

ANGLO AMERICAN PLATINUM CORPORATION

ANNUAL FACILITY VISIT

28 February 2002

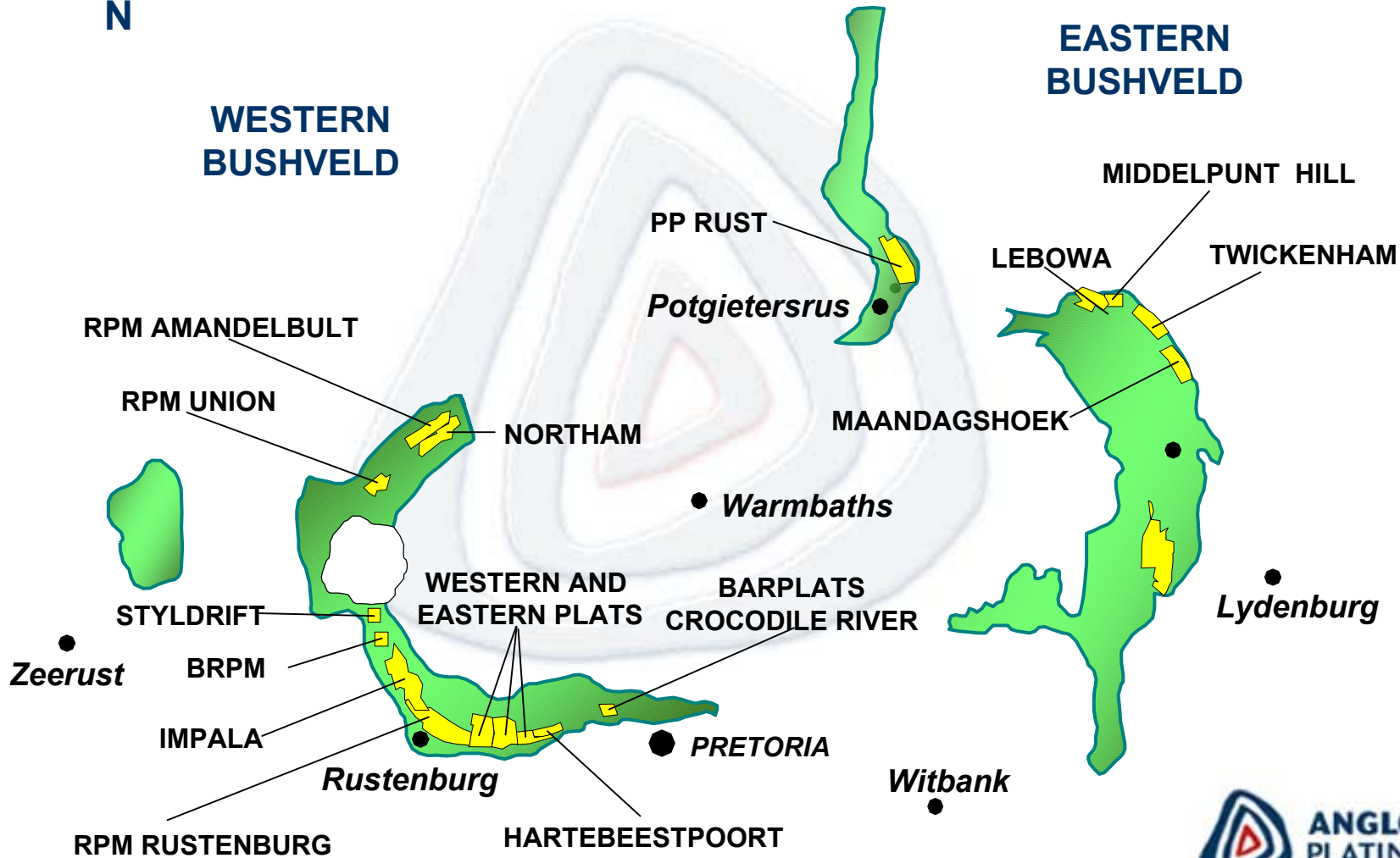
EASTERN BUSHVELD OPERATIONS

Chris Sheppard
Divisional Director : East Mines

AGENDA

- **Welcome**
- **Eastern Limb orientation**
- **Operations**
- **Geology**
- **Mining methods**
- **Conclusion**

