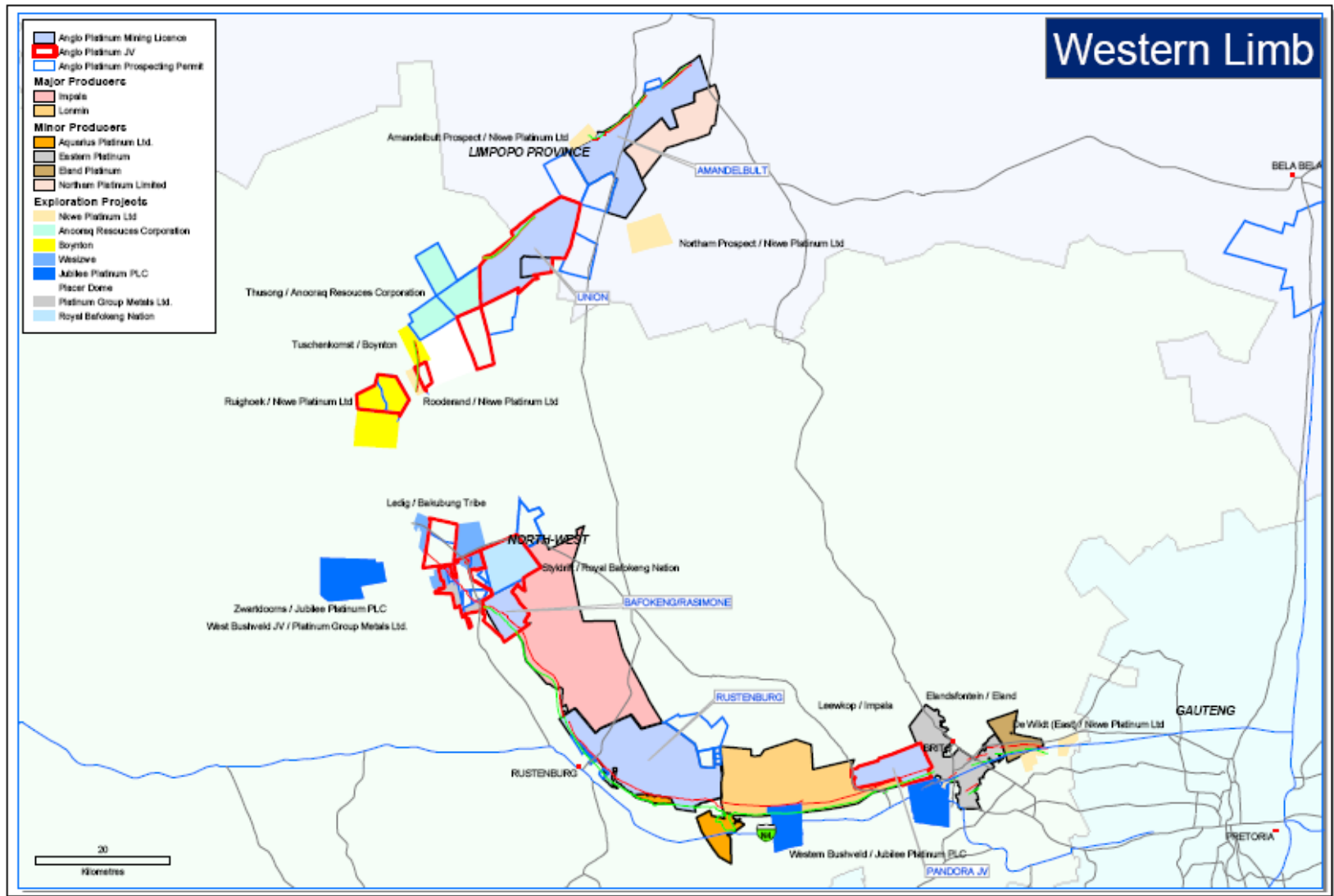


**SUSTAINABLE PLATINUM**





**Figure 2:-** Map showing the Western Limb mining operations in the BIC.

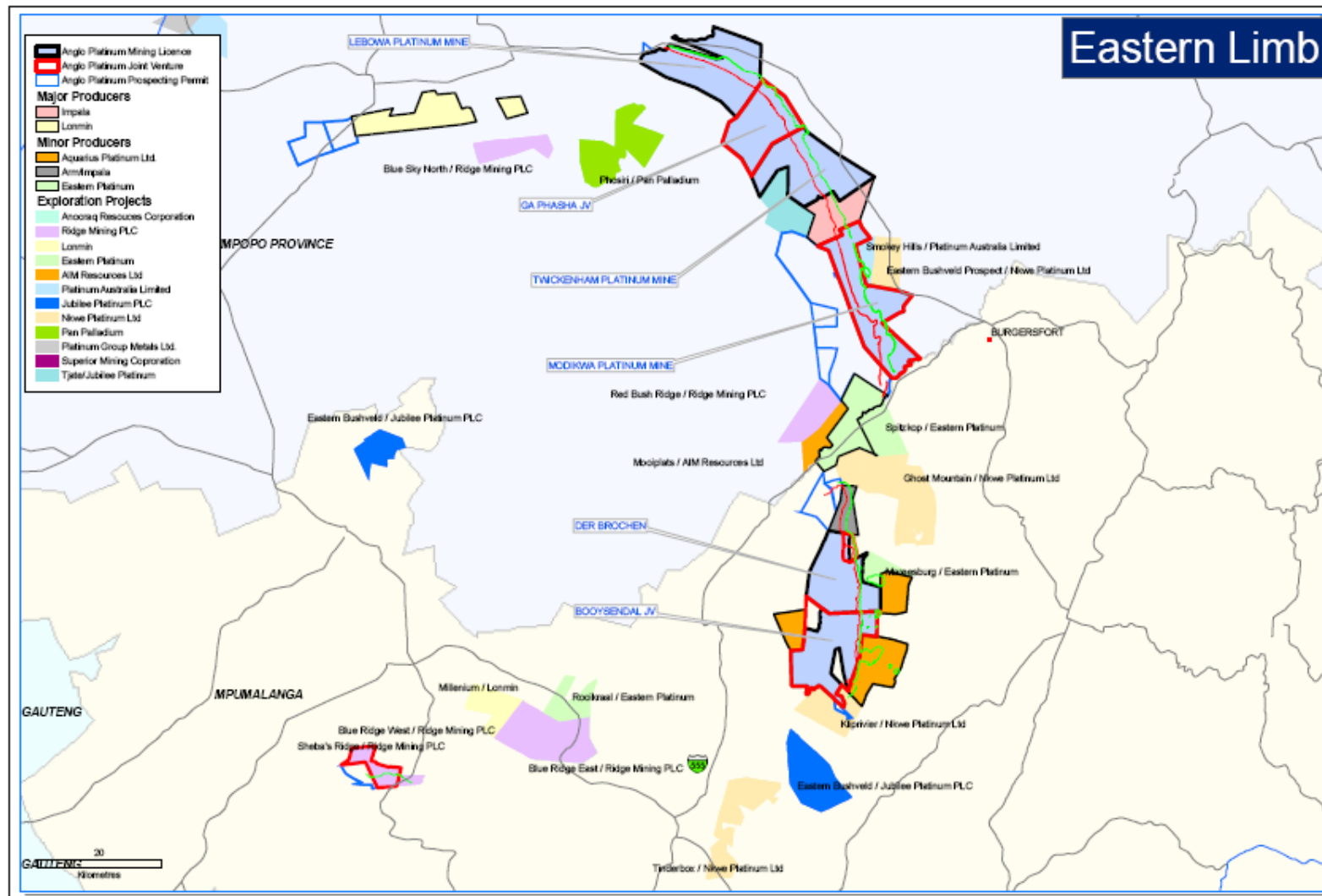


Figure 3:- Map showing the Eastern Limb of the BIC



<b>Platinum supply and demand</b>		
('000 oz)	<b>2006</b>	2005
<b>Supply</b>		
South Africa	<b>5 430</b>	5 115
Russia	<b>895</b>	890
North America	<b>365</b>	365
Others	<b>310</b>	280
<b>Total supply</b>	<b>7 000</b>	6 650
<b>Demand</b>		
Autocatalyst: gross	<b>4 380</b>	3 820
recovery	<b>(830)</b>	(770)
Jewellery	<b>1 740</b>	1 965
Industrial	<b>1 760</b>	1 660
Investment	<b>(30)</b>	15
<b>Total demand</b>	<b>7 020</b>	6 690
<b>Movement in stocks</b>	<b>(20)</b>	(40)
<i>Source: Johnson Matthey</i>		

**Figure 5:-** Platinum supply & demand.

Salient features of global supply and demand of platinum are shown in Figure 5.

The platinum producers produce a suite of metals including palladium, rhodium, ruthenium, osmium, gold, copper, nickel and cobalt. This summary report only contains information about platinum production.

Table 1 lists the main platinum producers in order of 2006 ounces produced and reflects historical production back to 2000. From the table it is evident Anglo Platinum, Impala Platinum (Implats), Lonmin and Northam are the top four producers. All data provided in the rest of this summary report relates only to these top four producers.

<b>HISTORIC PLATINUM PRODUCTION - SOUTHERN AFRICAN PRODUCERS</b>								
		<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
<b>Anglo Platinum</b>		<b>1814.2</b>	<b>2044.1</b>	<b>2170.1</b>	<b>2219.0</b>	<b>2438.3</b>	<b>2453.2</b>	<b>2816.5</b>
	Rustenburg	630.8	719.1	800.9	802.2	861.1	822.1	942.0
	Amandelbult	570.8	679.3	711.0	634.6	605.6	548.9	647.8
	Union	288.8	280.4	284.7	313.2	319.6	310.1	327.2
