



**MEDUSA**

**MEDUSA MINING LIMITED**

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**ANNOUNCEMENT**

18 October 2016

**INVESTOR PRESENTATION**

(ASX: MML)

Please find attached an updated Investor Presentation which the Company will present at the 121 Mining Investment Conference at the Island Shangri-La Hotel in Hong Kong on Thursday, 20 October 2016 at 3.20 pm.

Outlined below are Competent Persons' Consents in relation to resource and reserve information which appears in the Investor Presentation.

**JORC CODE 2012 COMPLIANCE - CONSENT OF COMPETENT PERSONS**

**Medusa Mining Limited**

Information in this report relating to **Exploration Results** is based on, and fairly represents, information and supporting documentation reviewed by Mr Gary Powell and compiled by Philsaga Mining Corporation's Co-O mine site technical personnel. Mr Gary Powell is a member of The Australian Institute of Geoscientists and the Australasian Institute of Mining and Metallurgy. Mr Powell is a full-time employee of Medusa Mining Ltd and has sufficient experience, which is relevant to the style of mineralisation and type of deposits under consideration, and to the activity which they are undertaking, to qualify as a "Competent Person" as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Powell consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

**Carras Mining Pty Ltd**

The Information in this report relating to **Ore Reserves** is based on information compiled by Dr Spero Carras of Carras Mining Pty Ltd. Dr Carras is a Fellow of the Australasian Institute of Mining & Metallurgy and has 30 years of 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 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dr Carras consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

# MEDUSA MINING LIMITED

“Gold producer focused on organic growth in the Philippines”



MEDUSA

## INVESTOR PRESENTATION - OCTOBER 2016



# Important Notice



This presentation contains only a brief overview of Medusa Mining Limited and its associated entities (“Medusa”) and their respective activities and operations. The contents of this presentation (including matters relating to the geology of Medusa’s projects), may rely on various assumptions and subjective interpretations which are not possible to detail in this presentation and which have not been subject to any independent verification.

This presentation contains a number of forward-looking statements, including the statements relating to anticipated production tonnages, grades and future drilling results. Such forward-looking statements are necessarily based upon a number of estimates and assumptions that, whilst considered reasonable by Medusa, may be subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies and involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements. Except to the extent required by applicable law, Medusa disclaims any intent or obligation to update publicly any forward-looking statements, whether as a result of new information, future events or results or otherwise. The words “believe”, “expect”, “anticipate”, “indicate”, “contemplate”, “target”, “plan”, “intends”, “continue”, “budget”, “estimate”, “may”, “will”, “schedule” and other similar expressions identify forward-looking statements. All forward-looking statements made in this presentation are qualified by the foregoing cautionary statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and accordingly investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein. Medusa does not warrant the accuracy, currency or completeness of the information with respect to forward-looking statements contained in this presentation, nor the future performance of Medusa.

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This presentation is not intended to be an offer for subscription, invitation, solicitation or recommendation with respect to securities in Medusa in any jurisdiction including the United States. No securities in Medusa have been nor will be registered under the US Securities Act of 1933,(USA) as amended. This presentation does not constitute an advertisement for an offer or proposed offer of securities under Australian law, US law or any other law and is for general information purposes only.

The information contained in this presentation is not a substitute for detailed investigation or analysis of any particular issue and has been prepared without consideration of your objectives and needs and financial position. Current and potential investors and shareholders should seek independent advice before making any investment decision in regard to Medusa or its activities.

## **JORC CODE 2012 COMPLIANCE - CONSENT OF COMPETENT PERSONS\***

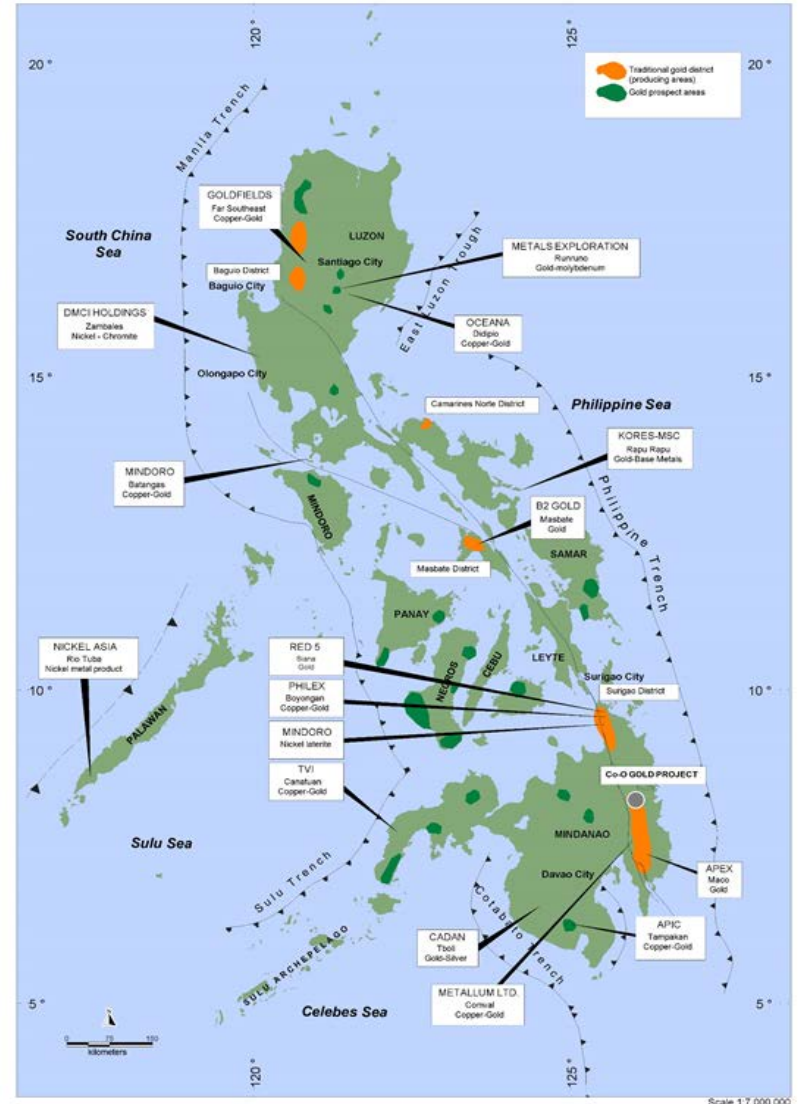
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# Investment Highlights



- ❑ **Proven developer/operator**
  - Co-O Mine, Philippines
  - 10 year history; 670,000 ounces produced
- ❑ **Significant mineral inventory (Co-O Mine)**
  - 961Koz Resources,
  - 376Koz Reserves (30 June 2016)
- ❑ **Strong growth potential**
  - 108K ounces gold produced FY15-16
  - 105-115K ounces guidance for FY16-17
- ❑ **Full engagement with CSR programs**
- ❑ **ISO 14001 certified**





## ❑ Share Capital

- Ordinary shares: 207,794,301
- Unlisted options: 3,740,500
- Market capitalisation (at 01 Aug 2016): ~ **US\$115M**

## ❑ Balance Sheet / Financial Growth

- Cash and cash equivalent (at 30 Jun 2016): **US\$22.0M**
- Unhedged, No Senior Debt.