EASTERN LIMB ORIENTATION – BUSHVELD COMPLEX



OPERATIONS

POTGIETERSRUST PLATINUM MINE

- **2001 : 4.27 million tons milled**
211 000 ozs refined Pt
65.7% operating margin
17.0% operating contribution

Geology – Platreef

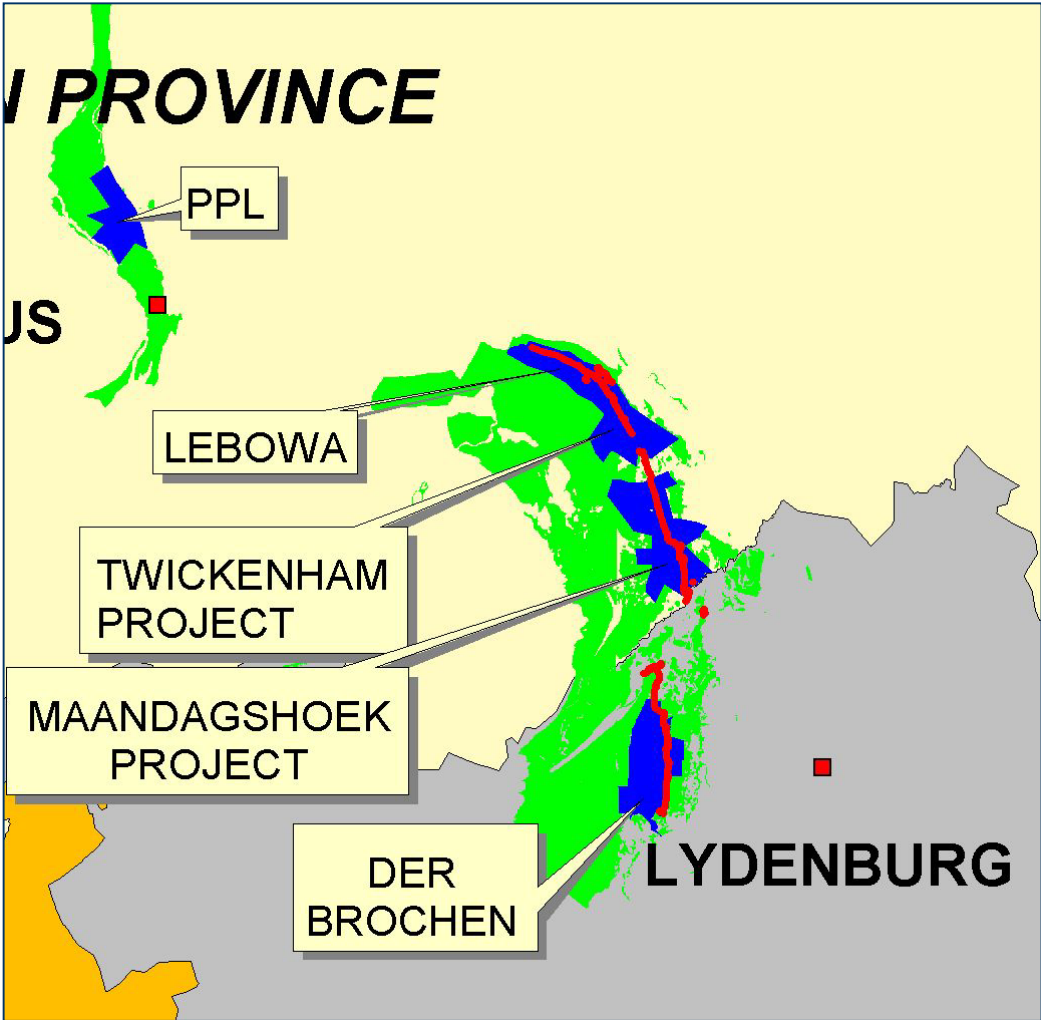
- **Open pit operation**
- **Excellent performance**
- **Ga-pila relocation successful**
-