	PPRust	194.1	211.1	165.3	188.9	196.0	200.5	185.5
	Lebowa	72.2	89.1	102.0	105.1	113.6	110.0	109.2
	BRPM 50%	57.5	65.1	81.1	88.8	168.3	188.4	240.6
	Modikwa 50%	-	-	25.1	86.2	114.0	128.2	145.6
	Kroondal 50%	-	-	-	-	-	90.0	148.3
	Marikana 50%	-	-	-	-	-	-	12.8
	WLTR	-	-	-	-	57.1	55.0	49.0
	Mototolo 50%	-	-	-	-	-	-	8.5
<b>Implats</b>		<b>1199.0</b>	<b>1291.7</b>	<b>1387.0</b>	<b>1673.1</b>	<b>1974.0</b>	<b>1876.8</b>	<b>1897.7</b>
	Impala (Lease Area)	1020.0	1002.4	1025.0	1040.0	1090.0	1114.6	1125.3
	Marula	-	-	-	-	12.9	28.9	48.4
		179.0	289.3	362.0	633.1	871.1	733.3	721.0
<b>Lonmin</b>		<b>659.8</b>	<b>716.7</b>	<b>757.5</b>	<b>932.9</b>	<b>916.8</b>	<b>913.6</b>	<b>987.0</b>
	Marikana (Westplats EastPlats)	659.8	716.7	757.5	932.9	916.8	902.0	938.0
	Limpopo (Messina)	-	-	-	-	-	11.6	49.0
<b>Northam</b>		<b>190.4</b>	<b>171.6</b>	<b>162.2</b>	<b>199.6</b>	<b>205.6</b>	<b>200.0</b>	<b>222.0</b>
	Northam	190.4	171.6	162.2	199.6	205.6	200.0	222.0
<b>Aquarius</b>		<b>18.5</b>	<b>33.0</b>	<b>50.0</b>	<b>58.0</b>	<b>82.6</b>	<b>125.5</b>	<b>214.0</b>
	Kroondal 50%	18.5	33.0	50.0	51.5	60.9	93.5	126.0
	Marikana 50%	-	-	-	6.5	21.7	31.0	30.0
	Everest	-	-	-	-	-	-	54.0
	CTRP	-	-	-	-	-	1.0	4.0
<b>Eastplats / Barplats</b>		<b>-</b>	<b>14.5</b>	<b>37.9</b>	<b>23.8</b>	<b>2.0</b>	<b>6.0</b>	<b>36.5</b>
	CRM	-	14.5	37.9	23.8	2.0	6.0	36.5
<b>ARM</b>		<b>-</b>	<b>-</b>	<b>25.1</b>	<b>95.8</b>	<b>122.9</b>	<b>137.8</b>	<b>157.6</b>
	Modikwa 50%	-	-	25.1	86.2	114.0	128.2	145.6
	Nkomati	-	-	-	9.6	8.9	9.6	12.0
<b>Mimosa</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>23.4</b>	<b>47.9</b>	<b>64.0</b>	<b>69.0</b>
	Mimosa	-	-	-	23.4	47.9	64.0	69.0
<b>Zimplats</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>79.9</b>	<b>82.7</b>	<b>85.0</b>	<b>89.0</b>
	Zimplats	-	-	-	79.9	82.7	85.0	89.0

