



**Cullinan – The World's Most Celebrated Diamond Mine** 

29 January 2014

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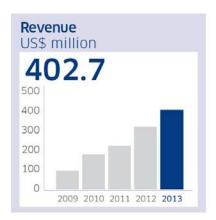
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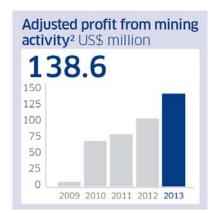
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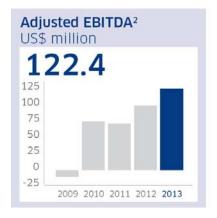
### **Petra Diamonds**

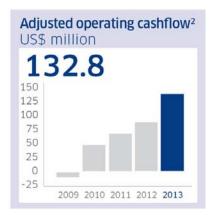


- Mid-tier diamond producer (LSE:PDL; FTSE 250)
- Quality management team delivering strong growth
- World-class resource base of +300m carats
- Diversified portfolio of producing mines and exploration
- On track for 5 Mctpa / ca. US\$1bn1 revenue by FY 2019
- Sustainability at heart of Petra
- Pure play exposure to late cycle diamonds









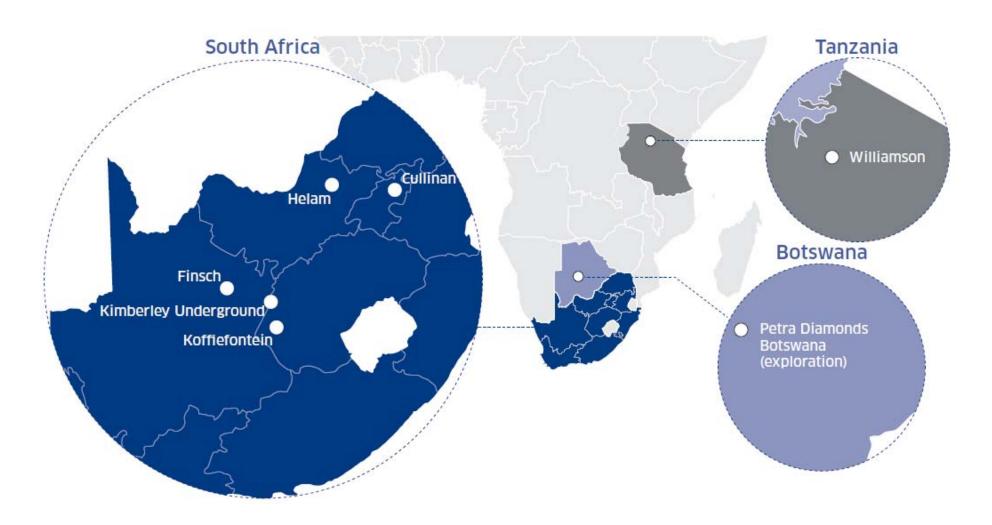
### Building a world-class diamond group

1. FY 2019 revenue forecast is a management estimate calculated using a 4% real price increase

### **Focus on Africa**



- Africa produces ca. 60% of the world's diamonds by value
- Multi-mine portfolio provides flexibility in terms of operational performance



### **An Exceptional Growth Path**



Petra has acquired five non-core diamond mines from De Beers:



# Koffiefontein 74% Petra; 26% BEE Front Cave

**July 2008** 



#### **November 2008**



May 2010



### September 2011



### The Petra approach:

12yr Mine Plan

+20yr Potential Life

- Focus on efficiencies and simplification
- Utilise in-house capabilities and share services across mines
- Focus on 'value' as opposed to 'volume' production
- Maximise rough diamond prices through competitive tender sales system

