



# Investment Analysts And Fund Managers Visit Bafokeng Rasimone Platinum Mine

11 March 2005



# Agenda



- ◆ Salient Features
- ◆ Location & Mine infrastructure layout
- Safety and Environment
- ◆ Resources and Reserves
- Mining Method
- Production
- Operating Cost
- ◆ Capital Programme
- Human Resources
- ◆ Key Business Issues
- ◆ Styldrift



# PLATINUM Salient Features: 2004

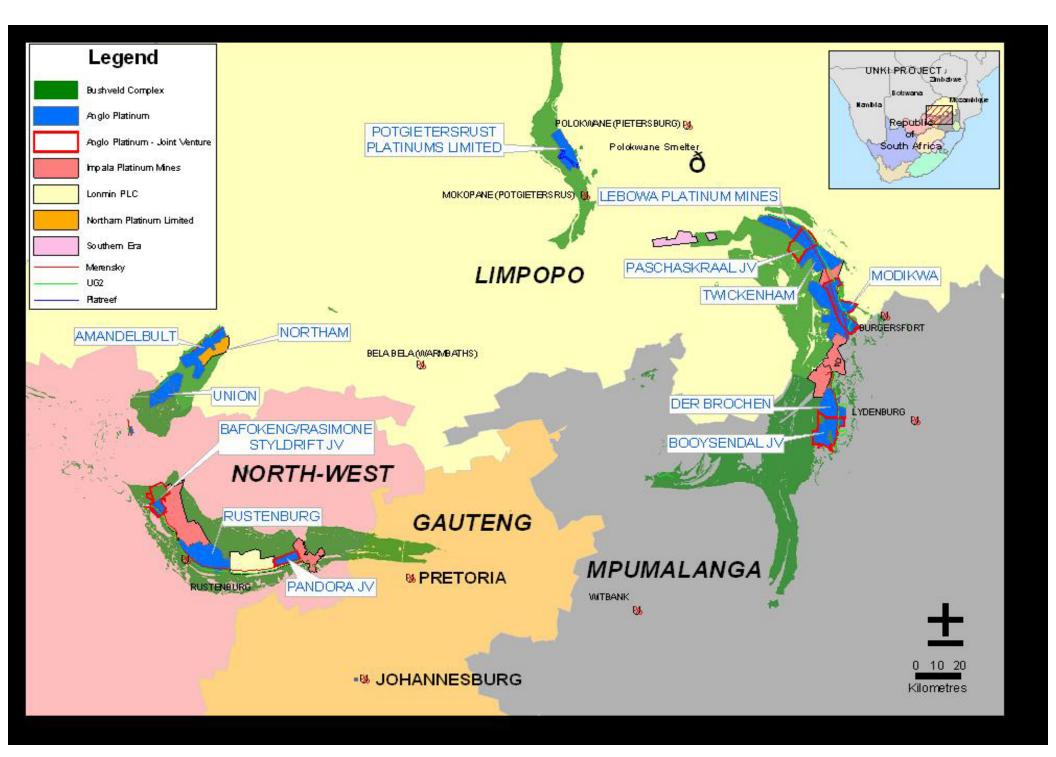


- Good safety performance
- Increase in immediately available ore reserves
- Increased understanding of orebody
- ◆ Tons from underground up 4%
- Conversion to breast mining accelerated (increased from 30% in 2003 to the current 80%)
- Concentrator recoveries significantly increased (Ounces from underground up 7%)
- Wet screening plant commissioned
- Cost per ounce increased by 7.6% notwithstanding the wage strike
- ◆ JV fully operational from March 2004