## ❑ Substantial Shareholders (at 30 Jun 2016)

- Ruffer LLP Group 8.34%
- Paradice Investment Management Pty Ltd 5.88%

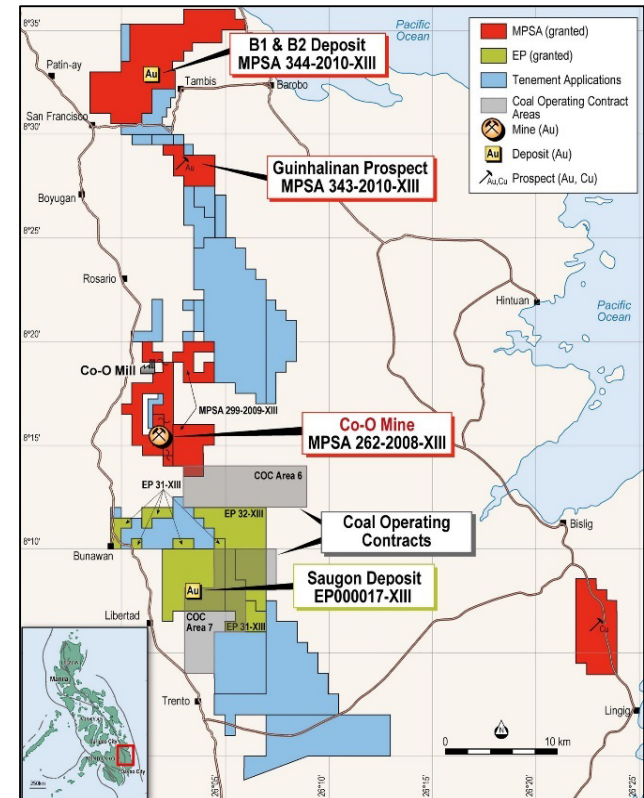
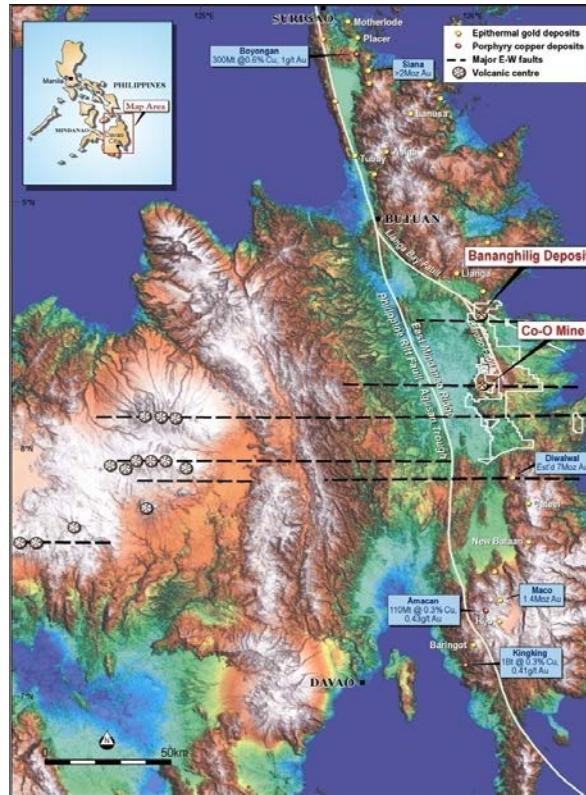
**55%** of shares institutionally held

# Core Assets



## ❖ Located on the East Mindanao Ridge

- + 500 km<sup>2</sup> of tenements on the main trend



# Co-O Mine and Mill



## Process Plant

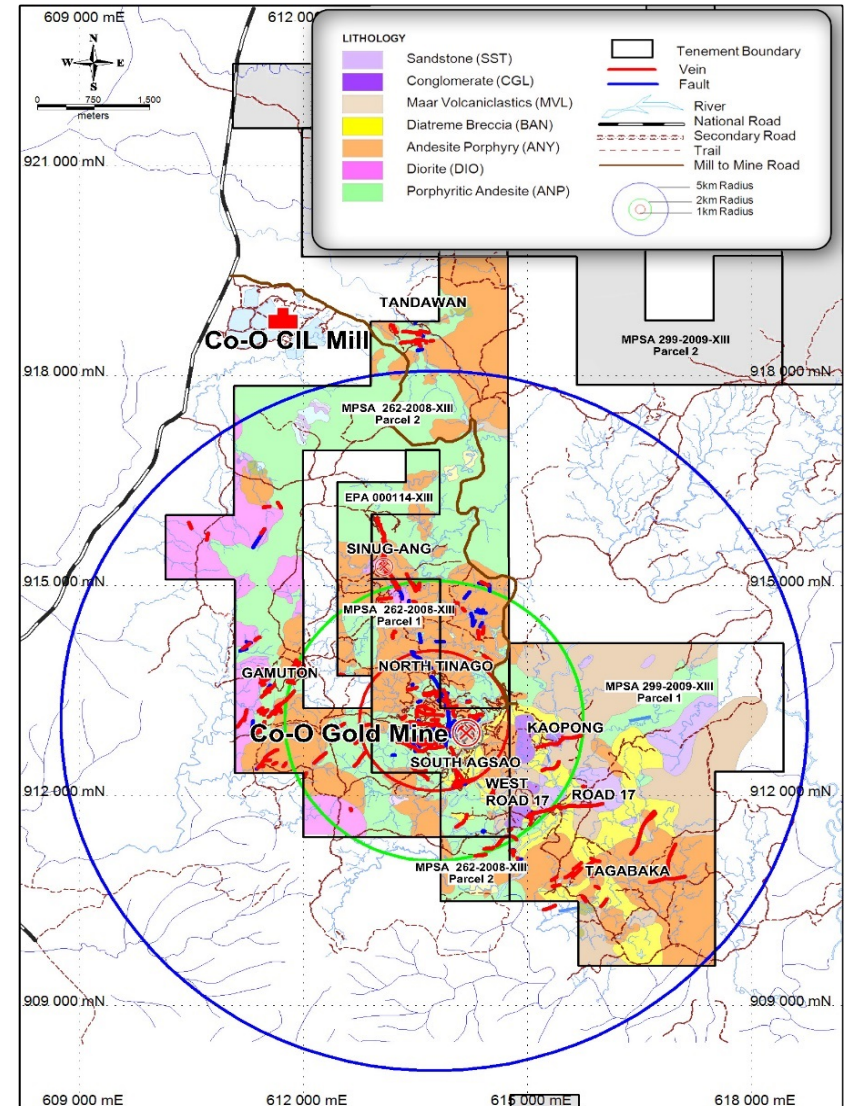
- New plant (2 years old)
- Conventional: Crush - SAG - CIL
- Placated for 2,500 tpd