OPERATIONS

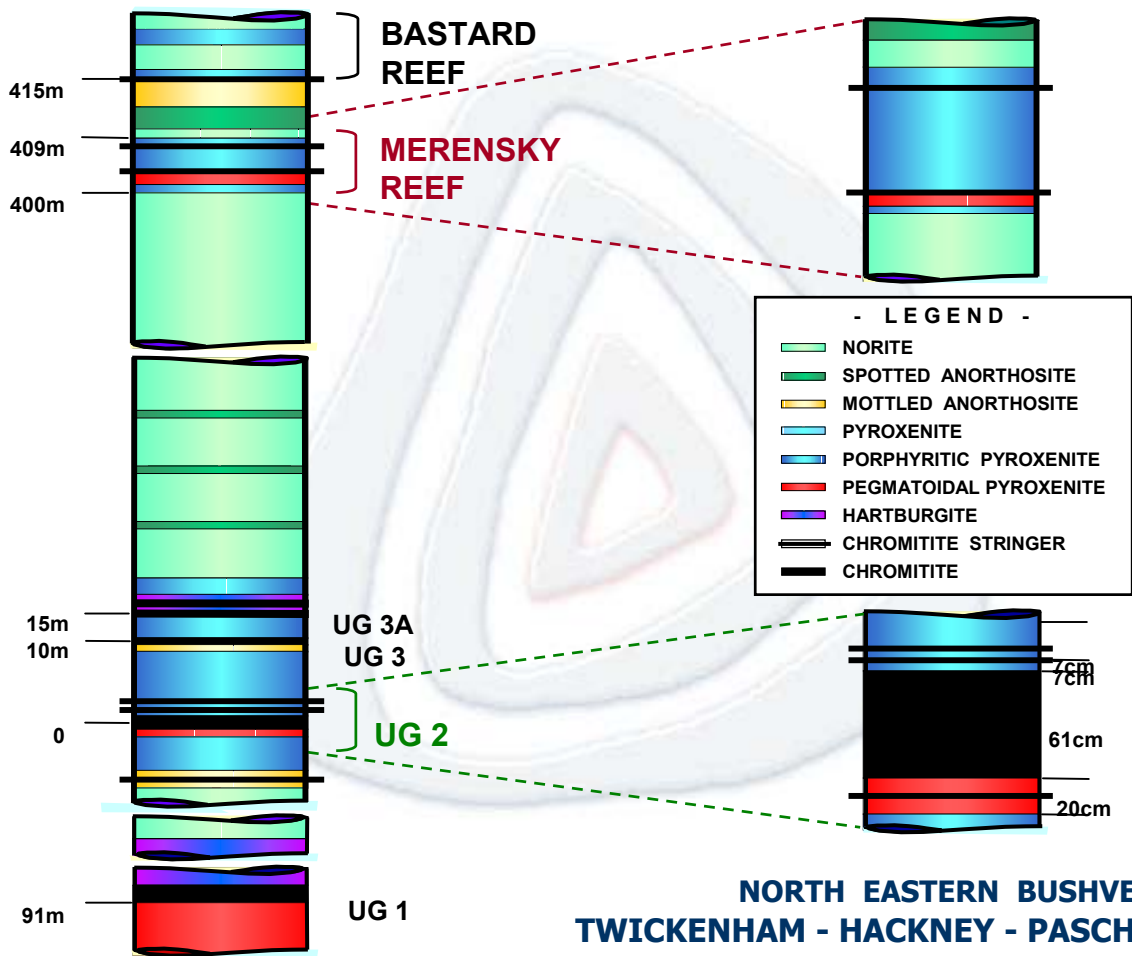
LEBOWA PLATINUM MINE

- **2001 : 1.40 million tons milled**
89 000 ozs refined Pt
48.9% operating margin
4.0% operating contribution
- **Geology – Merensky and UG2**
- **Underground operations**
- **Upgraded plant operating to plan**