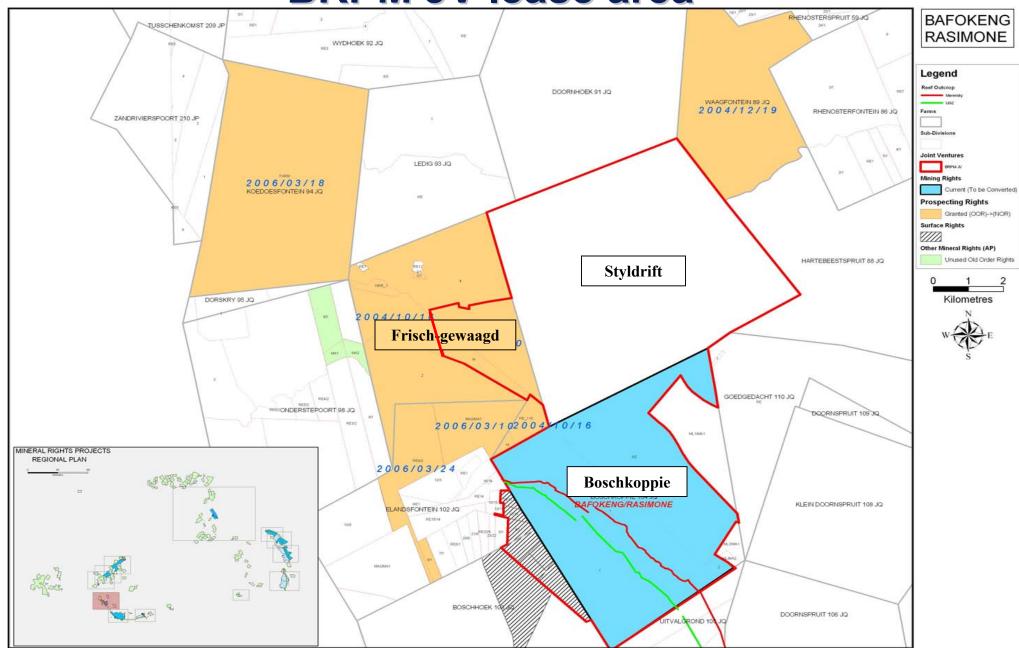




## Location



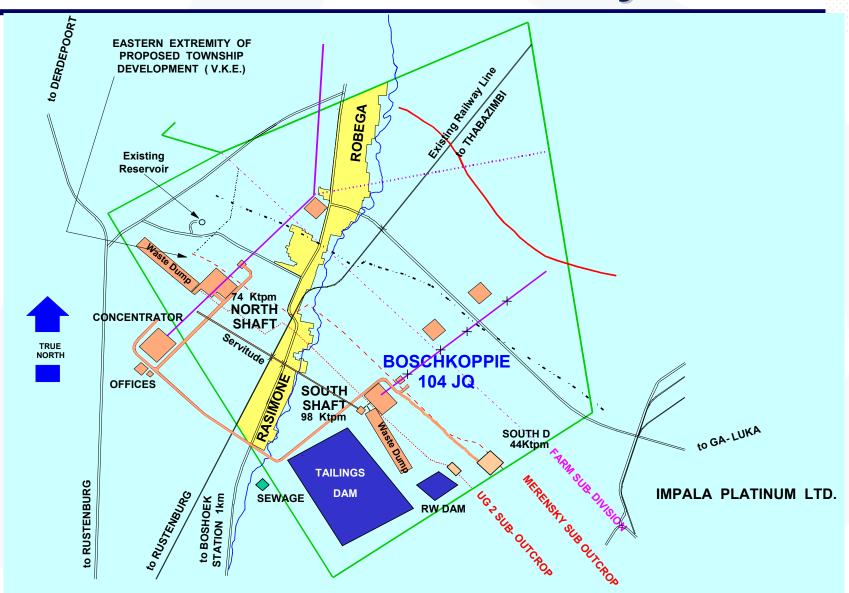
### **BRPM JV lease area**





# ANGLO PLATINUM Mine infrastructure layout







# PLATINUM Safety Milestones



#### One Million Fatality Free Shifts

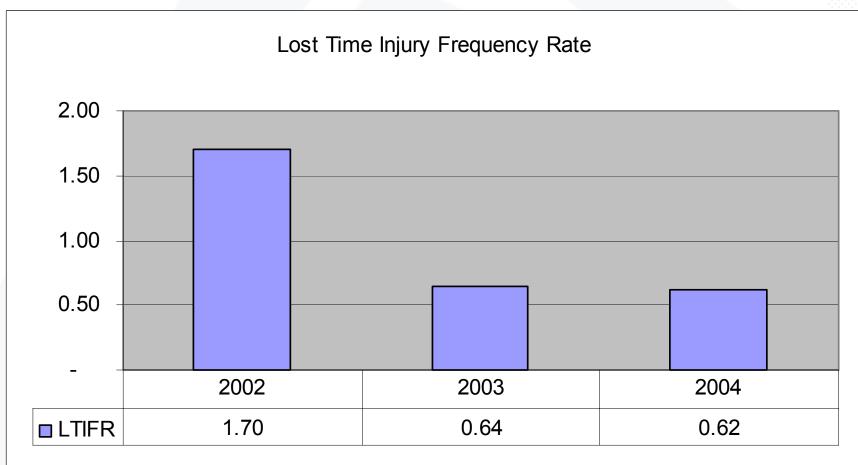
= 4 Times

- Dates: 23 September 2001
  - 13 January 2003
  - 8 December 2003
  - 18 January 2005
- ◆ North Shaft 2 Million Fatality free April 2004
- South Shaft 1 Million Fatality free shifts April 2004
- OHSAS 18001 Certification November 2004
- Process plant 5 years without a lost time Injury
- Logistic`s 4 Years without a lost time Injury
- **◆** Opencast 3½ year project completed without a lost time injury
- Process awarded with MMMA for 4 years (last one October 2004)
- ◆ Cementation mining = 5 Star NOSA awards at both shafts
- ◆ ISO 14001 Certification Apr 2002
- ♦ Won EMEM award in 2000 and again 2002