## Co-O Mine

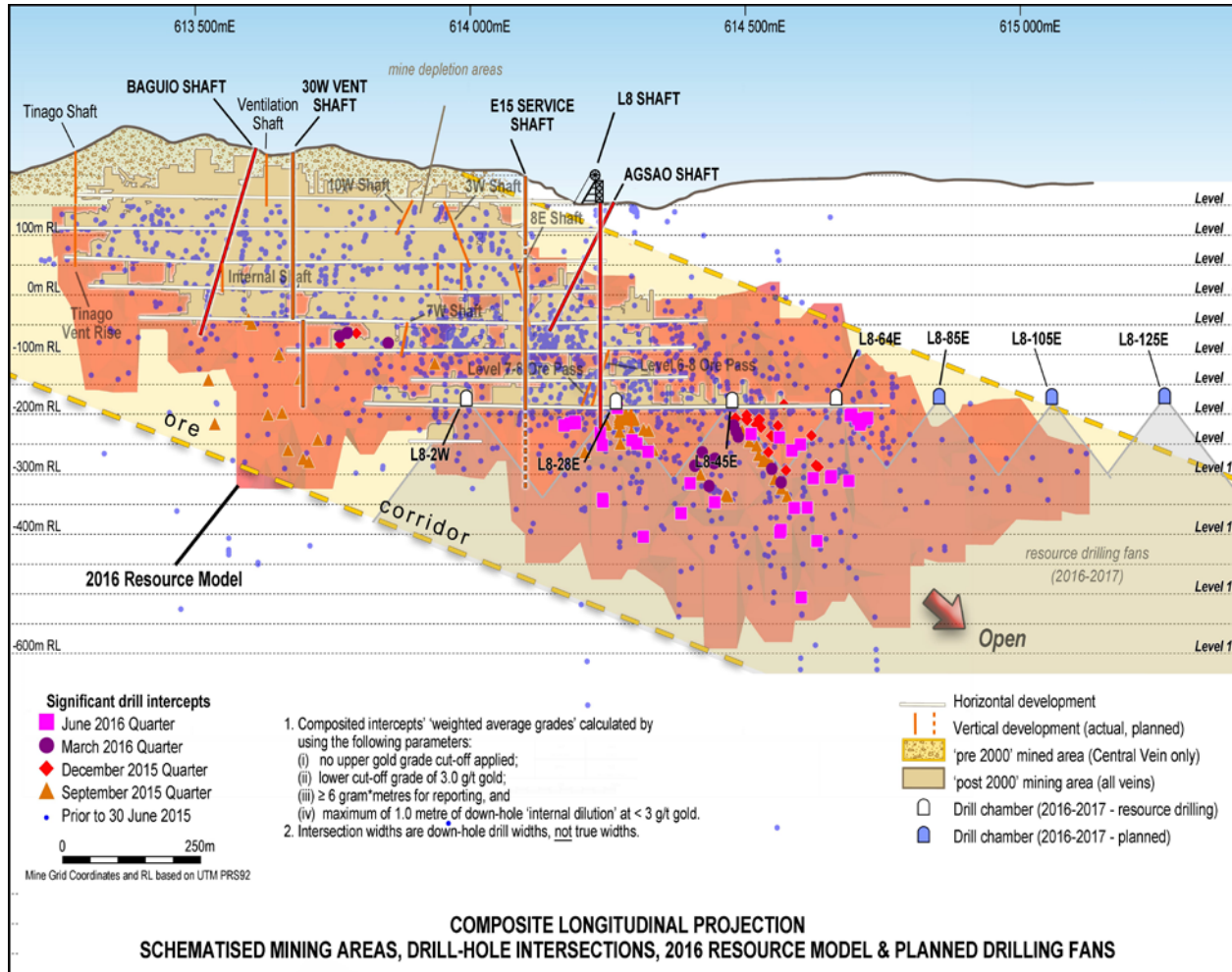
- 12 km haulage
- Underground high grade narrow vein
- Developed to L8 (L9-L10)
- Constrained at 1,550 tpd hoisted

## Geology

- Epithermal deposit on flank of diatreme intrusive



# Co-O Mine (long-section view)



- ❑ ~1,000m W-E length per level
- ❑ Level 8 production
- ❑ Developing Levels - 9 & 10
- ❑ L8, 400m from surface
- ❑ Favourable drilling results to L16
- ❑ Ore body plunges to the east
- ❑ Current shafts
  - L8 Shaft
  - Agsao Shaft
  - Baguio Shaft
  - Ventilation Shaft
- ❑ E15 Service Shaft
  - under construction



# Strategy for Creating Shareholder Wealth

(Co-O mine infrastructure reinvestment)



## ❑ E15 Service Shaft

- Un-constrain L8 Production Shaft (hoisting only)
- Mine hoisting capacity will increase by +20%  
(Mine 560k → 675k      Mill capacity is 720ktpa)

## ❑ Other Infrastructure Upgrades

- Ventilation expansion; double volumes (Sep 2016)
- De-watering upgrade; single stage lift; L8 to surface (Dec 2016)
- Internal Winzes; L8 to L10 (3 of 4 well advanced)  
(12E winze at L10, 29E & 17E winzes at L9)

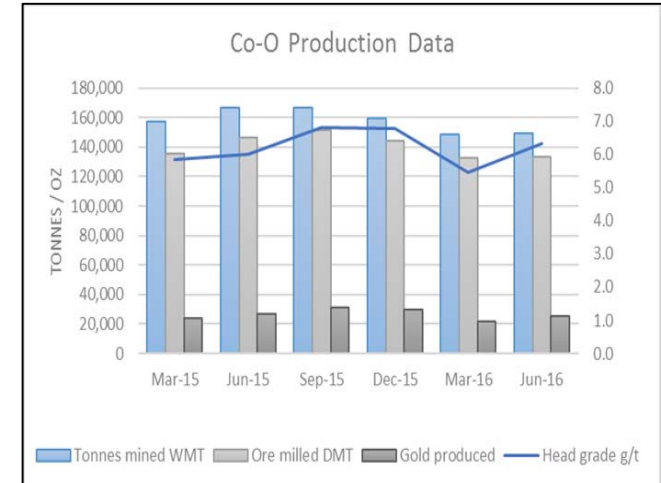
## ❑ Drilling from level 8 is now unrestricted

- FY16-17 budget 3 times that of previous 2 years

# Production: Quarter on Quarter



Description	Unit	Mar 2015 Quarter	Jun 2015 Quarter	Sep 2015 Quarter	Dec 2015 Quarter	Mar 2016 Quarter	Jun 2016 Quarter
Ore mined	WMT	157,489	166,497	166,620	159,149	148,478	149,412
Ore milled	DMT	135,725	146,095	151,463	144,123	132,393	133,213
Head grade	g/t	5.84	6.01	6.80	6.79	5.47	6.32
Recovery	%	94%	94%	94%	94%	94%	94%
Gold produced	oozes	23,940	25,642	31,495	29,674	21,980	25,429
Cash sold	US\$/oz	17,169	29,350	31,176	30,835	20,999	25,519
U/G development	US\$	7,677	3,441	7,269	4,836	5,266	4,501