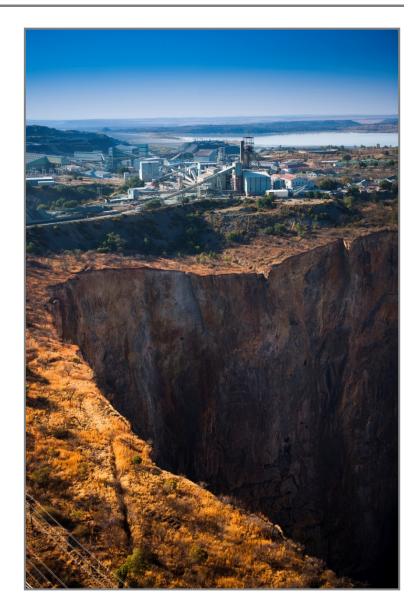


# **CULLINAN OVERVIEW**

### **A Unique Heritage**



- Source of many of the most famous diamonds
- Source of "the Cullinan", the world's largest gem diamond (3,106 carats)
- Has produced a quarter of all the world's diamonds of +400 carats; >130 stones of +200 carats; 775 stones of +100 carats
- World's most important source of truly rare and highly prized blue diamonds
- One of the world's largest diamond resources by in-situ value – 200.8 Mcts (incl. 17.1 Mcts tailings)
- Petra ramping up production from ca. 1 Mctpa to ca. 2.2
   Mctpa by FY 2019 (2 Mctpa ROM & 0.2 Mctpa tailings)
- Substantial expansion capital programme in progress, mainly related to C-Cut Phase 1
- Current life of mine plan of 17 years (actual life of +50 years)

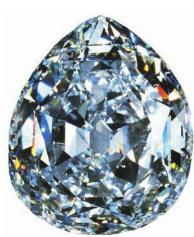


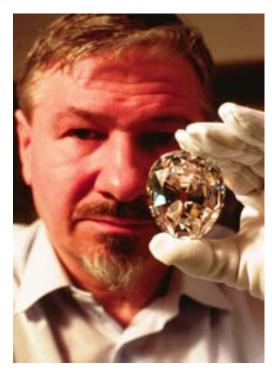
## **Cullinan – Writing the History of Diamonds**



The Cullinan – 3,106 carats rough Largest gem diamond ever discovered



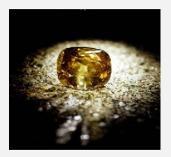




Also source of the largest polished diamonds in the world, incl. The Great Star of Africa (530 carats)

### **Cullinan – Iconic Gems**





The Golden Jubilee 755.50ct rough, 545.65ct polished 1986



The Cullinan **Heritage** 507.55 carats rough







**The Centenary** 599.10ct rough, 273.85ct polished 1986

The Safia

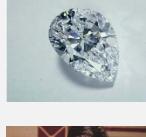
338.46ct rough,

90.97ct polished

1990's



**The Blue Heart** 30.82ct polished 1909



**The Taylor Burton** 240.80ct rough, 69.42ct polished 1966





### **World-class Diamonds Recovered by Petra**



- The 507.5 carat Cullinan Heritage sold for US\$35.5m (highest price on record for a rough stone) in February 2009
- An outstanding vivid blue stone of 29.6 carats recovered January 2014
- A 25.5 carat exceptional blue recovered in April and sold in May 2013 for **US\$16.9m** (**US\$663k per carat**) (could be world record per carat value for rough)
- The Star of Josephine, a 26.6 carat rough blue diamond cut and polished by Petra to 7.0 carats sold on auction for **US\$9.4m** (**US\$1.349m per carat**) in May 2009
- A 39.9 carat rough blue diamond sold for US\$8.8m in 2008
- 4.8 carat blue diamond sold for US\$1.45m, or +US\$300k per carat in 2012
- In FY 2013, 9 diamonds sold for **+US1m** each



The exceptional 29.6 carat blue recovered in January 2014



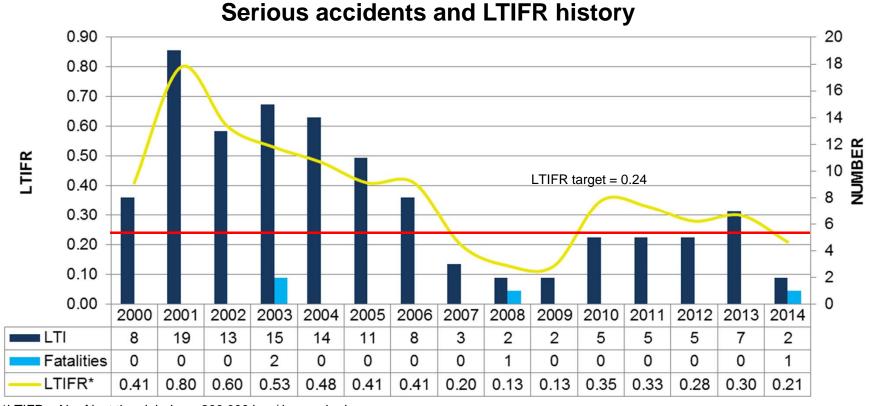
The 25.5 carat exceptional blue diamond sold in May 2013



The 'Star of Josephine' – fancy vivid blue and internally flawless diamond, being the top rating for a blue diamond