**Table 1:-** Platinum production from South African mines over the past 6 years

Table 2 below summarises the ore reserves held by the main platinum producers.

COMPARATIVE ORE RESOURCE TABLE – SOUTHERN AFRICAN PRODUCERS		AS AT	TONS (Mt)	GRADE (g/t 4e)	Pt (Moz)
<b>Anglo Platinum</b>		<b>Dec 06</b>	<b>6196.7</b>	<b>3.81</b>	<b>390.4</b>
	Rustenburg		369.1	6.0	40.9
	Amandeubult		322.6	6.2	38.1
	Union		243.2	5.8	26.6
	PPRust		2399.4	2.0	65.8
	Lebowa		488.8	6.3	45.5
	BRPM 50%		206.4	5.2	20.8
	Modikwa 50%		222.5	4.3	14.6
	Kroondal 50%		0.5	6.1	0.1
	Marikana 50%		2.8	3.7	0.2
	Twickenham		307.9	5.6	27.9
	Der Brochen		506.5	4.7	41.8
	Booyendal 50%		401.4	4.8	34.2
	Mototolo 50%		8.9	3.9	0.6
	Ga Pasha %		215.8	6.1	19.5
	Boikgantsho 50%		140.5	1.3	3.1
	Pandora 42.5%		67.2	4.1	5.1
	Sheba's Ridge 35%		271.1	0.8	3.8
	WBJ		22.1	4.3	1.8
<b>Implats</b>		<b>Jun 06</b>	<b>690.0</b>	<b>6.8</b>	<b>88.2</b>
	Impala (Lease Area)		548.8	7.2	74.3
	Marula		104.3	6.2	11.4
	Two Rivers 45%		36.9	3.8	2.5
<b>Lonmin</b>		<b>Sep 06</b>	<b>1408.0</b>	<b>4.7</b>	<b>114.6</b>
	Marikana (WestPlats EastPlats)		793.2	4.9	75.0
	Limpopo (Messina) Phl		183.0	4.6	13.6
	Akanani		364.6	4.4	20.8
	Pandora 42.5%		67.2	4.1	5.1
<b>Mvelaphanda</b>			<b>520.2</b>	<b>5.0</b>	<b>46.5</b>
	Northam	<b>Jun 06</b>	95.1	5.9	10.5
	Pandora	<b>Sep 06</b>	23.7	4.1	1.8
	Booyendal 50%	<b>Dec 06</b>	401.4	4.8	34.2
<b>Aquarius</b>		<b>Jun 06</b>	<b>88.4</b>	<b>4.5</b>	<b>7.3</b>
	Kroondal PSA1		30.3	5.9	3.2
	Marikana PSA2		18.4	4.9	1.7
	Everest		39.7	3.3	2.4
<b>ARM</b>			<b>267.5</b>	<b>4.2</b>	<b>17.6</b>
	Modikwa 50%	<b>Dec 06</b>	222.5	4.3	14.6
	Two Rivers 55%	<b>Jun 06</b>	45.0	3.8	3.0
<b>Eastplats/Barplats</b>		<b>Jun 06</b>	<b>474.6</b>	<b>4.2</b>	<b>31.6</b>
	CRM		89.7	4.4	7.6
	Kennedy's Vale		384.9	4.2	23.9
<b>Ridge Mining</b>			<b>554.8</b>	<b>1.0</b>	<b>9.9</b>
	Blue Ridge		51.1	3.2	2.9
	Shebas Ridge 65%		503.7	0.8	7.0
<b>Anooraq</b>		<b>Dec 06</b>	<b>356.3</b>	<b>4.2</b>	<b>22.6</b>
	Ga Pasha 50%		215.8	6.1	19.5
	Boikgantsho 50%		140.5	1.3	3.1
<b>Platmin/Boyntons</b>			<b>81.2</b>	<b>4.4</b>	<b>6.8</b>
	Pilanesburg		68.6	4.4	5.8
	Loskop		12.6	4.4	1.0
<b>Mimosa</b>		<b>Jun 06</b>	<b>128.3</b>	<b>4.1</b>	<b>7.9</b>
<b>Zimplats</b>		<b>Jun 06</b>	<b>1567.1</b>	<b>4.1</b>	<b>87.2</b>
<b>Platinum Group Metals (PTM) – WBJ</b>		<b>Dec 06</b>	<b>22.1</b>	<b>4.3</b>	<b>1.8</b>
<b>Eland Plats</b>		<b>Dec 06</b>	<b>165.4</b>	<b>4.1</b>	<b>13.3</b>
<b>Afplats - Leeuwkop</b>		<b>Jul 06</b>	<b>427.0</b>	<b>3.9</b>	<b>29.9</b>

Table 2:- Ore reserves of the South African producers

Based on 2006 production rates, as shown in Table 1, and publicly announced ore reserves, as listed in Table 2, it is evident that the South African life of these operations is as follows:-

- Anglo Platinum - 138 years
- Impala Platinum - 46 years
- Lonmin Platinum - 116 years
- Northam - 209 years

Clearly the industry has extensive resources and therefore can make a valuable contribution to South Africa's development over an extended period of time.