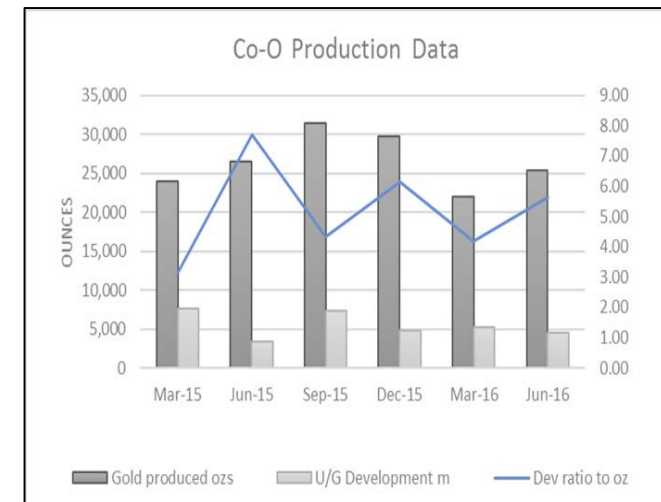


## Consistent Quarter on Quarter results

- Grades due to vein variability
- Quarterly averages ; 140k tonnes milled, grade 6.2 g/mt, production in excess of 25koz
- Have maintained development requirements over past 18 months

## FY16-17; same metrics until E15 Service Shaft is completed June 2017

- E15 improves hoisting capability by +20%





## □ Production

- 105,000 to 115,000 ounces
- Guidance is **back-end loaded**; infrastructure projects (waste development) will impact on production tonnes in H1
- H2 grades will improve as per the mine schedule with high grade production from L9

## □ All-In-Sustaining-Costs (“AISC”)

- US\$1,000 to US\$1,100 per ounce
- Same as FY15-16 to complete the mine expansion projects:  
E15 Service Shaft, Ventilation, De-watering, L8 Exploration, L8-L10 Winzes

## □ FY16-17

- 12 months required to un-constrain the mine (+120% capacity)
- Expansion capital costs reduced as projects are completed
- Improved cost per ounce from production improvements

# Infrastructure Investment



- ❑ **Process Plant expanded 2012-13**
  - Jaw crusher - SAG - Gravity - CIL - Dore
  - Placard for 2,500 tpd (720kpa)
  - Currently at 1,550 tpd (560kpa)
  - Consistent 94% recovery
  - TSF #5 completed FY15-16, 5 years capacity
    - Costs in FY15-16 AISC
- ❑ **No major investments required for current Life of Mine Plan**



# Infrastructure Investment



## ❑ Mine Infrastructure

- L8 restricted to 1,050 tpd due to man/material movements
- Inclined shafts limited to 500 tpd

## ❑ E15 Service Shaft

- Completion date; June 2017
- L8 becomes dedicated skipping shaft at 1,700 tpd
- E15 can skip 300 tpd

## ❑ Skipping capacity

- Current **1,800 tpd** (1,550t O - 250t W)
- Post E15: **2,300 tpd** (1,950t O - 350t W)