ANGLO PLATINUM MINERAL RESOURCES



GEOLOGY



**NORTH EASTERN BUSHVELD
TWICKENHAM - HACKNEY - PASCHASKRAAL
STRATIGRAPHIC COLUMN**

IDEALISED SECTION THROUGH THE UG2

H/Wall Pyroxenite

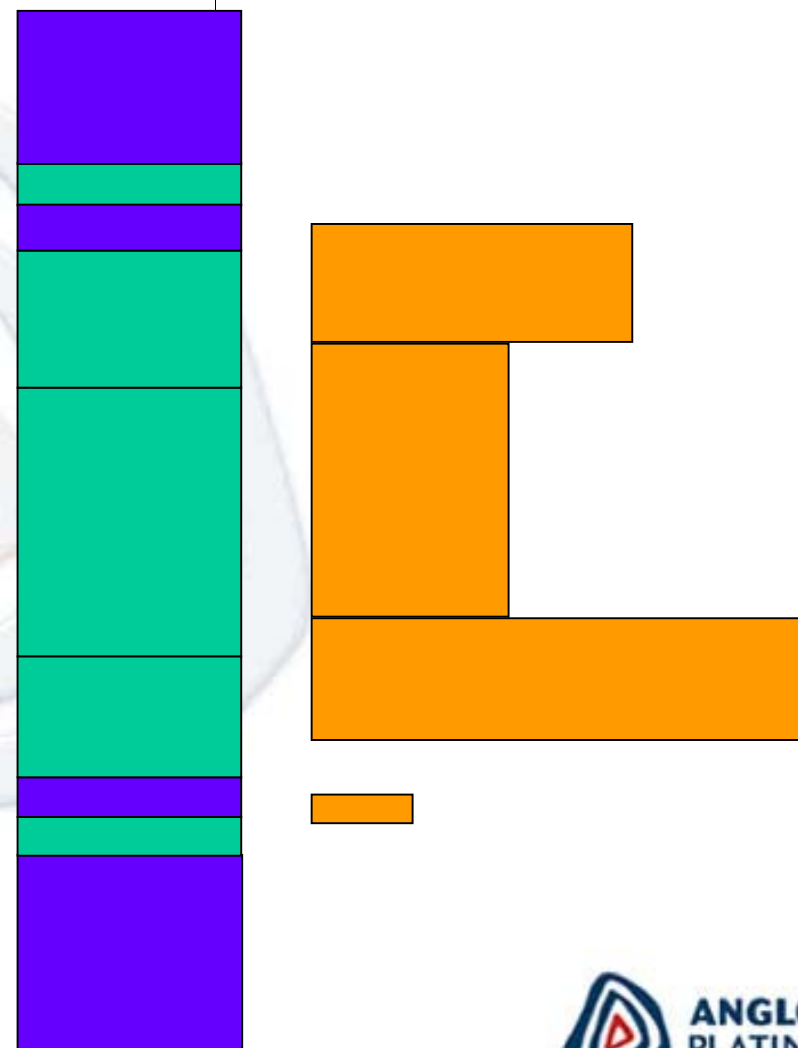
Top of Main Seam

Middle Main Seam

Bottom Main Seam

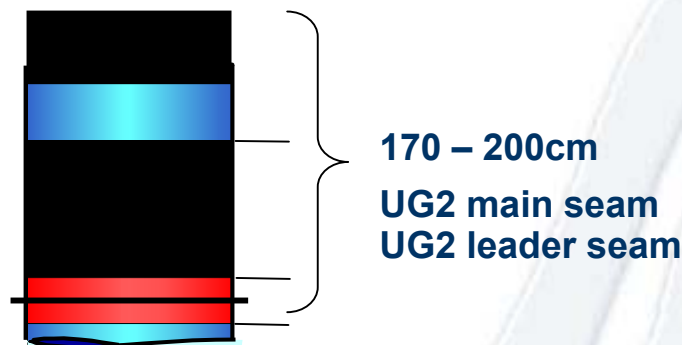
F/Wall Seam (impersistant)

F/Wall Pyroxenite



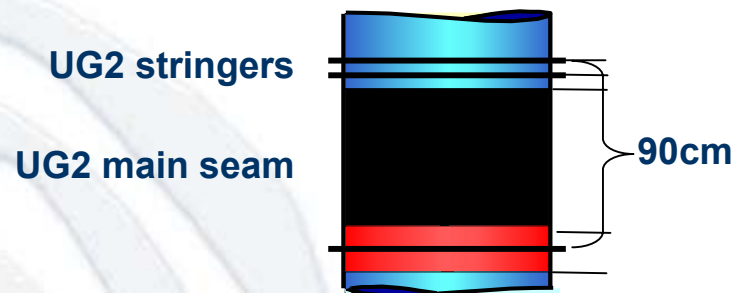
EAST VS WEST: THE UG2

West (RPM)



