



Liebherr 9350 Excavator and  
Caterpillar dump truck

ASX/BSE: DML

#### MARKET CAPITALISATION

Shares on Issue	442m
Share Price	A\$1.71
Market Cap	A\$752m
Cash (24 Apr)	US\$73m
Debt (24 Apr)	US\$180m

ABN 29 104 924 423

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DISCOVERY METALS LIMITED

# ASX ANNOUNCEMENT


## Discovery Metals Limited

### DFS confirms attractive economics for Zeta Underground Mine

#### Highlights:

- The Definitive Feasibility Study for the Zeta Underground Mine (Zeta DFS) at the Boseto Copper Project has been completed.
  - Mining is scheduled over a strike length of 2km beneath the Zeta open pit between 150 and 630 metres below surface.
  - **Sublevel Caving** is selected as the most appropriate mining method.
  - **Twin-decline development** from the Zeta open pit area will provide underground access.
  - **Average production of 1.5 Mtpa (18kt Cu and 800koz Ag per annum)** is scheduled over an eleven year period.
- The Zeta DFS economics were evaluated using contractors (as opposed to owner operated). At US\$3.00/lb Cu and US\$30/oz Ag the evaluation showed:
  - **NPV (10% discount factor) of US\$131m; IRR of 42%;**
  - **C1 cash cost of US\$1.82/lb** (which includes the contractor's profit and capital investment recoupment); and
  - Capex (to first ore production) of US\$26.8m.
- Project NPV increases significantly using current metal prices: at US\$3.50/lb Cu and US\$30/oz Ag the project returns a **NPV of US\$ 232m.**
- **Maiden Zeta Underground Ore Reserves** of 7.3Mt at 1.3% Cu and 24.5 g/t Ag.
- Further integration studies will be undertaken to confirm start-up and full production dates.

Discovery Metals' Managing Director, Brad Sampson, said ***"The underground mine at Zeta was a key component of the Boseto Development Plan (October 2010). The Development Plan anticipated integrated open cut and underground mining, producing 35ktpa copper for at least 15 years. The Zeta DFS establishes the technical and economic viability of the Zeta underground mine and confirms the Development Plan concept. Importantly, we intend that the Zeta mine will be a model for more extensive underground mining developments at Boseto, building on discoveries of a number of high potential targets for underground mining, including Plutus, Zeta NE, Selene and Mango."***



Discovery Metals Limited (the **Company** or **Discovery Metals**) reports the findings of the Zeta Underground DFS. The Zeta Deposit forms part of the Boseto Copper Project (100% owned by Discovery Metals) where open pit mining operations have commenced. The Company has completed its review of the Definitive Feasibility Study for underground mining at Zeta and summary results are presented here.

## **1. Study Scope and Methodology**

### **(a) Scope**

The Zeta Underground Mine DFS evaluated the development of an underground mining operation at Zeta based on the extraction of Ore Reserves and Additional Mineral Inventory located under the Zeta open pit. The Zeta Underground Mine was evaluated as a stand-alone mine with ore processed at the Boseto concentrator.

The DFS was undertaken by Mining Plus Pty Limited (the **Consultant**), an experienced Perth based mining consultant.

The scope of the DFS included:

- Evaluation of the most appropriate mining method taking into account safety of operating personnel and the mine itself, maximisation of resource recovery, capital and operating cost and operating risk;
- Detailed mine design within the defined resource area and providing opportunity for depth extensions; and
- Comparison of contractor versus owner operated mining.

### **(b) Mining Method**

The underground operations will be accessed via decline from twin portals, one developed from within the Zeta open pit, and one from the surface. Sublevel caving has been selected as the most appropriate mining method. All lateral development is planned to be within ore. Access on each level will be developed to the periphery of the ore body and the sub level caving conducted on retreat to the decline access points.

The underground mine extends over a strike length of approximately 2 kilometres and is situated immediately underneath the planned Zeta open pit extending from approximately 150 metres to 630 metres below surface. Copper-silver mineralisation has been intersected by drilling to 630 metres deep and high grade copper silver mineralisation remains open below this level (Figure 3).

Opportunity exists to trial the sublevel caving mining method at relatively shallow depths (55 metres below surface) in the southern end of the planned underground mining area. This will allow confirmation of the feasibility assumptions early in the development phase of the mine (Figure 3).