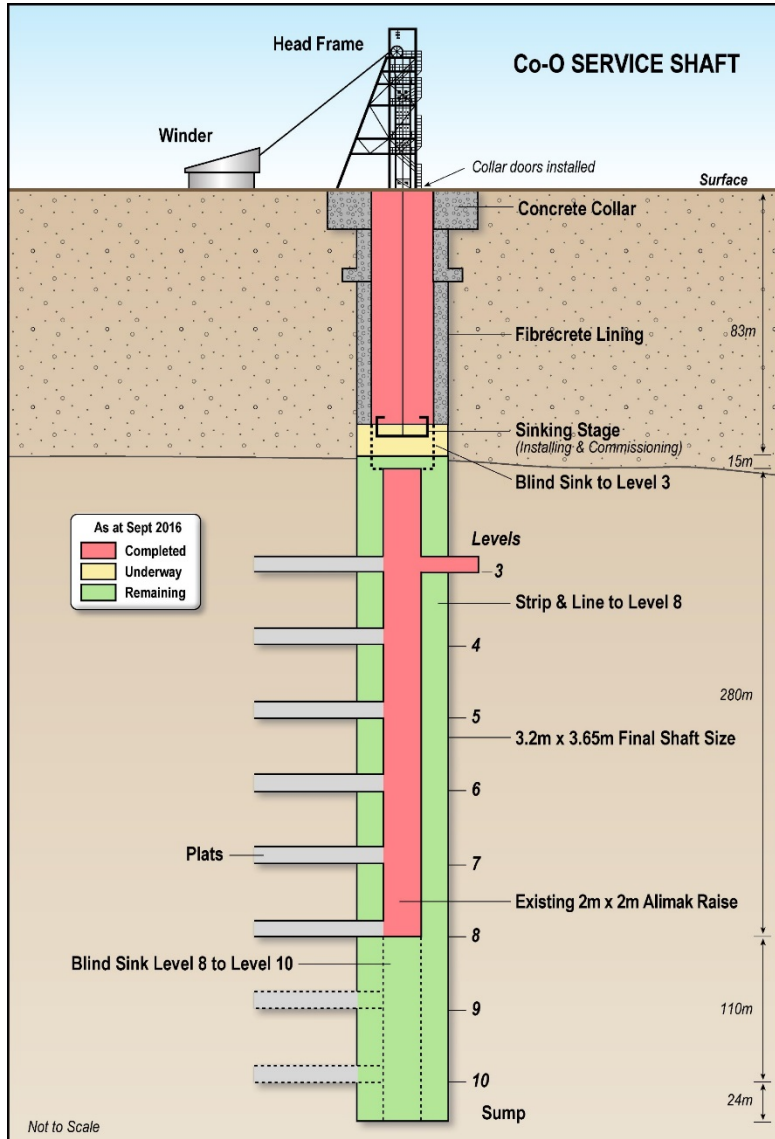
## ❑ Ventilation and de-watering

- Upgrades/expansion ETA Jan/17
- Efficiency improvements throughout mine

## ❑ HV Substation for E15 Shaft



# E 15 Service Shaft



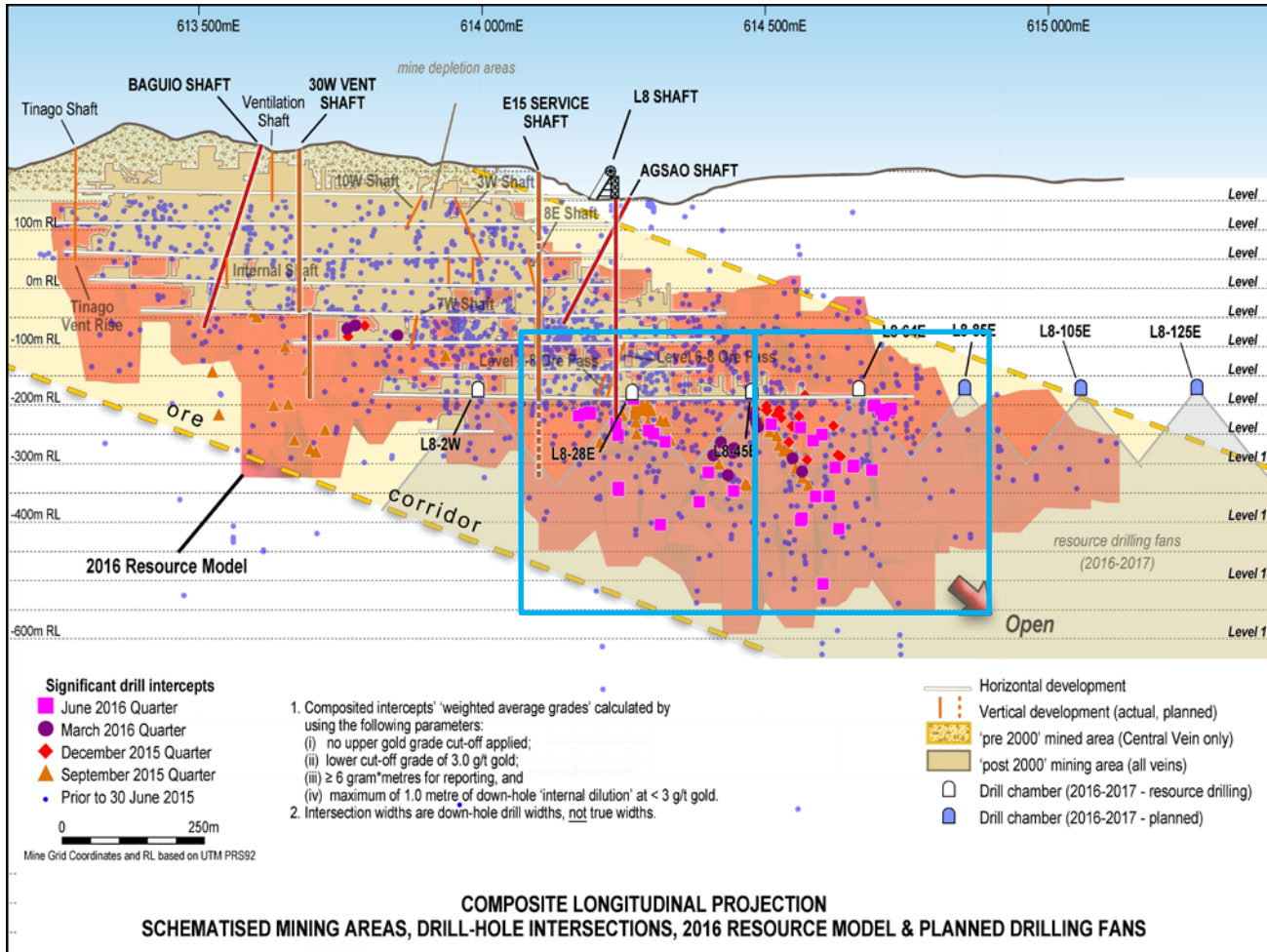
## Completion Schedule

- Civils 100%
- Winder house 100%
- Head Frame 100%
- Main Winder Sep16
- Stage Winders Sep16
- Power/Commissioning Oct16
- Strip Rise Oct 16 to Jan 17
- Sink L8-L10 Feb 17 to Jun 17

## E15 costs

- +65% in the FY15-16 AISC
  - 90% of hardware already purchased
  - HF, Ropes, sinking deck, winders

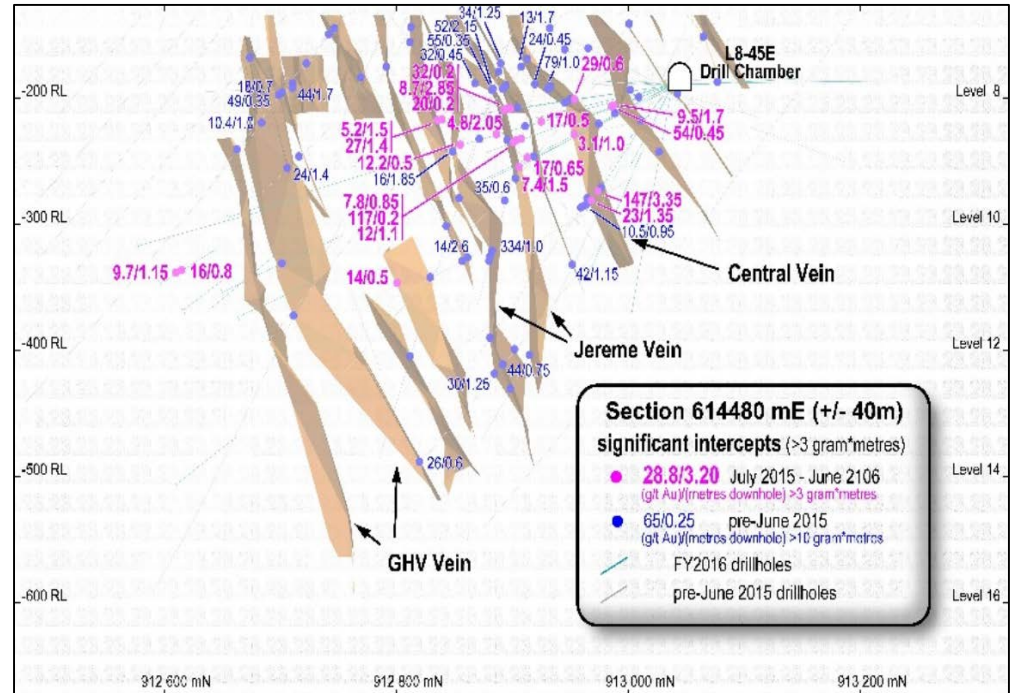
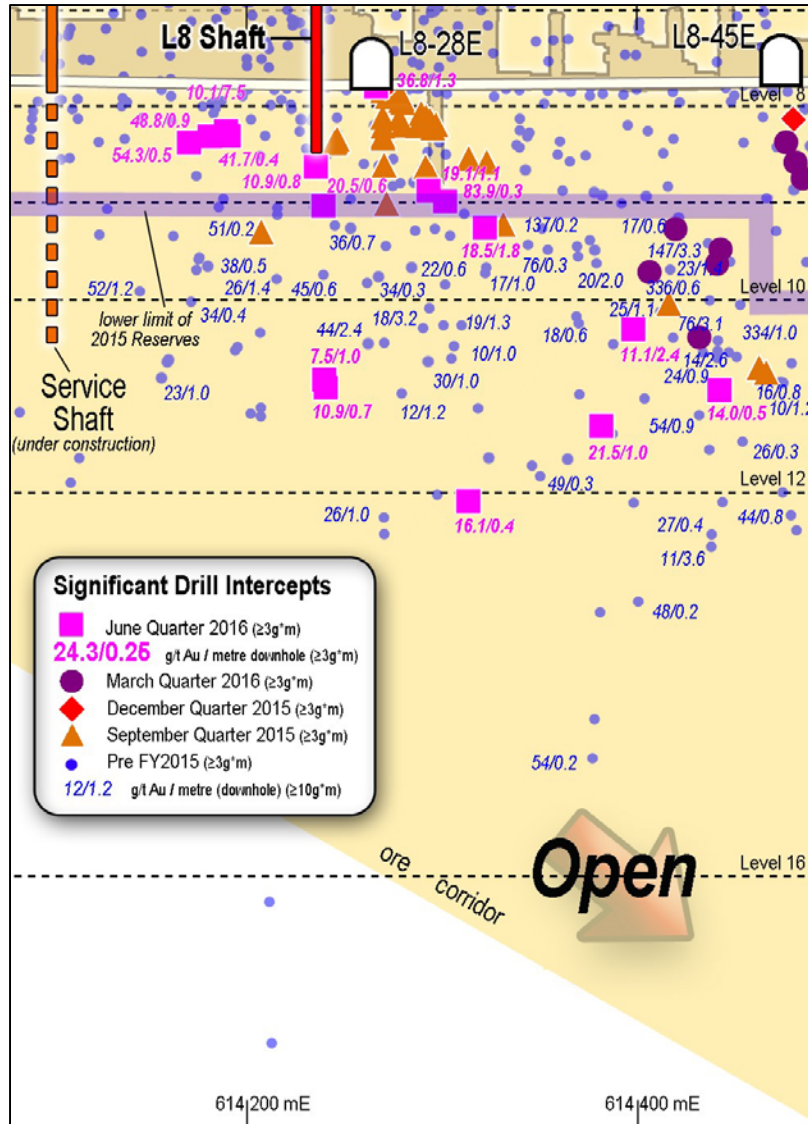
# Co-O Mine (long-section view)



