Overview of the South Deep Project

September 2011
Our Vision and Values

To be the global leader in sustainable gold mining

If we cannot mine safely, we will not mine

- Responsibility
- Honesty
- Safety
- Respect
- Innovation
- Deliver
Locality – Wits Gold Fields

- Historic production: > 1,600,000,000 oz of gold
- 4.5bn tons of ore treated at an average grade of 9.0g/t
Locality – South Deep

- South Deep
- Cooke
- Ezulwini
- CARLETONVILLE
- Blyvooruitsicht
- Tautona
- Mponeng
- Kusasalethu
- FOCHVILLE
- Driefontein
- Kloof

REFERENCE:
- Roads
- Farm Boundaries
- Mine Boundaries
- Towns
- Gold Fields Gold Mines
- Durban Roodspoort Deep
- Harmony
- AngloGold Ashanti
- Ezulwini
Overview

Building a world class mine

**Outline**

- Massive underground orebody
  - 81.5 Moz Resource
  - 34.5 Moz Reserve
- Fully mechanised mine
- Build-up to 750koz run-rate by end of 2014
- Life of Mine of 54 years

**Capital Programme**

<table>
<thead>
<tr>
<th>Project</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>Status</th>
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<tbody>
<tr>
<td>Refrigeration Plant</td>
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<td>Complete</td>
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<tr>
<td>Twin Vent Shaft</td>
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<tr>
<td>Tailings Storage Facility</td>
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<td>Plant Expansion</td>
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<td>On-track</td>
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<tr>
<td>New Mine Development</td>
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<td></td>
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<td>On-track</td>
</tr>
</tbody>
</table>

**Production and Capex**

- Production (lhs)
- Capex (rhs)

Bar chart showing production and capex from 2009 A to 2014 E.

- 2009 A: 0.0 Rbn
- 2010 A: 0.5 Rbn
- 2011 E: 1.5 Rbn
- 2012 E: 2.0 Rbn
- 2013 E: 2.5 Rbn
- 2014 E: 3.0 Rbn
1950: Prospecting in the area commenced

1961: Production at Western Areas Gold Mine (WAGM) commenced

1999: Placer Dome Western Areas (PDWA) Joint Venture (JV) formed

2000: Name changed to South Deep Gold Mine

2005: Twin Shaft Complex opened

2006: Gold Fields acquired Barrick’s 50% JV interest in the PDWA JV

2007: Gold Fields acquired all remaining WAL shares to own 100% of South Deep Gold Mine WAL listing terminated
Safety

Safety Trends

**LDIFR**

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<th>Year</th>
<th>Value</th>
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<td>F2009</td>
<td>5.78</td>
</tr>
<tr>
<td>F2010</td>
<td>2.8</td>
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<tr>
<td>F2011</td>
<td>2.4</td>
</tr>
<tr>
<td>C2011</td>
<td>1.82</td>
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**SIFR**

<table>
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<tr>
<td>F2009</td>
<td>2.11</td>
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<tr>
<td>F2010</td>
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<tr>
<td>F2011</td>
<td>0.84</td>
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<tr>
<td>C2011</td>
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**FIIFR**

<table>
<thead>
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<th>Year</th>
<th>Value</th>
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<td>F2009</td>
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<td>F2010</td>
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<td>F2011</td>
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<tr>
<td>C2011</td>
<td>0.06</td>
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</table>

[Image of group of people celebrating with a banner saying 1,000,000 Fatality Free Shifts]
Our People

- Employ approximately 3,700 people on operation
- Diverse workforce
- Well trained and qualified personnel
- World class medical facilities
- Wellness programme
  - “24 hours in the life of a miner”
- Organised labour
  - 72% NUM, 15% UASA and 14% non affiliated
Sustainable Development

Environmental Management

- Management of environmental aspects in line with latest legislative requirements
- Environmental Management Systems according to best practice international standards (ISO14001 certified)
- Water Management part of regional strategy
- International Cyanide Management Institute (ICMI) compliant
The primary reef targets are the MB’s and the EC’s.
Exploration Programme

