

ANGLOGOLD LTD  
Form 20-F  
April 07, 2003

As filed with the Securities and Exchange Commission on April 4, 2003

**United States Securities and Exchange Commission**

**Washington D.C. 20549**

**Form 20-F**

REGISTRATION STATEMENT PURSUANT TO SECTION 12(B) OR 12(G) OF THE SECURITIES EXCHANGE ACT OF 1934 OR  
ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934 OR  
TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934

**FOR THE FINANCIAL YEAR ENDED DECEMBER 31, 2002**

Commission file number: 0-29874

**AngloGold Limited**

(Exact Name of Registrant as Specified in its Charter)

**Republic of South Africa**

(Jurisdiction of Incorporation or Organization)

**11 Diagonal Street**

**Johannesburg, 2001**

**(P.O. Box 62117, Marshalltown, 2107)**

**South Africa**

(Address of Principal Executive Offices)

**Securities registered pursuant to Section 12(b) of the Act:**

<u>Title of Each Class of Each Exchange on Which Registered</u>	<u>Name</u>
American Depositary Shares Exchange	New York Stock
Ordinary Shares York Stock Exchange*	New

\*Not for trading, but only in connection with the registration of American Depositary Shares pursuant to the requirements of the Securities and Exchange Commission

**Securities registered pursuant to Section 12 (g) of the Act:**

None

**Securities for which there is a reporting obligation pursuant to Section 15 (d) of the Act:**

None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

Ordinary Shares of 25 ZAR cents each 222,622,022*	
A Redeemable Preference Shares of 50 ZAR cents each	2,000,000
B Redeemable Preference Shares of 1 ZAR cent each	778,896

\* Reflects the effects of the 2 for 1 split of the ordinary shares of AngloGold Limited which became effective at close of business on December 24, 2002. Concurrently with the stock split, the ratio of ordinary shares to American Depositary Shares has changed to one ordinary share equalling one American Depositary Share.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days:

Yes

No

Indicate by check mark which financial statement item the registrant has elected to follow:

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## **Presentation of information**

### **AngloGold Limited**

In this annual report on Form 20-F, references to AngloGold, the company and the group, are references to AngloGold Limited or, as appropriate, subsidiaries and associate companies.

## **Financial information**

### ***Sub-division of ordinary shares***

With effect from close of business on December 24, 2002, AngloGold's ordinary shares were sub-divided on a 2 for 1 basis. All references to ordinary shares, and all related calculations have been restated to take cognizance of this sub-division. In addition, concurrently with the split of ordinary shares, the ratio of ordinary shares to American Depositary Shares has changed to one ordinary share equalling one American Depositary Share.

### ***US GAAP financial statements***

The audited consolidated financial statements contained in this annual report on Form 20-F for the years ended December 31, 2002, 2001 and 2000 and as at December 31, 2002 and 2001 have been prepared in accordance with Generally Accepted Accounting Principles in the United States (US GAAP). AngloGold, formerly Vaal Reefs Exploration and Mining Company Limited (Vaal Reefs), was incorporated in South Africa in 1944. The consolidated company - as it is today - was only formed in June 1998. Historically, Vaal Reefs' consolidated financial statements were prepared in accordance with Generally Accepted Accounting Practice in South Africa (SA GAAP). Commencing in 1998 AngloGold prepared consolidated financial statements in accordance with US GAAP.



### ***IAS financial statements***

As a company incorporated in the Republic of South Africa, AngloGold also prepares audited consolidated full-year financial statements and unaudited consolidated quarterly financial statements in accordance with International Accounting Standards (IAS) and South African Statements of Generally Accepted Accounting Practice (SA GAAP). These financial statements (referred to as IAS statements) are distributed to shareholders and are submitted to the JSE Securities Exchange South Africa (JSE), as well as the London, New York and Australian stock exchanges and Paris and Brussels bourses and are submitted to the US Securities and Exchange Commission (SEC) on Form 6-K.

### ***Currency***

AngloGold presents its consolidated financial statements in United States dollars. In 2001, the group changed its presentation currency from South African rands to United States dollars since the majority of its sales revenues are realized in US dollars.

The consolidated financial statements for the year ended December 31, 2000 and the selected financial information for previous years under "Item 3A.: Selected financial data" have been translated from South African rands into United States dollars in accordance with the provisions of Statements of Financial Accounting Standards No. 52 "Foreign Currency Translation" (SFAS52) as issued by the Financial Accounting Standards Board of the United States (FASB).

In this annual report, references to rands, ZAR and R are to the lawful currency of the Republic of South Africa, references to US dollars or \$ are to the lawful currency of the United States and references to AUD dollars and A\$ are to the lawful currency of Australia.

See "Item 3A.: Selected financial data - Exchange rate information" for historical information regarding the noon buying rate in the City of New York for cable transfers in rands as certified for customs purposes by the Federal Reserve Bank of New York. On March 31, 2003, the noon buying rate was R7.9000 = \$1.00.

### ***Non-GAAP financial measures***

In this annual report on Form 20-F, AngloGold presents the financial items "total cash costs", "total cash costs per ounce", "total production costs" and "total production costs per ounce" which have been determined using industry standards promulgated by the Gold Institute and are not US GAAP measures. An investor should not consider these items in isolation or as alternatives to production costs, net income/(loss) applicable to common shareholders, income/(loss) before income tax provision, net cash provided by operating activities or any other measure of financial performance presented in accordance with US GAAP. While the Gold Institute has provided definitions for the calculation of total cash costs and total production costs, the calculation of total cash costs, total cash costs per ounce, total production costs and total production costs per ounce may vary significantly among gold mining companies, and by themselves do not necessarily provide a basis for comparison with other gold mining companies. See "Glossary of selected mining terms - Total cash costs (total cash costs per ounce)" and - "Total production costs (total production costs per ounce)" and "Item 5A: Operating results - Total cash costs and total production costs".

### **Shares and shareholders**

In this annual report, references to ordinary shares, ordinary shareholders and shareholders/members, should be read as common stock, common stockholders and stockholders, respectively, and vice versa.

### **Certain forward-looking statements**

This annual report includes "forward-looking information" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements, including without limitation, those concerning: the economic outlook for the gold mining industry; expectations regarding gold prices and production; growth prospects and outlook of AngloGold's operations, individually or in the aggregate, including the completion and commencement of commercial operations at AngloGold's exploration and production projects; and AngloGold's liquidity and capital resources and expenditure. These forward-looking statements are not based on historical facts, but rather reflect AngloGold's current expectations concerning future results and events and generally may be identified by the use of forward-looking words or phrases such as "believe", "aim", "expect", "anticipate", "intend", "foresee", "forecast", "likely", "should", "planned", "may", "estimated", "potential" or other similar words and phrases. Similarly, statements that describe AngloGold's objectives, plans or goals are or may be forward-looking statements.

These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause AngloGold's actual results, performance or achievements to differ materially from the anticipated results, performance or achievements expressed or implied by these forward-looking statements. Although AngloGold believes that the expectations reflected in these forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct.

The risk factors described in Item 3D, beginning on page 14 could affect AngloGold's future results, causing these results to differ materially from those expressed in any forward-looking statements. These factors are not necessarily all of the important factors that could cause AngloGold's actual results to differ materially from those expressed in any forward-looking statements. Other unknown or unpredictable factors could also have material adverse effects on future results.

You should review carefully all information, including the financial statements and the notes to the financial statements, included in this annual report. The forward-looking statements included in this annual report are made only as of the date of this annual report. AngloGold undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this annual report on Form 20-F or to reflect the occurrence of unanticipated events. All subsequent written and oral forward-looking statements attributable to AngloGold or any person acting on its behalf are qualified by the cautionary statements in this section.

## **Glossary of selected mining terms**

The following explanations are not intended as technical definitions but should assist the reader in understanding terminology used in this annual report. Unless expressly stated otherwise, all explanations are applicable to both underground and surface mining operations.

Acid treatment:  
granules in a dilute hydrochloric  
that have become

Acid treatment is the process of soaking activated carbon  
acid solution to dissolve calcium carbonate and other impurities  
absorbed in the carbon and that thereby reduce the ability to

adsorb gold.

Below collar:

The distance below the surface elevation of a shaft.

BIF:  
sedimentary rock.

Banded Ironstone Formation. A chemically formed iron-rich

By-products:  
gold, including silver,

Any products that emanate from the core process of producing  
uranium and sulphuric acid.

Calc-silicate rock:  
such as diopside and  
or dolomite.

A metamorphic rock consisting mainly of calcium-bearing silicates  
wollastonite, and formed by metamorphism of impure limestone

Carbon columns:  
activated carbon for processes  
treatment.

Any vertical cylindrical vessels used to contain granules of  
such as the extraction of gold from solution, elution or acid

Carbon-in-leach (CIL):  
tanks and adsorbed onto  
separated from the slurry

Gold is leached from a slurry of gold ore with cyanide in agitated  
carbon granules in the same circuit. The carbon granules are  
and treated in an elution circuit to remove the gold.

Carbon-in-pulp (CIP):  
cyanide in agitated tanks. The  
granules are mixed with the  
separated from the slurry

Gold is leached conventionally from a slurry of gold ore with  
leached slurry then passes into the CIP circuit where carbon  
slurry and gold is adsorbed onto the carbon. The granules are  
and treated in an elution circuit to remove the gold.

Channel width: mined as one unit.	The total thickness of all reef bands, including internal waste
Comminution: treatment.	Comminution is the breaking up of ore to make gold available for
Contained gold: irrespective of economic losses prior to recovery.	The total gold content of the orebody (tons multiplied by grade), potential and without deduction for mining and processing
Depletion: from extraction or	The decrease in quantity of ore in a deposit or property resulting production.
Development: underground mining	The process of accessing an orebody through tunnelling in operations.
Diorite:	An igneous rock formed by the solidification of molten material.
Electro-winning: electrolytic chemical reaction into a	A process of recovering gold from solution by means of form that can be smelted easily into gold bars.
Elution: before zinc precipitation or	Recovery of the gold from the activated carbon into solution electro-winning.

Grade: gold-bearing material generally metric tonne (g/t).	The quantity of gold contained within a unit weight of expressed in ounces per short ton of ore (oz/t), or grams per
Greenschist: presence of chlorite,	A schistose metamorphic rock whose green color is due to the epidote or actinolite.
In situ deposit:	Reserves still in the ground.
Intrusive event:	The intrusion of an igneous body into older rocks.
Leaching: reclaimed slime, prior to	Dissolution of gold from crushed or milled material, including adsorption onto activated carbon.
Metallurgical plant:	A processing plant erected to treat ore and extract gold.
Mine call factor: recovered and unrecovered the ore based on sampling.	The ratio, expressed as a percentage, of the total quantity of mineral product after processing with the amount estimated in
Mineral deposit: spaced drilling and/or average grade of metal. This comprehensive evaluation, based economic feasibility. assurance that this mineral	A mineralized body which has been delineated by appropriately underground sampling to support a sufficient tonnage and material or deposit does not qualify as a reserve until a on costs, grade, recoveries and other factors, demonstrates Consequently, although the potential exists, there is no deposit will ever become an ore reserve.

Ounce: grams.	Used in imperial statistics. A troy ounce is equal to 31.1035
Pay limit: equal to the total cash cost  on the total cash cost of  unit, multiplied by the	The grade (that is cut-off grade) at which the value of the ore is  of recovering the precious metal content. This grade is based  recovering the gold content, divided by the present price per  percentage of dilution and metallurgical processing losses.
Precipitate: precipitation referred to	The solid product of chemical reaction by fluids such as the zinc  below.
Probable (Indicated) reserves: from information  sites for inspection, sampling  adequately spaced. The degree  reserves, is high enough to	Reserves for which quantity and grade and/or quality are computed  similar to that used for proven (measured) reserves, but the  and measurement are further apart or are otherwise less  of assurance, although lower than that for proven (measured)  assume continuity between points of observation.
Productivity: grams of gold produced to  meters) to the total number of	An expression of labor productivity based either on the ratio of  the total number of employees or area mined (in square  employees in underground mining operations.
Proven (Measured) reserves: revealed in outcrops,  computed from the results of  and measurement are  well-defined that size, shape, depth	Reserves for which: (a) quantity is computed from dimensions  trenches, workings or drill holes; grade and/or quality are  detailed sampling; and (b) the sites for inspection, sampling  spaced so closely and the geological character is so  and mineral content of reserves are well established.

Pyrite flotation:  
ore and solution in such a  
the surface for collection.

This is the addition of a suite of chemicals to a mixture of ground  
way that a froth rich in pyrite, which also contains gold, floats to

Reclamation:  
water cannons from

Reclaiming, monitoring or pumping of slimes using high-pressure  
the dumps to the metallurgical plants for processing.

Recovered grade:  
metallurgical recovery.

The function of processing plant feed grade multiplied by

Reef:  
band, that may contain

A gold-bearing sedimentary horizon, normally a conglomerate  
economic levels of gold.

Refining:

The final purification process of a metal or mineral.

Rehabilitation:  
post-mining use.  
South African Department  
the US Environmental  
for Environmental  
final slope gradient, waste

The process of restoring mined land to allow an appropriate  
Rehabilitation standards are determined amongst others by the  
of Minerals and Energy, the US Bureau of Land Management,  
Protection Agency, and the Australian Minerals Industry Code  
Management, and address ground and surface water, topsoil,  
handling and re-vegetation issues.



Reserves (Ore reserves): legally extracted or	That part of a mineral deposit which could be economically and produced at the time of the reserve determination.
Rod and tube mills: down into fine particles in	These are types of circular grinding mills used to break the ore preparation for dissolving out the gold by means of cyanide.
Secondary gold recovery: recovery.	Any scavenging process for gold following initial primary gold recovery.
Seismic event: radiates detectable	A sudden inelastic deformation within a given volume of rock that seismic waves (energy), which results from mining activities.
Shaft: underground mine; for ore and waste; for ventilation	A vertical or subvertical excavation used for accessing an transporting personnel, equipment and supplies; for hoisting and utilities; and/or as an auxiliary exit.
Skarn: metamorphism and	A rock of complex mineralogical composition, formed by contact metasomatism of carbonate rocks.
Slipping: explosive means so as to	The widening of an existing excavation, either by mechanical or increase its overall dimensions.
Smelting: from impurities.	A pyro-metallurgical operation in which gold is further separated
Stope:	Underground excavation where the orebody is extracted.

Stoping:	The process of excavating ore.
Stoping width:	The sum of the channel width and external waste widths.
Stripping ratio: tonnes mined less ore tonnes	The ratio of waste tons to ore tons mined calculated as total mined divided by ore tonnes mined.

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Syngenetic:	Formed contemporaneously with the deposition of the sediment.
Tailings: minerals have been	Finely ground rock of low residual value from which valuable extracted.
Tailings dam (slimes dam):	Dams or dumps created from tailings.
Thermal regeneration: degrees Celsius to cycle.	The process of heating activated carbon granules typically to 750 restore the properties of carbon for the next gold extraction cycle.
Thrusting event: generation of low-angle	A period of structural compression in geological time with the thrust faults.
Tonne:	Used in metric statistics. Equal to 1,000 kilograms.

Ton: as a short ton.	Used in imperial statistics. Equal to 2,000 pounds. Referred to
Tonnage: measure. Typically used to situ or quantities of ore and	Quantities where the ton or tonne is an appropriate unit of measure resources and reserves of gold-bearing material in waste material mined, transported or milled.
Total cash costs (total cash costs administration, royalties per ounce): but are exclusive of employment severance costs, costs. Total cash costs per substitutes for or accordance with US GAAP.	Total cash costs include site costs for all mining, processing, and production taxes, as well as contributions from by-products depreciation, depletion and amortization, rehabilitation, corporate administration costs, capital costs and exploration ounce amounts do not represent, and should not be considered measures of costs and expenses reported by AngloGold in
Total production costs (total calculated by dividing production costs per ounce): over the same period. depreciation, depletion and other non-cash costs. Total should not be considered AngloGold in accordance	A measure of the average cost of producing an ounce of gold, the total production costs in a period by the total gold production Total production costs represent total cash costs, plus amortization, employee severance costs and rehabilitation and production costs per ounce amounts do not represent, and substitutes for or measures of costs and expenses reported by with US GAAP.
Tribute agreement: a portion of its mining consideration for a share in the revenue	A legal agreement between two parties in which one party makes rights available to the other party for exploitation, in and costs derived from such mining rights.