## **2. Corporate Social Responsibility Challenges**

The South African platinum mining industry is facing a number of corporate social responsibility challenges. Given South Africa's apartheid past, there is a legacy of under development that has resulted in significant levels of unemployment, illiteracy and resultant poverty. Communities around many of the platinum mining operations in the BIC are the most underdeveloped and poverty stricken in the Country. This is more prevalent on the eastern limb of the BIC around the likes of Lebowa, Modikwa and Everest Platinum mines.

This section of the summary document details the typical stakeholder engagement activities of the industry, summarises the direct economic contribution the four main platinum producers are making to the South African economy, lists the key challenges associated with addressing safety, health, environment and community issues.

## 2.1. Stakeholder Engagement

The platinum industry engages with a wide cross section of stakeholders. Table 3 is a summary table listing the industries key stakeholders and modes of engagement.

Stakeholder Category	Modes of Engagement
Investors	Meetings, results presentations, annual reports, circulars, media, index questionnaires.
Employees	Meetings, group functions, internal publications , intranet and e-mail.
Trade Unions and Associations	Partnership structures and task teams.
Customers and industry bodies	Meetings, written and telephonic correspondence.
Business Partners	Meetings, written and telephonic correspondence.
Major Contractors	Contract meeting, written and telephonic correspondence.
Major suppliers	Contract meeting, written and telephonic correspondence
Communities	Public open days, formal meetings with community leaders, news letters, interested and affected party meetings, written and telephonic correspondence.
Governmental Bodies	Formal meetings, presentations, document submissions, consultations, written and telephonic correspondence.
Non- Governmental Agencies – including social and environmental groups.	Contractual meetings, workshops, informal meetings, written and telephonic correspondence.
Educational Institutions	Meetings, workshops, reports and other written and telephonic correspondence.

**Table 3:-** Typical stakeholder groups the platinum producers interact with.

## **2.2. Economic Contribution**

The total value add<sup>1</sup> of the four main platinum producers to the South African economy in 2006 was R53.4<sup>2</sup> billion out of an industry total of R120 billion<sup>3</sup>.

The platinum industry paid direct taxes (over and above employee and other taxes) to the tune of R5.9 billion and employed some 165 000 people, of these 107 000 are fulltime employees and the remainder are contractors. The industry has in recent years overtaken gold as the biggest foreign exchange earner for South Africa. South Africa's GDP in 2006 was R450 bn and the total value add from the mining industry was R120 bn.

## **2.3. Safety**

The industries safety performance is unacceptable. In 2006, 42 workers lost their lives in mining related accidents, 18 at Anglo Platinum, 12 at Impala, 6 at Lonmin and 5 at Northam.

The LTIFR in the industry varies with Lonmin and Anglo Platinum both recording LTIFRs in the region of 2.5. Both Impala and Northam are less at 0.7 and 1.48 respectively. This is deemed to be attributed to different definitions being applied to lost time injuries..

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<sup>1</sup> Salaries, wages and other benefits net tax + taxes and other to government + providers of capital + re-invested in the Group.

<sup>2</sup> Average exchange rate in 2006 R6.77 to the US\$.

<sup>3</sup> The South African Chamber of Mines Sustainability and Transformation Report 2007.

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The table below shows some more recent benchmarking of safety performance between Anglo Platinum, Lonmin and Impala.

	Jul-Dec 2005	Jan-Jun 2006	Jul-Dec 2006	Jan-Jun 2007
<b>Anglo Platinum</b>				
Fatalities in the half year		8	10	18
Fatality rate per million ounces		5.93	7.41	13.33
Fatalities in financial reporting year			18	
Fatality rate per million ounces			6.67	
Fatality rate per 200 000 hours			0.019	
LTIFR per 200 000 hours reported			2.52	
<b>Impala</b>				
Fatalities in the half year	5	2	7	6
Fatality rate per million ounces	9.09	3.64	12.73	10.91
Fatalities in financial reporting year		7		13
Fatality rate per million ounces		6.36		11.82
Fatality rate per 200 000 hours		0.02		
Fatalities in year corresponding to AP reporting year			9	
Fatality rate per million ounces			8.18	
Fatality rate per 200 000 hours			0.017	
LTIFR per 200 000 hours reported			0.79	
<b>Lonmin</b>				
Fatalities in the half year		4	2	
Fatality rate per million ounces		8.33	4.17	
Fatalities in financial reporting year			6	
Fatality rate per million ounces			6.25	
Fatality rate per 200 000 hours calculated			0.038	
LTIFR per 200 000 hours reported			2.5	

**Table 4:-** Safety benchmarking between Anglo Platinum, Impala and Lonmin

The root causes of the industries poor safety performance are multi-faceted and are associated with, *inter alia*, non adherence to rules and procedures, poor ground conditions resulting in rock falls, literacy levels, social conditions and failure of equipment and machinery. There is no single solution and any approach to addressing safety needs to be multi faceted itself.

The industry is doing a lot to address its safety performance. Various forums, such as the Bushveld Safety Forum, have been established where the industry discusses safety issues on a collaborative basis. The industry is typically addressing safety through both a technical and value based approach. Details of some of the typical engineering solutions that are being applied to improve safety performance are shown in the case study in Figure 6.

More recently there has been a shift in the approach of some of the mining houses to address what have typically been known as the “soft issues” that could lead to an improved safety performance. These have typically been clustered as “adaptive solutions” to improve safety and include alignment of values, behaviour based safety and creating a caring and “connected” work environment between management and workers.

## ENGINEERING SOLUTIONS TO BE APPLIED TO IMPROVE SAFETY PERFORMANCE

Anglo Platinum has committed to eliminating or minimising the hazards associated with the people/machine interface through the development and use of better technology, enhanced monitoring and enforcement. Various other interventions are under way at our operations to reduce the number of incidents associated with various agencies to save lives. By agency these include:

### Transport

Locomotive proximity devices, which warn drivers of other locomotives nearby, are being installed to assist with collision avoidance. All operations will have these devices installed early 2007.

