# **OCEANA**GOLD anaGold **Macraes Operation** Analyst Site Visit Presentation 16 March 2015 Innovation Performance Growth

# **Cautionary Notes**

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### **Technical Disclosure**

The Mineral Resources for Didipio were prepared by, or under the supervision of, J. G. Moore, whilst the Mineral Resources for Macraes and Reefton were prepared by S. Doyle. The Mineral Reserves for Didipio were prepared under the supervision of M. Holmes, while the Mineral Reserves for Macraes and Reefton were prepared by, or under the supervision of, K Madambi. C. Bautista is Exploration Manager for the Philippines. M. Holmes, S. Doyle, K. Madambi, and J. G. Moore are Members and Chartered professionals with the Australasian Institute of Mining and Metallurgy and each is a "qualified person" for the purposes of NI 43-101. C. Bautista is a member of the AIG and is a "qualified person" for the purposes of NI 43-101. Messrs Holmes, , Doyle, , Madambi, Moore and Bautista have sufficient experience, which is relevant to the style of mineralisation and type of deposits under consideration, and to the activities which they are undertaking, to qualify as Competent Persons as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" ("JORC Code").

The resource estimates for the El Dorado Project were prepared by Mr. Steven Ristorcelli, C.P.G., of Mine Development Associates, Reno, Nevada (who is an independent Qualified Person as defined in NI 43-101) and conforms to current CIM Standards on Mineral Resources and Reserves.

For further scientific and technical information (including disclosure regarding mineral resources and mineral reserves) relating to the Reefton Project, the Macraes Project and the Didipio Project please refer to the NI 43-101 compliant technical reports available at sedar.com under the Company's name. For further scientific and technical information (including disclosure regarding mineral resources and mineral reserves) relating to the El Salvador Project please refer to the reports publicly available on SEDAR (<u>www.sedar.com</u>) prepared for Pacific Rim.

# **New Zealand 2015 Guidance**

# Drop in diesel price, weaker New Zealand dollar has driven operating costs lower



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# **NZ Operations Historical Production**

### On 17 March 2014, our four millionth ounce of gold was poured for the NZ Operation



RGP Mill Feed (Mt)

FRUG Mill Feed (Mt)

MGP Mill Feed (Mt)

— Overall Grade (g/t)

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# **Macraes Operation Overview**





Open Pit and underground operations, with a flotation/POX/CIL processing plant

> ~ 500 permanent personnel 427 OceanaGold employees; and 73 site based contractors

**Residential operation:** typically within 30 to 70 minutes

Company provides bus services from Oamaru and Dunedin

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# **Experienced Management Team**

### Bernie O'Leary

General Manager & Senior Site Executive

- Over 30 years industry experience
- Mining engineer with extensive open pit and underground experience
- Worked extensively in Australia, North and South America and New Zealand
- Track record of delivering on operational performance

### **Quenton Johnston** *Process Plant Manager*



- Metallurgist with 20 years industry experience and a degree in energy management
- Experience in commissioning new operations and technology
- Track record of developing high performing teams



- **Mike Dodd** Open Pit Mine Manager
- 20+ years mining experience with 5+ years in management
- 10+ years owner mining experience
- Strong in contractor management

### Ash O'Hallaron Health, Safety & Training Manager



- 20 years industry experience open pit and underground
- 10 years health and safety management
- 10 years risk management experience



### Matt Mengel Frasers Underground Manager

- Mining engineer with 20 years experience
- Operational experience in open pit, underground and alluvial within Australasia
- Significant experience with project development and operational management

### Knowell Madambi New Zealand Technical Services Manager



- Mining engineer with >20 years industry experience
- Significant African and Australasian experience
- Broad operational experience in underground and open pit gold, coal, diamond, copper, uranium, iron ore mines.

### Lisa Mills Human Resource Manager



- 18 years experience in organisational development and generalist human resource roles
- Significant experience within private and public sectors, and as an employee and consultant
- Worked throughout United Kingdom, Ireland, Canada and New Zealand

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# **Orientation**







# **Macraes Open Pit**

Mine Type		Open Pit
Resources <sup>1</sup>	Gold (Moz)	3.15
Reserves <sup>1</sup>	Gold (Moz)	1.23
Estimated Mine Life		~2017
Gold Production (ounces)		~90 – 110k

<sup>1</sup>As at December 31, 2013. Full Resource/Reserve table available at www.oceanagold.com

Large open pit operation since 1990. Eleven pits mined to date.

