Cu	Sulphide Lo Cu	Sulphide Hi Cu
Gold	%	89.2	92.6	91.3	93.0	91.3	91.5
Silver	%	71.4	74.9	86.8	91.5	72.0	68.2
Copper	%	7.4	38.5	32.6	60.4	26.1	89.0

## Kundip

Table 1:Kundip metal recoveries

In summary all Kundip ores require whole of ore leaching. Ore having sufficient levels of copper is designated "high copper ore" and will undergo an additional flotation step prior to leaching. The copper concentrate produced will be a high value concentrate with precious metal credits.

The principal driver in optimising metal recoveries is gold, followed by copper. The company is buoyed by the excellent recoveries achieved to be adopted in the definitive feasibility study



## Trilogy

DESCRIPTION	UNITS	Oxide Low Copper Ore	Oxide High Copper Ore	Cu-Au Sulphide Ore	Cu-Pb- Zn Sulphide Ore	Cu-Pb- Zn Trans Low Zn/PbS	Cu-Pb- Zn Trans High Zn/PbS
Gold	%	73.4	53.6	57.6	47.6	54.4	53.0
Silver	%	86.7	63.8	59.2	62.3	70.6	70.2
Copper	%	9.3	58.9	75.4	86.1	82.1	84.1
Lead	%	0.0	0.0	0.0	27.0	27.0	10.0
Zinc	%	0.0	0.0	0.0	58.0	58.0	75.0

Table 2: Trilogy metal recoveries

The Trilogy resource contains a diverse range of commodities. Each phase of testwork has been followed by rigorous confirmatory testwork ensuring confidence in the results.

The near surface oxide resource has gold and silver as the principal drivers, with copper featuring to a lesser extent. The majority of the oxide resource will be treated by straight leaching to recover the gold and silver with the high copper component being treated through the flotation circuit followed by leaching.

In the deeper sulphide component the copper gold ore will undergo flotation to generate a copper concentrate. Overall recoveries have improved from those previously assumed with copper concentrate grades of 25% achievable.

Within the transitional poly-metallic ore, the ratio of zinc to lead sulphide has been determined as a driver to metallurgical composition of the resultant concentrates. The bulk of tonnage to be treated is in the transitional low zinc to lead sulphide ratio category where a bulk zinc lead concentrate will be produced in addition to copper concentrate.

Poly-metallic ore will undergo sequential flotation to create a copper concentrate and either a bulk zinc lead concentrate or zinc concentrate determined by ore grades

In all Trilogy sulphide ores a portion of the float tailings stream will be leached to recover precious metals not reporting to concentrate streams.

The company is pleased that the confirmatory testwork carried out since release of the scoping study has demonstrated an overall improvement in recoveries. In all cases the anticipated concentrate grades for base metal concentrates and associated specifications have been confirmed as being eminently saleable in today's markets.

Work is well advanced on detailed plant design and capital estimation of the process facility. With operating and cost data now confirmed, work on open pit optimisations/designs and underground designs are well underway.



For further information please contact:

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### -ENDS-

## **Competent Person's Statement**

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Bruce Armstrong who is a Member of the Australasian Institute of Geoscientists. Mr Armstrong is a full time employee of Tectonic, and has sufficient experience which is relevant to the style of mineralisation under consideration to qualify as a Competent Person as defined in the 2004 edition of the JORC Code. Mr Armstrong has given his consent to the inclusion in the report of the matters based on the information in the form and context in which it appears. Information that relates to exploration targets refers to targets that are conceptual in nature, where there has been has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