Locomotive guard cars will ensure that guards are seated in well-constructed cars at the opposite end of each train at all times while the train is in motion. The guard will be able to sound a siren should any dangerous condition be encountered, which will indicate to the driver to stop. White and red lights will be fitted to each locomotive and guard car. The white light shines in the direction of travel, with the red at the rear and a flashing red when standing. The complete installation of guard cars and lights is expected by the third quarter of 2007.

The fixed roll-bar system on air loaders has proven unsatisfactory and will be replaced with two retractable arms that can be adjusted to prevent the loaders from toppling. All operations are currently installing these stabilising arms for completion by March 2007.

BRPM has implemented a pilot system that will reduce accidents caused by trackless vehicles colliding with people due to poor visibility. If successful, the system will be implemented at all operations.

Many accidents occur when drivers of heavy machinery equipment cannot see or detect vehicles close to their own vehicles. Cameras and monitors to show blind spots, radar detectors around haul trucks and rotating amber lights, LED indicator lights and additional signs are being installed on all dump trucks and drill rigs. In addition, driver fatigue monitors, reverse mode cameras and bull bars are on order to be installed by March 2007.

### Winches

Anglo Platinum is continuing to install systems at winching operations to allow any person to signal to the operator at any point along the installation to stop the winch. Two commercially available devices are being tested. Regulations were passed in December 2005 legislating such systems and therefore Anglo Platinum is compliant with legislation.

### Mud rush

Two main interventions have been identified to reduce accidents from mud rushes. These include moving operating controls 15 metres away from the box, or a Spillminator box, which operates with two independent doors. Over 600 Spillminator boxes have been installed to date at Amandelbult mine with great success. These boxes are easy to install, have rock-bolted bulkheads and conform to SANS 10208. By mid-2009, all operating boxes in the Group will be upgraded to this standard.

### Other

New upgraded and enhanced conveyor fire detection and suppression devices are being installed in a programme scheduled for completion in three years.

To reduce noise exposure and electrical power consumption, electric stope drills are undergoing extensive testing and pilot implementation for Anglo Platinum to reach its commitment of reducing noise-induced hearing loss to less than 10% by the end of 2008. In addition, the Brakspruit shaft will be testing various equipment to operate electric drilling machines traditionally operated by compressed air.

Extension of the business case is also currently being established for centralised blasting Group-wide.

Anglo Platinum will be investing R400 million in these safety initiatives over the next three years.



**Figure 6:-** Details of some engineering solutions being applied to improve safety

## **2.4. Environment**

The four main platinum producers are all ISO 14001 certified and have been for the past two years.

### **Sulphur Dioxide**

The single biggest environmental issue the industry has had to address in recent years is how to reduce sulphur dioxide (SO<sub>2</sub>) emissions from smelting process. The average daily SO<sub>2</sub> emissions recorded in 2006 were 17 t/day from Anglo Platinum's Waterval Smelter, 29 t/day from Impala and 7,9 t/day Lonmin. All three of the main producers have installed different technology to reduce emissions with Anglo Platinum going for a new converting process known as the ACP, whereas both Lonmin and Impala have chosen to continue with PS technology and install off gas scrubbing plants.

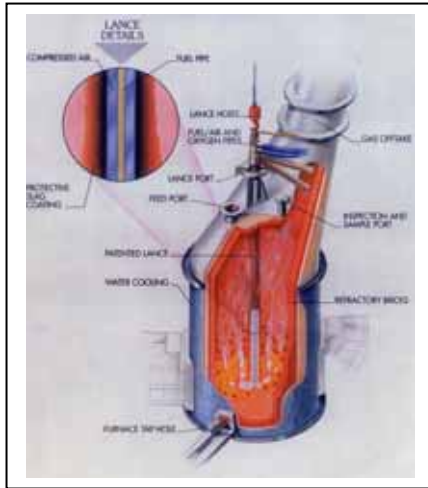
### **ACP – A Case Study**

Anglo Platinum's Waterval Smelter was emitting excessive levels of sulphur dioxide (SO<sub>2</sub>) into the atmosphere from its PS converters (see photo below) in the early part of 2001-2002. A technological solution had to be found how to reduce SO<sub>2</sub> emissions to levels well below legal requirements whilst greatly increasing overall production.



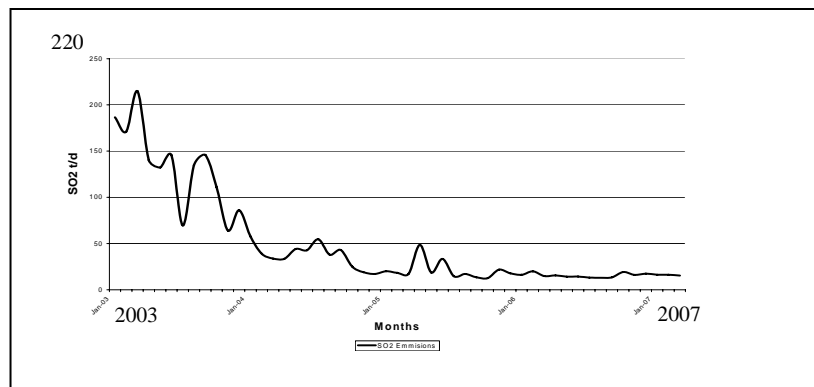
**Figure 7:-** Photograph of emissions prior to ACP and a typical PS converter

A team of Anglo Platinum engineers and metallurgists embarked on world wide search for the best means of reducing sulphur emissions from pyro-metallurgical processes. No one technology was able to provide the solution Anglo Platinum needed. After design modifications, Anglo Platinum chose an Ausmelt type technology that was modified and called the Anglo Platinum Converting Process. A schematic of the converter is shown in Figure 8. Feed in the converter is through a lance system and the vessel remains completely enclosed allowing for maximum off gas capture.