New TSF commissioned in 2014

Commenced mining new Coronation pit in September 2014.

Production at Macraes will be steady in 2015, lower in Q1 vs Q4/14

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# **Macraes Open Pit**

Ore is within a flat dipping ore shear zone (20-25 deg) comprising a hanging wall lode and quartz stockwork. Dominant sulphide association is pyrite with some arsenopyrite.

Host rock is schist comprising metamorphosed siltstones (semi-pelite) and metamorphosed sandstone (psammite).

Ore for gold assaying drilled on 4.5m x 4.5m pattern and holes used for blasting.

Ore blasted to 7.5m and mined selectively in 3 x 2.5m benches. Waste blasted to 15m.

Operate 24 hour days, 7 days per week, with 12 hours shifts. Approximately 138 personnel.

GPS based fleet management system is used to monitor, control and optimise fleet movements.

# **Macraes Open Pit Fleet**

Mine Fleet	Model	No.	Extra Details
	EX2500	1	Gross weight - 250t and payload - 30t
Excavators (Hitachi)	5230B	1	Gross weight - 317t and payload - 32t
	EX3600	2	Gross weight - 350t and payload - 39t
Dump Trucks	789C	18	Gross vehicle weight – 318t and payload – 180t
Water trucks	785C	1	130kL
	773B	1	50kL
Drills	Montabert 330CL	2	Top hammer, 7.5m single pass, 75m/hr
	Drilltech D45KS	2	Rotary, 200mm hole, 60m/hr
Tracked Dezero	D10R	1	
Tracked Dozers	D10T	3	
Graders	16H	3	CAT Graders
Wheeled Dozers	844	2	Gross vehicle weight – 69t
	992H	1	Gross vehicle weight – 98t and payload – 22t
Loaders	988G	1	Gross vehicle weight – 50t and payload – 14t
	Volvo 350F	1	Gross vehicle weight – 55t and payload - 15t
	IT62G	1	Gross vehicle weight – 18t and payload – 7t

# **Frasers Underground**

Mine Type		Underground
Resources <sup>1</sup>	Gold (Moz)	0.86
Reserves <sup>1</sup>	Gold (Moz)	0.12
Estimated Mine Life		end of 2016
Gold Production (ounces)		~40 – 50k

<sup>1</sup>As at December 31, 2013. Full Resource/Reserve table available at www.oceanagold.com

**Commissioned in January 2008** 

**Employees 181 personnel** 

Ore body is the down-dip extension of shear zone



Successful exploration programmes, still open at depth

Frasers underground mine expected to continue to end of 2016 or later at similar rates



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# **Frasers Underground**

24/7 operation, with 4 crews – 12 hour shifts.

Mining method is long-hole retreat with tele-remote loading operations. No backfill.

### Mining recovery ~65%

# **Equipment:**

2 x solo production drills
6x 50t trucks
3 x twin boom jumbos
5 x LHD's
1 x cable bolter
1 x Spraymech
4 x intergrated tool carriers
1 x Charmec



# **Production:**

Mill feed: 900kt per annum

Grade: +2 g/t

Ounces: ~50koz per annum

# **Frasers Underground – It Keeps Growing**



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# **Macraes Processing Plant**

Mill throughput of 5.8 Mtpa with a dual train SAG/Ball Mill Circuit

Crushing, grinding, flotation, fine grinding, pressure oxidation, carbon-in-leach, elution, electro winning, and smelting

Treating refractory ore requiring multi stage processing to maximise recovery. First stage (flotation) 85.5%, second stage (pressure oxidation and CIL) 95%, with overall at 81% Leaders in new technology application, flash flotation, pressure oxidation, OK 300m<sup>3</sup> float cells, fine grinding with Isa mill and pregrobbing management

Process availability maintained at >=95% for 10 years. Autoclave availability of 95% since commissioned in 1999. Planned versus unplanned downtime better than 80%