### **SHE Overview**





\*LTIFR = Nr of lost time injuries x 200,000 hrs / hrs worked

- Cullinan maintains the highest standards and is:
  - ISO14001 certified
  - OHSAS18001 certified
  - ISO9001 certified

### **Corporate Social Investment (CSI)**



Cullinan plays an active and supportive role in the local community

#### Social labour plan (SLP) projects

 Renovation and equipping of technical workshop and classrooms at Chipa Tabane High School in Refilwe

#### Support of local NGO's

- Cullinan contributes to a number of community projects, including:
  - Cullinan Sports Centre
  - CDII World Mandela Day through sports
  - Imfundiso Jewellery School
  - Tshepong Disability Centre
  - Refilwe Tshwaragang for the aged
  - Etsoseng Refilwe for the aged

#### **Education**

- Promoting better standards:
  - Maths and science school support programmes sponsored for three local high schools
  - Sponsorship of six high school learners from local communities in grades 10-12 who excelled in maths and science
- Scholarships –16 PDSA learners are been sponsored from grades 10-12







### **Corporate Social Investment**



#### **Bursaries**

- Bursaries are provided for two students and one academic, with the sponsorship covering the tuition fees
- Candidates must be from Cullinan's local communities and with an interest in mining careers
  - Two matric students studying Mining Engineering in 2014
  - One academic in second year studying Electrical Engineering
- Cullinan also offers these students vacation work each year until they complete their studies







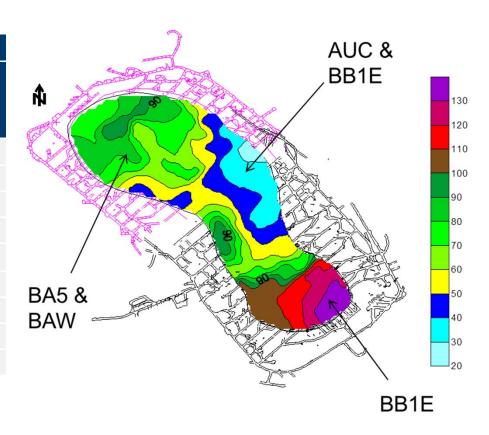


# **MINING OVERVIEW**

### **Major Diamond Resource**



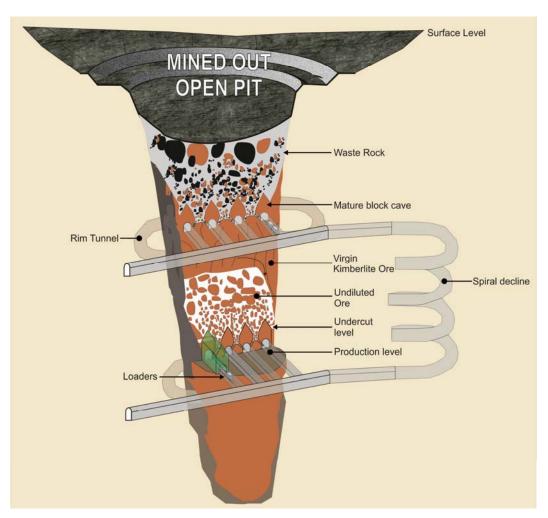
	C	Gross (Jun 2013)					
			Contained				
	Tonnes	Grade	Diamonds				
Category	(millions)	(cpht)	(Mcts)				
Reserves							
Proved	-	-	-				
Probable	63.2	41.8	26.4				
Sub-total	63.2	41.8	26.4				
Resources							
Measured	-	-	-				
Indicated	260.3	70.6	183.7				
Inferred	170.0	10.0	17.1				
Sub-total	430.2	46.7	200.8				



- Resource bottom cut-off: 1mm
- Reserve bottom cut off: 1mm
- B-Cut resource tonnes and grade are based on block cave depletion modelling and include external waste.
- C-Cut Resource stated as in-situ
- Reserve carats and grades are factorised as per the following resource to reserve liberation factors: "Brown" kimberlite 75.8%, "Grey" kimberlite 71.4%, and Hypabyssal kimberlite 71.8%
- Changes in Reserve and Resource figures due to mining depletions and PCBC modelling for the following mining areas: BB1E, AUC, AUC North, BA5, BA West Phase 1 and C-Cut Phase 1).