Vibroseis survey (3D survey):  
controlled frequencies. These  
three-dimensional images  
around 25 meters. This process

Geophysical technique used to generate seismic waves of  
waves reflect from rock interfaces and are analyzed to produce  
of the sub-surface geological structure with a resolution of  
facilitates accurate long-term mine planning.

Waste:  
consideration for future treatment and,

Material that contains insufficient mineralization for  
as such, is discarded.

Yield:  
unit mass of ore expressed

The amount of valuable mineral or metal recovered from each  
as ounces per short ton or grams per metric tonne.

Zinc precipitation:  
converts gold solution to a

Zinc precipitation is the chemical reaction using zinc dust that  
solid form for smelting into unrefined gold bars.

## **PART I**

### **Item 1: Identity of directors, senior management and advisors**

Not applicable.

### **Item 2: Offer statistics and expected timetable**

Not applicable.

### **Item 3: Key information**

#### **3A. Selected financial data**

The selected financial information set forth below for the years ended December 31, 2000, 2001 and 2002 has been derived from, and should be read in conjunction with, the US GAAP financial statements included under item 18 of this annual report. The selected financial information for the years ended December 31, 1998 and 1999 and as at December 31, 1998, 1999 and 2000 has been derived from the US GAAP financial statements not included in this annual report.

The acquisition during 1998 of the participating companies (for definition, see "Item 4A.: History and development of the company") and the interests in the share interests companies (for definition, see "Item 4A.: History and development of the company") have been accounted for as a purchase business combination under US GAAP. Accordingly, the US GAAP financial statements reflect the participating companies and the share interests companies from June 29, 1998, the effective date of the acquisition for accounting purposes.

In addition, the Minorco, Acacia, Morila, Geita and the Cerro Vanguardia acquisitions have each been accounted for as a purchase business combination under US GAAP, and the US GAAP financial statements only reflect the acquired entities and assets from the effective date of their acquisition. Accordingly, the operations and financial condition of the companies and assets acquired from Minorco are included in the US GAAP financial statements from April 1, 1999, and the financial condition of the companies and assets acquired from Acacia are reflected in the US GAAP balance sheet as at December 31, 1999 and their operations and financial condition are included in the US GAAP financial statements from 2000. The operations and financial condition of the interests in the companies and assets acquired in Geita are only reflected in the US GAAP balance sheet as at December 31, 2000 and are included for the whole year in the US GAAP financial statements for the year ended and as at December 31, 2001. The operations and financial condition of the interests in the companies and assets acquired in Morila are included in the US GAAP financial statements from October 18, 2000. In addition, the operations and financial condition of AngloGold's interests in the Deelkraal and Elandsrand mines that were sold during 2001 are reflected in the US GAAP financial statements only through January 31, 2001, the effective date of the sale. The operations and financial condition of AngloGold's interests in the Free State mines that were sold effective January 1, 2002 are reflected in the US GAAP financial statements only through December 31, 2001. The operations and financial condition of the additional 46.25 percent interest acquired in Cerro Vanguardia are included in the US GAAP financial statements from July 1, 2002. The operations and financial condition of AngloGold's interests in its wholly-owned subsidiary, Stone and Allied Industries, that were sold effective October 1, 2002 are reflected in the US GAAP financial statements only through September 30, 2002. Therefore such financial statements are not necessarily indicative of AngloGold's financial condition or results of operations for any future periods. For a discussion of the acquisitions mentioned above, see "Item 4A.: History and development of the company" and "Item 4B.: Business Overview - Products, operations and geographic locations".

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	Year ended December 31,				
	1998 <sup>(1) (2)</sup>	1999 <sup>(1) (3)</sup>	2000 <sup>(1) (5)</sup>	2001 <sup>(7)</sup>	2002 <sup>(8) (9)</sup> <sup>(10)</sup>
	\$	\$	\$	\$	\$
(in millions, except share and per share amounts)					
<b>Consolidated statement of income</b>					
Sales and other income	1,559	2,233	2,264	2,066	1,799
Product sales <sup>(11)</sup>	1,499	2,121	2,208	2,041	1,761
Interest, dividends and other	60	112	56	25	38
Costs and expenses	1,366	2,099	2,508	2,059	1,369
Operating costs <sup>(12)</sup>	1,195	1,574	1,604	1,391	1,029
Royalties	45	-	9	16	25
Depreciation, depletion and amortization	191	288	439	371	333
Impairment of assets	-	-	387	173	-
Goodwill amortized	4	11	18	27	-
Interest paid	37	69	72	72	44
Loss on sale of mining assets	-	-	-	4	-
Loss on sale of assets	-	-	-	-	11
(Gain)/loss on derivatives	(106)	157	(21)	5	(73)
Income/(loss) before equity income and income tax	193	134	(244)	7	430
Equity income in affiliates	14	7	4	1	4
Income/(loss) before income tax provision	207	141	(240)	8	434
Deferred income and mining tax (expensed)/benefit	(23)	74	(9)	(163)	(62)
Income/(loss) before minority interest	184	215	(249)	(155)	372
Minority interest	-	(2)	(13)	(8)	(16)
Preferred stock dividends	(8)	-	-	-	-
Income/(loss) before cumulative effect of accounting change	176	213	(262)	(163)	356
Cumulative effect of accounting change	-	-	-	(10)	-
Net income/(loss) applicable to common stockholders	176	213	(262)	(173)	356
<b>Other financial data</b>					
Income/(loss) from continuing operations	176	213	(262)	(163)	356
Income/(loss) per common share from continuing operations	1.50	1.08	(1.22)	(0.76)	1.60
Basic earnings/(loss) per common share (in \$) <sup>(13) (14)</sup>					
Before cumulative effect of accounting change	1.50	1.08	(1.22)	(0.76)	1.60

Cumulative effect of accounting change	-	-	-	(0.05)	-
Net income/(loss) - applicable to common stockholders	1.50	1.08	(1.22)	(0.81)	1.60
Diluted earnings/(loss) per common share (in \$) <sup>(13)</sup> <sup>(14)</sup>					
Before cumulative effect of accounting change	1.49	1.08	(1.22)	(0.76)	1.60
Cumulative effect of accounting change	-	-	-	(0.05)	-
Net income/(loss) - applicable to common stockholders	1.49	1.08	(1.22)	(0.81)	1.60
Dividends per common share (cents) <sup>(14)</sup>	152	143	135	84	113

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	Year ended December 31,				
	1998 <sup>(1)</sup> <sup>(2)</sup>	1999 <sup>(1)</sup> <sup>(3)</sup>	2000 <sup>(1)</sup> <sup>(5)</sup>	2001 <sup>(7)</sup>	2002 <sup>(8)</sup> <sup>(9)</sup> <sup>(10)</sup>
	\$	\$	\$	\$	\$
	(in millions, except share and per share amounts)				
<b>Consolidated balance sheet data (as at period end)</b>		(4)	(6)		
Cash and cash equivalents	254	493	195	191	413
Other current assets	387	402	411	409	625
Property, plant and equipment, and acquired properties net	4,019	4,831	3,851	2,599	2,917
Goodwill	49	213	383	333	345
Inventories	-	27	31	47	79
Other long-term assets, and derivatives	330	83	82	171	166
<b>Total assets</b>	<b>5,039</b>	<b>6,049</b>	<b>4,953</b>	<b>3,750</b>	<b>4,545</b>
Current liabilities	418	642	845	1,210	799
Provision for environmental rehabilitation	98	196	134	94	108
Deferred income and mining tax	1,149	1,025	802	440	561
Other long-term liabilities, and derivatives	259	826	838	624	1,217
Minority interest	-	25	27	28	40
<b>Stockholders' equity</b>	<b>3,115</b>	<b>3,335</b>	<b>2,307</b>	<b>1,354</b>	<b>1,820</b>

Total liabilities and stockholders' equity	5,039	6,049	4,953	3,750	4,545
Capital stock (exclusive of long-term debt and redeemable preferred stock)	8	9	9	9	9
Number of common shares as adjusted to reflect changes in capital stock	195,706,398	213,229,356	214,024,174	215,268,116	222,622,022
Net assets	3,115	3,360	2,334	1,382	1,860

(1) *Translated into US dollars in accordance with the provisions of Statement of Financial Accounting Standards No. 52, "Foreign Currency Translation" (SFAS52).*

(2) *Includes the results of operations and financial condition of the participating companies and share interests companies from June 29, 1998, the effective date of the consolidation for accounting purposes. See "Item 4A.: History and development of the company".*

(3) *Includes the results of operations and financial condition of the assets acquired from Minorco with effect from April 1, 1999, the effective date of the Minorco acquisition. See "Item 4A.: History and development of the company".*

(4) *Includes the financial position of Acacia as of December 31, 1999. See "Item 4A.: History and development of the company".*

(5) *Includes the results of operations and financial condition of Morila as of October 18, 2000. See "Item 4A.: History and development of the company".*

(6) *Includes the financial position of Geita as of December 31, 2000. See "Item 4A.: History and development of the company".*

(7) *Excludes the results of operations and financial condition of the Deelkraal and Elandsrand mines sold with effect from February 1, 2001. See "Item 4A.: History and development of the company".*

(8) *Excludes the results of operations and financial condition of the Free State mines sold with effect from January 1, 2002. See "Item 4A.: History and development of the company".*

(9) *Includes the results of operations and financial condition of an additional 46.25 percent interest acquired in the Cerro Vanguardia mine located in Argentina from July 1, 2002. See "Item 4A.: History and development of the company".*

(10) *Excludes the results of operations and financial condition of Stone and Allied Industries sold with effect from October 1, 2002. See "Item 4A.: History and development of the company".*

(11) *Product sales represents revenue from the sale of gold.*

(12) *Operating costs include production costs, exploration costs, related party transactions, general and administrative, market*



*development costs, research and development, employment severance costs and other.*

(13) *The calculations of basic and diluted earnings/(loss) per common share are described in note 7 to the consolidated financial statements "earnings/(loss) per common share".*

(14) *Per share information gives effect to AngloGold's two-for-one stock split and the issuance of a total of 278,196 ordinary shares under AngloGold's odd-lot offer. For further information on the stock split and the odd-lot offer, see note 29 to the consolidated financial statements "stock split".*

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## Annual dividends

The table below sets forth the amounts of interim, final and total dividends paid in respect of the past five years in cents per ordinary share. AngloGold's board of directors declared an interim dividend of 675 South African cents per ordinary share in respect of 2002 on July 30, 2002 with a record date of August 23, 2002 and a payment date of August 30, 2002 and a final dividend of 675 South African cents per ordinary share on January 30, 2003, with a record date of February 21, 2003 and a payment date of February 28, 2003. See "Item 10E.: Taxation - Taxation of dividends".

<b>Year ended December 31,</b>	<b>Interim</b>	<b>Final</b>	<b>Total</b>	<b>Interim</b>	<b>Final</b>	<b>Total</b>
	<b>(US cents per ordinary share <sup>(1)</sup>)</b>			<b>(South African cents per ordinary share)</b>		
1998	61.50	63.85	125.35	375	400	775
1999	74.07	83.43	157.50	450	550	1,000
2000	51.06	39.88	90.94	375	325	700
2001	38.21	49.06	87.27	350	550	900
2002	63.81	82.12	145.93	675	675	1,350

(1) *US dollar cents per share figures have been calculated based on exchange rates prevailing on each of the respective payment dates.*

Future dividends will be dependent on AngloGold's cash flow, earnings, financial condition and other factors. AngloGold does not currently intend substantially changing its past practice of paying out dividends

from funds available after providing for long-term growth. Under South African law, AngloGold may only declare and pay dividends out of its results calculated in accordance with SA GAAP. As at December 31, 2002 AngloGold's retained earnings as calculated under SA GAAP amounted to \$449 million. Dividends are payable to shareholders registered at a record date that is after the date of declaration.

Under the terms of AngloGold's new articles of association adopted on December 5, 2002, dividends may be declared in US dollars or South African rands at the discretion of the board of directors. Currently, dividends are declared in South African rands and paid in Australian dollars, South African rands and United Kingdom pounds. Dividends paid to registered holders of AngloGold ADSs are paid in US dollars converted from South African rands by The Bank of New York, as depositary, in accordance with the deposit agreement. For details on exchange controls applicable to holders of ordinary shares or ADSs, see "Item 10D.: Exchange controls".

### Exchange rate information

The following table sets forth for the periods and dates indicated certain information concerning the noon buying rate in New York City for cable transfers as certified for customs purposes by the Federal Reserve Bank of New York expressed in rands per \$1.00. On March 31, 2003, the noon buying rate between rands and US dollars was R7.9000 = \$1.00.

<b>Year ended December 31</b>	<b>High</b>	<b>Low</b>	<b>Year end</b>	<b>Average <sup>(1)</sup></b>
1998	6.64	4.89	5.90	5.59
1999	6.27	5.68	6.16	6.13
2000	7.84	6.06	7.57	6.98
2001	13.60	7.50	12.00	8.76
2002	12.47	8.59	8.59	10.34

(1) *The average of the noon buying rates on the last business day of each month during the year.*

<b>Month</b>	<b>High</b>	<b>Low</b>
October 2002	10.53	10.00
November 2002	9.98	9.25

December 2002	9.27	8.59
January 2003	9.05	8.44
February 2003	8.57	8.02
March 2003	8.26	7.90

AngloGold historically has declared all dividends and distributions in South African rand, and, as a result, exchange rate movements may have affected the US dollar value of these dividends as well as any other distributions paid by the depositary to investors that hold AngloGold ADSs. Exchange rate movements may have also affected the market value of AngloGold ADSs, which may have reduced their value to investors.

Under the terms of AngloGold's new memorandum and articles of association, dividends and distributions may be declared in US dollars or South African rand at the discretion of the board of directors of AngloGold. If and to the extent AngloGold subsequently declares dividends and distributions in US dollars, exchange rate movements will not affect the US dollar value of any dividends or distributions. If and to the extent that dividends and distributions are declared in South African rand, exchange rate movements will continue to affect their US dollar value to investors.

Moreover, fluctuations in the exchange rates of the US dollar and the pound sterling will affect the US dollar equivalents of the pound sterling price of the ordinary shares on the London Stock Exchange (LSE) and, as a result, are likely to affect the market price of the ADSs in the United States.

**3B. Capitalization and indebtedness**

Not applicable.

**3C. Reasons for the offer and use of proceeds**

Not applicable.

**3D. Risk factors**

You should carefully consider the following risk factors, which have been separated into three groups:

- &#8226 risks related to the gold mining industry generally;
- &#8226 risks related to AngloGold's operations; and
- &#8226 risks related to AngloGold shares and AngloGold ADSs.

### **Risks related to the gold mining industry generally**

- ***The profitability of AngloGold's operations, and the cash flows generated by those operations, are significantly affected by changes in the market price for gold***

The market price for gold can fluctuate widely. These fluctuations are caused by numerous factors beyond AngloGold's control, including:

- speculative positions taken by investors or traders in gold;
- changes in the demand for gold for industrial uses, for use in jewellery and investment;
- changes in the supply of gold from production, disinvestment, scrap and hedging;
- financial market expectations regarding the rate of inflation;
- the strength of the US dollar (the currency in which the gold price trades internationally) and of other currencies;
- changes in interest rates;

- actual or expected gold sales by central banks;
- gold sales by gold producers in forward transactions;
- global or regional political or economic events; and

- costs of gold production in major gold-producing nations, such as South Africa, USA and Australia.

The price of gold is often subject to sharp, short-term changes resulting from speculative activities. While the overall supply of and demand for gold can affect its market price, because of the unique size of above-ground stocks of the metal - these do not affect the price in the same manner as the supply of and demand for other commodities affect the market prices of those other commodities.