## **Safety**

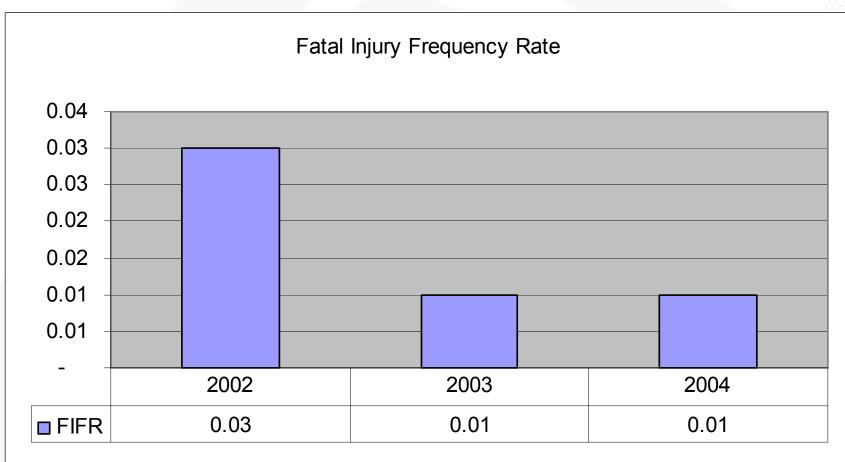






## **Safety**







## ANGLO Environment



#### EMS Status

Continued ISO14001 Certification confirmed in third CAV audit in 2004

#### Waste management

- Effective system with permitted landfill site on mine

#### Dust

Dust fall out low except within plant area near ROM stockpile and crusher.

#### Public Participation

- Bi-annual environmental committee meeting held

#### Social Issues

- Transformation forum
- Addicted to business program
- Environmental awarness interventions at local schools
- Aligned with minerals act and charter





## **Resources and Reserves**



## ANGLO PLATINUM Reserves and Resources (50%)\*



Reserves	Me	Merensky Reef						
	Mt		4E grade					
Proved	10,1	<u>a</u>	4.90  g/t					
Probable	7.5	<u>a</u>	4.84  g/t					
Total	17,6	<u>a</u>	4.87 g/t					

Resources	Merensky Reef			UG2 Reef				
	Mt		4E grade		Mt		4E Grade	
Measured					1.7	$\overline{a}$	5.20 g/t	
Indicated	22.5	$\bigcirc$	5.69  g/t		7.9	$\overline{a}$	5.19 g/t	
Inferred	63.9	$\overline{a}$	6.39 g/t		95.1	$\overline{a}$	5.09 g/t	
Total	86.4	<u>a</u>	6.20 g/t		104.7	<u>a</u>	5.10 g/t	

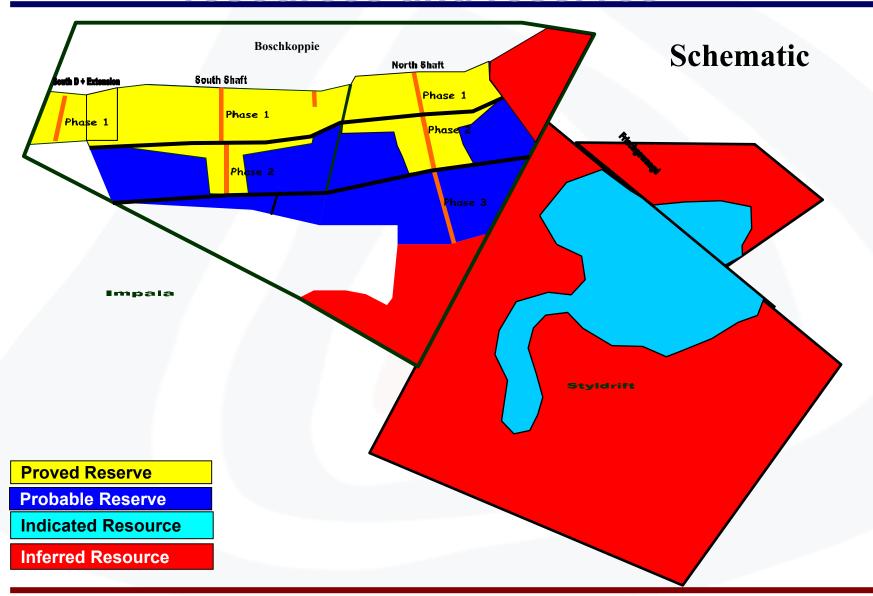
The above reserves and resources are the 50% attributable to Anglo Platinum following finalisation of the JV