### **Moving into Undiluted Ore**





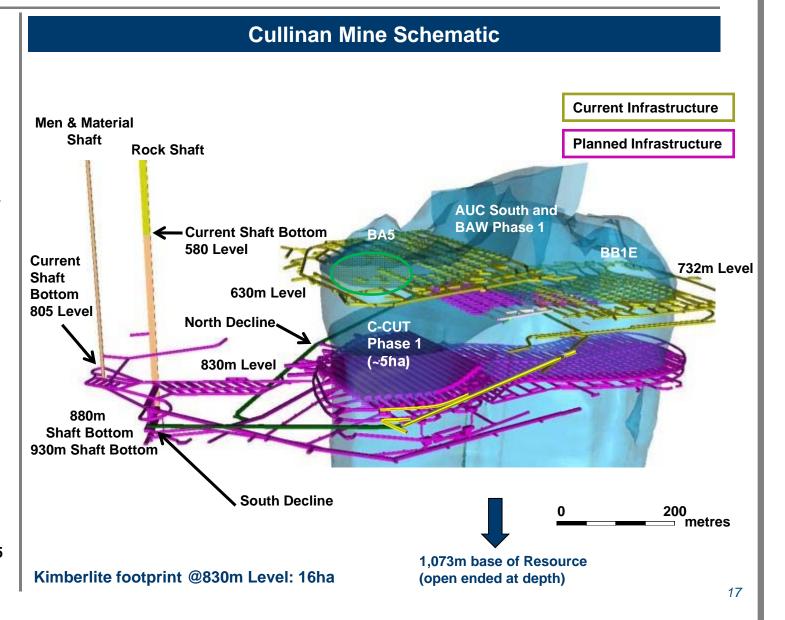
- Caving is a safe and proven mechanised mining method; provides access to higher volumes of ore than other methods
- Current underground mining taking place in diluted, mature caves nearing end of lives
- Expansion programmes to take next 'cut' by deepening and establishing new block/sub level caves in undiluted kimberlite
- Grades expected to rise significantly, increasing margin per tonne mined:
  - Finsch c. 37 cpht to c. 56 cpht<sup>1</sup>
  - Cullinan c. 31 cpht to c. 50 cpht1
- Will reduce wear and tear on processing systems (waste rock is harder and more abrasive than kimberlite)

### **Expansion Plan – Overview**



# Expansion Plan – to take production to c. 2.2 Mctpa by FY 2019 (2.0 Mctpa ROM & 0.2 Mctpa tailings)

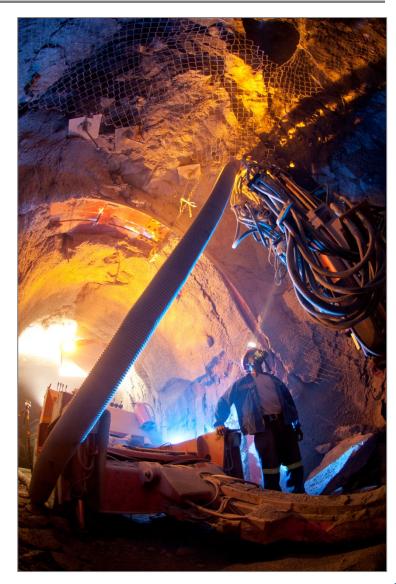
- Commenced rehabilitation of BA5 areas at 645m to create access to undiluted ore – FY 2013
- Development of declines, access tunnels and shaft deepening on track
- Tailings ramp up to steady state
   2.7 Mtpa FY 2015
- New production levels to be established at 839m and shaft to 930m to be commissioned – end FY 2016
- 880mL ore-handling system, allowing for future ramp-ups to utilise full C-Cut footprint (16ha vs current 5ha) – end FY 2016
- Initial production from new C-Cut cave FY 2016
- Upgrading and streamlining of plant facilities in order to handle increased tonnes – from FY 2015 to FY 2019



### **Expansion Plan – Current Status**



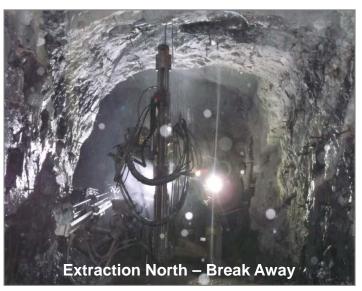
- South Decline completed to 930mL shaft bottom
- Shaft deepening (and related infrastructure) to 930m in progress using contractor Murray & Roberts
- Development of waste tunnels in progress and over 7,418 metres developed to date
- Refinements to allow for increased flexibility and to increase capacity of mine infrastructure
  - Upgrading of support specifications to cater for anticipated longer life of the block cave
  - Inclusion of batching plant to deliver concrete to shaft and production infrastructure, freeing up shaft time and reducing potential disruptions
  - Optimisation of 880mL ore-handling systems allowing for potential future ramp up
- First development on contact openings planned for FY 2014