A Plan View showing infrastructure and portal locations is shown in Figure 4.

Ore from both development and caving operations will be trucked to the surface, stockpiled and then trucked approximately 8 kilometres to the Boseto Concentrator.

### **(c) Operator Concept**

The study evaluated contractor based operations and owner based operation. The contractor based operation was selected as the Base Case due to strategic considerations commensurate with the stage

of the Company's development (eg rapidity of implementation and lower capex). The contractor mining option however is a higher operating costs scenario than the owner mining scenario as contractor margins and capital costs recovery flow through to the C1 cash costs.

## 2. Ore Reserves and Mineral Resources

The Underground Ore Reserves at Zeta, reported for the first time here, are:

	Tonnes (Mt)	Cu%	Ag g/t
Underground Proved Ore Reserve	1.01	1.3	24.0
Underground Probable Ore Reserve	6.29	1.3	24.6
<b>Underground Total Proved &amp; Probable Ore Reserve</b>	<b>7.30</b>	<b>1.3</b>	<b>24.5</b>

The Total Ore Reserve for the Zeta Underground Project is reported as 7.30 million tonnes at 1.3% Copper and 24.5 g/t silver at a cut off of 0.6% Cu and is reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code) 2004 Edition.

All underground reserves are scheduled for mining in the Zeta DFS mine schedule.

Mining is scheduled to depths below the current limit of Ore Reserves. Between approximately 360 metres and 630 metres below surface, additional Mining Inventory has been scheduled for mining in areas where insufficient drill hole information currently exists to define Ore Reserves (see below).

Additional Inventory Inferred			Additional Inventory Unclassified			Total Additional Inventory		
Mt	Cu %	Ag g/t	Mt	Cu %	Ag g/t	Mt	Cu %	Ag g/t
7.92	1.4	26.9	1.15	1.1	26.1	9.07	1.3	26.8

It is planned to drill additional holes into this zone, between 360 metres and 630 metres below surface after access has been established underground.

Copper-silver mineralisation remains open below the current depth of drilling (approximately 630 metres) and potential exists to extend the Mineral Resources and Ore Reserves at depth and to increase the scheduled mine life.

## 3. Costs

### (a) Capital costs to first stope ore production

Capital expenditure over the current planned life of the underground mine, to complete all decline development to the base of the mine, and fully equip the underground mine is approximately US\$80 million. In the table following, capital expenditure to deliver first ore flows is shown.

Component	Amount (US\$ Millions)
Capital Development	\$11.4m
Major Underground Plant Items	Contractor
Minor Plant Items	\$5.4m
Ventilation	\$0.8m
Mobilisation, Offices, Workshop	\$6.8m
<b>Subtotal</b>	<b>\$24.4m</b>
Contingency & escalation	10%
<b>Total</b>	<b>\$26.8m</b>

**(b) Operating Costs**

Input	Unit	Cost
Copper Price	US\$/t or \$/lb	\$6,614 or \$3.00
Average Silver price	US\$/oz	\$30.00
Exchange Rate	US\$ to A\$	1.00
Discount rate for NPV	%	10

Operating Costs	US\$/lb Cu Metal	US\$/t Ore
Mining Costs	1.69	45.1
Plant Processing Costs	0.24	6.3
Power Costs (site coal power station)	0.09	2.3
U/G Administration Costs	0.01	0.3
<b>Total Site Costs</b>	<b>2.02</b>	<b>54.0</b>
Transport Costs (US\$200/t concentrate)	0.22	
Treatment Costs (US\$63.5/t concentrate)	0.07	
Refining Costs (6.35c/lb Cu)	0.07	
Silver Credit	(0.56)	
Average C1 Cash Costs (after silver credit)	1.82	

**(c) Project Financing**

The DFS assumes the development of the Zeta underground mine will be financed using cash flows from the Boseto open pit operations. This assumption will be revisited upon completion of integration studies and the development of more detailed planning for the Boseto expansion and the Boseto coal fired power station.