<sup>\*</sup> At 31 December 2004, reserves are in addition to resources



# Merensky reef: resources and reserves

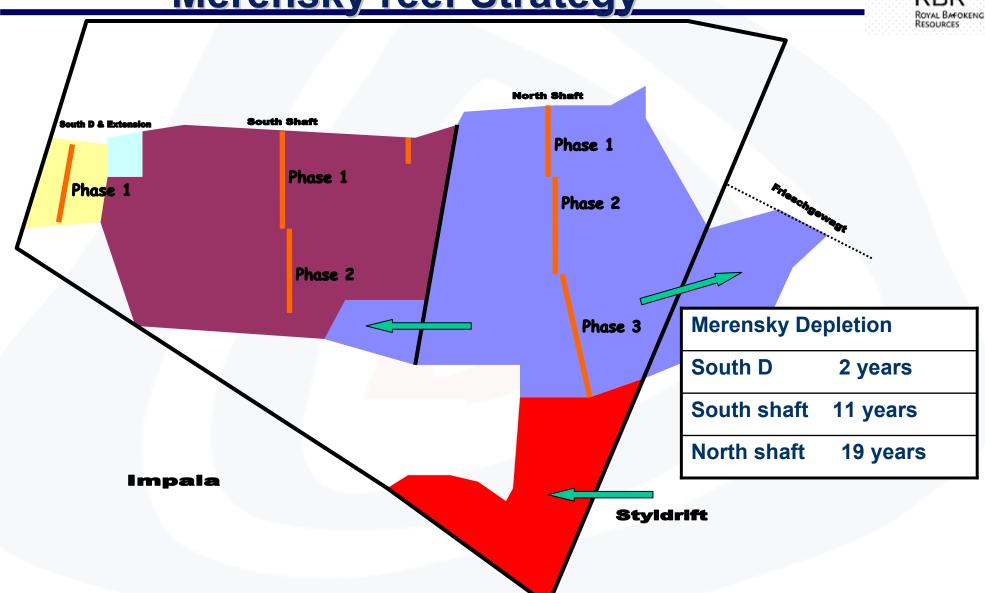






## Boschkoppie: Merensky reef Strategy

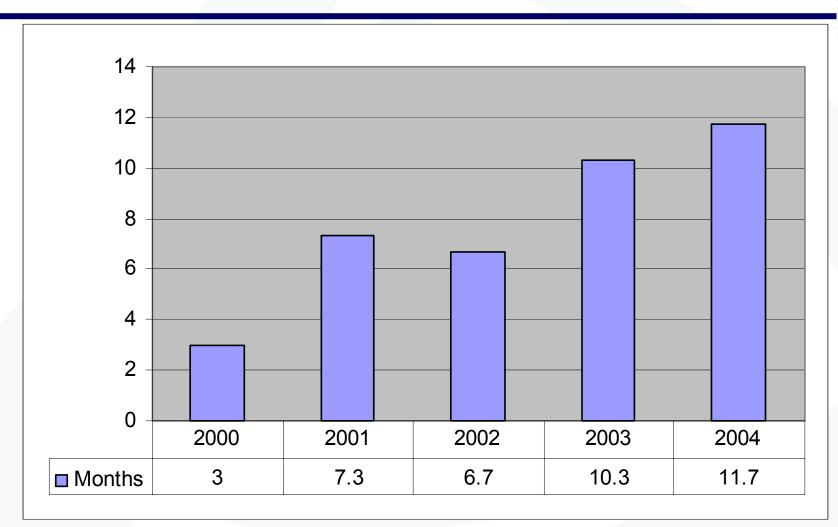






#### **Immediately Available Ore Reserves**



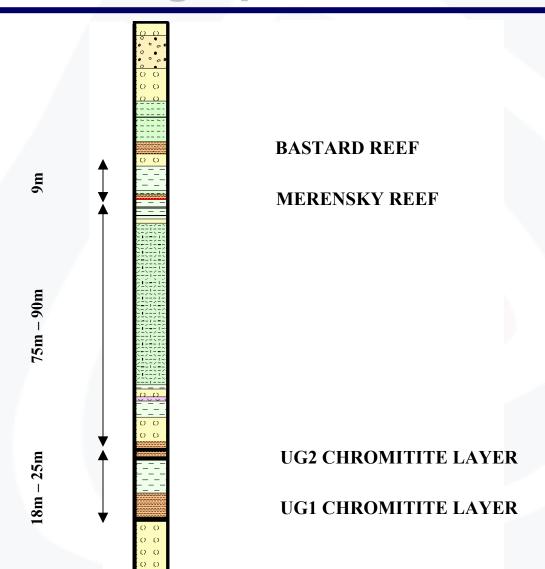


• Planned increase to 18 months in 2006



# ANGLO PLATINUM Stratigraphic Section

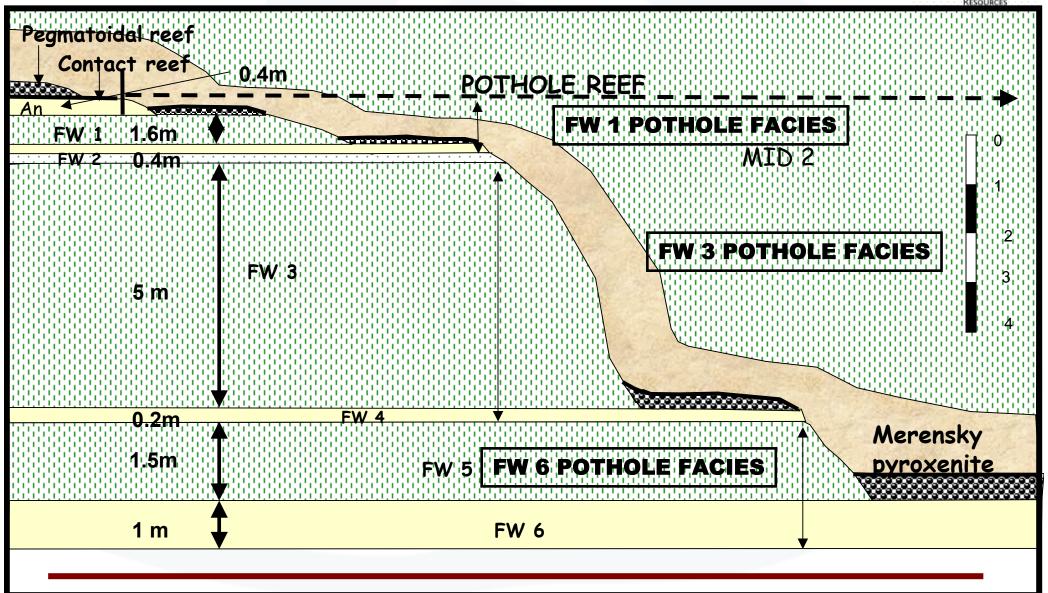






# **BRPM – Schematic section showing reef** variations









# **Mining Method**



## ANGLO PLATINUM Original Design



- Original Design 200 ktpm Merensky Operation
- 2 Twin Decline Shaft Clusters
  - North and South Shafts
- Dip Mining
- Conveyor Manriding
- Flatter Structures
- English Literate Employees