# **Expansion Plan – Current Status**











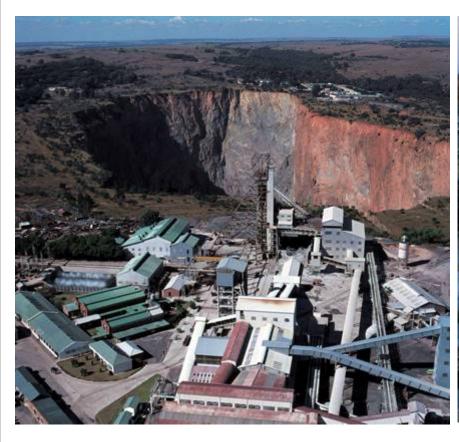


# **PLANT OVERVIEW**

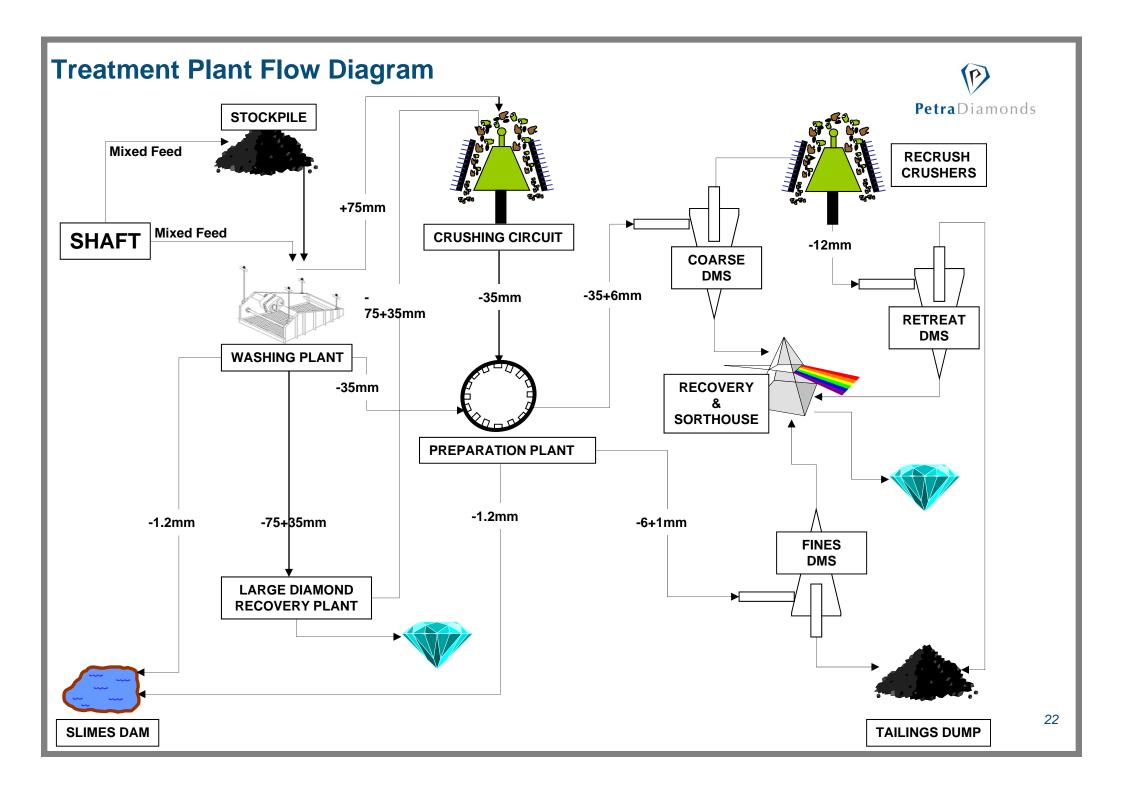
## **An Aerial Perspective**



- Existing plant footprint ca. 27ha, including 13.5km of conveyor belts
- Ongoing objective to simplify and streamline processing route