**Figure 8:-** Schematic of the ACP converter

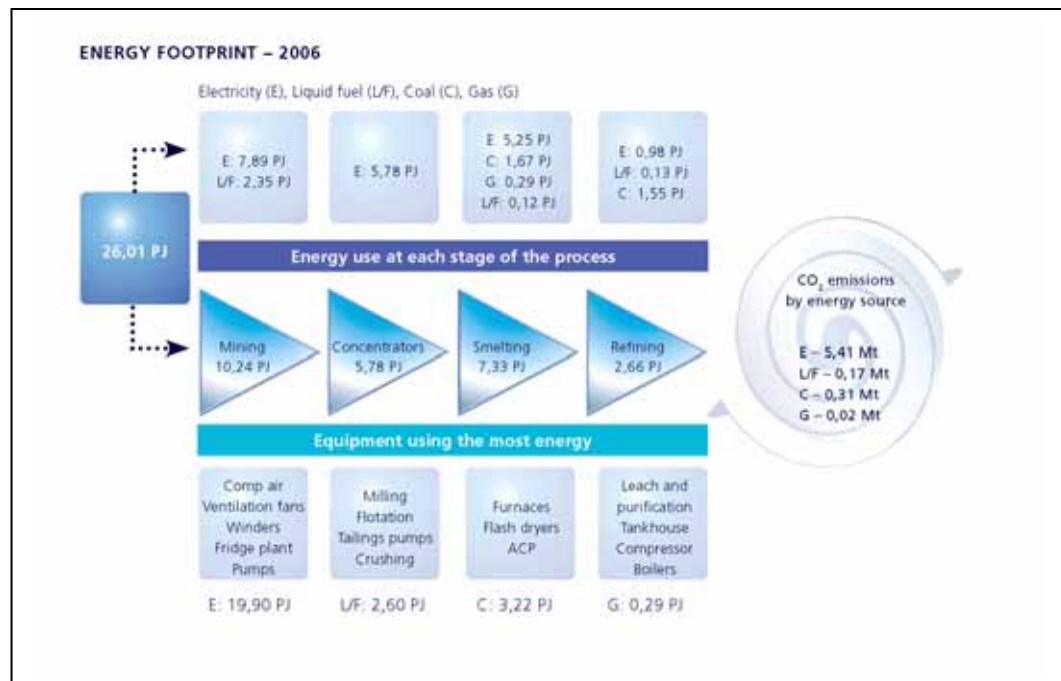
This process was commissioned during 2003, 2004 and 2005 and is achieving the desired results with SO<sub>2</sub> emissions having being reduced from approximately 220 tonnes per day on average to less than 16 tonnes per day, or 0.002 tons/oz produced. See graph in Figure 9.



**Figure 9:-** Graph showing reduced SO<sub>2</sub> emissions from Waterval Smelter

### Climate Change and Greenhouse Gas Emissions

Climate change issues are growing in significance. Whilst the platinum industry is not a major emitter of direct greenhouse gas emissions, its secondary emissions are substantial. In 2006 the industries' greenhouse gas emissions were 9.4 million tons CO<sub>2</sub> equivalent. The three main platinum producers are all signatories to the Department of Minerals and Energy's Energy Efficiency Accord which requires industry to reduce energy consumption by 15% by 2015, with 2004 being the baseline year. By improving energy efficiency the platinum producers will reduce greenhouse gas emissions as typically 90% of all CO<sub>2</sub> emitted by platinum producers are associated with secondary emissions from the use of electricity. Figure 10 is a schematic showing typically where Anglo Platinum uses energy in the platinum mining and refining process and shows the amount of CO<sub>2</sub> emitted. From the figure it is evident that Anglo Platinum emitted 5.91 Mt of CO<sub>2</sub>, which equates to 2 tons of CO<sub>2</sub> per ounce of platinum produced (Includes direct and indirect emissions of CO<sub>2</sub>).



**Figure 10:-** Schematic showing Anglo Platinum's 2006 energy footprint.

The platinum producers typically have energy efficiency projects underway to reduce energy consumption and some of the key Anglo Platinum projects are summarised below:-

- Compressor project at Amandelbult saving 5.5 MW instantaneous power and a total of 75 978 GJ
- Electric drilling (uses 0,12 kWh/meter versus 8kWh/metre for pneumatic drilling)
- Low energy lighting at Amandelbult has saved an estimated 2.1 MW at pilot level. Total savings will be about 2.4% of the mines energy account
- Solar water heating at Mototolo change house

Further details of these and other projects are included in the case study below.

## ENERGY SAVING

### Compressed air

Compressed air is a major source of energy in an underground mine and, as a result, pneumatically driven ancillary equipment, such as chainsaws, dewatering pumps, loaders and drills, has been introduced over the years, increasing the dependency on compressed air. Compressors operate at a rate from 25 000 m<sup>3</sup>/hour, consuming 2,2 MW of power, to 210 000 m<sup>3</sup>/hour, consuming 15 MW of power, to maintain an average system pressure of 500 kPa.

HVAC International, a registered energy services company, is installing a remote-controlled supervisory control and data acquisition system to optimise energy use. The objective of this system is to optimise Eskom (the national energy utility) tariffs by running compressors during off-peak periods, as well as saving energy by running the optimum number of compressors at any time. The system will also facilitate improved compressed air operating pressure by starting the required machines in time as predicted by the system. A pilot study at Amandelbult section has yielded potential savings of 5,5 MW of instantaneous power, depending on the compressor running time saved. This system will be rolled out at Rustenburg section in 2007, followed by Amandelbult section and Lebowa.

Assuming a saving of six hours per day during the week and a 24-hour saving on weekends yielding 2 814 hours saved per year, this would translate to 75 978 GJ saved and approximately R3,2 million saved.

### Electric drilling

Anglo Platinum drills approximately 50 million blast holes per annum to access and extract the ore bodies. In 1998, AngloGold contracted Hilti to develop an electric drill as a replacement for compressed air drills. Following extensive prototype development and testing, the electric drill has finally proven a viable replacement for the pneumatic drill. While the drilling rate is similar to that of the pneumatic drill, the electric drill dramatically reduces noise levels and eliminates the need for oil lubrication. Electric drilling is also vastly more energy efficient in comparison with compressed air drilling (0,12 kWh/metre drilled for electric drilling, compared with 8 kWh/metre drilled for pneumatic drilling).