## 4. Timetable for development

### (a) Permitting

The Botswana Department of Environmental Affairs (**DEA**) has accepted a Preliminary Environmental Impact Assessment (**PEIA**) on the underground mining proposed at Zeta. The Company is currently working with environmental consultants to complete an addendum to the approved Boseto Environmental & Social Impact Assessment to incorporate additional impacts and management plans arising from underground mining. It is anticipated that the Company will receive approval for this addendum in the second half of 2012.

### (b) Indicative Timeline

The Zeta DFS and its economic evaluation assumed that the mine would start at the earliest possible date and the table below gives details of the earliest start up that could be achieved. The optimum extraction and processing sequence for the combined open pit and new underground Ore Reserves at Boseto has not yet been determined, with the final sequence being dependent on the timing of the planned expansion of the Boseto Concentrator to deliver in excess of 50,000 tonnes of copper per annum. Work continues to both develop the expansion plan and to delineate new areas of Mineral Resources (eg Zeta NE) that may contribute to the expansion plan. The Company expects to provide more detail on the expansion planning late in 2012, after the Boseto Concentrator is running at nameplate throughput of 3 Mtpa.

The Company intends to maintain the option for the early start date for the Zeta mine while these studies continue. To that end, recruitment of a project development team for the Zeta Underground Mine has commenced and the current schedule is for sufficient work to be progressed in 2012 to allow the award of a mining contract in early 2013 and commencement of development to provide underground access in late 2013.

Activity	Scheduled Timing
Project Planning	Q2/2012 - Q3/2012
Award Underground Mining Contract	Q1/2013
Infrastructure Construction	Q2/2013 - Q4/2013
Infrastructure Construction Completion	Q4/2013
Commencement of Decline Development	Q4/2013

## 5. Financial Outcomes

The financial outcomes forecast in this release are all pre-tax, and pre-financing charges.

Highlight	Units	Definitive Feasibility Study
Evaluated Operation Period	Years	11
Average Underground Ore	Million Tonnes per year	1.5
Average Copper Production	Tonnes Cu p.a.	18,000
Average Silver Production	Oz Ag p.a.	800,000
Average C1 Cash Costs After Silver Credits	US\$/lb	\$1.82
Capital Expenditure (to first stope ore)	US\$ Millions	\$26.8
Copper	US\$/lb Cu	\$3.00
Silver Price	US\$/oz Ag	\$30
Operating Surplus	US\$ Millions	\$345
Project NPV <sup>10</sup>	US\$ Millions	\$131
Internal Rate of Return	%	42%

### Copper Price Sensitivity

Cu Price Case	US\$/lb	\$ 3.00	\$ 3.50	\$ 4.00
Ag Price Case	US\$/oz	\$30	\$30	\$30
Operating Surplus	US\$ Millions	345	550	755
Project NPV <sup>10</sup>	US\$ Millions	131	232	332
IRR	%	42	67	92

The sensitivity analysis identifies that the Zeta mine is a worthwhile investment at all evaluated price levels and the economics are strongly driven by higher copper and silver prices.

An indirect comparison can be made between the Zeta mine as evaluated in this DFS and previous information on the economics of the Zeta Underground mine which was included in the Boseto Development Plan and demonstrates the value of the Zeta Underground mine remains similar to that evaluated in the 2010 Boseto Development Plan.

- The difference between the BFS and the Development Plan financial outcomes as published in August 2010, using \$3.00/lb Cu and \$17/oz for Ag, was US\$124million, ie the contribution to the Boseto Copper Project caused by introducing the Zeta underground mine and extending the open cut to a 15 year life was US\$124million.
- The current study shows that the value created by introducing the Zeta underground on its own (ie without open cut extension) using \$3.00/lb Cu and \$30/oz for Ag is US\$131million.



Continuing Fleet Assembly



Managing Director, Brad Sampson, addressing staff in Gaborone



Flotation Circuit



Screen plant and crushed ore bin

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### Competent Persons Statement

The information in this report as it relates to the Zeta, Plutus and Petra Mineral Resources for the Boseto Copper Project was reviewed by Mr David Arnott, who is a MAusIMM. Mr Arnott is employed fulltime by Snowden Mining Industry Consultants Pty Ltd (Snowden). Mr Arnott 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' (**The JORC Code**).