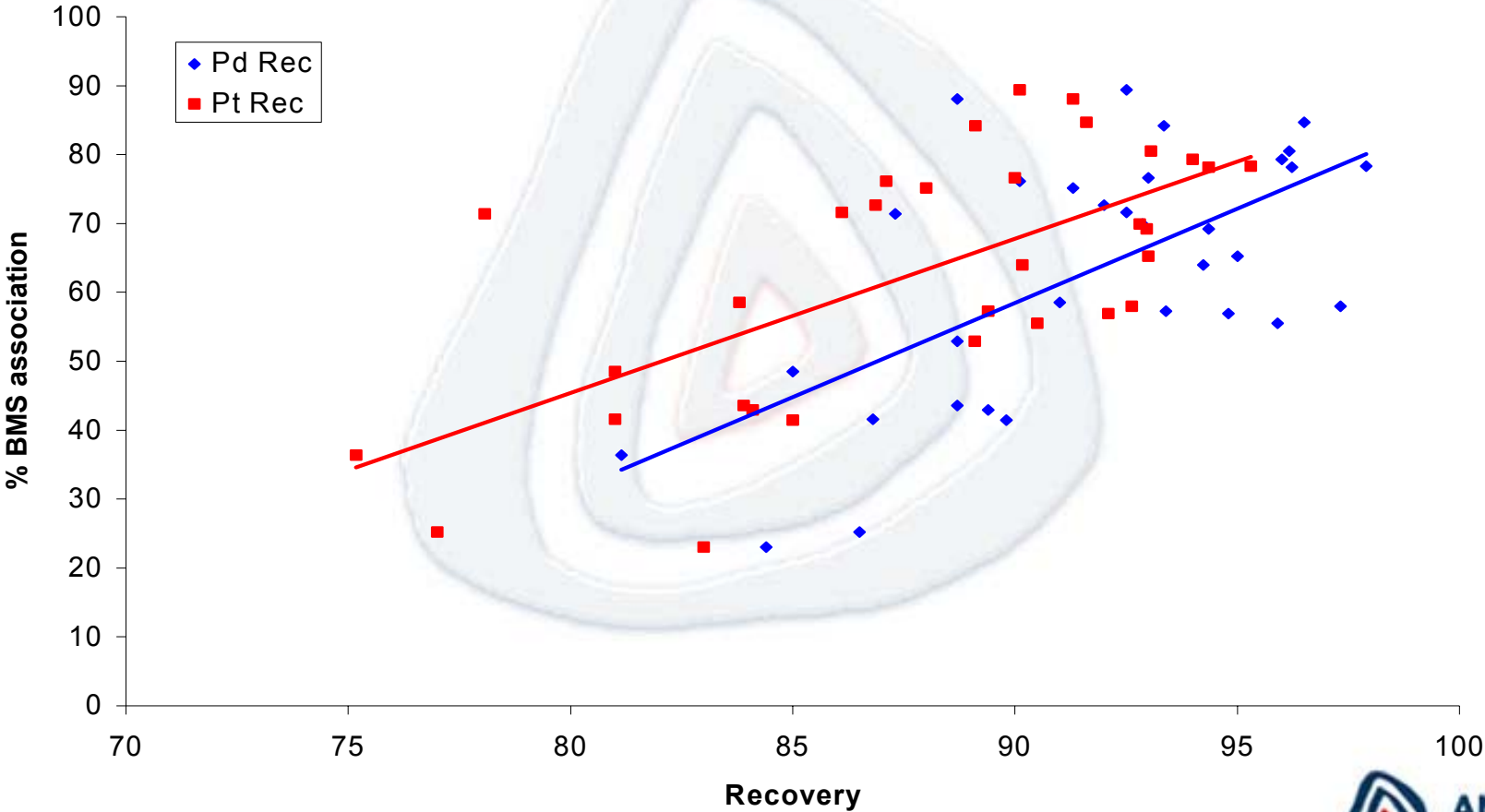
- UG2 ~60cm
- Has a leader (~25cm)
- Has a pyroxenite parting (20-150cm)
- UG2 “packing” loose