The following table presents the annual high, low and average afternoon fixing prices over the past 10 years, expressed in US dollars, for gold per ounce, on the London Bullion Market:

<b>Year</b>	<b>High</b>	<b>Low</b>	<b>Average</b>
1993	406	326	360
1994	396	370	384
1995	396	372	384
1996	415	367	388
1997	367	283	331
1998	314	273	287
1999	340	252	278
2000	317	262	279
2001	298	253	271
2002	347	278	310

*Source of Data: Metals Week and Reuters*

On March 31, 2003, the afternoon fixing price of gold on the London Bullion Market was \$334.85 per ounce.

If revenue from gold sales falls below the cost of production for an extended period of time, AngloGold may experience losses and may be forced to curtail or suspend some or all of its capital projects and/or operations and change its past practice of paying dividends. In addition, AngloGold would have to assess the economic impact of low gold prices on its ability to recover any losses it may incur during that period and on its ability to maintain adequate reserves. The weighted average total cash costs of AngloGold's world-wide production per ounce of gold produced was \$161 in 2002, \$178 in 2001, and \$213 in 2000. Total cash costs of production is a non-GAAP measure. For further information on this and other non-GAAP measures, see "Item 5A.: Operating results - Total cash costs and total production costs".

- ***The use of hedging instruments to protect against low gold prices and exchange rate movements may prevent AngloGold from***

***realizing all potential income gains resulting from subsequent gold price increases in the future***

AngloGold uses hedging instruments to fix the selling price of a portion of its anticipated gold production and to protect its revenues against unfavorable gold price and exchange rate movements. While the use of these instruments may protect against a drop in gold prices and exchange rate movements, it will only do so for a limited period of time and only to the extent that the hedge remains in place. The use of these instruments may also prevent AngloGold from realizing the positive impact on income of any subsequent favorable increase in the price of gold on the portion of production covered by the hedge and of any subsequent favorable exchange rate movements. For a discussion of AngloGold's hedging instruments, see "Item 11.: Quantitative and qualitative disclosures about market risk".

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- ***AngloGold faces many risks related to its operations that may affect its cash flows and overall profitability***

**Uncertainty and cost of mineral exploration and acquisitions.** Exploration activities are speculative, involve substantial expenditures and are often unproductive. Substantial expenditures are required to:

- establish ore reserves through drilling and metallurgical and other testing techniques;
- determine metal content and metallurgical recovery processes to extract metal from the ore; and
- construct, renovate or expand mining and process facilities.

Once gold mineralization is discovered it can take several years to determine whether gold reserves exist and until the actual production of gold is possible. During this time the economic feasibility of production may change.

AngloGold considers from time to time the acquisition of reserves, development properties and operating mines. AngloGold's decisions to acquire these properties are based on a variety of factors including

historical operating results, estimates of and assumptions about future reserves, cash and other operating costs, metal prices and projected economic returns, and evaluations of existing or potential liabilities associated with the property and its operations. Other than historical operating results, all of these may differ significantly from AngloGold's estimates and assumptions. In addition, there is intense competition for attractive properties.

As a result of these uncertainties, AngloGold's exploration programs and acquisitions may not result in the expansion or replacement of current production with new reserves or operations. This could adversely affect AngloGold's ongoing business and financial position.

**Development risks.** AngloGold's profitability depends, in part, on the actual economic returns and the actual costs of developing mines, which may differ significantly from its estimates and involve unexpected problems and delays.

AngloGold's decision to develop a mineral property is typically based, in the case of an extension or in the case of a new development, on the results of a feasibility study.

Feasibility studies derive estimates of expected or anticipated project economic returns. These estimates are based on assumptions about:

- future gold and other metal prices;
- anticipated tonnage, grades and metallurgical characteristics of ore to be mined and processed;
- anticipated recovery rates of gold and other metals from the ore;
- anticipated capital expenditure and cash operating costs; and
- the return on investment.

Actual cash operating costs, production and economic returns may differ significantly from those anticipated by AngloGold's studies and estimates. There are a number of uncertainties inherent in the development and construction of an extension to an existing mine or any new mine. These uncertainties include:

- the timing and cost, which can be considerable, of the construction of mining and processing facilities;

- the availability and cost of skilled labor, power, water and transportation facilities;
- the availability and cost of appropriate smelting and refining arrangements;
- the need to obtain necessary environmental and other governmental permits, and the timing of those permits; and
- the availability of funds to finance construction and development activities.

The costs, timing and complexities of mine construction and development could be increased by the remote location of many mining properties. New mining operations could experience unexpected problems and delays during development, construction and mine start-up. In addition, delays in the commencement of mineral production could occur. Accordingly, AngloGold's future development activities may not result in the expansion or replacement of current production with new production or one or more of these new productions may be less profitable than currently anticipated or may not be profitable at all.

**Ore reserves estimate risks.** The ore reserves presented in this annual report are the best estimates of AngloGold's management in accordance with Industry Guide 7 of the SEC. It should be noted that in Australia and South Africa, AngloGold is legally required to publicly report ore reserves and mineral resources according to the Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code) and the South African Code for Reporting of Mineral Resources and Ore Reserves (SAMREC Code). The SEC's Industry Guide 7 does not recognize mineral resources. Accordingly, AngloGold does not report estimates of mineral resources in this annual report on Form 20-F.

AngloGold undertakes annual revisions to its ore reserve estimates based upon actual exploration and production results, depletion, new information and fluctuations in production and economic parameters. These factors may result in reductions in ore reserves and adversely affect AngloGold's profitability and its financial position.

**Mining industry risks.** Gold mining is subject to numerous events that may have an adverse impact on a gold mining business. These events include, but are not limited to:

- environmental hazards;



- industrial accidents;
- underground fires;
- labor disputes;
- unexpected geological formations;
- unanticipated ground and water conditions;
- fall of ground accidents;
- legal and regulatory restrictions; and
- seismic activity.

The occurrence of one or more of these events may result in the death of, or personal injury to, miners, the loss of mining equipment, monetary losses, delays in production and potential legal liabilities. As a result, AngloGold's operations could be affected and, if such effect were material, its financial position could be adversely impacted to a significant extent.

Seismic activity is of particular concern to the gold mining industry in South Africa, in part because of the large percentage of deep-level gold mines. To understand and manage this risk, AngloGold uses sophisticated seismic and rock mechanic technology. AngloGold has had some success with these technologies in identifying the possible location of future seismic activity and aiding in the development of mine layouts and support layouts and methods. Despite these programs and their success to date, seismic activities may cause substantial damage to AngloGold's South African operations, which could have an adverse impact on the results of AngloGold's operations and consequently, its financial condition.

- ***AngloGold's operations are subject to extensive health and safety laws and regulations***

Gold mining operations, like AngloGold's, are subject to a variety of mine health and safety laws and regulations depending upon the jurisdiction in which they are located. These laws and regulations are formulated to improve and to protect the safety and health of employees.

In complying with the mine health and safety laws and regulations to which AngloGold's operations are subject, AngloGold has dedicated resources to ensure the application of international best practice in the management of safety and health, including medical surveillance systems. These systems have resulted in significant improvements in the safety performance of AngloGold.

If these laws and regulations were to change and, if as a result, material additional expenditure was required to comply with the laws and regulations, it could adversely affect AngloGold's financial position. For example, if the merger and alignment of benefits under two statutory occupational health compensation schemes in South Africa, as proposed by the South African government were to proceed, AngloGold's annual liability for occupational lung disease claims may increase from current levels of around R12 million (\$1.5 million). For a discussion of the mine health and safety laws and regulations to which AngloGold's operations are subject, see "Item 4B.: Business overview - Safety and health".

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- ***AngloGold is subject to extensive environmental regulations***

Operations of gold mining companies are subject to extensive environmental regulations in the various jurisdictions in which they operate. These regulations establish limits and conditions on gold producers' ability to conduct their operations. The cost of compliance by AngloGold with environmental regulations has been significant in the past.

Pursuant to environmental regulations, gold mining companies are also obligated to close their operations and rehabilitate the lands that they mine in accordance with these regulations. Estimates of the total of ultimate closure and rehabilitation costs for gold mining operations are material and are subject to revision. AngloGold expenses rehabilitation costs as incurred and provides for the anticipated costs of compliance on a unit of production basis over the operating life of the mine. Other environmental liabilities are accrued when they are known, probable and can be reasonably estimated.

If AngloGold's environmental compliance obligations were to change as a result of changes in the laws and regulations or in certain assumptions made by AngloGold to estimate liabilities, or if unanticipated conditions were to arise in its operations, AngloGold's expenses and provision may increase to reflect these changes. If material, this could adversely affect AngloGold's results of operations and financial position. For a discussion of the environmental laws and regulations to which AngloGold's operations are subject and the estimated cost of AngloGold's future environmental rehabilitation obligations, see "Item 4D.; Property, plant and equipment -- Sustainable development environmental and social investment" and "Note 16 Provision for environmental rehabilitation" of the consolidated financial statements of AngloGold.

## **Risks related to AngloGold's operations**

In addition to the risks related to the gold mining industry generally, AngloGold's operations are also subject to the following risks specific to AngloGold:

- ***Foreign exchange fluctuations could have a material impact on AngloGold's operating results and financial position***

In recent years, the devaluation against the US dollar of mainly the South African rand, and, to a lesser extent, the Brazilian real, the Argentinean peso and the Australian dollar has had a significant positive effect on the profitability of AngloGold's operations. In 2002, AngloGold derived approximately 73 percent of its revenues from these countries, mainly South Africa, and approximately 76 percent of production costs in these local currencies, mainly in South African rand. In addition, the production costs in South African rand, Brazilian real, Argentinean peso and Australian dollar are only modestly offset by the effect of devaluations on the price of imports denominated in US dollars as imported products comprise a small proportion of production costs in each of these countries. AngloGold's product, gold, is a US dollar-priced commodity, and the majority of AngloGold's revenues are realized in US dollars. The strengthening of the US dollar against these local currencies yields significantly higher revenues and lower production costs in US dollar terms. Any reversal in this trend, if material, may have an adverse impact on AngloGold's operating results. Due to the strengthening of the South African rand against the US dollar, production costs at the South African operations increased during the second half of 2002 compared to the first half. For a discussion of trends expected for 2003, see "Item 5D.: Trend information".

To a lesser extent, mainly as a result of its hedging instruments, AngloGold's revenues are denominated in South African rands and Australian dollars, which partially offsets the effect of the US dollar's strength or weakness on AngloGold's profitability. For a discussion of AngloGold's gold price and foreign exchange risk management activities, see "Item 11.: Quantitative and qualitative disclosures about market risk".

In addition, due to its global operations and local foreign exchange regulations, AngloGold holds funds in local currencies, such as the rand and Australian dollar. The US dollar value of these currencies may be affected by exchange rate fluctuations. If material and adverse, exchange rate movements may affect the overall financial position of AngloGold. For a discussion of AngloGold's cash and cash equivalents held in various local currencies, see "Item 5B.: Liquidity and capital resources - Liquidity".

- ***Inflation may have a negative impact on the results of operations***

Most of AngloGold's operations are located in countries that have historically experienced high rates of inflation. AngloGold's operations have not been materially adversely affected by inflation in recent years. However, because AngloGold is unable to control the market price at which it sells the gold it produces (except to the extent that it enters into forward sales and other derivative contracts), it is possible that significantly higher inflation in the future in the countries in which it operates with a consequent increase in operational costs in local currencies, without a concurrent devaluation of the local currency of operations against the US dollar or an increase in the US dollar price of gold, could have a material adverse effect upon AngloGold's results of operations and financial condition.

While no specific operations are currently at risk, significantly higher and sustained inflation in the future, with a consequent increase in operational costs, could result in operations being discontinued at mines with higher cost operations. See "Item 4B.: Business overview - Products, operations and geographic locations".

- ***Changes to mineral rights ownership regimes in countries where AngloGold's mineral deposits are located could have a material impact on AngloGold's financial position***

AngloGold's rights to own and exploit mineral reserves and deposits are governed by the laws and regulations of the jurisdictions in which the mineral properties are located. Currently, a significant portion of AngloGold's mineral reserves and deposits are located in South Africa.

In October 2002 the President of South Africa assented to the Mineral and Petroleum Resources Development Act, 2002 which was passed by Parliament in June 2002. It will come into operation on a date to be proclaimed by the President, which is expected to be during or shortly after June 2003. Until then the existing regulatory regime for mineral rights will remain in place whereby the holder of mineral rights is entitled to mine on obtaining a mining authorization from the State. AngloGold owns substantially all the mineral rights for which it holds mining authorizations.

The new Act vests custodianship of South Africa's mineral resources in the State which will issue prospecting rights or mining rights to applicants in the future. The existing common law prospecting, mining and mineral rights will cease to exist but transitional arrangements are provided in order to give holders of existing rights the opportunity to acquire new rights.

Where AngloGold holds mineral rights and mining authorizations and is conducting mining operations on the date on which the new Act comes into effect, it will be able within five years from the date of effectiveness of the new Act to submit the old rights and authorization for conversion to a new mining right. AngloGold will need to submit a mining work program and thereby to substantiate the area and period of the new right, and also to comply with the requirements of the undermentioned Charter. A similar procedure applies where AngloGold holds prospecting rights and a prospecting permit and is conducting prospecting operations, but AngloGold must apply for conversion to a new prospecting right within two years from the date of effectiveness of the new Act for which purpose a prospecting work program must be submitted. Where AngloGold holds unused rights however, AngloGold will have one year to apply for new prospecting rights or mining rights, the requirements in regard to which are more stringent than for conversion, involving, for example, non-concentration of resources, fair competition, no exclusionary effects, and proof of financial and technical ability.

If AngloGold does not acquire new rights under the new Act, AngloGold would be entitled to claim compensation from the State if it can prove that thereby its property has been expropriated. Whether mineral rights constitute property and whether the new Act does bring about an expropriation are both aspects which are the subject of legal debate which is likely to be settled ultimately by litigation. The factors in determining compensation include not only fair market value but also history of acquisition and use and aspects of redress and reform which could have the effect of reducing the compensation.

AngloGold cannot give assurance that it will be successful in its application for conversion of old rights to new rights under the new Act, but the company is optimistic in this regard. In addition, it is uncertain if and to what extent AngloGold would receive compensation from the State to the extent it would not acquire new rights.

Even where new rights are obtained under the new Act, these rights will not be equivalent to the existing rights. The area covered by the new rights may be reduced by the State if it finds that the prospecting or mining work program submitted by an applicant do not substantiate the need to retain the area covered by the old right. The duration of the new rights will no longer be perpetual but rather, in the case of new mining rights, a maximum of 30 years with renewals of up to 30 years each and in the case of prospecting rights, up to five years with one renewal of up to three years. The new Act provides for a retention period after prospecting of up to three years with one renewal of up to two years, subject to certain conditions, such as non-concentration of resources, fair competition, and non-exclusion of others. In addition, the new rights will be transferable subject to the approval of the Minister of Mines (Minister). Mining or prospecting must commence within one year or 120 days, respectively, of the mining right or prospecting right becoming effective, and must be conducted continuously and actively thereafter.

The new rights can be suspended or cancelled by the Minister on breach or, in the case of a mining right, on non-optimal mining in accordance with the mining work program.

The new rights will be subject to a State royalty calculated on gross revenue as proposed in the draft Mineral and Petroleum Money Bill, 2003, which was released in March 2003 for comment, and which proposes a quarterly payment of royalty of 3 percent of gross revenue in the case of gold. As proposed, royalty payments will commence upon the conversion and granting of a new mining right.

The new Act calls for a Charter to be developed by the Minister within five years of commencement of the new Act, but the content of which has largely been agreed with mining industry representatives (including AngloGold), and with representatives of other stakeholders. The Charter's stated objectives include;

- expansion of opportunities for persons disadvantaged by unfair discrimination under the previous political dispensation,
- expansion of the skills base of such persons,
- the promotion of employment and advancement of the social and economic welfare of mining communities, and
- promotion of beneficiation.