- ◆ Team Concept
- Multiskilling
- ◆ Total Package Remuneration



## ANGLO PLATINUM Additional Projects



- Opencast Merensky Complete
- ◆ Opencast UG2 Complete
- South D Mechanised Section Commenced 2001
  - Initially XLP bord and pillar section
  - Converting to hybrid mechanised mining
  - Depletion early 2007



## ANGLO PLATINUM Changes to Original Design

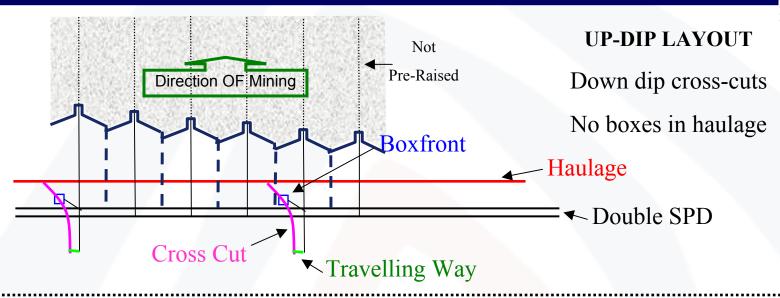


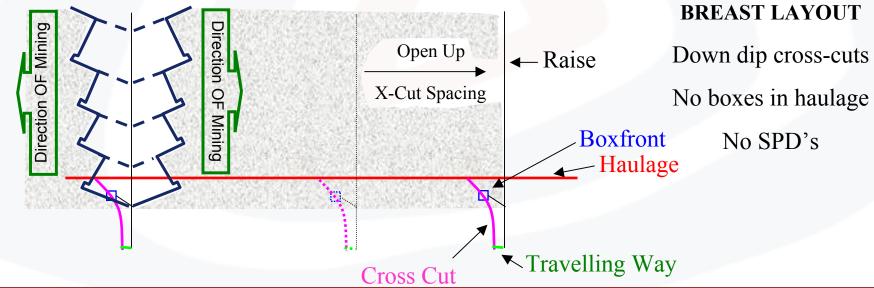
- Planned Steady State Production Increased To 220 ktpm
  - Mitigate Lower Grade
- Converting To Breast Mining From Dip Mining
  - Currently 80% breast mining from 30% in 2003
  - Results in reduced development requirements
- Chairlifts Planned For Phase 2 Deepening
- Reverting To Single Skilled Operators