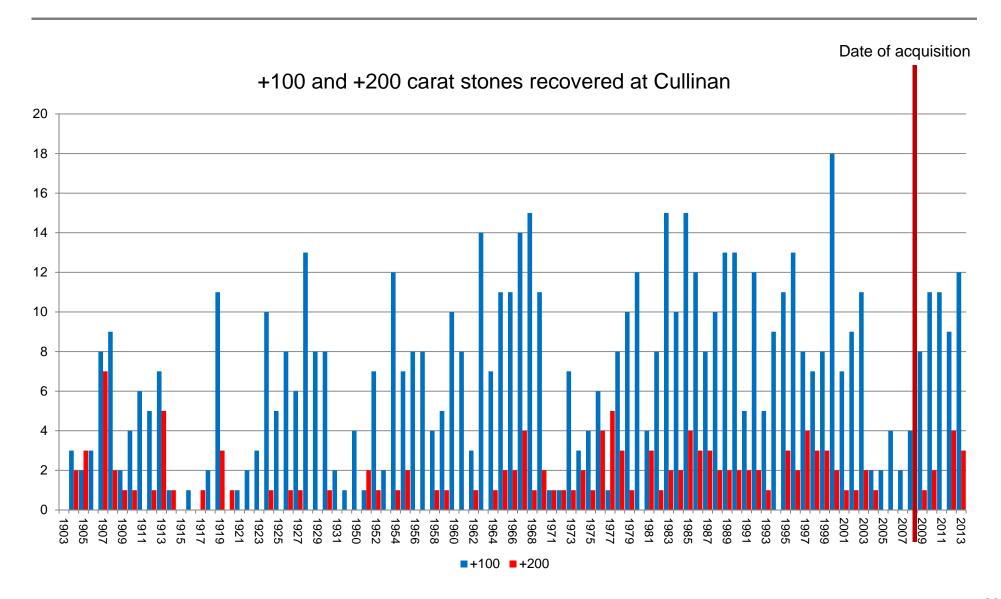






# **Consistent Production of Large Diamonds**





### **Major Tailings Project**



#### Resource of 165 Mt (17.1 million carats)

- Construction and commissioning of new tailings treatment facility has been completed
- Re-crush module is under construction will assist in increasing the liberation efficiency and hence the recovered grade
- Tailings treatment to increase from 1.5 Mtpa (FY 2013) to ca. 2.2 Mtpa (FY 2014) and reach steady state levels of production of 2.7 Mtpa (FY 2015) at a grade of 5-6 cpht
- At this level of production, the tailings resources will be sufficient to serve as feed material for a period of > 50 years







# **OUTLOOK**

### H1 FY 2014 Results



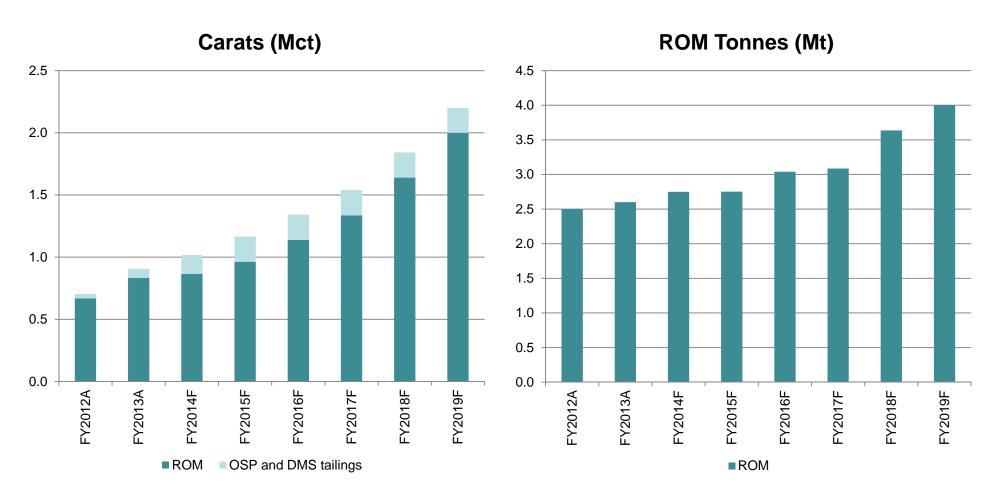
	Unit	H1 FY 2014	H1 FY 2013	Variance	FY 2013
Sales					
Revenue	US\$M	61.3	48.7	+26%	133.0
Diamonds sold	Carats	409,117	363,833	+12%	816,611
Average price per carat	US\$	150	134	+12%	163
ROM Production					
Tonnes treated	Tonnes	1,291,208	1,282,009	+1%	2,595,004
Diamonds produced	Carats	399,819	384,146	+4%	795,370
Grade	Cpht	31.0	30.0	+3%	30.7
<u>Tailings Production</u>					
Tonnes treated	Tonnes	1,020,252	568,929	+79%	1,485,889
Diamonds produced	Carats	61,519	24,618	+150%	73,605
Grade	Cpht	6.0	4.3	+40%	5.0
<u>Total Production</u>					
Tonnes treated	Tonnes	2,311,460	1,850,938	+25%	4,080,893
Diamonds produced	Carats	461,338	408,764	+13%	868,975
Capex					
Expansion Capex	US\$M	30.1	33.6	<u>n/a</u>	64.0
Sustaining Capex	US\$M	4.7	5.3	<u>n/a</u>	17.2
Borrowing costs capitalised	US\$M	2.4	5.7	<u>n/a</u>	7.8
Total Capex	US\$M	37.2	44.6	<u>n/a</u>	89.0