Rollout of the electric drill is in progress at Townlands and Brakspruit shafts in Rustenburg, and for the Brakfontein (Lebowa) and Twickenham projects. At Amandelbult, excellent production figures have already been achieved in sections using electric drilling. The rollout plan for 2007 involves expanded use of electric drills where compressed air supply pressures and volumes are problematic, as well as where it makes economic sense.

### Low-energy lighting

Anglo Platinum has identified low-energy lighting as a means to contribute to the energy-saving target as committed to internally. Initially, conversion from incandescent lamps to compact fluorescent lamps and from conventional switch-start fluorescent lamps to fluorescent lamps with electronic control gear, was envisaged. Voltex, a registered energy services company, had a better solution, the Voltex Mine Light (VML), an industrial-quality compact fluorescent light.

A pilot rollout was done at Amandelbult mine, and a total power saving of 2,1 MW was measured. Some 30 640 lamps were fitted underground, which all burn 24 hours per day, resulting in a meaningful energy saving of 2,4% of the mine's energy account. Lamp replacement at all mines will begin early in 2007 initially with Lebowa, Union and BRPM. Expected energy saving for Anglo Platinum is over 1%.

## **Water Use**

The industry is also a major user of water and in 2006 used 74.3 million m<sup>3</sup> of water. There are numerous programmes to increase recycling by amongst other things using grey water. For example Anglo Platinum and Impala recently concluded agreements with the Rustenburg Local Municipality to take 60 MI/day of purified sewerage effluent for use in the concentrator plants.

## **2.5. Health**

### **Noise Induced Hearing Loss**

One of the major issues the industry is facing with respect to employee health relates to noise induced hearing loss (NIHL). In 2006 1339 new cases of NIHL were compensated. There are various initiatives to eliminate NIHL by 2013 including machine silencing, technology replacements and improvements in personal protective equipment to reduce employee exposure.

### **HIV/AIDS**

The HIV/AIDS pandemic remains a major concern for the industry. All producers have VCT programmes with the uptake varying. Anglo Platinum achieved 48% testing and 75% counselling in 2006, whereas Impala and Lonmin were only able to achieve 20 %and 16% respectively.

The total number of industry employees on ART at the end of 2006 was 3367. Prevalence rates appear to be in the order of 20% of employees HIV positive. The total number of employees across the industry on wellness programmes at the end of 2006 was 7442.

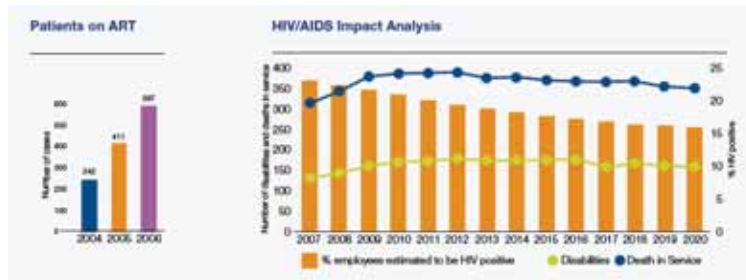
**LONMIN'S HIV/AIDS PROGRAMME**



HIV is a serious disease with wide-spread socio-economic ramifications. In South Africa, where the public debate concerning treatment options is ongoing, we remain committed to minimising the spread and impact of the pandemic and associated opportunistic diseases to both our employees and the communities that host our operations. Lonmin considers HIV/AIDS as a serious but manageable risk and for a number of years has adopted a series of proactive programmes that promote preventative and treatment measures. We aim to work in partnership with stakeholders to deliver cost-responsible health-care which will meet the needs of our employees, their dependants and the GLC. We track critical milestones, to ensure that we achieve this outcome.

**Business Risk Monitoring**

We continue to monitor the HIV risk on the sustainability of the business and conducted an update on the HIV/AIDS impact analysis that was performed in 2003. The analysis enables us to compare our experience to industry peers and determines the impact of HIV on the long-term sustainability of the operations. The results presented in the graph below, conclude that the disease does not pose a significant threat to the long-term sustainability of our operations. The relatively low proportion of HIV/AIDS related costs as a fraction of labour cost does not pose a risk to the business.



**Awareness & Education**

Routine education on TB, STIs, HIV and ART is provided to all employees at the annual mine induction. This is reinforced by awareness campaigns conducted at the operations throughout the year. A campaign will typically provide materials and further education on these diseases at an information booth, and will involve a local artist, sports star, leader or HIV project group to present a visual display such as industrial theatre or a talk on the issues. All awareness campaigns are equipped to facilitate and provide easy access to VCT and are extended to community members.

**Voluntary Counselling and Testing (VCT)**

In 2004, we undertook to test 100% of our workforce for HIV by 2010. In 2005, 1,615 employees (representing 8% of the workforce) were tested followed by 3,236 in 2006. This progress is encouraging and indicates an increase of more than 10%. We will continue to improve access to counselling and testing facilities and to focus on encouraging employees to be aware of their HIV/AIDS status.

**Anti-Retroviral Therapy (ART)**

The Lonmin ART programme has presented some excellent results since inception in January 2004. To date, 898 persons have been offered treatment on the programme and we have exceeded our target of having 550 patients on the ART programme by end of the 2006 financial year. The challenge remains to monitor and manage the number of patients that voluntarily discontinue treatment, through active follow-up and counselling. Currently each year around 12% of patients that enter the programme have voluntarily discontinued treatment.

## 2.6. Communities

The industry has made a significant contribution to communities that surround the mines. In 2006 the industry spent R 115 million on socio-economic development projects. These projects ranged from providing new schools to building community infrastructure such as roads.

The mining companies have ensured that their socio-economic development projects integrate with local economic development programmes of the local municipality through the integrated development planning process. BenchMarks recently reported that the industry often confuses CSR with philanthropy. It is the industries view that this is largely not the case and the social and environmental considerations of the business are integrated with key operational decisions and structures. Readers are referred to the work by:-

- Hamann, R. (2004). Corporate social responsibility, partnerships, and institutional change: The case of mining companies in Rustenburg, South Africa. In *Natural Resources Forum* 28 (2004 Pgs 278-290).
- Hamann, R. and Bezuidenhout, A. (2003). Case study of corporate social responsibility in the South African Mining Sector.