The information in this report as it relates to the Zeta, Plutus and Petra Ore Reserves for the Boseto Copper Project was reviewed by Mr Peter Myers, who is a MAusIMM. Mr Myers is employed fulltime by Snowden. Mr Myers 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 JORC Code.

The mining specific information in this report that relates to Ore Reserves is based on information compiled by Mr Andrew Gasmier, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Gasmier is employed full time by Mining Plus Pty Ltd. Mr Gasmier 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 JORC Code.

Messrs Arnott, Myers and Gasmier consent to the inclusion in this report of the matters based on information provided by them and in the form and context in which it appears.

### Forward looking statements

This release includes certain statements that may be deemed "forward-looking statements". All statements in this discussion, other than statements of historical facts, that address future activities and events or developments that Discovery Metals expects, are forward-looking statements. Although Discovery Metals believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the forward-looking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include market prices, continued availability of capital and financing, and general economic, market or business conditions. Investors are cautioned that any such statements are not guarantees of future performance and that actual results or developments may differ materially from those projected in forward-looking statements.

### Discovery Metals Background

Discovery Metals is an ASX/BSE listed copper exploration and development company focused on the emerging Kalahari Copperbelt in northwest Botswana. The Company is a near-term copper producer currently developing its 100% owned Boseto Copper Project towards production in the first half of 2012.

The Kalahari Copperbelt sediment-hosted mineralisation of the Boseto Copper Project is similar in style to the well-known and large deposits of the Central African Copperbelt of Zambia and the Democratic Republic of the Congo.

Discovery Metals has prospecting licences covering 11,872 km<sup>2</sup> along the Kalahari Copperbelt.

**Further information on the Company including Mineral Resources and Ore Reserves is available on our website: [www.discoverymetals.com](http://www.discoverymetals.com)**

**For further information on this release and Discovery Metals Limited, please contact:**

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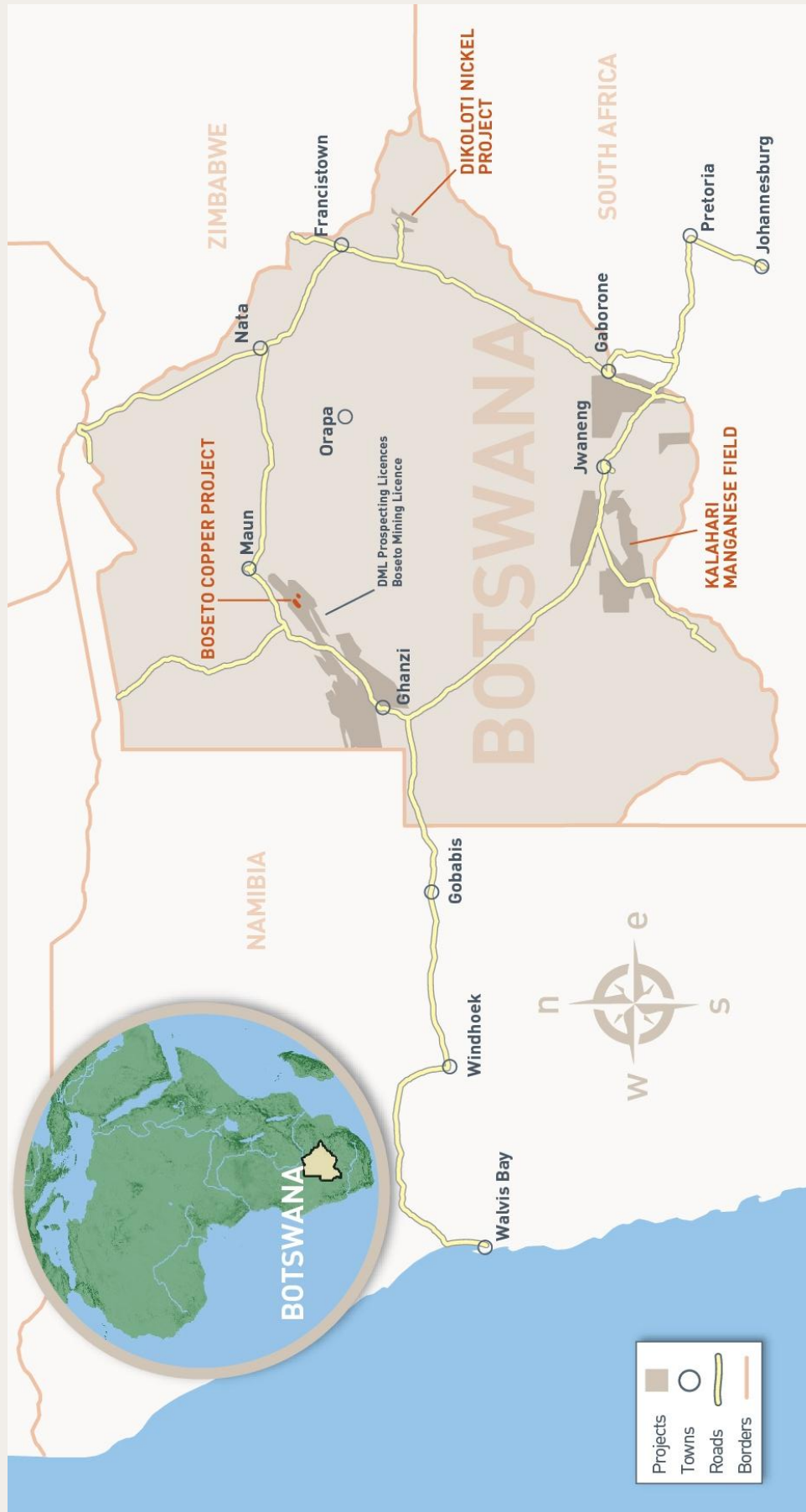