- H1 production impacted by ca. two week work stoppage
- Initiatives to make up lost production have worked well
- Slower than anticipated ramp-up of tailings in H1 partially offset by improved grades
- H1 results include a 126.4 carat diamond sold for US\$8.5m

### **Production Forecast**

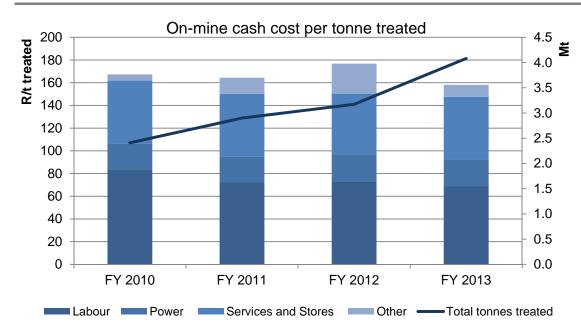


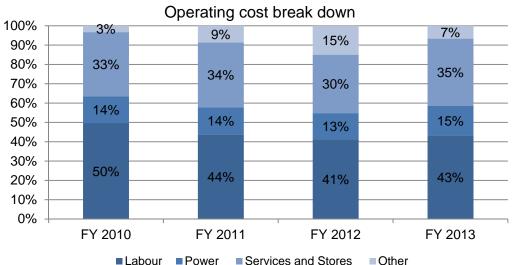
Targeting 2.2 million carats by FY 2019



### **Operating Cost History and Make-up**







- Risk of rising electricity costs managed through efficient design of new infrastructure
- Maintenance and management of new and old infrastructure
- New designs cater for high degree of automation
- Advancement of a Group procurement strategy to yield benefits related to economies of scale

### **Cullinan Outlook**



- Spectacular diamonds regular production of 'specials'
- Major resource world's second largest indicated resource by in-situ value
- Improving recoveries ongoing plant changes
- Improving grades grade to rise from ca. 31 cpht to ca. 50 cpht when new mining block established
- Improving mining costs Petra focus on increasing efficiencies, simplification of underground ore-handling system and streamlining of process route
- Very robust economics positive cashflow even at depth of downturn
- Longevity current 17 year mine plan will only exploit 21% of total resource
- Potential for future ramp ups not currently planned but Petra readying underground infrastructure

### Strategy to grow production from 1 million to 2.2 million carats pa



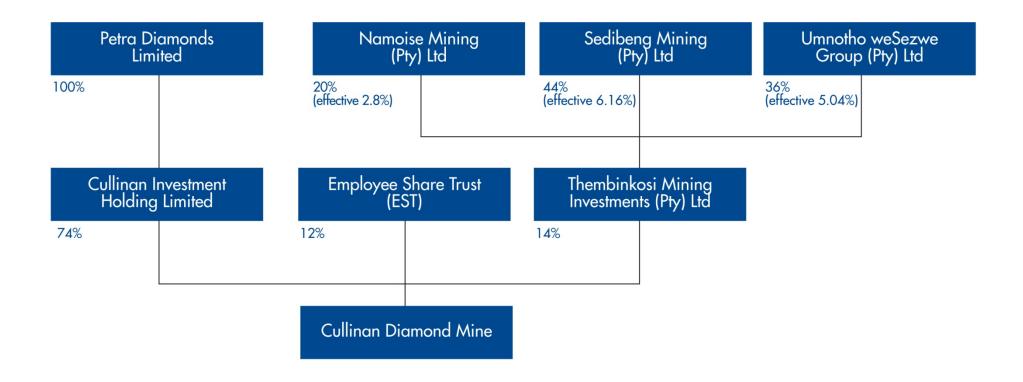
# **Petra** Diamonds



**Appendix** 

### **Ownership Structure**





#### Note:

Petra has an interest in Sedibeng Mining (Pty) Ltd – refer document 'Effective Interest in Mines: <a href="www.petradiamonds.com/investors/analysts