East



- UG2 ~60cm
- Has several stringers (~1-5 mm width each).
- Up to 6-7 stringers
- UG2 compact with more Base Metals Sulphides

EASTERN BUSHVELD UG-2 RECOVERY vs BASE METAL SULPHIDE ASSOCIATION



MINING METHODS EMPLOYED

- Fully mechanised shaft sinking
- Fully mechanised development process
- Transport process
- Current conventional stoping process
 - Reef dip
 - Stoping width
 - Dilution
 - Strata control

TRAINING ISSUES

- **Learnt lessons from previous projects**
- **Learnerships**
- **Initial skills and team training**
- **Induction via 10 day integrated team training intervention**
 - **Adventure related experiential learning technique**
 - **Behaviour based safety initiative included**

WHY THE EASTERN LIMB WILL BE A SUCCESS STORY

- Excellent orebody
- Effective teams in place
- Solid technical skills base
- Mine designs that work
- PASSION

EASTERN BUSHVELD PROJECTS

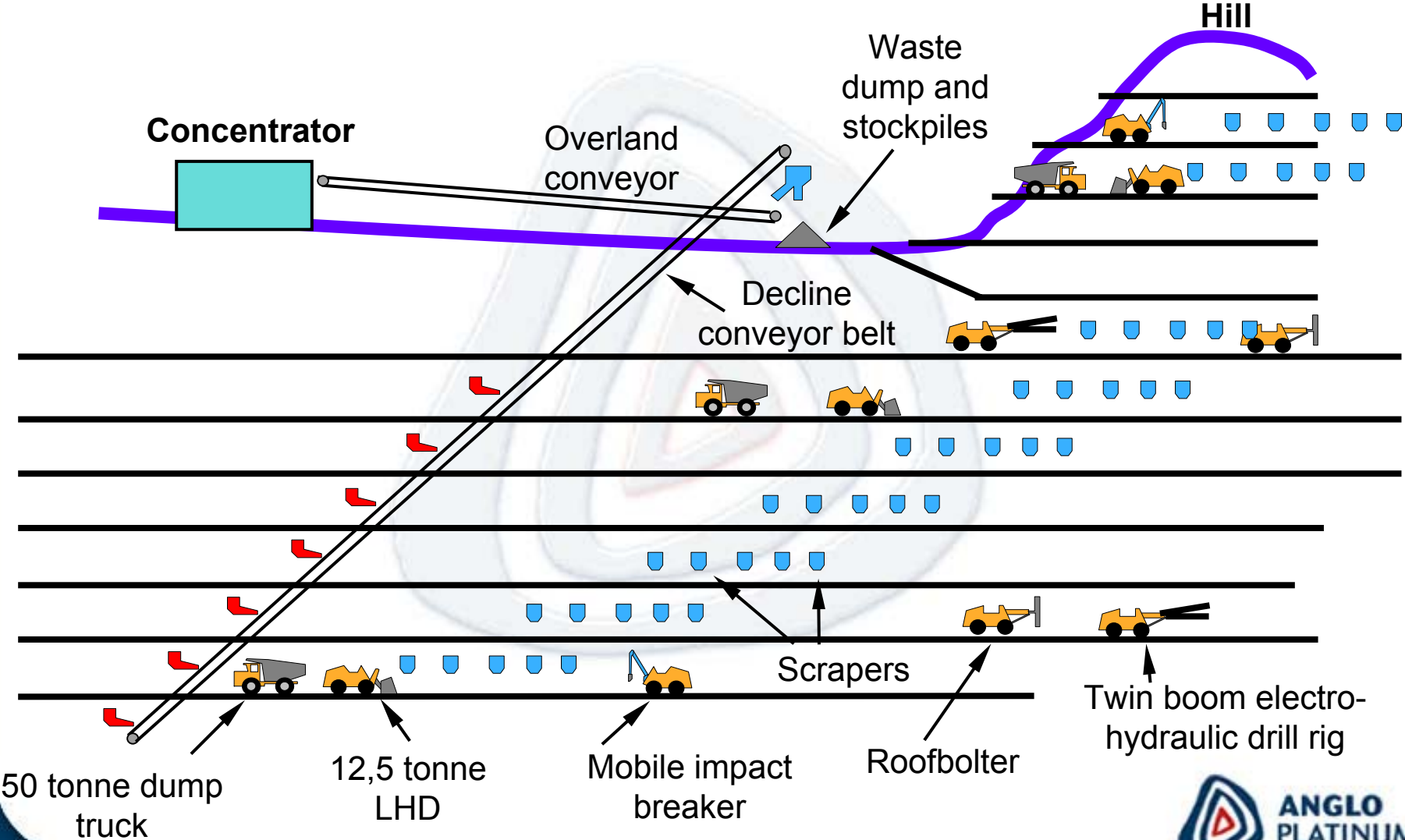
**Maandagshoek Platinum Mine
Twickenham Platinum Mine
Polokwane Smelter**