Figure 1: Discovery Metals' Botswana Projects



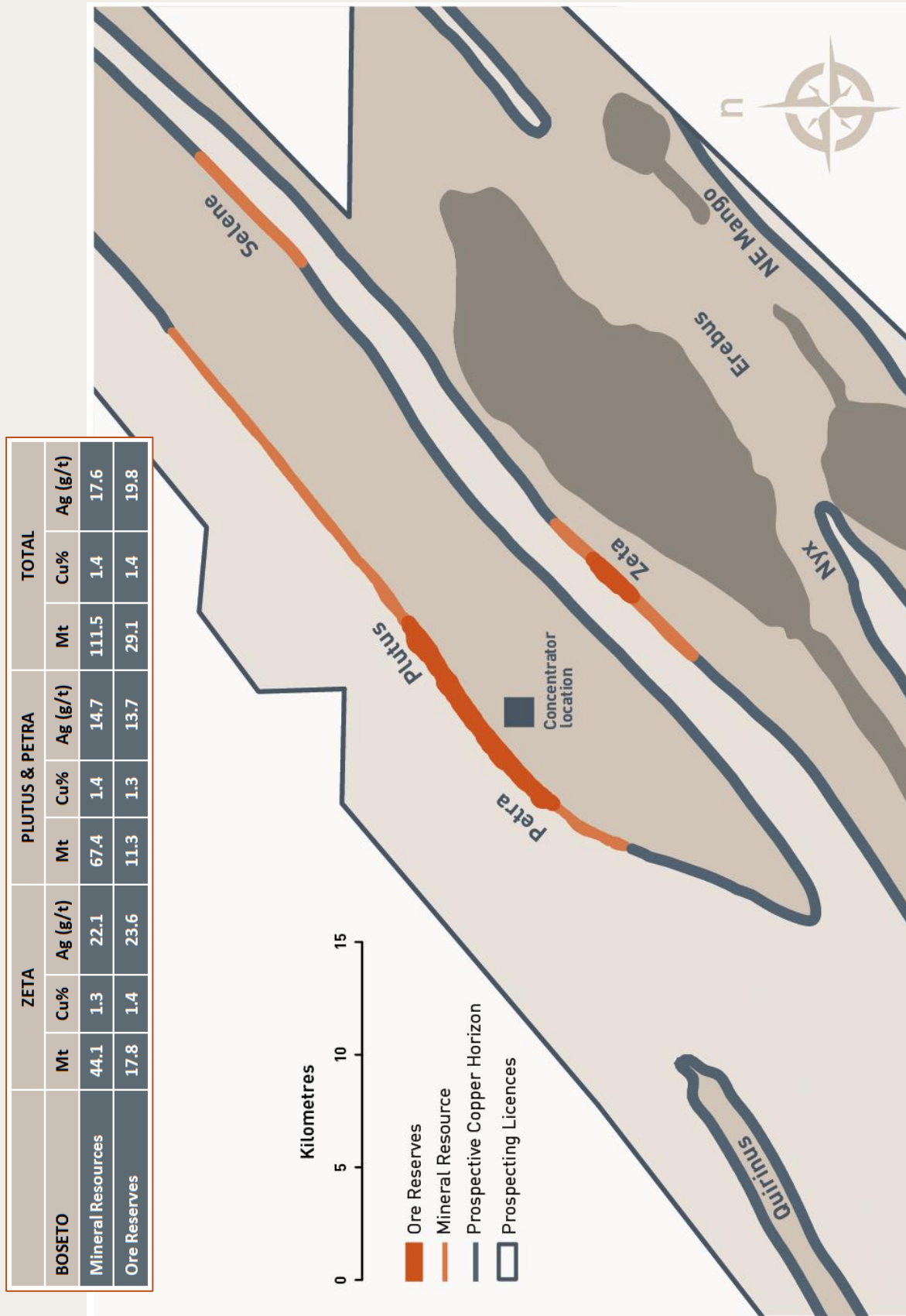
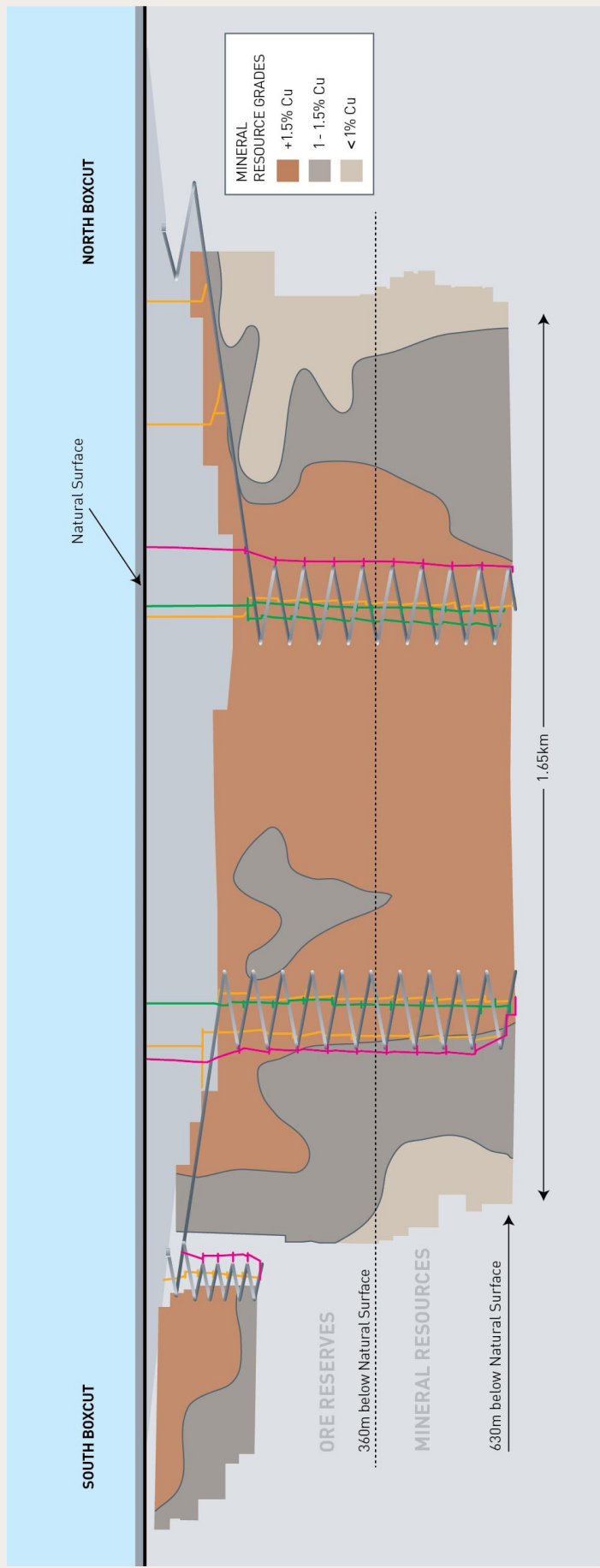