The Charter requires that each mining company achieve 15 percent ownership by historically disadvantaged South Africans of its South African mining assets within five years and 26 percent such ownership within ten years. It contemplates that this will be achieved inter alia by disposals of assets by mining companies to historically disadvantaged persons on a willing seller - willing buyer basis at fair market value. In addition, the Charter requires mining companies to formulate plans for achieving employment equity at management level with a view to achieving 40 percent participation by historically disadvantaged persons in management and ten percent participation by women in the mining industry, each within five years. When considering applications for the conversion of existing rights, the State will take a "scorecard" approach, evaluating the commitments of each company to the different facets of promoting the objectives of the Charter. The draft scorecard was published by the government in February 2003.

AngloGold fully supports the notion that the mining industry and the wider South African economy have to find ways of dealing with the legacy of the country's history in a manner that promotes economic development and growth. AngloGold has made progress in adjusting the ownership structure of its South African mining assets and the composition of its management consistent with the Charter's spirit. AngloGold believes that it is well placed to meet the Charter's targets in accordance with the scorecard.

AngloGold has completed a number of asset sales to companies owned by historically disadvantaged persons in the past four years, which meet the requirements of the Charter and the scorecard. According to AngloGold's estimates based on 2002 operating data, these transactions transfer 24.1 percent of AngloGold's attributable units of production in South Africa to historically disadvantaged persons. However, AngloGold would expect the State to conduct its own assessment of these transfers when AngloGold submits its conversions. In addition, AngloGold is continuing to evaluate alternative ways in which to achieve objectives of the Charter through, for example, forms of broad-based equity ownership by historically disadvantaged entities, groups or individuals, including employee share ownership and empowerment unit trusts.

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AngloGold has made significant progress towards meeting the requirements of the Charter and the scorecard in human resource development, employment equity, mine community and rural development, housing and living conditions, procurement and beneficiation. AngloGold will also reflect these results when it lodges its conversions or applications for acquisition of new rights to replace its existing rights. AngloGold's performance under the criteria set by the Charter and the scorecard will be assessed by the State upon the occurrence of such lodgments or applications. Details of the State's methodology for calculating performance in regard to beneficiation has however not yet been made public.

Any significant adjustment to AngloGold's property ownership structure could have a material adverse effect on AngloGold's financial condition or the value of AngloGold's ordinary shares, and failure to comply with the requirements of the Charter and the scorecard could subject AngloGold to negative consequences, the scope of which has not yet been fully determined.

AngloGold may also incur expenses to give additional effect to the Charter and the scorecard, including costs which it may incur in facilitating the financing of initiatives towards ownership by historically disadvantaged persons as part of the industry-wide commitment to assist such persons in securing R100 billion of financing during the first five years of the Charter's life. There is furthermore no guarantee that any steps AngloGold might take to comply with the Charter would ensure that it could successfully acquire new mining rights in place of its existing rights. In addition, the terms of such new rights may not be as favourable to AngloGold as are those of its existing rights. Having said this, AngloGold believes, based on present indications, that it should be able successfully to acquire new rights on reasonable terms.

The new Act also imposes on mining companies additional responsibilities relating to environmental management and to environmental damage, degradation or pollution resulting from their prospecting or mining activities. AngloGold has a policy of evaluating, minimizing and addressing the environmental consequences of its activities and, consistent with this policy and the new Act, has undertaken a review of the environmental costs and liabilities associated with its South African operations in the light of the new, as well as the existing, environmental requirements. While this examination could result in an increase in AngloGold's compliance costs and accruals for environmental remediation, it is not certain at this stage whether these costs or liabilities will have a material adverse effect on AngloGold's financial condition or results of operations.

For discussion of the mineral right ownership of AngloGold, see Note 27 to the consolidated financial statements "Mineral and Petroleum Resources Development Act, 2002" and "Item 4B.: Business Overview - Rights to mine and title to properties".

- ***Labor disruptions could have an adverse effect on operating results and financial condition***

Approximately 88 percent (2001: 92 percent) of AngloGold's workforce is located in South Africa. AngloGold's employees in South Africa and some South American countries are highly unionized. In the past, trade unions have had a significant impact on the collective bargaining process, as well as on social and political reforms, most notably in South Africa. It is uncertain whether labor disruptions will be used to advocate labor, political or social causes in the future. Should any labor disruptions occur, if material, they could have an adverse effect on AngloGold's results of operations and financial condition. For a discussion of AngloGold's employees and labor relations, see "Item 6D.: Employees".

- ***AngloGold faces certain risks in dealing with HIV/AIDS which may have an adverse effect on its operations***

AIDS and tuberculosis (which is exacerbated in the presence of HIV/AIDS) remain the major health care challenges faced by the South African operations. Approximately 88 percent (2001: 92 percent) of AngloGold's total workforce is located in South Africa. A significant portion, approximately 30 percent, of this workforce is believed to be infected with the HIV virus. AngloGold is continuing to develop and implement various programs aimed at helping those who have been infected with HIV and preventing new infections. On November 14, 2002, AngloGold announced that it had begun implementing a monitored antiretroviral therapy program for volunteer employees in South Africa who are infected with HIV. Initially, the program involves administering a first line triple therapy regimen supplied by GlaxoSmithKline, otherwise known as a drug cocktail, to 200 eligible employees. As from April 2003, AngloGold intends to roll out the treatment to all eligible employees desiring it.



At this stage, it appears that the drug cocktail itself will cost approximately R840, or approximately \$80, per participating employee per month. It is not yet possible to develop an accurate cost estimate of the program in its entirety, given uncertainties such as drug prices and the ultimate rate of employee participation. Before inclusion of this antiretroviral therapy, AngloGold estimated the cost of managing the impact of HIV/AIDS to be in the order of \$4 to \$6 per ounce mined, and the cost of failing to manage HIV/AIDS to be approximately \$9 per ounce mined.

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AngloGold does not expect the cost that it will incur related to the treatment and prevention of HIV infection and AIDS to materially and adversely affect its operations and profitability. Nevertheless, it is not possible to determine with certainty the costs that AngloGold may incur in the future in addressing this issue and consequently, AngloGold's operations and profitability could be adversely affected. For a full discussion see "Item 4B.: Business overview - Safety and health - South Africa region".

- ***Occurrence of events for which AngloGold is not insured may affect its cash flows and overall profitability***

AngloGold maintains insurance to protect against certain risks related to its operations. This insurance is maintained in amounts that are believed to be reasonable depending upon the circumstances surrounding each identified risk. However, AngloGold may elect not to have insurance for certain risks, due to the high premiums associated with insuring those risks or for various other reasons, e.g. the risks are too remote. As a result, there can be no assurance that AngloGold will maintain insurance sufficient to cover all identified risks or that it will be able to obtain insurance coverage at acceptable premiums. The occurrence of events for which AngloGold is not insured may adversely affect its cash flows and overall profitability.

- ***A majority of AngloGold's ore reserves and mineral deposits and mining operations are located in countries that face political and economic risks***

AngloGold's mineral deposits and mining operations are currently located mainly in African and to a lesser extent in South American countries. These countries, to a greater or lesser extent, have experienced political instability and economic uncertainty in the past. In some of these countries, government policy may be unpredictable, and the institutions of government and market economy may be unstable and may be subject to rapid and unpredictable change.

Any existing and new mining operations and projects carried out by AngloGold are and will be subject to various national and local laws, policies and regulations governing the prospecting, developing and mining of mineral reserves, taxation, exchange controls, investment approvals, employee relations and other matters. If in one or more of these countries AngloGold could not obtain or maintain necessary permits, authorizations or agreements to implement planned projects or continue its operations under conditions or within time frames that make such plans and operations economic, or if legal regimes or the governing political authorities would change materially, this could have an adverse impact on AngloGold's financial position.

### **Risks related to AngloGold shares and AngloGold ADSs**

- ***Sales of large amounts of AngloGold ordinary shares or AngloGold ADSs or the perception that these sales may occur could adversely affect the prevailing share price of AngloGold ordinary shares or AngloGold ADSs***

The market price of the AngloGold ordinary shares or AngloGold ADSs could fall if large amounts of AngloGold ordinary shares or AngloGold ADSs are sold in the public market, or there is a perception in the marketplace that such sales could occur. Holders of AngloGold ordinary shares or AngloGold ADSs may decide to sell AngloGold ordinary shares or AngloGold ADSs at any time. Sales, if substantial, or the perception that these sales may occur and may be substantial, could exert downward pressure on the prevailing market prices for AngloGold ordinary shares and AngloGold ADSs, causing the market prices to decline.

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- ***Fluctuations in the exchange rate between the US dollar and South African rand may reduce the US dollar market value of AngloGold ADSs, as well as the US dollar market value of any dividends or distributions paid by AngloGold***

AngloGold historically has declared all dividends and distributions in South African rand, and as a result, exchange rate movements may have affected the US dollar value of these dividends as well as of any other distributions paid by the depositary to investors that hold AngloGold ADSs, which may have reduced their value to investors. At the general meeting of AngloGold's shareholders held on December 5, 2002, a majority of AngloGold's shareholders passed a special resolution to adopt a new memorandum and articles of association, which, inter alia, allows for dividends and distributions to be declared in US dollars or South African rand at the discretion of the board of directors of AngloGold. If and to the extent AngloGold subsequently declares dividends and distributions in US dollars, exchange rate movements will not affect the US dollar value of any dividends or distributions. If and to the extent dividends and distributions are declared in South African rand, exchange rate movements may have also affected the market value of AngloGold ADSs, which may have reduced their value to investors.

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#### **Item 4: Information on the company**

AngloGold, formerly Vaal Reefs Exploration and Mining Company Limited, was incorporated in South Africa in 1944.

##### **4A. History and development of the company**

AngloGold produces approximately six million ounces of gold each year. The company, headquartered in Johannesburg, South Africa, has a global presence with 20 operations comprising open-pit and underground mines and surface reclamation plants in eight countries (Argentina, Australia, Brazil, Mali, Namibia, South Africa, Tanzania and the United States of America), supported by extensive yet focused exploration activities in 10 countries.

AngloGold is listed on the following securities exchanges: Johannesburg (ANG), New York (AU) and Australia (AGG), as well as the London Stock Exchange (79LK), Euronext Paris (VA FP) and Euronext Brussels (ANG BB).

AngloGold Limited (Registration number 1944/017354/06) was incorporated in the Republic of South Africa in 1944 under the name of Vaal Reefs Exploration and Mining Company Limited. Its principal executive office is located at 11 Diagonal Street, Johannesburg, 2001 (P.O. Box 62117, Marshalltown, 2107) South Africa (Telephone +27 11 637-6000). AngloGold's US office is located at 509 Madison Avenue, Suite 1914, New York, NY 10022, USA (Tel. +1 212 750 5626) and the company's

authorized representative in the USA is: Puglisi & Associates, 850 Library Avenue, Suite 204, P.O. Box 885, Newark, Delaware 19715, USA (Tel. +1 302 738 6680).

AngloGold, as it conducts business today, was formed in June 1998 through the consolidation of the gold interests of Anglo American Corporation of South Africa Limited (AAC) and its associated companies into a single, focused, independent, global gold company. Vaal Reefs Exploration and Mining Company Limited (Vaal Reefs), the vehicle for the consolidation, changed its name to AngloGold Limited and increased its authorized share capital, effective March 30, 1998. AngloGold then acquired, in share-for-share exchanges in terms of South African schemes of arrangement and following shareholder approval, all of the issued share capital of the following participating companies:

- East Rand Gold and Uranium Company Limited (Ergo);
- Eastvaal Gold Holdings Limited (Eastvaal);
- Southvaal Holdings Limited (Southvaal);
- Free State Consolidated Gold Mines Limited (Freegold);
- Elandsrand Gold Mining Company Limited (Elandsrand);
- H.J. Joel Gold Mining Company Limited (HJ Joel); and
- Western Deep Levels Limited (Western Deep Levels)

(collectively the "participating companies"). A total of 51,038,968 ordinary shares were issued to AAC and 66,010,118 ordinary shares to other shareholders in exchange for their shares in these companies.

In addition, AngloGold acquired in private transactions with AAC and minority shareholders certain share interests in gold mining companies, including:

- approximately 17 percent of Driefontein Consolidated Limited (Driefontein);
- 100 percent of Anmercosa Mining (West Africa) Limited (Anmin West Africa);

- approximately 89 percent of Western Ultra Deep Levels Limited (Western Ultra Deep);
- approximately 52 percent of Eastern Gold Holdings Limited (Eastern Gold);
- 100 percent of Erongo Mining and Exploration Company Limited (Erongo); and
- other sundry share interests

(collectively the "share interests companies"). A total of 25,734,446 ordinary shares were issued to AAC and 957,920 ordinary shares to minority shareholders in exchange for their shares in these companies.

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AngloGold also acquired certain gold exploration and mining rights from AAC and other companies in exchange for which 1,623,080 ordinary shares were issued to AAC and 4,210,412 ordinary shares to other companies.

Prior to the consolidation, Vaal Reefs was a client company of AAC under a service agreement and HJ Joel was a client company of Johannesburg Consolidated Investments Limited (JCI) under another service agreement. Under these agreements, AAC and JCI provided certain technical, administrative, secretarial and purchasing services. In connection with the above transaction, AngloGold acquired from AAC and JCI all the rights under these service agreements relating to the participating companies listed above. AngloGold now provides these services. The rights under the service agreements were acquired from AAC in exchange for 6,834,872 ordinary shares of AngloGold, and the rights under the service agreement from JCI were acquired for cash of R62.5 million.

The consolidation was approved by the required majorities of the shareholders of AngloGold and the participating companies and became effective on June 29, 1998 for accounting purposes. The participating companies and the 50 percent or more owned share interests companies became subsidiaries, and the less than 50 percent owned share interests companies became associate companies.

In December 1998, AngloGold agreed to purchase Minorco's gold interests located primarily in North and South America. This transaction became effective March 31, 1999. See "Item 4B.: Business overview - Products, operations and geographic locations - North American operations" and " - South American

operations".

With effect from December 31, 1999 AngloGold acquired Acacia Resources in Australia, including all or part of new mining operations and exploration activities. See "Item 4B.: Business overview - Products, operations and geographic locations - Australian operations".

With effect from July 3, 2000, AngloGold acquired a 40 percent interest in the Morila mine located in Mali from Randgold Resources. See "Item 4B.: Business overview - Products, operations and geographic locations - East and West African operations - Morila".

With effect from December 15, 2000, AngloGold acquired a 50 percent interest in the Geita mine located in northern Tanzania from Ashanti Goldfields Limited. See "Item 4B.: Business overview - Products, operations and geographic locations - East and West African operations - Geita".

In 2000, in support of its market development initiatives, AngloGold acquired a 25 percent interest in OroAfrica, South Africa's largest manufacturer of gold jewellery and a 33 percent holding in GoldAvenue, an e-commerce business in gold, created jointly with JP Morgan and Produits Artistiques de Metaux Precieux (PAMP).

In December 2000, agreement was reached with Harmony Gold Mining Company Limited, whereby Harmony agreed to purchase AngloGold's Elandsrand and Deelkraal mines with effect from February 1, 2001 for an amount of \$109 million. All conditions precedent relative to the sale were fulfilled on April 9, 2001 on which date the agreement of sale became unconditional. See note 24 to the consolidated financial statements "Sales of shafts".

In terms of an agreement signed with African Rainbow Minerals (Proprietary) Limited (formerly African Rainbow Minerals & Exploration (Proprietary) Limited) ("ARM") in January 1998, the No. 2 Shaft Vaal River Operations was tributed to ARM on the basis that 40 percent of all revenue, costs and capital expenditure would be attributable to ARM, with the balance to AngloGold. With effect from July 1, 2001, AngloGold announced that it had disposed of its interests in No. 2 Shaft Vaal River Operations to ARM for the sum of \$1 million. See note 24 to the consolidated financial statements "Sales of shafts".