## □ Features

- Looking North
- Levels 1,000m W-E
- L8 at 400m depth
- Long-section shows the GH Vein only
- Blue frames; location of drilling sections
- Location of Shafts and other infrastructure

# Co-O Ore Body and Resource Definition

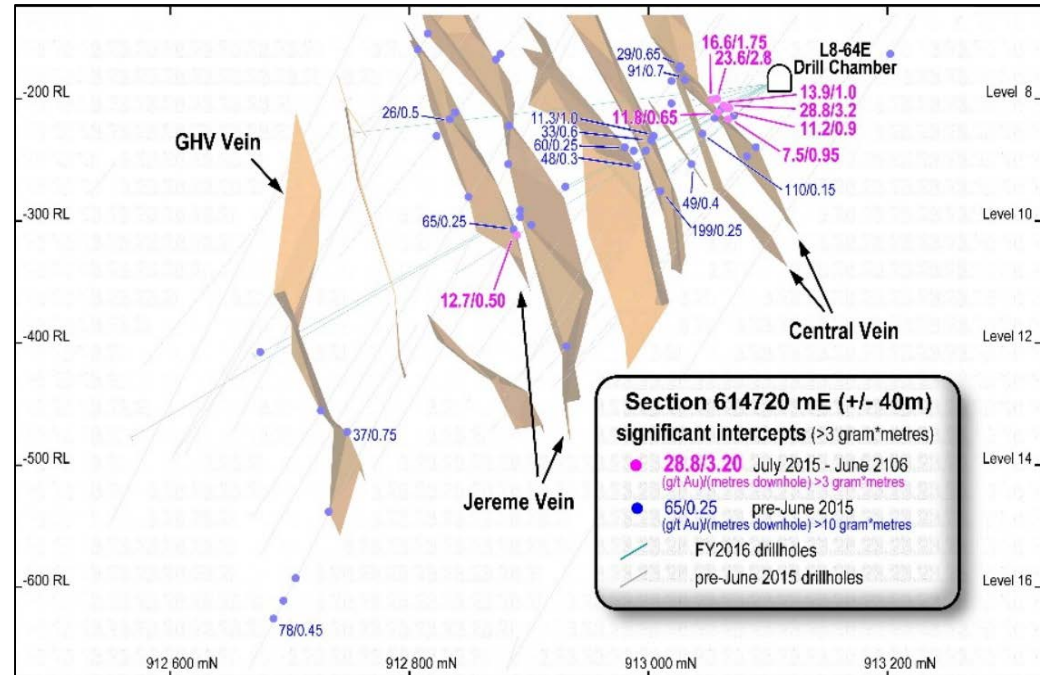
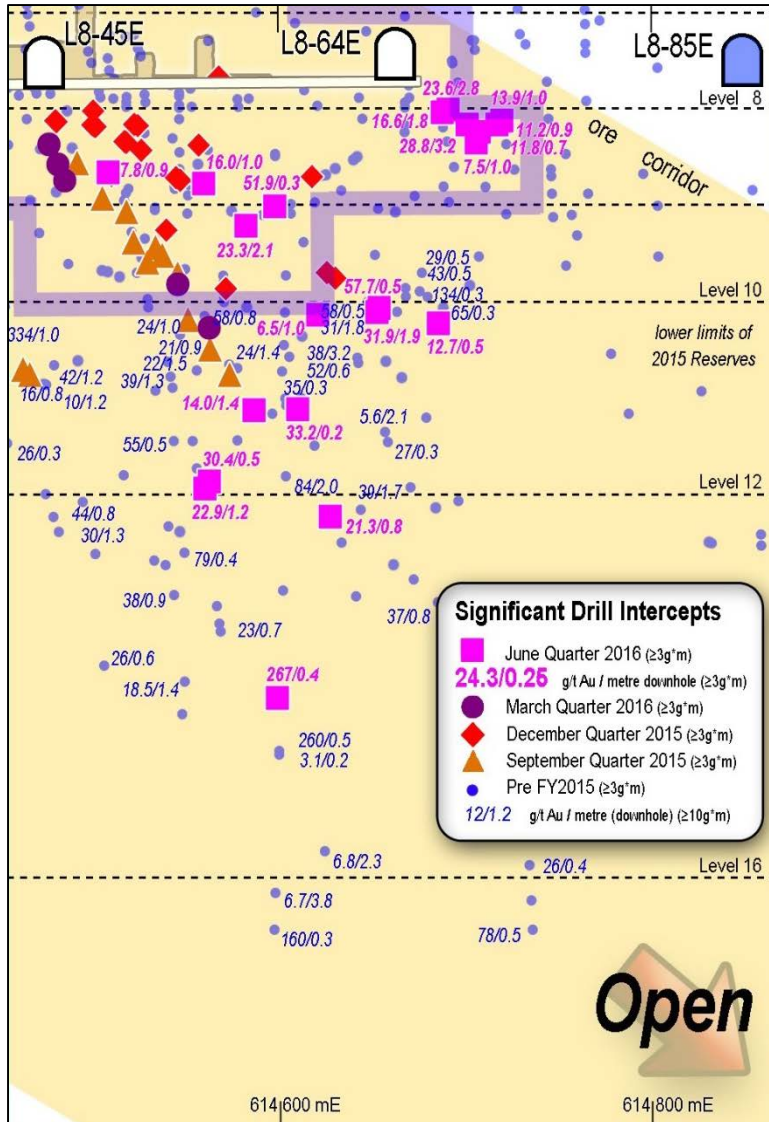


## Drilling results:

- Grams per tonnes/intersection (metres)
- 4 primary veins with multiple sub-veins