Anglo Platinum has also responded to BenchMarks about certain inaccuracies in their report. These have been communicated to BenchMarks and are included in Appendix 1 of this document for reference.

Typical areas where the mining companies' focus their socio-economic spend include:-

- Infrastructure: contributing to the sustained improvement of physical infrastructure in underdeveloped areas.
- Education: supporting the development of quality education centres and improvements in mathematics, science and English-language teaching and learning at primary and secondary schools.
- Health and welfare: supporting initiatives geared at enhancing government's delivery of primary healthcare and welfare services to the underprivileged sector.

- Small donations: contributing to charitable causes, sport and community development events.
- Community capacity-building: supporting initiatives to improve the skills of community members and their organisations.
- Small, medium and micro enterprise development: supporting programmes intended to promote entrepreneurship in mine communities and labour sending areas.

An example of one of the education projects is detailed in the case study on the next page.

### ANGLO PLATINUM SCHOOLS PROJECT (APSP)

Anglo Platinum believes the greatest opportunity to effect meaningful socio-economic development comes from making investments in our youth. In 2006, Anglo Platinum spent R12,3 million on education projects. The exact developmental impacts of these projects need to be assessed from time to time as part of the APSP. Accordingly, Anglo Platinum is assessing the impact of the company's financial contributions to the schools project. It is important that we determine whether our investments are having a significant impact on the academic performance of learners within our sphere of influence.

The APSP is divided into six core areas: learner enrichment, capacity building, educator sponsorship, infrastructure/materials support, special programmes and bursaries.

The approach is twofold: the short-term approach, which is learner-centred through the learner enrichment programme, and the long-term approach, which is educator-centred through the educator sponsorship programme, and infrastructure and material support.

The learner enrichment programme takes learners identified as either top performers or high-potential candidates and offers them specialised courses to assist in their academic development. The most significant of these projects is the Edumap project that enrolled 40 learners into a one-year residential learning academy to raise their level of academic excellence to meet Anglo Platinum's bursary requirements. Over the last three years, 60 learners have been involved in the programme, achieving 58 higher-grade maths passes with 27 distinctions and 60 higher-grade science passes with 15 distinctions, as well as 12 Anglo bursaries.

The educator capacity building programme intends to improve the overall skill levels of educators and administrators in our local schools. The aim is to achieve quality learning in maths, sciences and technology.

These two project areas have been designed to work in concert with one another to increase the number of learners from traditionally under-resourced schools, within our sphere of influence, reaching higher levels of education and ultimately improving the skills base from which we source our workforce.

A comparison of learner results between schools in the Rustenburg and Lebowa areas shows different results. Children in the Lebowa area have not been offered the same level of instruction as children in the Rustenburg area. Moreover, the infrastructure, facilities and material are lacking in the Lebowa area.

Findings such as this led us to re-evaluate the objectives of APSP, our investments in education and the focus areas thereof.



In order to gain access to the platinum bearing ore there are occasions where communities need to be relocated. One such relocation is currently underway at Ga Puka and Ga Sehaolelo at PPL Mine. There has also been a previous resettlement at PPL involving the Ga Pila community. Details of these resettlements are included in the case study below.

#### Resettlement projects receiving media attention in 2006

There was much negative media publicity for Anglo Platinum during 2006 due to our alleged heavy-handed approach to dealing with local communities. The issues that attracted the most attention included the resettlements of Ga Puka and Ga Sekhaolelo to the Armoede farm and previous resettlement of Ga Pila to the Sterkwater farm, both near PPRust mine. The resettlements became necessary as mining activities encroached on the communities and Anglo Platinum was concerned about the safety of residents.

After an extensive consultation process involving various government departments, community leaders and members, it was agreed that the new townships to be developed would include roads, services, schools, churches, businesses and recreation facilities. The two resettlements will see approximately 1 700 households moved into houses of similar size to the existing dwelling and each household would receive a resettlement allowance. The approximate cost to be incurred during the resettlements is R800 million. In addition, the new communities will benefit from grazing and agricultural



Existing village

land on adjacent properties, job creation and skills development through the use of local SMMEs in construction. Bursaries have also been made available for local students' tertiary education. Planning for these resettlements was conducted in accordance with the requirements of South African legislation, the Chamber of Mines resettlement guide, the World Bank guidelines and the new safeguard policies for resettlement.

Despite this, some relocated occupants of the new houses at Sterkwater have become dissatisfied with the maintenance of services. Anglo Platinum handed over the responsibility for maintenance of services at Sterkwater to the local municipality on completion of construction and the relocation. It would appear that capacity constraints within the municipality have meant that service provision has become somewhat erratic at times and has led to the residents, who do not receive an adequate response from the municipality, blaming Anglo Platinum.

Anglo Platinum has learnt from this relocation experience. The Group is working very closely with local municipalities to ensure there is capacity to maintain service delivery before responsibility is handed over. In future, the Group will also ensure that post-resettlement monitoring programmes, management plans and consultative forums are established to deal with post-relocation grievances and issues.



New houses – Ga Pila



New houses – Ga Puka

### **3. CONCLUSION**

This summary report has summarised some of the key sustainability challenges the four main platinum producers, including Anglo Platinum, Impala Platinum, Lonmin Platinum and Northam, are addressing in South Africa.

The industry is undoubtedly having a significant positive economic impact on the South African economy with a total value add in 2006 of R53,4bn (total mining industry value add in South Africa is R120 bn) and more than 150 000 people employed directly by the industry.

There are however a number CSR challenges that the industry faces, these include:-

- Dramatically improving the industries safety performance;
- Continuing to reduce sulphur dioxide emissions through the deployment of new technology;
- Improving energy efficiency by 15% by 2014 (2004 baseline year) in order to amongst other things reduce CO<sub>2</sub> emissions and reduce the industries impact on climate change;
- Ways of improving water efficiency and increased salt loadings;
- Health issues with respect to noise induced hearing loss and HIV/AIDs; and
- Community development.

A few case studies that typify what the industry is doing have been included in the report. More detailed information is included in each of the main platinum producers sustainable development reports, all of which are available on the companies' internet sites.