# **Up-Dip To Breast Conversion Schematic**









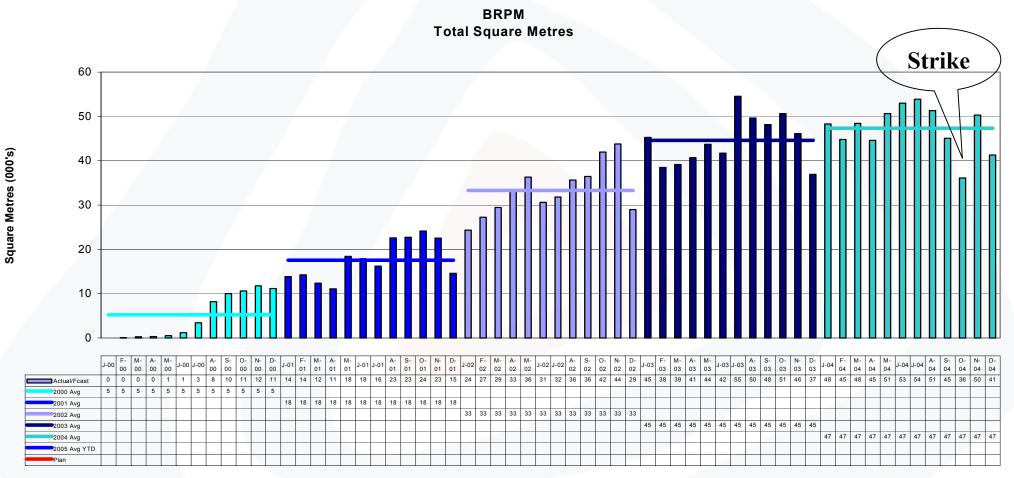


## **Production**



# ANGLO PLATINUM Stoping - Centare Profile

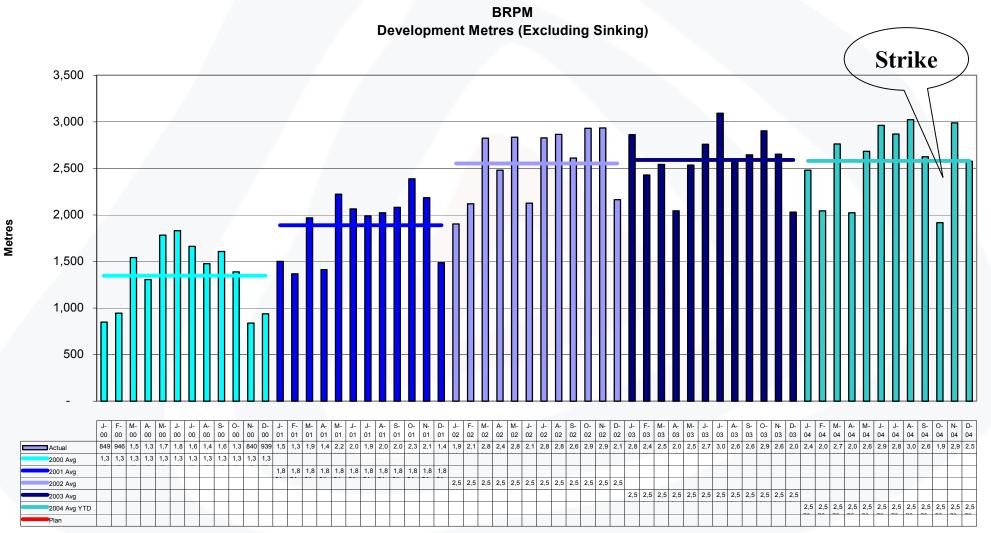






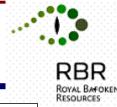
# PLATINUM Development (excl sinking)