- Surface exploration programme of R173 million
## Resources

### Measured & Indicated Resources

<table>
<thead>
<tr>
<th></th>
<th>Tonnes (Mt)</th>
<th>Grade (g/t)</th>
<th>Gold (‘000 oz)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Dec 10</td>
<td>Jun 10</td>
<td>Jun 09</td>
</tr>
<tr>
<td><strong>Classification</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Underground</td>
<td></td>
<td></td>
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<tr>
<td>Measured</td>
<td>41.5</td>
<td>40.5</td>
<td>41.6</td>
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<tr>
<td>Indicated (AI)</td>
<td>250.5</td>
<td>125.7</td>
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<tr>
<td>Total Above</td>
<td>292.0</td>
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<tr>
<td>Infrastructure</td>
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<td></td>
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<tr>
<td>Indicated (BI)</td>
<td>42.3</td>
<td>92.6</td>
<td>92.6</td>
</tr>
<tr>
<td>Total Below</td>
<td>42.3</td>
<td>92.6</td>
<td>92.6</td>
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<tr>
<td>Infrastructure</td>
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<tr>
<td><strong>Grand Total</strong></td>
<td>334.3</td>
<td>258.8</td>
<td>260.1</td>
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## Inferred Resources

<table>
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<th>Classification</th>
<th>Dec 10</th>
<th>Jun 10</th>
<th>Jun 09</th>
<th>Dec 10</th>
<th>Jun 10</th>
<th>Jun 09</th>
<th>Dec 10</th>
<th>Jun 10</th>
<th>Jun 09</th>
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<tbody>
<tr>
<td><strong>Underground</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inferred Al</td>
<td>17.2</td>
<td>78.0</td>
<td>78.0</td>
<td>6.3</td>
<td>5.8</td>
<td>5.8</td>
<td>3,460</td>
<td>14,566</td>
<td>14,566</td>
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<tr>
<td>Inferred (BI)</td>
<td>21.8</td>
<td>-</td>
<td>-</td>
<td>6.5</td>
<td>-</td>
<td>-</td>
<td>4,572</td>
<td>-</td>
<td>-</td>
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<tr>
<td><strong>Grand Total</strong></td>
<td>39.0</td>
<td>78.0</td>
<td>78.0</td>
<td>6.4</td>
<td>5.8</td>
<td>5.8</td>
<td>8,032</td>
<td>14,566</td>
<td>14,566</td>
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</tbody>
</table>

## Total Measured, Indicated & Inferred Resources

<table>
<thead>
<tr>
<th></th>
<th>Tonnes (Mt)</th>
<th>Grade (g/t)</th>
<th>Gold (‘000 oz)</th>
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</thead>
<tbody>
<tr>
<td><strong>Grand Total</strong></td>
<td>373.3</td>
<td>336.8</td>
<td>338.1</td>
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<tr>
<td></td>
<td>6.8</td>
<td>7.2</td>
<td>7.2</td>
</tr>
<tr>
<td></td>
<td>81,454</td>
<td>78,164</td>
<td>78,392</td>
</tr>
</tbody>
</table>
Approximately one third of those of Gold Fields, AngloGold Ashanti and Barrick
Mining Philosophy

Mining a massive orebody at depth

De-stress mining

- Depth Equivalent 1200m below surface
- De-stressed zone 30 - 40 Mpa 3000 - 4500 psi
- Front abutment stress 500 Mpa 72 500 psi
- Depth 2600m below surface
- Virgin Rock rock stress 75 Mpa 11 000 psi

Backfilling

- Large backfilled stope

Mechanisation

- Images of mining machinery and equipment
Reserving a great orebody

- Conventional Drifts & Drives
- Conventional Breast Mining
- Apparent Dip Drifts & Drives with Benching
- Conventional Destress Stoping
- Trackless Drifts & Benches
- Longhole Stoping
- Conventional Composite Mining
- Down Dip Accessed Destressing
Mining Methods – Drift and Bench Mining

1. Primary drift mining
   - Mining direction
   - 3.7m Advance per blast

2. Bench access

3. Bench mining
Mining Methods – Destress Mining

1. Stoping-drive mining
2. Advance stope-access-drive
3. Stoping-drive completion
Mining Methods – Longhole stoping

1. Longhole stope access
2. Slot development
3. Slot development
4. Stoping
5. Stoping

Completed slot

Slot raise
105 Development of intake and conveyer infrastructure

Development towards the Wrench fault (105 & 105 levels)