**Mike Halhead
Divisional Director : Projects**

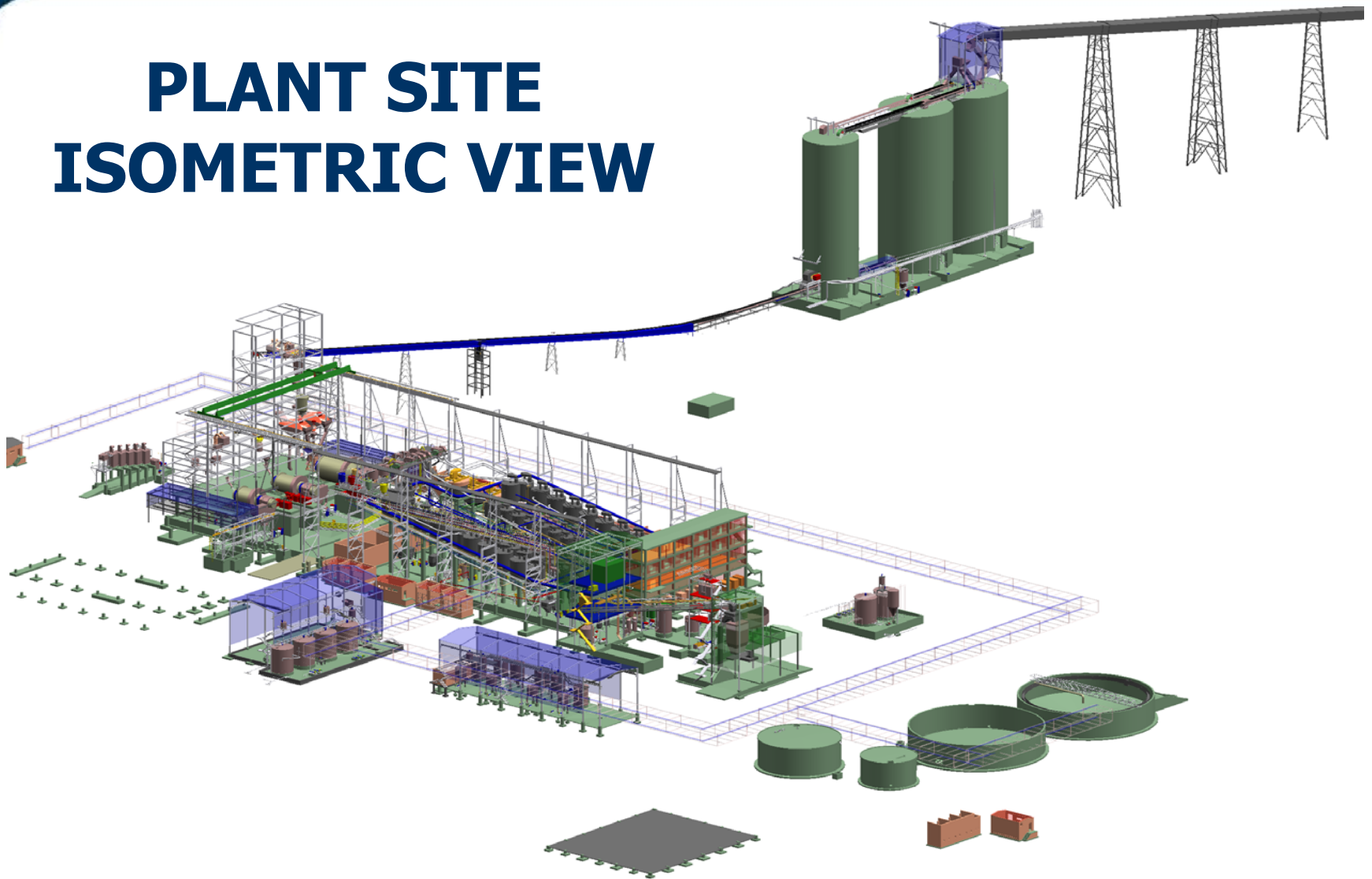
KEY PARAMETERS

- Joint Venture with ARM
- Mining authorisation covers the farms Driekop, Maandagshoek, Hendriksplaats, Onverwacht & Winterveld
- First phase comprises 2 decline shaft systems on Onverwacht and Hendriksplaats + adit system on Onverwacht Hill
- Production – 200 ktm, 162 koz Pt/annum, 156 koz Pd/annum
- 2 100 employees
- Budget – R1,35 billion (mid 2000 terms)
- Commissioning date – 2nd Quarter 2002
- Steady State Production - 2004

MINING METHOD & EQUIPMENT



PLANT SITE ISOMETRIC VIEW



PROJECT STATUS

- Time largely recovered on delayed site access with fast-track schedule
- Stoping commenced in February 2002
- Plant start up forecast for May 2002
- Full production in 2004 confirmed
- Final expenditure forecast at R1,6 billion (escalated)

KEY PARAMETERS

- Proposed mining area comprises the farms Twickenham, Hackney and Paschaskraal
- First phase includes 2 decline shaft systems on Hackney and Paschaskraal + an adit system on Serafa Hill
- Production – 250 ktm, 160 koz Pt/annum, 176 koz Pd/annum
- Budget R2,7 billion (2002 terms)
- Commissioning – 2004
- Steady State Production - 2006

PROJECT STATUS

- Mining authorisation & EMPR applications submitted
- Surface rights acquisition process in progress
- Trial mining to commence in 2nd Quarter 2002
- Detail design studies well advanced
- Project on schedule.

POLOKWANE SMELTER :

Key Parameters

- **New smelting complex on the outskirts of Pietersburg**
- **Six-in-line 68MW electric furnace**
- **Smelting capacity – 650 000 tonnes/annum**
- **Furnace matte shipped to ACP plant in Rustenburg for converting**
- **Budget – R1,31 billion (2001 terms)**