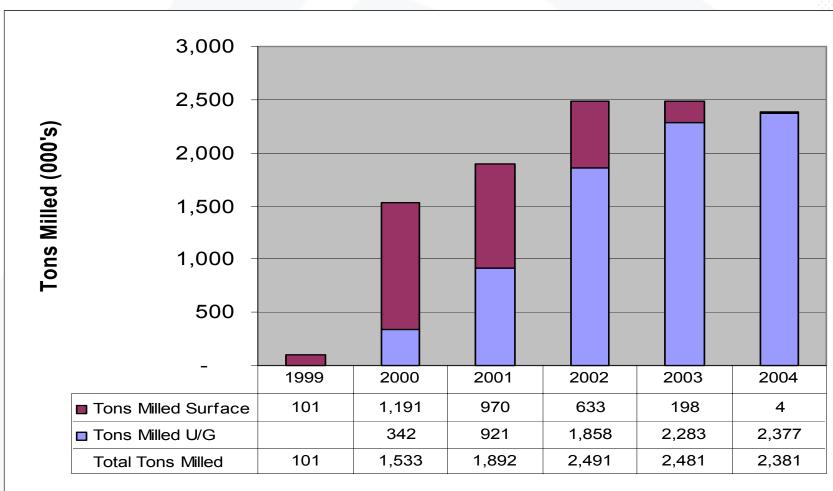






# ANGLO Tons Milled

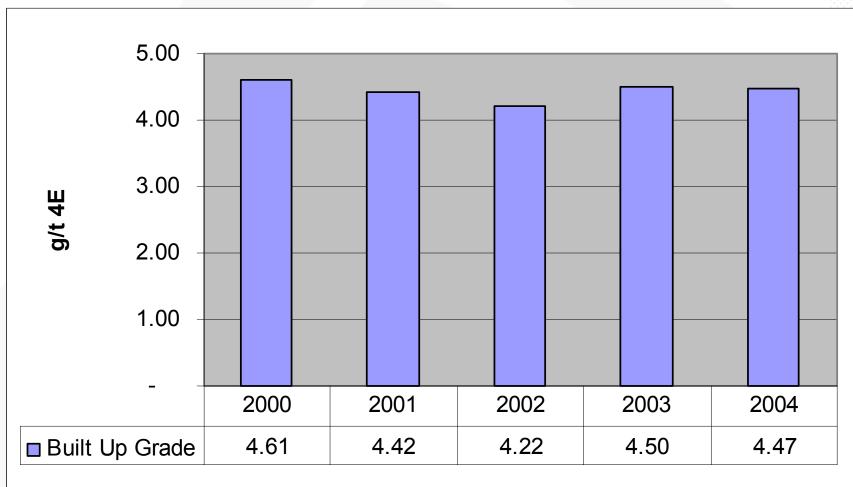




• Build up to 220ktpm in H2 2005





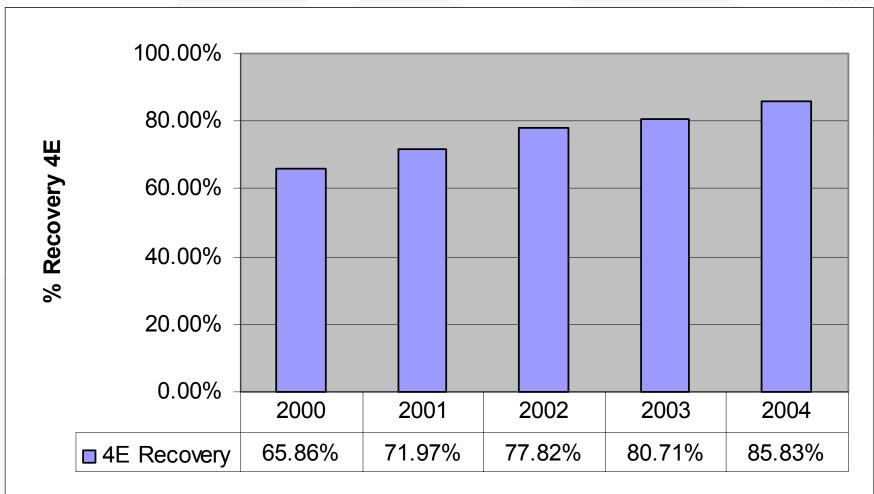


• Expect grade improvement to 4.7 g/t by 2006



# PLATINUM Plant 4E Recovery





No further significant short-term increase expected



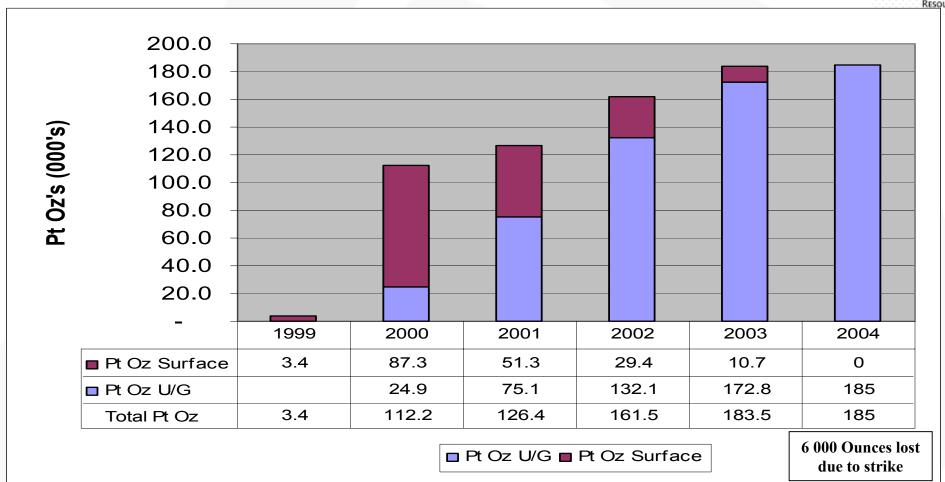


- ♦ Wet screening modification completed to achieve 220ktpm
- ◆ Planned recovery increases have been realised
  - No UG2 from February 2004
  - Expert systems in place
  - Process optimisation



# PLATINUM Equivalent Refined Pt Ounces\*





- 200 000 refined platinum ounces planned for 2005
- Volume of 220 000 refined platinum ounces pa from 2006