On September 5, 2001, AngloGold announced that it was to make a takeover offer for Normandy Mining Limited (Normandy), Australia's largest listed gold mining company. The offer was to be settled in AngloGold shares in the ratio of 4.30 AngloGold shares for every 100 Normandy shares. The final offer to Normandy shareholders comprised 4.30 AngloGold shares plus a cash consideration of A\$30 for every 100 Normandy shares. At the close of the offer on January 18, 2002, AngloGold had received acceptances totaling 159,703,481 Normandy shares (7.16 percent of the Normandy issued share capital). Arising out of the offer, a total of 6,869,602 AngloGold ordinary shares were issued. This excludes 143,630 AngloGold ordinary shares issued under the top-up facility to Normandy shareholders. The Normandy shares acquired were sold on the market on January 21, 2002 realizing a total of \$158 million. See note 2 to the consolidated financial statements "Acquisitions and disposals of businesses".

On April 11, 2002 AngloGold announced that the final condition precedent for the sale of its Free State assets to African Rainbow Minerals Gold Limited (formerly African Rainbow Minerals (Proprietary) Limited) and Harmony Gold Mining Company Limited, through a jointly-owned company ("Free Gold"), had been fulfilled for a net consideration of \$229 million including tax payable by AngloGold and net of contractual obligations pursuant to the sale. The sale was effective from January 1, 2002. See note 24 to the consolidated financial statements "Sales of shafts".

During July 2002 AngloGold acquired an additional 46.25 percent of the equity, as well as the total loan assignment, of Cerro Vanguardia SA, a company conducting gold mining operations in Argentina, from Prez Companc International SA, for a net consideration of \$97 million, thereby increasing its interest in Cerro Vanguardia to 92.5 percent. For a full discussion see note 2 to the consolidated financial statements "Acquisitions and disposals of businesses".

AngloGold disposed of its wholly-owned subsidiary, Stone and Allied Industries (O.F.S.) Limited, a stone crushing company, to a joint venture of that company's existing management and a group of black entrepreneurs, with effect from October 1, 2002, for a consideration of R5 million, comprising R1.4 million in respect of the equity interest and R3.6 million, a loan claim. In respect of the equity interest, R450,000 in cash and the outstanding balance of R950,000 together with the loan of R3.6 million is payable in five equal annual installments, together with interest, commencing October 1, 2003. The agreement of sale provides for a 10 percent interest in Stone and Allied Industries (O.F.S.) Limited to be held by Masakhisane Investment Limited, a wholly-owned subsidiary established by AngloGold in terms of its Small and Medium Enterprises Development Initiative, which company will render technical and administrative assistance to the purchasers until the total amount of the consideration has been settled. See note 2 to the consolidated financial statements "Acquisitions and disposals of businesses".

On February 27, 2003, AngloGold announced that it had entered into a purchase and sale agreement with Queenstake Resources USA Inc (Queenstake) for its interest in the Jerritt Canyon Joint Venture. This follows an unsolicited offer by Queenstake to the Jerritt Canyon joint venture partners. AngloGold currently owns 70 percent of the joint venture and is the operator and managing partner of the Jerritt Canyon mine.

In terms of the agreement, Queenstake will pay the Jerritt Canyon Joint Venture \$8 million on closing, with \$6 million in deferred payments, with additional royalty payments. Queenstake will accept full closure and reclamation and other liabilities. The transaction is expected to close during April 2003. See note 30 to the consolidated financial statements "Subsequent events".

On March 13, 2003, AngloGold announced that its wholly-owned subsidiary, AngloGold Australia Limited signed a new joint venture agreement with Striker Resources NL and De Beers Australia Exploration Limited, covering a large ground holding in the east Kimberley region of Western Australia. AngloGold, as manager of the joint venture, has agreed to spend an initial \$356,940 on gold exploration and has the right to earn 51 percent in all the tenements subject to the agreement, via a series of joint venture agreements, for total combined expenditure of \$4.61 million. The agreement comprises the right to earn 51 percent in the Oombulgurri Gold Project by spending \$3 million, and two options to earn 51 percent by spending a combined \$1.64 million on tenements in which Striker holds joint interest with AKD Limited in one case, and with Ellendale Resources NL in another. The area of influence covered by the agreements totals more than 17,000 square kilometers and both Striker and De Beers will provide AngloGold with access to their databases for the region, including drill and sample material. See note 30 to the consolidated financial statements "Subsequent events".

For a detailed discussion of the principal capital expenditures of the company, see "Item 5B.: Liquidity and capital resources - Investing activities".

#### **4B. Business overview**

##### **Gold market**

The gold market is relatively liquid compared with many other commodity markets, with the price of gold generally quoted in US dollars. Physical demand for gold is primarily for fabrication purposes, and gold is traded on a world-wide basis. Fabricated gold has a variety of uses, including jewellery (which accounts for almost 80 percent of fabricated demand), electronics, dentistry, decorations, medals and official coins. In addition, central banks, financial institutions and private individuals buy, sell and hold gold bullion as an investment and as a store of value.



The use of gold as a store of value (the tendency of gold to retain its value in relative terms against basic goods and in times of inflation and monetary crisis) and the large quantities of gold held for this purpose in relation to annual mine production have meant that historically the potential total supply of gold has been far greater than demand. Thus, while current supply and demand play some part in determining the price of gold, this does not occur to the same extent as for other commodities.

Instead, the gold price has from time to time been significantly affected by macro-economic factors such as expectations of inflation, interest rates, exchange rates, changes in reserve policy by central banks, and global or regional political and economic crises. In times of inflation and currency devaluation, gold is often seen as a refuge, leading to increased purchases of gold and a support for the price of gold.

Interest rates affect the price of gold on several levels. High real interest rates increase the cost of holding gold and discourage physical buying in developed economies. High US dollar interest rates would also make hedging or forward selling of gold attractive because of the higher contango premiums available in the forward prices. Increased forward selling in turn has an impact on the spot price at the time of such sales. At a secondary level, changes to interest rates are viewed by market participants as indicators of other economic changes (including expectations of inflation), and have been used historically by market participants to motivate decisions to buy or sell gold.

Changes in exchange rates against the US dollar affect levels of demand for gold in non-US economies. In South East Asia, for example, during the mid-1990s strong local currencies encouraged robust gold demand due to low real gold prices in local currencies. In contrast, when South East Asian currencies fell sharply against the US dollar in 1997, the local currency values of gold increased proportionally, and wholesale selling of metal ensued in the region. Recoveries in Asian currencies since 1999 have seen a resumption in earlier levels of gold demand in the region as local prices of gold declined with stronger local currencies. In the investment market, a strong dollar during the 1990's had a negative effect on investment demand for gold in developed economies. The weakness in the US currency since 2001 has seen that influence reversed, and dollar weakness has been seen as a signal to buy gold.

Whilst political and economic crises can affect the gold price both positively or negatively, neither effect is inevitable. As a recent illustration of this uncertain effect, in 1998, despite negative sentiments caused by the Russian financial crisis, and ensuing corrections in the capital markets world-wide, the price of gold remained stable. By contrast, in 2002 political events have helped to drive the gold price higher, particularly in respect of the current war in Iraq.

## **Mining process**

The mining process can be divided into four main phases:

- finding the orebody;
- creating access to the orebody;
- removing the ore by mining or breaking the orebody; and
- transporting the broken material from the mining face to the plants for treatment.

This basic process applies to both underground and surface operations.

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### **Orebody discovery**

Identification of orebodies is the output of the geological search for new reserves. The search is extended once access to the orebody has been obtained to enable clearer identification of the portions to be mined.

### **Access to the orebody**

In underground mines, shafts are sunk to gain access to the orebody. Once the shaft has been sunk and equipped, horizontal development at various intervals extends access to the location of the reef to be mined. On-reef development then provides specific mining access.

In open-pit mining, access is gained through overburden stripping, which removes the covering layers of topsoil or rock.

### **Ore removal**

Ore removal from the host rock begins with drilling and blasting of the accessible ore. The blasted faces are then cleaned and the ore is made available to the ore transport system.

In open-pit mines, gold-bearing material may require drilling and blasting and is usually loaded by excavators to make it available to the ore transport system.

### **Ore transport**

Underground train systems collect broken ore and remove it to a series of ore passes to convey it to the bottom of the shaft from where it is hoisted to the surface. Conveyor belts or surface railway systems are used to transport the ore to treatment plants. The accompanying waste rock is then placed on waste rock dumps.

Open-pit mines usually transport ore to treatment facilities in large-capacity haultrucks.

### **Services**

Mining activities require extensive services, both on the surface and underground, including:

- mining engineering services;
- mine planning;
- ventilation;
- provision of consumable resources;
- engineering services;
- financial, administration and human resource services; and
- environmental/permitting services.

## **Processing**

Extracting gold from ore is a critical component of the overall economic success of the mining process. Extensive research and development has resulted in: a special elution process; linear screening to remove tramp materials; and the pump cell (for pumping pulp between stages in the carbon-in-pulp section). Processes are also constantly re-engineered in order to improve productivity and security. Consequently, modern plants are characterized by a high degree of automation and a relatively low headcount.

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A typical gold plant circuit consists of the following:

- **Delivery from the shafts and mining operations**

Delivery from the shafts and mining operations is either direct, by means of conveyor systems, or by road or rail via both public and private networks. Systems operated by AngloGold conform to operating standards utilized in the mining industry.

- **Comminution**

Comminution is the breaking up of ore to make gold available for treatment. Conventionally, this process occurs in multi-stage crushing and milling circuits. Modern technology is based on large mills fed directly with run-of-mine material.

- **Treatment**

Gold in the milled ore is dissolved by leaching in agitated tanks using cyanide with oxygen enhancement. This more cost-effective carbon-in-pulp (CIP) process has largely superceded the use of rotary drum

filtration. For refractory gold ores, as often found in North and South America, the ore treatment is more complex and among other processes requires whole-ore roasting (as practiced at Jerritt Canyon) or flotation and subsequent concentrate roasting (as at Morro Velho's Cuiab circuit) where gold is extracted by leaching with cyanide.

- **Recovery**

Filtrate produced in rotary filter plants is contacted with zinc powder to produce a gold precipitate. With the CIP process, the gold adsorbed on carbon is eluted to produce a concentrated gold-bearing solution from which the gold can be recovered either by zinc precipitation or by electro-winning. The precipitate is then smelted to produce gold bullion, or dor bars, which are transported to a refinery for refining to a good delivery status. Good delivery status refers to a bar that is accepted to contain the quantity and purity of gold as stamped on the bar, without further weighing or assaying.

- **Secondary processes**

In order to increase recovery of gold from various tailings arising from extraction processes, secondary gold recovery processes are used. These include pyrite flotation and sulphuric acid production, followed by gold recovery.

- **Uranium plants**

The only uranium plant still operating in South Africa is at the Vaal River operations. The plant employs the NIMCIX ion exchange process, followed by solvent extraction. The NIMCIX ion exchange process is the adsorption of uranium in solution onto resin beds, which are then eluted to introduce the uranium into a concentrated purified form in solution. Uranium plants are completely separate from the plants built to recover secondary gold from tailings.

- **Sulphuric acid plants**

In addition to gold and uranium production, a number of other processes have been or are being used to enhance gold recoveries. One of these processes is pyrite flotation, where the resultant pyrite concentrate is used to feed a sulphuric acid plant roaster, as at Ergo, Vaal River and Morro Velho. By employing this process, AngloGold benefits from acid sales as well as recovering gold from the roaster calcine.

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## Summary of metallurgical operations

### South African operations

	West Wits		Vaal River			Ergo	
	Mponeng (previously No. 1 plant)	Savuka (previously No. 3 plant)	No. 1 plant	No. 2 plant	No. 8 plant	No. 9	
<b>Gold plants</b>							
Capacity (000 tonnes/month)	180	280	180	240	240	420	4,420
Technology	ROM mills (3), cyanide, CIP, elution, electro-winning	crushers, tube mills, ball mills, cyanide, CIP	ROM mills (2), ball mills, cyanide, CIP, elution, electro-winning	cyanide, CIP, elution, electro-winning	crushers, tube mills, ball mills, cyanide, CIP, electro-winning	ROM mills (6), cyanide, CIP, electro-winning	retreatment cyanide, CIL, zinc-precipitation
<b>Uranium plants</b>							
Capacity (000 tonnes/month)						250	
<b>Pyrite flotation plants</b>							
Capacity (000 tonnes/month)				250	145	250	800
<b>Sulphuric acid plants</b>							
Production (tonnes/month)				7,500		6,300	15,000

**Summary of metallurgical operations****East and West African operations**

	<b>Geita</b>	<b>Morila</b>	<b>Yatela</b>	<b>Sadiola</b>	<b>Navachab</b>
<b>Gold plants</b>					
Capacity (000 tonnes/month)	333	250	210	335	110
Technology	crushing, SAG milling, ball mill, gravity concentration cyanide leach, CIP, elution, electro-winning	crushing, SAG milling, ball mill, gravity concentration cyanide leach, CIP, elution, electro-winning	mineral sizing, agglomeration, heap leaching, carbon adsorption	mineral sizing, SAG mills (2), ball mill, cyanide leach, CIP, elution, electro-winning	crushing, SAG milling, cyanide leach, CIP, elution, electro-winning

For detailed discussion on Geita, Morila and Yatela acquisitions, see "Item 4B: business overview - Products, operations and geographic locations".

### Summary of metallurgical operations

	North American operations		South American operations			
	Colorado <sup>(1)</sup>	Jerritt Canyon <sup>(2)</sup>	Cerro Vanguardia	Morro Velho Cuiaba	Morro Velho Raposos	Serra Grande
<b>Gold plants</b>						
Capacity (000 tonnes/month)		113	75	63	30	62
- crushed ore production	1,512					
- total ore production	1,535					
- solution processed	2,235					
Technology	crushers, valley heap leach, gold adsorption by carbon in solution, elution, electro-winning	crushers, dry ball mill, roasting, cyanide, CIP, elution, electro-winning	crushers, ball mill in cyanide, CCD leach, CIL, elution, zinc precipitation, cyanide recovery	crushers, ball mill, gravity concentration, flotation, acid plant, calcine leach, rotary filters, CIP, elution, zinc precipitation, electro-winning	crushers, ball mill, gravity concentration, cyanide, CIP, zinc precipitation, electro-winning	crushers, ball mill, gravity concentration, cyanide, rotary filters, zinc precipitation
<b>Pyrite flotation plants</b>						
Capacity (000 tonnes/month)				63		



**Sulphuric acid plants**

Production (tonnes/month) 10,800

(1) At the Colorado plant capacity increased from 1999 as a third carbon column (gold recovery from solution) was commissioned.

(2) A sale of AngloGold's full interest in the Jerritt Canyon Joint Venture has been agreed . Closing of the sale is expected by no later than March 31, 2003.

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**Summary of metallurgical operations**

	Sunrise Dam	Australian operations Boddington <sup>(1)</sup>		Union Reefs	Tanami <sup>(2)</sup>
		Basement	Leach plant		
<b>Gold plants</b>					
Capacity (000 tonnes/month)	283	<b>Closed</b> 45	<b>Closed</b> 683	233	125
Technology	crushers, ball mills, gravity concentrate, CIL, elution, electro-winning	crushers, mills, gravity concentrate, flotation, CIL, elution, electro-winning	crushers, mills, CIL, elution, electro-winning	crushers, mills, gravity concentrate, CIL, elution, electro-winning	crushers, mills, gravity concentrate , CIL , elution , electro-winning

(1) The Boddington plant is on care and maintenance, pending commencement of the expansion project;

- (2) The Tanami process plant is leased to Newmont North Flinders.

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## **Products, operations and geographic locations**

AngloGold's main product is gold. An insignificant portion of its revenue is derived from the sales of silver, uranium oxide and sulphuric acid. AngloGold sells its products on world markets.

The operations and geographical areas in which AngloGold currently operates are shown in Diagram 1.

### **South African operations**

AngloGold's South Africa region comprises seven underground operations located in two geographic areas on the Witwatersrand Basin:

- the West Wits area, near Carletonville, straddling the North West and Gauteng provinces (comprising Mponeng, Savuka and TauTona); and
- the Vaal River area, near Orkney, in the North West Province and Free State Province (comprising Great Noligwa, Kopanang, Tau Lekoa and Moab Khotsong, and

a surface metallurgical reclamation operation, Ergo, located near Johannesburg in Gauteng Province.