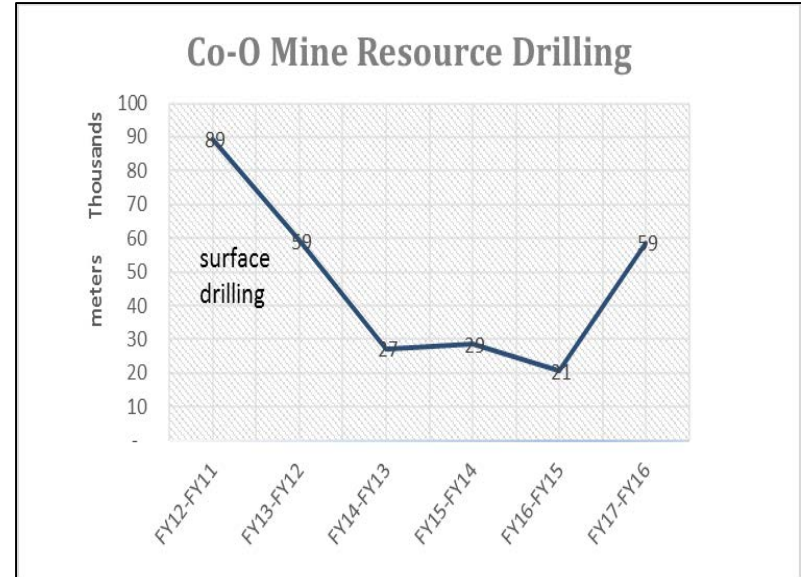
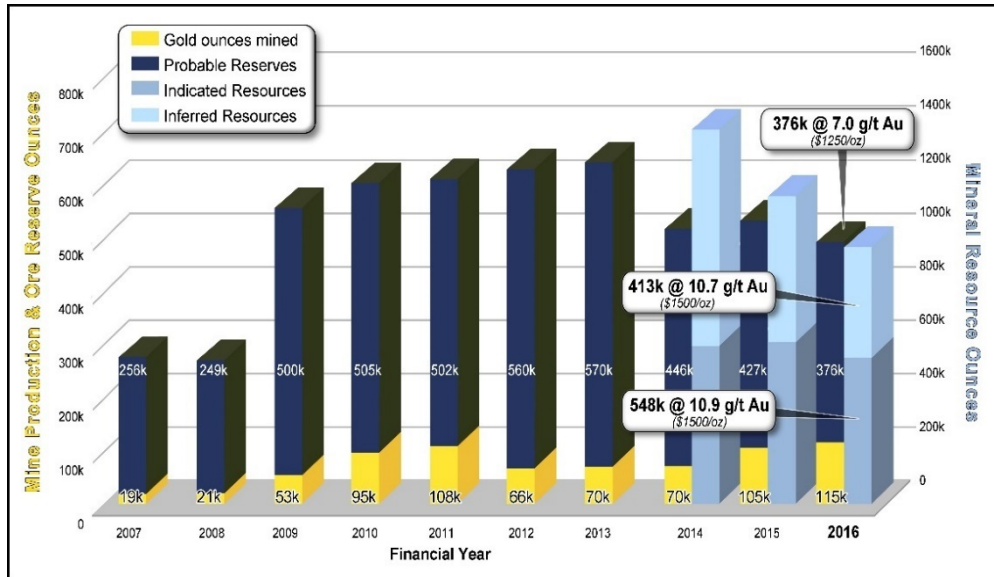
# Co-O Ore Body and Resource Definition



## Drilling results:

- Pre-2015 holes L12-L16 drilled from surface

# Resources & Reserves (at 30 June 2016)



## ❑ Resources (Co-O Mine)

- 2.77M tonnes @ 10.80 g/t for 961,000 ounces gold

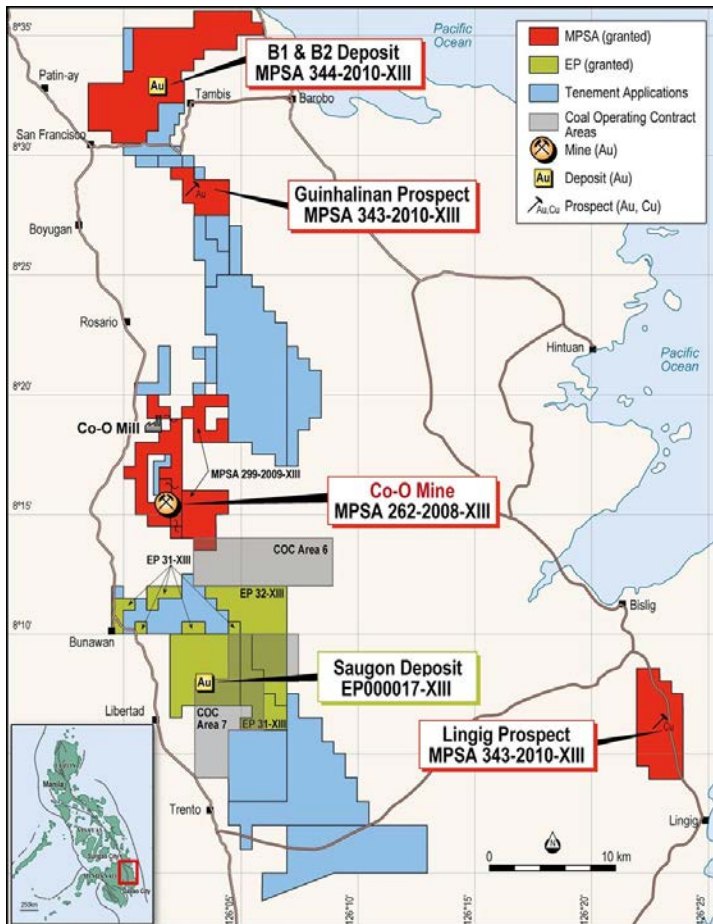
## ❑ Reserve (Co-O Mine)

- 1.67M tonnes @ 6.99 g/t for 376,000 ounces gold

Resource and Reserve driven by depletion and delays to drilling on L8

From July 2005 to June 2016; produced 670Koz

# Exploration



- Strategic land holding along well-mineralised East Mindanao Cordillera (503 km<sup>2</sup>)
- Regional
  - Bananghilig (B1)
    - Re-estimated resource (JORC 2012)
    - 7.78M tonnes @ 1.73 g/t for 435,000 ounces gold
  - Coal Project; complete resource estimation
  - Near Mine Exploration
    - FY16-17 focus is on targets within 15km of processing plant
- Generative
  - Leveraging Medusa's strengths
    - Philippines established Company +10 years
    - Narrow vein, underground, high grade gold
    - Tier 1: Mindanao Region, Tier 2: Philippines, Tier 3: SE Asia

# Social Responsibility - License to Operate



## ❑ Best in class community engagement

- Community health centers and Services
- Co-O Mine 16 bed hospital with doctors
- Construction of community buildings, water projects

## ❑ Education

- Scholarships and assistance
- Adopt-a-school programs in 23 schools
- +10,000 students benefitting

## ❑ Environmental Stewardship

- Adopt-a-creek
- Re-forestation programs with stakeholders
- National Green Program

## ❑ Government Affairs

- Engaged with 4 levels of government
  - Indigenous
  - Local / Municipal
  - Regional
  - National