TECTONIC RESOURCES GLOBAL RESOURCE TABLE: JUNE 2010 GOLD AND COPPER RESOURCE TABLE: KUNDIP PROJECT AND OTHERS**									
CATEGORY	Mt	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)			
MEASURED	0.00	0.00	0.0	0.0					
INDICATED	4.97	3.10	2.3	0.3					
INFERRED	2.75	2.73	2.0	0.3					
SUB TOTAL	7.72	2.97	2.2	0.3					
BASE METAL RESOURCE TABLE: TRILOGY PROJECT***									
MEASURED	0.31	2.4	41	0.3	0.1	0.0			
INDICATED	5.75	0.7	48	1.1	2.1	1.3			
INFERRED	0.18	0.6	12	0.8	0.2	0.2			
SUB TOTAL	6.24	0.82	47	1.0	2.0	1.2			
GLOBAL RESOURCE TABLE: GRADE									
MEASURED	0.31	2.4	41.2	0.3	0.1	0.0			
INDICATED	10.72	1.8	26.8	0.7	1.1	0.7			
INFERRED	2.94	2.6	2.7	0.3	0.0	0.0			
GRAND TOTAL	13.97	2.01	22.0	0.6	0.9	0.5			
GLOBAL RESOURCE TABLE: CONTAINED METAL									
	Mt	M Oz	M Oz	t (000)	t (000)	t (000)			
MEASURED	0.31	0.02	0.41	0.9	0.4	0.0			
INDICATED	10.72	0.63	9.23	78.9	122.5	73.9			
INFERRED	2.94	0.25	0.25	9.4	0.3	0.3			
GRAND TOTAL	13.97	0.90	9.90	89.2	123.3	74.3			

Table 3 - Phillips River Global Resource Estimate

\*- Based on wire-framing to drill holes on a 1.0g/t Au cut-off for shallow resource, and 3.0g/t Au. for deeper mineralisation, and reporting to a 1g/t Au cut-off. \*\*- Variously based on wire-framing to drill holes, and reporting on a 1g/t or 1g/t Au equivalent cut-off based on:

\*\*- Variously based on wire-framing to drill holes, and reporting on a 1g/t or 1g/t Au equivalent cut-off based on:
Au eq= Au ppm +( Cu ppm \*0.0001420827408)
\*\*\*-Based on wire-framing to drill holes on a 0.5% Cu equivalent cut-off and reporting to a 1% Cu equivalent cut-off.

\*\*\*-Based on wire-framing to drill holes on a 0.5% Cu equivalent cut-off and reporting to a 1% Cu equivalent cut-off. Oxide Cu eq. =(Au ppm \* 9775)+(Ag ppm \* 150.4) +(Cu ppm):

Sulphide Cu eq. = (Au ppm \*4720)+(Ag ppm \* 75.5)+(Cu ppm)+(Pb ppm \* 0.2384) + (Zn ppm \* 0.1925)







## About Tectonic

Tectonic Resources NL ("Tectonic") has established a singular focus on the Phillips River Project and is well underway with the implementation of its strategy to advance the project to Bankable Feasibility Status. Situated on the south coast of Western Australia, between Hopetoun and Ravensthorpe, the project includes two established resource areas that lie in close proximity to each other. Both are the subject of ongoing work programmes.

#### Trilogy

The Trilogy deposit is a shallow bulk tonnage poly-metallic resource of 6.2Mt at 0.8g/t Au, 47g/t Ag, 1.0% Cu, 2.0% Pb and 1.2% Zn. The deposit lies on freehold farming land owned by the company. Current Activities:

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- Metallurgical testwork is completed confirming concentrate specification and recoveries
- Review of regional exploration targets is ongoing with geochemical soil sampling targeting broadly defined copper gold anomalism

#### Kundip

Kundip is a historic mining centre with mineralisation hosted within quartz shear structures. The currently defined resources are contained within a 3km by 1km area. Exploration is ongoing outside of the resource area. A total resource of 7.72Mt at 2.97g/t Au and 0.3% Cu has been defined. Current work programmes are aimed at increasing the resource base and increasing confidence in known resources.

Current Activities:

- Regional Geochemical sampling and mapping is being progressed to gain greater understanding into the area
- Toll milling of gold ore stockpiled on surface during past mining episodes
- Drilling results of exploration RAB drilling are being assessed for follow-up work as they become available

#### **Feasibility Study**

The company appointed GR Engineering as study manager to oversee all aspects of the Feasibility study including detailed engineering of the processing facility. The study is destined for completion by the end of September 2010.