- **Commissioning – 1st Quarter 2003**

PROJECT STATUS

- **EMPR & re-zoning applications approved**
- **Restitution claims resolved**
- **Site established in November 2001**
- **Earthworks and civils well advanced**

EXPANSION ISSUES

- **Housing**
- **Integrated development planning**
- **Medium to long term water requirements**
- **Recruitment and training**
- **Empowerment**

RECRUITMENT & TRAINING

- Project HR resources appointed
- Expansion manning strategy developed
- Platinum Mining Expansion Services established
 - Managerial & technical development
- Socio-economic studies carried out
 - High literacy, high unemployment rates
- Transparent, community based recruiting instituted
- Training Resources
 - Anglo Platinum Development Centre – Rustenburg
 - Engineering Skills Training Centre – Randfontein
 - Existing Operations
 - OEM Training
 - Learnerships

RECRUITMENT & TRAINING

● Maandagshoek

- Managerial & Technical team in place
- Skills database developed for local area
- Quantitative assessment and selection processes employed
- In excess of 500 people currently in training
- Experienced mining teams contracted in for start up

● Twickenham

- Senior managerial appointments in progress
- Skills database being developed

Polokwane Smelter

- - Managerial appointments being made
- Operational staff in training

EMPOWERMENT AND SMALL & MEDIUM ENTERPRISE DEVELOPMENT

- **High priority given to local empowerment and SME development**
- **Resources dedicated to development of capacity**
- **All contractors required to maximise the usage of local labour and companies**
- **Alliances & JVs with local companies encouraged**
- **Close liaison with Provincial and local authorities**

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