80 staff: 4 operating crews with in house maint. on 12 hour shifts and 4 metallurgists. Site laboratory for assay services – SGS contractor



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# **Sulphide Ore Process Flowsheet**



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# **Autoclave**

Refractory gold associated with sulphides

Recovery improvement realised was approximately 10% overall

Pressure oxidation autoclave (30 bar and 220°C) was commissioned in 1999

Reefton concentrate is highly refractory and makes for an ideal autoclave feed







# **Sound Environmental Management**

# An unwavering commitment to the environment today, for tomorrow

# **Native Fauna**



Creation of lizard rock piles to provide additional habitat

# Ecology

 Three covenant areas showcasing natural vegetation

### Rehabilitation



 Restoring lands to support grazing

### Water



Comprehensive ground and surface water monitoring

# Rainbow Trout



 Raise 10,000 trout a year at foot of Macraes tailings facility



Protection of significant sites
Restoring Gay Tans cottage

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# **Investing in Our Local Community**

# Working together with our community to leave a positive, long lasting legacy

# EDUCATION





EducationHealth and Research

Sports and Socio-CulturalSustainable Development

# SUSTAINABLE DEVELOPMENT



Community trust established this year (NZ\$2.3M)

# HEALTH



# SPORTS AND SOCIO-CULTURAL





Own and operate Stanley's Hotel in Macraes village

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# Macraes Operation → Looking ahead

Production at Macraes will be steady in 2015, lower in Q1 vs Q4 last year

Frasers underground mine expected to continue to end of 2016. Continuing to explore down dip.

Stepping up exploration effort. NZ\$8M spend over next 2 years

**Continuing Round Hill study** 



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# **Regional Exploration – Macraes South**



# **Evaluating line of strike potential**

Macraes South area extends south of Golden Bar where the topography drops around 100 metres and includes the last 8 kilometres of the HMSZ and Eastern Lodes before it is buried by tertiary sediments.

Home Reef: southern extension of Golden Bar and has inferred resource of 65kt @ 1.2 g/t based on ten drill holes.

Shaws: south of Home Reef on an intermediate structure and contains an inferred resource of 2.47MT @ 1.3 g/t. Potential exploration target.

Taylors: south of Shaws on Stoneburn road. Indicated and inferred resource estimate of 0.7Mt @ 1.3 g/t.

Wilsons: divided into upper, lower and south prospects with a combined inferred resource estimate of 9.4Mt @ 1.07 g/t.

# **Regional Exploration – Macraes North**



# **Evaluating line of strike potential**

Macraes North comprises a 7 kilometre section of the HMSZ north of Deepdell.

The eastern lodes are approximately 1.5 kilometres to the north and include Bruhns, Mt Highlay and Mareburn.

Mt Highlay / Bruhns Lode: area of old workings. No holes drilled, potential exploration target.

Mareburn: approx. 50 holes to upgrade to potential mineable resource – 1Mt @ 1.5 g/t

Nunns / NZGT: drilling completed, resource estimation in progress.

# **Underground – 2015 Proposed Drilling Plan**

Two phases of exploration drilling from 2EX3 targeting the area east of current Panel 2 development. Cost approximately NZ\$2.5M

Phase one consists of 10 holes for a total of 2,285 metres. Phase two drill holes will be dependent upon phase one results.

Completion of the 1D jump up rise drill program

Exploration drilling using the MDR150 mobile drill rig targeting the proposed 3A panel at an estimated cost of NZ\$160/m



# **Growth Opportunity – Round Hill / Frasers**

# Under concept, potential exists for a mine extension

# **Round Hill / Frasers Tungsten Project** Round Hill / Frasers Au + WO<sub>3</sub> Optimisation Mine gold and tungsten mineralisation from open pit extensions of Round Hill and Frasers Frasers Construct a new processing facility. Two options being considered: Twin plant – 3Mtpa Au + POX and 1Mtpa WO<sub>3</sub> Twin plant – 6Mtpa Au + POX and 1Mtpa WO<sub>3</sub> 7Mtpa Shell 36 There is significant potential along the strike of the Round HMSZ to identify modest low strip Au / WO<sub>3</sub> Hill resources

Gold = 0.4 g/t Au grade shell / Red = 0.1%  $WO_3$  grade shell

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