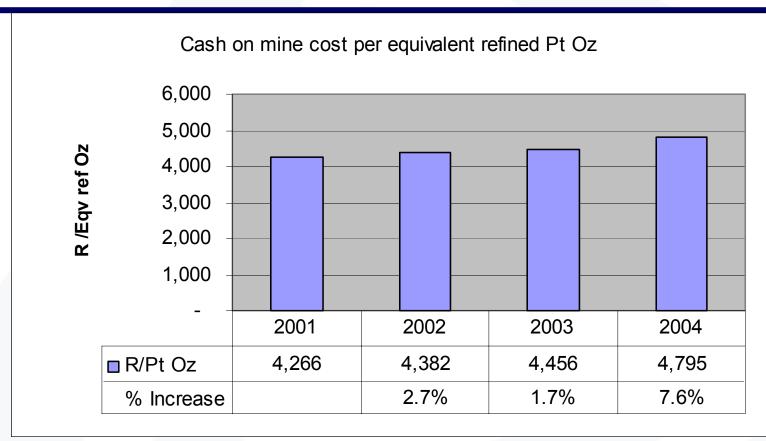




# **Operating Costs**



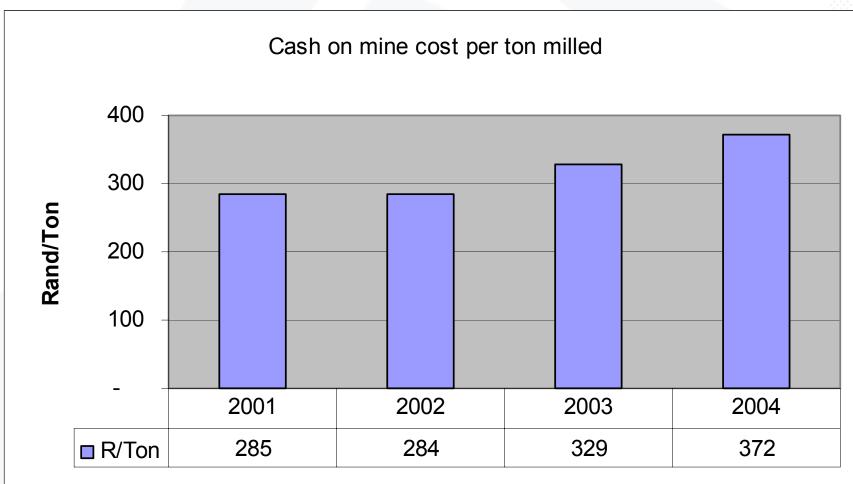




- 2004 increase without strike: 4.2%
- Underground unit costs likely to remain constant in real terms







• Increase due to reduction in low cost surface tons





# **Capital Programmes**



## **Capital Progammes**



- Average capital expenditure R200m pa over life of mine
- Phase 2 Extensions
  - Ongoing capital for the replacement of current production.
  - Additional R100m p.a. for next 4 years
- Wet Screening
  - Plant was commissioned in 2004 to ensure sustainable throughput of 220 ktpm.





## **Human Resources**



# ANGLO PLATINUM Human Resource Development



- BRPM has both underground and surface training centres.
- ◆ The training department is IS09001 compliant.
- FOG competent A and B.
  - On schedule to meet exemption requirements
- Full accreditation as national training provider
  - Twice audited by MQA, Anglo platinum full accreditation ratified by committee
- Mining Charter Compliance
  - Social plan approved
  - Talent management strategy in place





# **Key Business Issues**



# ANGLO PLATINUM Key Business Issues



- **♦** Create Flexibility
- ◆ Achieve planned grade
- **♦ Improve underground crew efficiencies**
- ◆ Reduce costs
- **◆** Achieve charter compliance



# PLATINUM Cost Optimisation



- **Restructuring commenced during 2004** 
  - Cost effective and efficient management structure in place
  - Changing to single skilled operators
- Supply chain initiative
  - Wider implementation
- **Efficiency and grade improvements** 
  - Reduced dilution
  - Improved in-stope team efficiency





# Styldrift

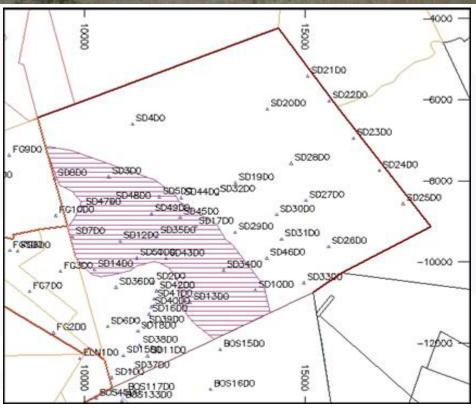


## **Styldrift**



- Geological resource modeling initially (pre 2002) targeted the thick merensky value zone in the South west of the farm Styldrift.
- 3D seismic completed 2002 on this portion of the property.
- Further drilling to commence in 2005 to increase resource confidence of both Merensky and UG2.
- Pre-feasibility commenced with further investigation of several mine designs identified from the OME in order to confirm mine design for full feasibility in 2006.
- ◆ The life of mine exploitation strategy of Merensky and UG2 reefs is being reviewed in line with the prefeasibility study









## Questions