AngloGold sold its operation in the Free State with the effective date of January 1, 2002. These operations comprised the Bambanani, Joel, Tshepong and Mathjabeng mines and related surface operations. For a full discussion of the sale, see "Item 4A.: "History and development of the company" and Note 24 to the consolidated financial statements "Sales of shafts".

**Geology:** The Witwatersrand Basin comprises a six-kilometer thick sequence of interbedded argillaceous and arenaceous sediments that extends laterally for some 300 kilometers north-east south-west and 100 kilometers north-west south-east on the Kaapvaal Craton. The upper portion of the basin, which contains the orebodies, crops out at its northern extent near Johannesburg. Further west, south and east the Witwatersrand Basin is overlain by up to four kilometers of Archaean, Proterozoic and Mesozoic volcanic and sedimentary rocks. The Witwatersrand Basin is late Archaean in age and is considered to be in the order of 2.7 to 2.8 billion years old.

In the Witwatersrand Basin, gold occurs in laterally extensive quartz pebble conglomerate horizons termed reefs that are generally less than two meters thick and are widely considered to represent laterally extensive braided fluvial deposits. Separate fan systems were developed at different entry points and these are preserved as distinct goldfields. There is still much debate about the origin of the gold mineralization in the Witwatersrand Basin. Gold was generally considered to have been deposited syngenetically with the conglomerates but there has been a swing to an epigenetic origin theory. However, the most fundamental control to the gold distribution in the Basin remains the sedimentary features, such as facies variations and channel directions. Gold generally occurs in native form often associated with pyrite and carbon, with quartz being the main gangue mineral.

- **West Wits operations**

**General description:** The West Wits operations comprise Mponeng, Savuka and TauTona mines. Savuka and TauTona share a processing plant, whereas Mponeng has its own individual processing plant. These operations comprise crushers, mills, CIP and zinc precipitation and smelting facilities.

**Geology:** Two reef horizons are exploited at the West Wits operations, the Ventersdorp Contact Reef (VCR) located at the top of the Central Rand Group and the Carbon Leader Reef (CLR) near the base. The separation between the two reefs increases from east to west from 400 to 900 meters due to the VCR unconformity. TauTona and Savuka mine both reefs whereas Mponeng only mines the VCR. The structure is relatively simple; faults of greater than 70 meters are rare. The CLR consists of one or more conglomerate units and varies from several centimeters to more than three meters in thickness. Regionally, the VCR dips at approximately 21 degrees but may vary between 5 and 50 degrees, accompanied by changes in thickness of the conglomerate units. Where the conglomerate has the attitude of the regional dip, it tends to be thick, well-developed and accompanied by higher gold accumulations. Where the attitude departs significantly from the regional dip, the reef is thin.

### Operating and production data for West Wits operations

	Mponeng	Elandsrand <sup>(1)</sup>	TauTona	Savuka	Deelkraal <sup>(1)</sup>
<b>2000</b>					
Pay limit (oz/t)	0.29	0.26	0.48	0.38	0.34
Pay limit (g/t)	9.80	9.07	16.60	13.16	11.64
Recovered grade (oz/t)	0.235	0.186	0.330	0.245	0.209
Recovered grade (g/t)	8.05	6.37	11.30	8.39	7.17
Gold production (000 oz)	402	355	599	272	175
Total cash costs (\$/oz) <sup>(2)</sup>	238	281	172	247	294
Total production costs (\$/oz) <sup>(2)</sup>	279	327	219	335	423
Capital expenditure (\$ million)	28.9	18.9	5.9	1.0	1.6
Employees <sup>(3)</sup>	4,924	5,690	5,864	4,067	3,491
Outside contractors <sup>(3)</sup>	565	320	342	112	105
<b>2001</b>					
Pay limit (oz/t)	0.26	0.31	0.51	0.35	0.51
Pay limit (g/t)	8.80	10.6	17.40	11.92	17.5
Recovered grade (oz/t)	0.225	0.179	0.348	0.232	0.220
Recovered grade (g/t)	7.71	6.13	11.94	7.97	7.55
Gold production (000 oz)	366	20	622	240	13
Total cash costs (\$/oz) <sup>(2)</sup>	223	362	154	248	331
Total production costs (\$/oz) <sup>(2)</sup>	281	362	180	354	385
Capital expenditure (\$ million)	29.4	1.5	7.2	0.4	-
Employees <sup>(3)</sup>	5,260	-	5,047	3,645	-
Outside contractors <sup>(3)</sup>	486	-	285	337	-
<b>2002</b>					
Pay limit (oz/t)	0.24	-	0.47	0.38	-
Pay limit (g/t)	7.54	-	14.54	11.90	-
Recovered grade (oz/t)	0.252	-	0.340	0.206	-
Recovered grade (g/t)	8.63	-	11.66	7.07	-

Gold production (000 oz)	466	-	643	236	-
Total cash costs (\$/oz) <sup>(2)</sup>	178	-	132	245	-
Total production costs (\$/oz) <sup>(2)</sup>	240	-	154	301	-
Capital expenditure (\$ million)	31.7	-	10.9	5.7	-
Employees <sup>(3)</sup>	5,237	-	5,397	4,396	-
Outside contractors <sup>(3)</sup>	456	-	318	514	-

(1) *Elandsrand and Deelkraal operations were sold effective February 1, 2001 to Harmony Gold Mining Company Limited.*

(2) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Item 5A.: Operating results - Total cash costs and total production costs".*

(3) *Average for the year.*

## Operating review

Volumes mined increased at **Mponeng** by 21 percent and recovered grade rose to 8.63 g/t during 2002. Although newly equipped raise lines at Mponeng had an impact on costs, the flexibility afforded by these had a favorable impact on production from mid-year. As a result, gold production increased by 27 percent to 466,000 ounces from 366,00 ounces in 2001, while total cash costs decreased by 20 percent to \$178 per ounce compared with \$223 per ounce in 2001. In rand terms, total cash costs decreased by 3 percent during the same period.

At **TauTona**, production rose by 3 percent to 643,000 ounces from 622,000 in 2001. Total cash costs decreased to \$132 per ounce, a 14 percent reduction from the 2001 total cash cost of \$154 per ounce. In rand terms, total cash costs increased by 5 percent during the same period.

Increased seismicity in the VCR at **Savuka** had a negative impact on the volumes mined at the beginning of the year, although improvements in the rate of face advance countered this to some extent. After having mined a pillar in the first half of the year, the grade dropped on the depletion of the pillar. Consequently, gold produced decreased by 2 percent to 236,000 ounces, while total cash cost decreased by 1 percent to

\$245 per ounce compared with 2001 when gold production was 240,000 ounces at a total cash cost of \$248 per ounce. In rand terms, however, total cash costs increased by 20 percent as a result of the accelerated development plan to match the new life of mines profiles.

A lack of available face length during the first half of 2001 had a negative impact on mining volumes at **Mponeng**. The shortfall, together with the lower-than expected face values, kept recovered gold at low levels for the first half of 2001. Planned developments to improve face length availability resulted in four additional raise lines coming into production in the second half of 2001, restoring production flexibility and resulting in significantly increased gold production by year-end. Overall, gold production for 2001 was lower than expected, while total cash costs per ounce were maintained. At **TauTona** a focus on releasing gold inventory resulted in an improvement in grade during 2001, although seismicity had an impact on mining volumes, and winder and power problems in the lower Carbon Leader sections also affected production in 2001. Gold production was up 4 percent and total cash costs per ounce were maintained in 2001. TauTona accounted for some 13 percent of the region's gold production in 2001. **Savuka** had a slow start to the year 2001, after a ten-day December 2000 break due to orepass problems and the need to address safety issues. Two seismic events in the shaft pillar area resulted in crews being moved to areas with much lower grades, with an overall impact on grade and volume mined. Production was back on track by the second quarter of 2001 and performance for the year 2001 as a whole was satisfactory.

## Growth prospects

Progress was made during 2002 with the **Mponeng Shaft Deepening Project**. The project involves the development of ore reserves from the VCR on 113, 116 and 120 levels (located 11,300, 11,600 and 12,000 feet below the surface, respectively). The project will add some 2.8 million ounces to production and extend the life of mine by five years to 2012. Total capital expenditure for the project is \$159.3 million (converted at the closing exchange rate for 2002) with some \$37.2 million remaining at year end 2002. Average project cash costs over the life of mine should be in the region of \$180 per ounce converted at the closing exchange rate for 2002. In-circle development was completed during February 2003. Access development on 113 level (11,300 feet below surface) has been completed and permanent equipping began in January 2003. At 116 and 120 levels (11,600 feet and 12,000 feet below surface), access development is scheduled for completion in May 2003.

The **TauTona Extension Project** has two areas of focus, namely accessing and mining part of the shaft pillar, and accessing and mining an area east of the Bank Dyke (previously part of the Mponeng mine plan). The project will add a total of 2.7 million ounces of production over the life of the mine, at a total capital cost of \$50.4 million (converted at the closing exchange rate for 2002). Approximately \$18.7 million of this amount has already been spent as of the end of 2002. Life of mine has been extended by six years to 2013, with average project cash costs expected to be in the order of \$180 per ounce converted at the closing exchange rate for 2002. Currently, development to access the CLR and area east of the Bank Dyke is in progress, while rehabilitation of the haulages continues. The drilling program from various levels is in progress.

## Outlook

At **Mponeng**, gold production is expected to decrease to 401,000 ounces in 2003, while total cash costs should increase to \$244 per ounce from the cost of the increased development plan and lower gold production. In 2003, capital expenditure is expected to be in the region of \$46 million for expansion and shaft deepening, ore reserves development and infrastructure upgrades.

Looking forward to 2003, production at **Savuka** is expected to decrease to 235,000 ounces, while total cash costs should rise to \$330 per ounce following the higher volumes mined and increased development planned. The higher volumes mined as planned for 2003 are to counter the 23 percent drop in recovered grade. Capital expenditure on expansion projects and infrastructure refurbishment is expected to be in the region of \$10 million in 2003. Savuka has strategic synergies with TauTona.

Gold production at **TauTona** is expected to decrease in 2003 to 623,000 ounces at a total cash cost of \$168 per ounce mainly from lower gold production and inflationary pressures. During 2003, capital expenditure is likely to be in the region of \$22 million, on infrastructure refurbishment and expansion projects.

- **Vaal River operations**

**Description:** AngloGold's Vaal River operations are located in the original Vaal Reefs mining area of the Witwatersrand Basin, and comprise three operating mines, Great Nologwa, Kopanang and Tau Lekoa and a developing mine, Moab Khotsong.

The Vaal River complex also has four gold plants, one uranium plant and one sulphuric acid plant. The Vaal River processing plants include crushers, mills, CIP and electro-winning facilities and are able to treat between 180,000 and 420,000 tonnes of ore per month. Although the Vaal River operations produce uranium oxide as a by-product of the production of gold, the value is not significant relative to the value of gold produced.

**Geology:** In order of importance, the reefs mined at the Vaal River operations are the Vaal Reef, the VCR and the "C" Reef. The Vaal Reef contains approximately 85 percent of the reserve tonnage with mining grades between 10 and 20 grams per tonne. It comprises a series of oligomictic conglomerates and quartzite packages developed on successive unconformities. Several distinct facies have been identified, each with its unique gold distribution and grade characteristic. The VCR has a lower grade than the Vaal Reef, and contains approximately 15 percent of the estimated reserves. The economic portion is mainly concentrated in the western part of the lease area. It can take the form of a massive conglomerate, a pyritic sand unit with intermittent pebble layers or a thin conglomerate horizon. The reef is located at the contact between the overlying Kliprivierberg Lavas of the Ventersdorp SuperGroup and the underlying sediments of the Witwatersrand SuperGroup which creates a distinctive seismic reflector. The VCR is located up to one kilometer above the Vaal Reef. The "C" Reef is a thin, small pebble conglomerate with a carbon-rich basal contact, located approximately 270 meters above the Vaal Reef. It has less than 1 percent of the estimated reserves with grades similar to the Vaal Reef, but more erratic. The most significant structural features are the north-east striking normal faults which dip to the north-west and south-east, resulting in zones of fault loss.

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### Operating and production data for Vaal River operations

	Great Noligwa <sup>(1)</sup>	Kopanang	Tau Lekoa	Moab Khotsong <sup>(1)</sup>
<b>2000</b>				
Pay limit (oz/t)	0.32	0.38	0.17	-
Pay limit (g/t)	10.95	13.13	5.72	-
Recovered grade (oz/t)	0.359	0.205	0.145	-
Recovered grade (g/t)	12.32	7.04	4.98	-
Gold production (000 oz)	971	481	315	-
Total cash costs (\$/oz) <sup>(2)</sup>	144	216	216	-
Total production costs (\$/oz) <sup>(2)</sup>	165	249	286	-
Capital expenditure (\$ million)	3.0	5.2	3.0	45.5
Employees <sup>(3)</sup>	8,627	7,297	3,627	776
Outside contractors <sup>(3)</sup>	809	489	577	1,080
<b>2001</b>				
Pay limit (oz/t)	0.29	0.36	0.14	-
Pay limit (g/t)	9.91	12.28	4.78	-
Recovered grade (oz/t)	0.360	0.216	0.129	-
Recovered grade (g/t)	12.34	7.40	4.42	-



Gold production (000 oz)	1,004	494	286	-
Total cash costs (\$/oz) <sup>(2)</sup>	122	178	203	-
Total production costs (\$/oz) <sup>(2)</sup>	135	204	248	-
Capital expenditure (\$ million)	1.2	2.8	2.2	43.2
Employees <sup>(3)</sup>	7,185	6,371	3,200	803
Outside contractors <sup>(3)</sup>	806	632	716	1,425
<b>2002</b>				
Pay limit (oz/t)	0.32	0.35	0.14	-
Pay limit (g/t)	9.96	10.78	4.30	-
Recovered grade (oz/t)	0.321	0.211	0.130	-
Recovered grade (g/t)	11.02	7.23	4.45	-
Gold production (000 oz)	880	511	311	-
Total cash costs (\$/oz) <sup>(2)</sup>	124	165	192	-
Total production costs (\$/oz) <sup>(2)</sup>	142	194	248	-
Capital expenditure (\$ million)	11.5	8.5	1.5	35.8
Employees <sup>(3)</sup>	8,356	6,953	3,890	968
Outside contractors <sup>(3)</sup>	913	685	732	1,011

(1) *In 2002, 2001 and 2000, Moab Khotsong was mined from Great Nologwa. Operating data for Great Nologwa includes Moab Khotsong operating data for these periods.*

(2) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(3) *Average for the year.*

## Operating review

Volume mined at **Great Nologwa** decreased for 2002 compared with 2001 as a result of the cumulative effects of a number of damaging seismic events during the second quarter of 2002, which continued to be felt into the third and fourth quarters, as a result of a lack of available production mining faces. At the same time, steps to further improve workplace safety were taken and changes were made to the mining plan which resulted in a temporary slowdown in mining production. Consequently, gold production decreased by 12 percent to 880,000 ounces in 2002 from 1,004,000 ounces in 2001. Total cash costs rose by 2 percent to \$124 per ounce in 2002 compared to \$122 per ounce in 2001, largely as a result of the decrease in gold production and costs incurred following the seismic events. In rand terms, total cash costs increased by 26 percent over the same period.

At **Kopanang**, gold production increased by 3 percent to 511,000 ounces in 2002 (2001: 494,000 ounces), mainly as a result of increased volumes mined through improved labor efficiencies. Total cash costs decreased by 7 percent from \$178 per ounce in 2001 to \$165 per ounce in 2002. In rand terms, however, total cash costs increased by 14 percent, mainly as a result of increased cementitious support for safety reasons and lower by-product contributions due to the lower exchange rate.

At **Tau Lekoa**, gold production increased by 9 percent from 286,000 ounces in 2001 to 311,000 ounces in 2002, total cash costs decreased by 6 percent to \$192 per ounce in 2002 from \$203 per ounce in 2001. In rand terms, however, total cash costs increased by 16 percent during the same period. This was primarily the result of increased volumes mined, increased labor building up to a higher volume platform and lower contributions from by-products.