Build-up in Phase-1 NoW

Current to October 2015
Mine Design and Scheduling

Destress mining accessed from 105 Level South of the Wrench fault

105 SoW commence Jan 2013

110 Level Decline to SoW commence in October 2012

Continuation of the Phase-1 NoW at ~220Kt/m
Infrastructure development on 95 and 93 levels to access the Eastern portion of Phase-1 SoW (Block-A)
Start date Jan 2023
Current to Jan 2035

110 Level mining reaching SoW in 2020

Stoping on the four corridors South of Wrench (West Block-B)

Infrastructure development on 95 and 93 levels to access the Eastern portion of Phase-1 SoW (Block-A)
Start date Jan 2023

Current to Jan 2035
Stoping in the Eastern portion of Phase-1 SoW (Block-A)

Stoping in Phase-2

VCR mining

Mine Design and Scheduling

Current to Jan 2050
Completion of Phase-2

Completion of Phase-1 SoW (Block – A)

Current to Dec 2067
## Reserves

### Mineral Reserves at a gold price of R265,000/kg

<table>
<thead>
<tr>
<th>Classification</th>
<th>Tonnes (Mt)</th>
<th>Grade (g/t)</th>
<th>Gold (‘000 oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM – Proved</td>
<td>14.9</td>
<td>14.1</td>
<td>15.2</td>
</tr>
<tr>
<td>CM – Probable</td>
<td>1.8</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>NOW - Probable</td>
<td>56.2</td>
<td>42.5</td>
<td>42.6</td>
</tr>
<tr>
<td>SOW – Probable</td>
<td>83.3</td>
<td>17.5</td>
<td>17.5</td>
</tr>
<tr>
<td>OM – Probable</td>
<td>0</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Total Al</td>
<td>156.1</td>
<td>81.6</td>
<td>82.8</td>
</tr>
<tr>
<td>Probable (BI)</td>
<td>36.5</td>
<td>66.6</td>
<td>66.6</td>
</tr>
<tr>
<td>Phase 2</td>
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<tr>
<td>Total</td>
<td>192.6</td>
<td>148.2</td>
<td>149.4</td>
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</tbody>
</table>
Reserves

Approximately one third of those of Gold Fields, AngloGold Ashanti

Source: Goldval.com as at September 2010
Existing Mine Infrastructure

- **South Shaft**
- **Twins Main Shaft**
- **Twins Ventilation Shaft**
- **Metallurgical Plant**
- **Rock Capacity**
  - 120ktpm
  - 175ktpm
  - 195ktpm
- **Shaft damaged**
- **Intermediate Pump Stations**
- **80 Level Pumps & Refrigeration Plants**
- **83 Level Backfill Plant**
- **95a Level Pump Station**
- **Deepened Section**
- **94 Level Refrigeration**

**Challenge**
- Limited storage from 95 Level to 95a Level

**Colour Coding:**
- Red: Up Cast
- Green: Down Cast
- Gold: Rock Handling Capacity
Planned Mine Infrastructure – Vent Shaft Deepening

Headgear A-Frame early lift strategy
Completed in May 2011

Rock winder installation progressing to plan – all major components manufactured and delivered to the mine
Planned Mine Infrastructure – Backfill Infrastructure

Full Plant Tailings – Backfill plant under construction at South Shaft
Planned Mine Infrastructure – Tailings Storage Facility

Return Water Dam – lining complete and both return dams being filled

TSF – tailings deposition to cover the toe drains is in progress

Penstock - returning water to fill the return water dam

Completed Silt Trap and Neutralisation Plant
Planned Mine Infrastructure – Plant Expansion

330ktpm milling capacity
450ktpm downstream processing capacity

Leach extension earthworks
Planned Mine Infrastructure – Plant Expansion
Planned Mine Infrastructure – Electrical Infrastructure

- Eskom new 132KV overhead supply line
- 40MVA transformer No.5
- Substation extension
Enjoy your visit to South Deep