## ❑ ISO 14001 Certification

- Certified June 2016
- Fully permitted
- Fully compliant



- ❑ Unhedged, low cash costs, no long term debt
- ❑ Knowledge of business, operations and exploration in Philippines
- ❑ Mine capital projects removing constraints, increasing production (progressively over next 12 months)
- ❑ Resource definition and expansion drill program
- ❑ Near-mine exploration potential
- ❑ New leadership team, operationally focussed

**12 months to establish operational efficiencies and drilled-off resource base to deliver consistent results**

# Mineral Resources & Ore Reserves

(as at 30 June 2016)



Deposit	Category	Tonnes <sup>4</sup>	Grade <sup>4</sup> (g/t gold)	Gold <sup>4</sup> (ounces)
<b><u>MINERAL RESOURCES</u></b> <sup>1,2</sup>				
<b>Co-O Resources</b> <sup>1</sup> (JORC 2012)	Indicated	1,564,000	10.90	548,000
	Inferred	1,203,000	10.68	413,000
<b>Total Co-O Resources</b>	<b>Indicated &amp; Inferred</b>	<b>2,767,000</b>	<b>10.80</b>	<b>961,000</b>
<b>Bananghilig Resources</b> <sup>3</sup> (JORC 2012)	Indicated	7,580,000	1.66	406,000
	Inferred	200,000	4.42	29,000
<b>Total Bananghilig Resources</b>	<b>Indicated &amp; Inferred</b>	<b>7,780,000</b>	<b>1.73</b>	<b>435,000</b>
<b>Saugon Resources</b> <sup>3</sup> (JORC 2004)	Indicated	47,500	7.00	10,700
	Inferred	34,000	4.60	5,000
<b>Total Saugon Resources</b>	<b>Indicated &amp; Inferred</b>	<b>81,500</b>	<b>6.00</b>	<b>15,700</b>
<b>TOTAL</b>	<b>Indicated</b>	<b>9,191,500</b>	<b>3.26</b>	<b>964,700</b>
<b>TOTAL</b>	<b>Inferred</b>	<b>1,437,000</b>	<b>9.67</b>	<b>447,000</b>
<b>TOTAL RESOURCES</b>	<b>Indicated &amp; Inferred</b>	<b>10,628,500</b>	<b>4.13</b>	<b>1,411,700</b>
<b><u>ORE RESERVES</u></b> <sup>2</sup>				
<b>Co-O Reserves</b> <sup>2</sup> (JORC 2012)	Probable	1,670,000	6.99	376,000
<b>TOTAL RESERVES</b>	<b>Probable</b>	<b>1,670,000</b>	<b>6.99</b>	<b>376,000</b>

**Notes:**

The information in this presentation has been extracted from Medusa's ASX release for Mineral Resources and Ore Reserves dated 28 September 2016.

- 1 Estimates of Mineral Resources are inclusive of the estimates of Ore Reserves.
- 2 Co-O mineral resources and ore reserves estimated under guideline of JORC Code 2012.
- 3 Bananghilig mineral resources and ore reserves have been re-estimated under guideline of JORC Code 2012.
- 4 Saugon mineral resources were previously prepared and first disclosed under the JORC Code 2004, and have not been updated to comply with JORC Code 2012 on the basis that the information has not materially changed since it was last reported.
- 5 Rounding to the nearest 1,000 may result in some slight discrepancies in totals.
- 6 The full Mineral Resource and Ore Reserve document and Qualifications is released on [www.medusamining.com.au](http://www.medusamining.com.au)



## **MINERAL RESOURCE AND RESERVE QUALIFICATIONS**

### **Notes:**

1. Mineral Resources are inclusive of Ore Reserves.
2. Co-O and Bananghilig Mineral Resources and Co-O Ore Reserves estimated under guideline of JORC 2012.
3. Saugon Mineral Resources were previously prepared and first disclosed under the JORC 2004, and have not been updated to comply with JORC 2012 on the basis that the information has not materially changed since it was last reported.
4. Rounding to the nearest 1,000 may result in some slight apparent discrepancies in totals

### **MINERAL RESOURCES:**

#### **Co-O:**

- a minimum lower block cut-off of 3.2 gram\*metres/tonne accumulation, which incorporates minimum mining widths of 1.25m or 1.5m (depending on vein attitude) above cut-off grade, in its derivation;
- various high cut gold grades, up to 300 g/t gold, have been applied to different veins, and
- a gold price of US\$1,500 per ounce has been applied

#### **Bananghilig:**

- Indicted Resource: a lower block cut-off of 0.75 g/t gold has been applied to mineralisation within a US\$1,500/oz Whittle pit shell, reflective of open pit mining costs.
- Inferred Resource: a lower block cut-off of 3.0 g/t gold has been applied to mineralisation outside of the US\$1,500/oz Whittle pit shell, to a maximum depth of 100 metres below the pit shell walls and base, reflective of underground mining costs.
- a high cut of 40 g/t gold has been applied to all mineralisation.
- Allowance for artisanal mining depletion of 18,300 oz gold applied within the Whittle pit shell
- a gold price of US\$1,500 per ounce has been applied

#### **Saugon:**

- a lower cut-off of 2.0 g/t gold has been applied
- a gold price of US\$1,500 per ounce has been applied

### **ORE RESERVES:**

Ore Reserves are a subset of Mineral Resources

#### **Co-O:**

- minimum mining widths of 1.25 metres (stopes  $\geq 50^\circ$ ) and 1.5 metres (stopes  $< 50^\circ$ ) have been applied, and where the vein width was equal to, or greater than, the minimum mining width, an extra 0.25 metres dilution was added to the hanging wall,
- a further 10% dilution has been allowed for slabbing in mining of low angle stopes under draw,
- shape dilution of 7% of extra tonnage at 2 g/t gold applied, to reflect pinch and swell of veins, and faulting,
- an allocation for extra development 'on-vein' at a grade of 2 g/t gold has been applied.
- an allocation for extra development 'off-vein' at a grade of 1 g/t gold has been applied.
- 85% mining recovery for stopes  $< 10$  g/t gold,
- 90% mining recovery for stopes  $\geq 10$  g/t gold,
- 80% average recovery factor for pillars in empty stopes are included in reserve, for the three major veins, at the grade of their respective stopes, to reflect improved current pillar robbing mining practice, together with high grade pillars for minor veins.
- stopes containing  $< 500$  tonnes were removed to account for ore loss,
- a cut-off grade of 4.4 g/t gold has been applied to all stopes,
- a gold price of US\$1,250 per ounce has been applied.



**MEDUSA**

[www.medusamining.com.au](http://www.medusamining.com.au)

## **Board of Directors:**

Andrew Teo (Non-executive Chairman)  
Raul Villanueva (Executive Director)  
Ciceron Angeles (Non-executive Director)  
Roy Daniel (Non-executive Director)

## **Management:**

Boyd Timler (Chief Executive Officer)  
Raul Villanueva (President, Philippines subsidiaries)  
Peter Alphonso (Chief Financial Officer)  
James Llorca (Manager Geology and Resources)

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