At **Moab Khotsong** development is continuing as planned, with excavation of the 101 level (10,100 feet below the surface) in progress.

In 2001, gold production at **Great Noligwa** was 3 percent higher than 2000, aided by an improvement in grade and higher productivity. This was partially offset by a 9 percent lower mine call factor. Total cash costs per ounce decreased over the same period, despite higher cash operating costs arising from the replacement of major hoisting equipment in the first quarter of 2001. At **Kopanang**, gold production was up 3 percent in 2001 compared to 2000 as a result of higher mining volumes and despite a lower than anticipated reduction in grades. Total cash costs per ounce were down some 17 percent in 2001 compared to 2000 and the mine accounted for 11 percent of AngloGold's South African gold production in 2001. At **Tau Lekoa**, volume mined was down slightly and gold produced declined marginally in 2001 compared to 2000 as a result of a combination of a lower mined value and a lower mine call factor, planned and unexpected yield decreases, and the need to rectify certain safety concerns. Total cash costs per ounce were maintained over the same period. Management's focus on grade improvement resulted in a slow but steady return to normal operating performance levels by 2001 year end. At **Moab Khotsong** development continued in 2001, with excavation of the 101 station (10,100 feet below the surface) in progress at year end.

### Growth prospects

The largest of the current South African projects is the development of the **Moab Khotsong** mine, located in the Vaal River area. The project comprises the sinking of a new shaft to 10,100 feet below surface (101 level) to access the Moab lease area, a 136-tonne reserve. The shaft system will have a capacity to hoist about 150,000 tonnes per month. Production is scheduled to commence in the last quarter of 2003, with full

production of 360,000 ounces per annum, expected in 2006. The mine will add a total of 4.5 million ounces to this region's production to 2015, with average total cash costs of \$129 per ounce at 2002 year's closing exchange rate. Total capital expenditure for the project is \$440 million converted at the closing exchange rate for 2002, of which some \$335 million has already been spent as of year end 2002. Development of this mine, which began in 1991, is on schedule. The main shaft extension was commissioned to a depth of 10,100 feet in June 2002. Permanent equipping of the RV shaft is 70 percent complete and commissioning took place during March 2003. Access development has progressed to a point where the first crosscut is in position and the first raiseline is being established.

## Outlook

In terms of outlook, production at **Great Noligwa** is expected to increase to 954,000 ounces during 2003, at a total cash costs of \$154 per ounce as grades continue to decline. Capital expenditure during 2003 is likely to be in the region of \$23 million for the refurbishment of infrastructure and the No. 8 plant mill.

For 2003, production at **Kopanang** is expected to increase to 512,000 ounces at total cash costs of \$220 per ounce, predominantly from higher volumes mined. Capital expenditure for the year ahead is planned at \$13 million on infrastructure refurbishment, expansion development and hostel upgrades.

Gold production at **Tau Leko**a should increase to 319,000 ounces in 2003, while total cash costs are expected to rise to \$244 per ounce mainly through higher volumes mined, lower grade and inflation. Tau Leko anticipates capital expenditure of about \$8 million during 2003, on technology projects, expansionary projects (Goedgenoeg and Weltevreden) and infrastructural refurbishment.

- **Ergo operations**

**Description:** AngloGold's Ergo operations re-treat tailings dams and sand to recover gold and produce sulphuric acid using a secondary process. These tailings dams are located on the East Rand of the Witwatersrand. Since 1987, material has been treated through two CIL plants, believed to be two of the largest of their kind in the world. Ergo can only profitably treat tailings dams if they exceed a certain grade and, as a result of the expected rate of depletion of the higher grade material available, the operation is not expected to continue past its current estimated life of early 2005.

**Operating and production data for Ergo operations**

	<b>2000</b>	<b>2001</b>	<b>2002</b>
Pay limit (oz/t)	0.01	0.01	0.01
Pay limit (g/t)	0.18	0.19	0.29
Recovered grade (oz/t)	0.007	0.007	0.007
Recovered grade (g/t)	0.24	0.25	0.25
Gold production (000 oz)	321	332	264
Total cash costs (\$/oz) <sup>(1)</sup>	242	215	184
Total production costs (\$/oz) <sup>(1)</sup>	321	259	277
Capital expenditure (\$ million)	(0.2)	0.1	0.2
Employees <sup>(2)</sup>	1,080	942	904
Outside contractors <sup>(2)</sup>	857	199	218

(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(2) *Average for the year.*

**Operating review**

As anticipated by AngloGold, gold production at **Ergo** decreased by 20 percent from 332,000 ounces in 2001 to 264,000 ounces in 2002 following the closure of the Daggafontein plant in December 2001. During the year, the operation was affected by higher than expected rainfall, environmental clean-up activities and power failures, which were offset by improved headgrades and increased metallurgical efficiency. Total cash costs decreased by 15 percent to \$184 per ounce from \$215 per ounce in 2001.

Gold production at **Ergo** was up during 2001 compared to 2000, reflecting a strong performance for the year. Higher head grades, increased clean-up activities at the Daggafontein plant (which closed in December 2001) and improved metallurgical efficiencies resulted in an improvement in recovered grade. Total cash costs per ounce decreased from \$242 per ounce in 2000 to \$215 per ounce in 2001.

**Growth prospects**

AngloGold expects to close the ERGO operation early 2005 and planning has started with the establishment of a closure project team. The project scope includes rehabilitation, social aspects and other liabilities associated with the closure of the operation.

## Outlook

Production is expected to decrease to 215,000 ounces in 2003 as a result of a declining headgrade. Total cash costs should rise to \$285 per ounce in 2003 from treating the same volumes at a 20 percent lower grade.

## Free State operations

**Description:** The mines in the Free State Province (comprising Bambanani, Joel, Tshepong and Matjhabeng) were sold to African Rainbow Minerals Gold Limited (formerly African Rainbow Minerals (Proprietary) Limited) and Harmony Gold Mining Company Limited through a jointly-owned company ("Free Gold") with effect from January 1, 2002 (for a full discussion, see "Item 4A.: History and development of the company" and note 24 to the consolidated financial statements "Sales of shafts").

## Operating and production data for Free State operations

	Bambanani	Tshepong	Matjhabeng	Joel
<b>2000</b>				
Pay limit (oz/t)	0.35	0.30	0.41	0.17
Pay limit (g/t)	11.86	10.16	14.17	5.97
Recovered grade (oz/t)	0.208	0.215	0.210	0.135
Recovered grade (g/t)	7.15	7.36	7.19	4.61
Gold production (000 oz)	441	320	368	210
Total cash costs (\$/oz) <sup>(1)</sup>	272	236	287	288

Total production costs (\$/oz) <sup>(1)</sup>	313	294	399	348
Capital expenditure (\$ million)	2.6	0.1	-	28.0
Employees <sup>(2)</sup>	7,453	4,601	7,738	4,151
Outside contractors <sup>(2)</sup>	208	128	95	317
<b>2001</b>				
Pay limit (oz/t)	0.39	0.23	0.31	0.16
Pay limit (g/t)	13.26	8.05	10.56	5.50
Recovered grade (oz/t)	0.229	0.239	0.226	0.104
Recovered grade (g/t)	7.86	8.20	7.75	3.56
Gold production (000 oz)	412	383	188	127
Total cash costs (\$/oz) <sup>(1)</sup>	230	178	236	345
Total production costs (\$/oz) <sup>(1)</sup>	269	219	447	441
Capital expenditure (\$ million)	3.0	0.1	-	4.5
Employees <sup>(2)</sup>	5,228	3,756	2,204	2,073
Outside contractors <sup>(2)</sup>	345	152	16	179
<b>2002</b>				
Pay limit (oz/t)	-	-	-	-
Pay limit (g/t)	-	-	-	-
Recovered grade (oz/t)	-	-	-	-
Recovered grade (g/t)	-	-	-	-
Gold production (000 oz)	-	-	-	-
Total cash costs (\$/oz) <sup>(1)</sup>	-	-	-	-
Total production costs (\$/oz) <sup>(1)</sup>	-	-	-	-
Capital expenditure (\$ million)	-	-	-	-
Employees <sup>(2)</sup>	-	-	-	-
Outside contractors <sup>(2)</sup>	-	-	-	-

(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(2) *Average for the year.*

AngloGold's East and West African operations comprise five operations, located in three African countries other than South Africa. These are the Morila, Sadiola Hill and Yatela mines in Mali in West Africa, the Navachab mine in Namibia on the south-western coast of Africa, and the Geita mine in Tanzania.

- **Sadiola (attributable 38 percent)**

**Description:** AngloGold has a 38 percent interest in, and manages, the Sadiola mine within the Sadiola exploitation area in Western Mali. The joint venture partners are IAMGOLD, a Canadian listed company (38 percent), the Government of Mali (18 percent), and the International Finance Corporation (IFC) (6 percent). The mine is situated 77 kilometers south of Kayes. Construction commenced at the Sadiola open-pit operations in 1994 and full production was achieved by June 1997, with 380,000 ounces of low cost gold being produced in the first year.

**Geology:** The Sadiola deposit occurs within an inlier of greenschist facies metamorphosed Birimian rocks known as the Kenieba Window. The specific rocks which host the mineralization are argillaceous carbonates and greywackes which have been intensely weathered to a maximum depth of 200 meters.

A series of north-south trending faults occur within the inlier, the most prominent of which, the Senegalo-Malian Shear (SM), passes through the Sadiola lease area. The mineralization occurs in the immediate vicinity of a parallel structure to the SM.

The Sadiola Hill deposit generally consists of two zones, an upper oxidized cap and an underlying sulphide zone. The present mining operation exploits the oxidized cap only. Since 2002, the deeper saprolitic sulphide ore has been mined and in future will progressively replace the depleting oxide reserves.

#### **Operating and production data for Sadiola**

	<b>2000</b>	<b>2001</b>	<b>2002</b>
Pay limit (oz/t)	0.04	0.04	0.05
Pay limit (g/t)	1.33	1.46	1.71
Recovered grade (oz/t)	0.104	0.091	0.086
Recovered grade (g/t)	3.56	3.13	2.96
Gold production (000 oz) 100 %	612	536	480
Gold production (000 oz) 38 %	232	204	182
Total cash costs (\$/oz) <sup>(1)</sup>	114	131	163
Total production costs (\$/oz) <sup>(1)</sup>	207	211	247
Capital expenditure (\$ million) 100 %	10.0	16.0	16.5
Capital expenditure (\$ million) 38 %	3.8	6.0	6.3
Employees <sup>(2)</sup>	378	361	399
Outside contractors <sup>(2)</sup>	443	472	454

(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Item 5A.: Operating results - Total cash costs and total production costs".*

(2) *Average for the year.*

## Operating review

In 2002, tonnage throughput at Sadiola was adversely affected by mineral sizer downtime in the first quarter, the low availability of high-grade oxide ore during the year and problems with the treatment of higher grade soft sulphide ore. Gold production of 182,000 attributable ounces in 2002 was 10 percent lower than the 204,000 attributable ounces produced in 2001. Total cash costs increased by 25 percent from \$131 per ounce in 2001 to \$163 per ounce in 2002 as a result of the lower production and treatment of sulphide ores. The plant conversion project to improve gold recovery from the treatment of soft sulphide ore was completed on schedule at the end of February 2002. High cyanide values in the final residue prevented the treatment of soft sulphide ore, which required high cyanide addition to maintain acceptable recoveries. A cyanide destruction plant was designed and commissioned in the third quarter of 2002 and was fully operational at year end. The system was fully optimized by the end of January 2003. The final installment on the project finance loans for the development of Sadiola was paid during the second quarter in 2002. The total repayments for the five-year period of the facility amounted to \$288 million.

Gold production decreased by 12 percent on the previous year to 536,000 ounces in 2001 (204,000 attributable ounces) mainly due to a planned lower mill throughput, coupled with a 12 percent planned decline in the recovered grade. Total cash costs were \$131 per ounce in 2001.

## Outlook



During 2003, attributable production is expected to decrease by 7 percent to 169,000 ounces, while total cash costs should increase by 18 percent to \$193 per ounce due to increased reagent costs to treat sulphide ore. Capital expenditure attributable to AngloGold of \$2 million is planned for 2003.

- **Navachab (attributable 100 percent)**

**Description:** After having obtained an additional 30 percent interest in 1999, AngloGold holds a 100 percent interest in the Navachab open-pit gold mine near Karibib in Namibia, which has been in production since 1990.

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**Geology:** The Navachab deposit is hosted by Damaran greenschist-amphibolite facies, calc-silicates, marbles and volcanoclastics. The rocks have been intruded by granites, pegmatites and quartz porphyry dykes and have also been deformed into a series of alternating dome and basin structures. The mineralized zone forms a sheet-like body which plunges at an angle of approximately 25 degrees to the north-west. The mineralization is predominantly hosted in a sheeted vein set (60 percent) and a replacement skarn body (40 percent). The gold is very fine-grained and associated with pyrrhotite, pyrite, chalcopyrite, scheelite and sphalerite. Approximately 80 percent of the gold is free milling.

#### Operating and production data for Navachab

	2000	2001	2002
Pay limit (oz/t)	0.04	0.04	0.03
Pay limit (g/t)	1.30	1.36	1.02
Recovered grade (oz/t)	0.053	0.060	0.056
Recovered grade (g/t)	1.82	2.04	1.93
Gold production (000 oz) 100 %	77	87	85
Total cash costs (\$/oz) <sup>(1)</sup>	189	164	147
Total production costs (\$/oz) <sup>(1)</sup>	364	241	212
Capital expenditure (\$ million) 100 %	0.1	0.5	2.1
Employees <sup>(2)</sup>	168	168	171

Outside contractors <sup>(2)</sup>	183	178	182
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(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(2) *Average for the year.*

## Operating review

During 2002, gold production at Navachab was 2 percent lower than in 2001 at 85,000 ounces from 87,000 ounces, mainly due to a 5 percent decrease in recovered grade. Total cash costs declined by 10 percent from \$164 per ounce in 2001 to \$147 per ounce in 2002.

In 2001, Navachab produced a record 87,000 ounces of gold, the highest since the mine's inception in 1989. Total cash costs of \$164 per ounce reflects a decrease of 12 percent compared to 2000.

## Growth prospects

A decision to proceed with a pushback towards the east to extend the life of mine by eight years to 2013 was taken by the AngloGold board in July 2002. Owing to improvements in the gold price, a feasibility study commenced during the last quarter of 2002 to evaluate the economic viability of a mine expansion project at Navachab.

An early application for the renewal of the mining license has been approved, extending the license to 2018.

## Outlook

Looking ahead to 2003, attributable production should decrease by 6 percent to 80,000 ounces. It is anticipated that total cash costs will increase by 50 percent to \$220 per ounce as extra stripping will be required at the Eastern pushback. Capital expenditure is expected to rise by 41 percent to \$4 million in 2003.

- **Geita (attributable 50 percent)**

**Description:** On December 15, 2000, AngloGold acquired a 50 percent interest in the Geita project in Tanzania from Ashanti Goldfields Company Limited. Under the joint venture agreement, the Geita Joint Venture is governed by a committee (the "Joint Venture Committee") which has equal representation from both partners, with equal voting rights and neither side has a casting vote. The Joint Venture Committee is chaired on a rotating basis by representatives of Ashanti Goldfields Company Limited and AngloGold. A purchase price of \$205 million was paid for the Geita Joint Venture, with \$35 million funded through AngloGold's own resources and the balance of \$170 million funded through debt, with a project finance provision of \$67 million at acquisition.

AngloGold contributed its Nyamulilima Hill property (some 14 kilometers from the Geita processing plant) to the Geita Joint Venture. In addition, AngloGold and Ashanti have entered into a broad strategic alliance to seek opportunities throughout Africa.

**Geology:** Geita is an Archaean mesothermal mainly BIF-hosted deposit. Mineralization is located where auriferous fluids, which moved along shears often on BIF-diorite contacts, reacted with the BIF. Some lower-grade mineralization can occur in the diorite as well (usually in association with BIF-hosted mineralization), and approximately 20 percent of the gold is hosted in the diorite.