Figure 2: Mineral Resources and Ore Reserves in the Boseto Zone



**Figure 3: Zeta Underground Schematic**

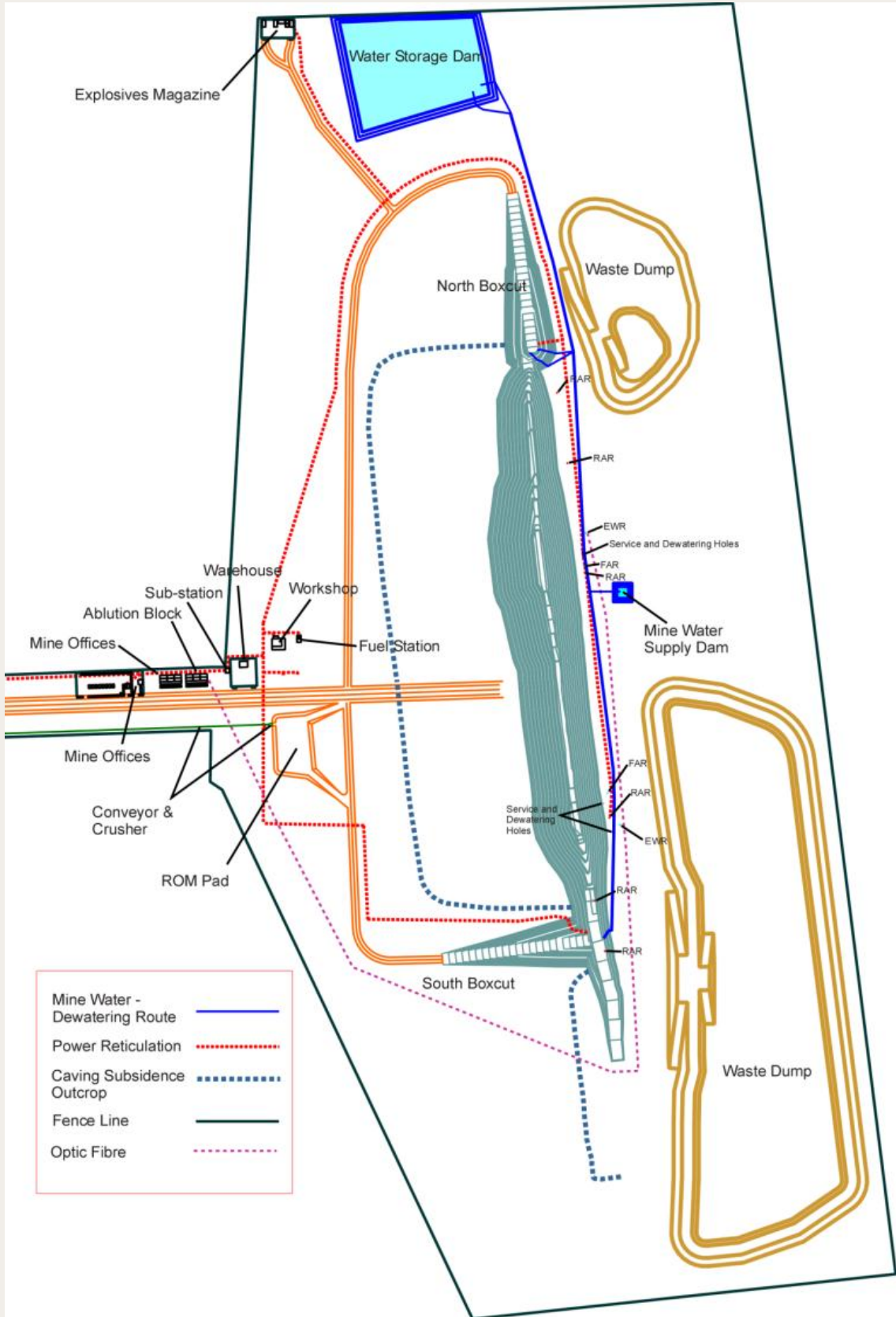


Figure 4: Zeta Underground Plan View