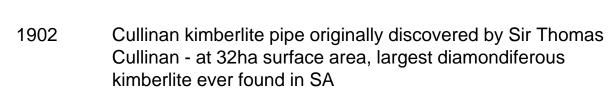
### The History Of Cullinan

1903

1930









Open pit mining commenced at 'Premier Mine' - at time of outbreak of WW1 14,000 were employed at mine

De Beers acquired controlling interest in Premier through



scheme of arrangement with Anglo American 1932

Mine closed due to depression and lack of market for luxury goods

1945 Mine reopened and pit dewatered for development of underground mine

1997 Premier (Transvaal) Diamond Company amalgamated into De Beers Consolidated

2003 Mine renamed 'Cullinan' as part of centenary celebrations

2008 Mine acquired by Petra Diamonds Cullinan Consortium on 16 July as a going concern - acquisition cost of R1bn -Petra had an initial effective interest of 37%

2009 Petra increased its interest in the mine to 74% by buying out Al Rajhi's interest

# **Capex Profile**



	Financial Year	2013A	2014F	2015F	2016F	2017F	2018F	2019F
Operation								
Finsch	ROM tonnes treated (Mt)	2.6	2.8	2.9	3.2	3.2	3.2	3.2
	Tailings tonnes treated (Mt)	2.6	2.6	3.0	3.0	3.0	3.0	3.0
	Expansion Capex (ZARm)	296.1	512.3	422.2	346.9	467.9	403.0	354.3
	Sustaining Capex (ZARm)	93.7	132.7	115.3	76.7	74.3	73.1	71.8
Cullinan	ROM tonnes treated (Mt)	2.6	2.8	2.8	3.0	3.1	3.6	4.0
	Tailings tonnes treated (Mt)	1.5	2.7	2.7	2.7	2.7	2.7	2.7
	Expansion Capex (ZARm)	565.7	765.3	842.7	755.7	219.4	100.2	76.8
	Sustaining Capex (ZARm)	152.0	81.3	74.9	52.3	49.3	50.1	50.3
Koffiefontein	ROM tonnes treated (Mt)	0.2	0.3	0.7	1.0	1.1	1.1	1.1
	Surface tonnes treated (Mt)	1.2	1.2	0.7	0.3	-	-	-
	Expansion Capex (ZARm)	96.4	171.0	103.6	57.9	31.6	-	-
	Sustaining Capex (ZARm)	84.0	25.1	32.8	34.7	28.7	28.2	27.8
Kimberley	ROM tonnes treated (Mt)	0.8	1.1	1.1	1.1	1.2	1.3	1.3
	Expansion Capex (ZARm)	155.6	96.1	111.0	37.3	-	-	-
	Sustaining Capex (ZARm)	35.4	28.2	28.8	28.7	28.5	28.1	27.6
Helam	ROM tonnes treated (Mt)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Expansion Capex (ZARm)	-	-	-	-	-	-	_
	Sustaining Capex (ZARm)	15.2	9.8	10.1	10.0	10.0	9.9	9.8
PETRA	Expansion Capex (ZARm)	1 113.8	1 544.6	1 479.4	1 197.8	718.9	503.2	431.1
(SA Operations)	Sustaining Capex (ZARm)	380.3	277.0	261.9	202.5	190.9	189.4	187.3
Williamson	ROM tonnes treated (Mt)	2.7	3.6	4.0	4.5	5.0	5.0	5.0
(Tanzania)	Alluvial tonnes treated (Mt)	0.4	0.3	-	-	-	-	_
	Expansion Capex (USDm)	8.4	8.2	6.8	6.8	-	-	-
	Sustaining Capex (USDm)	3.3	5.9	5.8	6.0	6.2	5.0	4.9
PETRA	Total ROM tonnes treated (Mt)	9.1	10.7	11.6	13.0	13.7	14.3	14.7
(All Operations)	Total tailings/other tonnes treated (Mt)	5.7	6.8	6.4	6.0	5.7	5.7	5.7
	Total tonnes treated (Mt)	14.8	17.5	18.0	19.0	19.4	20.0	20.4

- 1. All Capex numbers are stated in FY 2014 money terms (except for FY 2013 actuals)
- 2. Depreciation on mining assets for FY 2014 guided at c. US\$45 million
- 3. As in prior guidance, capital estimates above do not include any capitalised borrowing costs. Guidance is to assume 95% of borrowing costs are to be capitalised



# **Petra** Diamonds



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