#### Operating and production data for Geita

	2000 <sup>(1)</sup>	2001	2002
Pay limit (oz/t)	0.05	0.06	0.07
Pay limit (g/t)	1.58	1.96	2.13
Recovered grade (oz/t)	0.077	0.108	0.106
Recovered grade (g/t)	2.65	3.70	3.62
Gold production (000 oz) 100 %	177	546	579
Gold production (000 oz) 50 %	88	273	290
Total cash costs (\$/oz) <sup>(2)</sup>	156	147	175

Total production costs (\$/oz) <sup>(2)</sup>	156	198	228
Capital expenditure (\$ million) 100 %	31.1	15.8	17.4
Capital expenditure (\$ million) 50 %	15.6	7.9	8.7
Employees <sup>(3)</sup>	452	472	580
Outside contractors <sup>(3)</sup>	383	540	1,139

(1) *AngloGold acquired its interest in the Geita mine effective December 31, 2000 with the first gold being produced on June 8, 2000.*

*Figures stated are for a 12 month period ended December 31, 2000. Only the assets and liabilities are reflected in AngloGold's consolidated balance sheet as at December 31, 2000.*

(2) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(3) *Average for the year.*

## Operating review

Production at Geita rose by 6 percent from 273,000 attributable ounces in 2001 to 290,000 attributable ounces in 2002, despite a decline in the average grade for the year. Total cash costs increased by 19 percent from \$147 per ounce in 2001 (to \$175 per ounce in 2002, as a result of increased stripping requirements, increased mining from the Kukuluma pit and greater haulage distances between the mined areas and the Geita plant.

2001 was the first full year of production at Geita, with production of 273,000 attributable ounces of gold, at total cash costs of \$147 per ounce.

## Growth prospects

During the second quarter in 2002, Geita successfully concluded its 90-day project completion testing, as required by loan covenants, resulting in the release of the AngloGold loan guarantees. Approval was granted for the first phase of the Geita expansion project during the first quarter of 2002. This followed encouraging results from exploration drilling in the Nyankanga pit, which increased the total remaining ore reserve at Geita to 33.5 million tonnes (16.75 million tonnes attributable). To realize the full potential of this increased reserve, the Geita plant's throughput is being raised from 4.5 million tonnes per annum to 6 million tonnes per annum in two phases over the next two years. By year-end 2002, Phase 1 of this project - increasing throughput to 5.6 million tonnes per annum - had been completed and commissioned.

## Outlook

During 2003, attributable production is expected to increase by 17 percent to 339,000 ounces. Total cash costs should increase by 1 percent to \$176 per ounce. Capital expenditure attributable to AngloGold of \$12 million is planned in 2003.

- **Morila (attributable 40 percent)**

**Description:** On July 3, 2000, AngloGold acquired a 40 percent interest in the Morila project in Mali, from Randgold Resources Limited. The transaction involved the purchase by AngloGold from Randgold Resources (Morila) Limited of half of Randgold's 80 percent interest in Socit des Mines de Morila S.A. (Morila). As a result, AngloGold and Randgold Resources Limited each hold a 40 percent indirect interest in the Morila Joint Venture, with 20 percent being held by the Malian Government. Under the joint venture agreement, AngloGold is the operator of the mine. AngloGold paid a purchase price of \$132 million for its stake in the Morila Joint Venture, with \$72 million funded through AngloGold's own resources and the balance of \$60 million funded through debt, with a project finance provision of \$36 million at acquisition. This mine is situated some 180 kilometers by road, south east of Bamako, the capital city of Mali (600 kilometers south east of Sadiola).

**Geology:** Morila is a Birimian mesothermal sediment-hosted deposit. The mineralization model is still being developed, but indications are that mineralization is related to a compressive event. Original mineralization relationships are largely obscured by an intrusive event.

## Operating and production data for Morila

	2000 <sup>(1)</sup>	2001	2002
Pay limit (oz/t)	0.08	0.08	0.08
Pay limit (g/t)	2.75	2.79	2.46

Recovered grade (oz/t)	0.257	0.200	0.349
Recovered grade (g/t)	8.81	6.87	11.96
Gold production (000 oz) 100 %	142	631	1,052
Gold production (000 oz) 40 %	57	252	421
Total cash costs (\$/oz) <sup>(2)</sup>	88	103	74
Total production costs (\$/oz) <sup>(2)</sup>	158	190	147
Capital expenditure (\$ million) 100 %	35.1	28.5	17.0
Capital expenditure (\$ million) 40 %	15.0	11.4	6.8
Employees <sup>(3)</sup>	363	383	442
Outside contractors <sup>(3)</sup>	409	550	469

(1) *AngloGold acquired its interest in the Morila mine effective July 3, 2000. Figures stated are for the period from October 18, 2000, the date the Morila mine started to produce gold.*

(2) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Item 5A.: Operating results - Total cash costs and total production costs".*

(3) *Average for the year.*

## Operating review

In 2002, gold production at Morila increased by 67 percent to 421,000 attributable ounces from 252,000 attributable ounces in 2001, largely as a result of the interception of exceptionally high-grade zones of ore during July to October 2002. As a result, total cash costs for the year improved by 28 percent to \$74 per ounce in 2002 from \$103 per ounce in 2001.

In 2001, in the first full year of operation, Morila produced 252,000 ounces attributable to AngloGold. Total cash costs, at \$103 per ounce, increased by 17 percent compared to 2000 owing to a reduction in the proportion of high-grade, soft oxide material treated, which was replaced with lower grade sulphide ore.

## Outlook

Attributable production at Morila is expected to decrease by 19 percent to 343,000 ounces for 2003, while total cash costs should be \$93 per ounce, with the return to average mine grades. Drilling to identify other possible high-grade zones is underway. Capital expenditure attributable to AngloGold of \$4 million is anticipated in 2003.

- **Yatela (attributable 40 percent)**

**Description:** As part of the consolidation of Anglo American Corporation's gold mining interests, AngloGold acquired a 50 percent interest in Sadiola Exploration Limited, which company held the prospecting rights in the Sadiola region. Together with joint owner, IAMGOLD, exploration was performed and a feasibility study conducted at the Yatela deposit site, located some 25 kilometers north of Sadiola and approximately 50 kilometers south-south-west of the town of Kayes. The success of the feasibility study led to the formation of a company, Socit d'Exploitation des Mines d'Or de Yatela S.A., in which AngloGold and IAMGOLD each hold an effective 40 percent interest, with the Government of Mali holding 20 percent.

**Geology:** Yatela mineralization occurs as a keel-shaped body in Birimian metacarbonates. The keel is centered on a fault which was the feeder for the original mesothermal mineralization, with an associated weakly mineralized diorite intrusion. Mineralization occurs as a layer along the flanks and in the bottom of the keel. The ore dips almost vertically on the west limb and more gently towards the west on the east limb, with tight closure to the south.

### Operating and production data for Yatela

	2000	2001 <sup>(1)</sup>	2002
Pay limit (oz/t)	-	0.07	0.07
Pay limit (g/t)	-	2.30	2.09
Recovered grade (oz/t)	-	0.097	0.086
Recovered grade (g/t)	-	3.33	2.95
Gold production (000 oz) 100 %	-	131	269
Gold production (000 oz) 40 %	-	52	107
Total cash costs (\$/oz) <sup>(2)</sup>	-	149	175
Total production costs (\$/oz) <sup>(2)</sup>	-	231	252
Capital expenditure (\$ million) 100 %	36.0	18.3	8.9
Capital expenditure (\$ million) 40 %	14.4	7.3	3.6
Employees <sup>(3)</sup>	142	144	157
Outside contractors <sup>(3)</sup>	173	327	391

- (1) *The first gold was produced on May 9, 2001 and attributable production and total cash cost reflects the third and fourth quarters of 2001 only.*
- (2) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*
- (3) *Average for the year.*

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## **Operating review**

2002 was the first full year of operation at Yatela. Attributable gold production increased by 105 percent to 107,000 ounces compared to 2001, while total cash costs increased by 18 percent to \$175 per ounce, largely as a result of higher maintenance costs on the mineral sizers as a result of harder materials being treated, and increased reagent - mainly cement - usage. Cement is used for leach pad stability.

The first gold was produced on May 9, 2001, a month ahead of schedule and an estimated \$5 million below construction budget. Production build-up under operational management and a team of permanent employees commenced at the end of the second quarter of 2001. Attributable production in 2001 of 52,000 ounces at total cash costs of \$149 per ounce reflects the third and fourth quarters of 2001 only.

## **Outlook**

During 2003, attributable production is expected to decrease by 8 percent to 98,000 ounces. Total cash costs should increase by 14 percent to \$199 per ounce. Capital expenditure attributable to AngloGold of \$3 million is planned in 2003.

## **North American operations**



AngloGold completed the acquisition of its North American operations from Minorco effective March 31, 1999. AngloGold's North American gold assets are held through AngloGold North America Inc. These operations comprise the wholly-owned AngloGold (Jerritt Canyon) Corp. (formerly Independence Mining Company Inc.), which holds a 70 percent interest in the AngloGold (Jerritt Canyon) Corp. - Meridian Jerritt Canyon Joint Venture in Nevada, and the wholly-owned AngloGold (Colorado) Corp. (formerly Pikes Peak Mining Company), which holds a 66.7 percent interest, with a 100 percent interest in gold produced, in the Cripple Creek & Victor Gold Mining Company (CC&V) in Colorado.

- **Cripple Creek & Victor (attributable 67 percent with 100 percent interest in production)**

**Description:** AngloGold (Colorado) Corp., a subsidiary of AngloGold North America Inc., owns 67 percent of Cripple Creek & Victor Gold Mining Company (CC&V), in the Cripple Creek mining district, south-west of Colorado Springs in Colorado. The other 33 percent of CC&V is held by Golden Cycle Gold Corporation (Golden Cycle). AngloGold is manager of the operation. AngloGold is currently entitled to receive 100 percent of the cash flow from the operation until a loan, extended to the joint venture by AngloGold North America Inc., is repaid. CC&V is a low-cost, low-grade open-pit operation. AngloGold believes that good potential exists for the discovery of future mineral deposits and the establishment of these deposits as reserves.

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The prospective geological environment could result in extensions to the life of mine plan, potentially from underground mining below the ultimate pit bottom.

CC&V began the establishment of the Cresson orebody in May 1994. Establishment was completed by December 1994 and production from the Cresson mine commenced in the first quarter of 1995.

**Geology:** The Cripple Creek District is centered on a Tertiary-aged diatreme-intrusive complex, approximately circular in shape covering 18.4 square kilometers, surrounded by older Precambrian rocks. The Precambrian rocks consist of biotite gneiss and granodiorite which occur within a larger quartz monzonite intrusion which is in turn intruded by granite. The intersection of these four units and major faults

formed an area of weakness which subsequently facilitated the formation of the Tertiary complex. The Tertiary intrusives range from syenite to phonolit/phonotephrite to lamprophyre. Fault structures are generally near vertical and strike north-northwest to northeast. These structures are commonly intruded by phonolite dykes and appear to have acted as primary conduits for the mineralizing solutions. The north-east structures are more subtle but appear to control the locations of higher-grade pods of mineralization which occur at their intersection with the north-north-west system. High-grade gold mineralization is primarily associated with potassic and pyritic alteration and occurs adjacent to the major structural zones. The broader zones of disseminated mineralization occur primarily as halos around the stronger alteration in permeable wall rocks. The average depth of oxidation is 120 meters and is best developed along major structural zones. Individual orebodies can be tabular, irregular or massive. Individual gold particles are generally less than 20 microns in size and occur as native gold with pyrite or hydrous iron and manganese oxides and as gold-silver tellurides, often in quartz-fluorite veins. Silver is present but is economically unimportant.

### Operating and production data for Cripple Creek & Victor operations

	2000	2001	2002
Pay limit (oz/t)	0.01	0.01	0.01
Pay limit (g/t)	0.38	0.34	0.34
Recovered grade (oz/t)	0.022	0.017	0.016
Recovered grade (g/t)	0.75	0.59	0.57
Gold production (000 oz)	248	214	225
Total cash costs (\$/oz) <sup>(1)</sup>	177	187	187
Total production costs (\$/oz) <sup>(1)</sup>	294	332	391
Capital expenditure (\$ million)	20.3	82.2	66.2
Employees <sup>(2)</sup>	271	278	314
Outside contractors <sup>(2)</sup>	81	243	258

(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(2) *Average for the year.*

### Operating review and prospects

During 2002, production at CC&V increased by 5 percent from 214,000 ounces in 2001 to 225,000 ounces in 2002. Although gold production was negatively affected by technical problems associated with the leach system pH, improved metallurgy and higher leach solution volumes were processed during the latter part of 2002. These factors, combined with the near completion of the bulk of the \$194 million expansion in the third quarter, served to enhance operational efficiencies. The expansion project has increased the average annual gold production by 40 percent and extended the life of mine from 2008 to at least 2013, thereby

yielding an additional total of 2.8 million ounces of production over the life of mine. Current indications are that the average life of mine cash costs will reduce from \$227 per ounce to \$170 per ounce. The new crushing facility was commissioned in July 2002, while additional leach pad and solution handling equipment were brought into production in September and December 2002, respectively. Total cash costs remained at \$187 per ounce as higher reagent costs were offset by continued cost-cutting efforts. Mined tonnage and metal production improved towards the latter part of 2002 as full benefit of the expansion project was realized.

During 2001, CC&V treated 2.4 million tonnes of surface ore producing 214,011 ounces of gold at a total cash cost of \$187 per ounce. The expansion of the Cresson mine, which was approved by the AngloGold board, began during the first quarter of 2001, to continue throughout 2002. The ore is treated using a valley heap leach process with gold in solution being recovered by activated carbon followed by a smelting process.

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## Outlook

For 2003, production is expected to rise to 344,000 ounces at a total cash cost of \$177 per ounce. Capital expenditure amounted to \$66 million in 2002, and is expected to be in the region of \$25 million in 2003.

- **Jerritt Canyon Joint Venture (attributable 70 percent)**

**Description:** AngloGold has a 70 percent ownership interest in, and is the operator and manager of, the AngloGold (Jerritt Canyon) Corp. - Meridian Jerritt Canyon Joint Venture. (Jerritt Canyon Joint Venture). The remaining 30 percent is held by Meridian Jerritt Canyon Corp. The Jerritt Canyon operations are located north west of the town of Elko, Nevada. The joint venture land position (or tenements) covers approximately 360 square kilometers. On February 27, 2003, AngloGold announced that it had entered into a purchase and sale agreement with Queenstake Resources USA Inc (Queenstake) on its interest in the Jerritt Canyon Joint Venture. In terms of this agreement, Queenstake will pay the Jerritt Canyon Joint Venture \$8 million on closing, with \$6 million in deferred payments, with additional royalty payments. Queenstake will accept full closure and reclamation and other liabilities. The transaction is expected to close during April 2003.

Ore production is currently drawn from four underground mines, Murray, SSX, Smith and MCE. Murray commenced production in 1994, SSX commenced commercial production in mid-1998, and MCE commenced production in 2000.

**Geology:** The Jerritt Canyon district is located in the north central Independence Mountains north-west of Elko, Nevada. The gold deposits of the district are Carlin-type replacement deposits hosted by calcareous, carbonaceous Palaeozoic marine sediments. West-north-west trending faults and associated thrust fault and high-angle fault control the mineralization. This complex faulting has resulted in the repetition of favorable host rocks and structural traps for localization of gold mineralization.

Gold mineralization is found where favorable strata, contacts, and juxtapositions of strata exist adjacent to the controlling structures and the district, therefore, consists of many discrete orebodies with separate ore pods. Carbonaceous and pyritic, laminated, calcareous siltstones and argillaceous dolomitic limestones are the most favorable host rocks. The total gold content of individual ore pods varies from a few thousand ounces to several hundred thousand ounces.

The depth of the mineralized bodies varies widely from near surface to depths of several hundred meters and is largely controlled by the depth at which the favorable stratigraphic horizons occur. Historically, the bulk of gold production has come from open-pit operations, but with the exhaustion of near-surface deposits production emphasis has moved to underground deposits.

The gold associated with ore grades was principally precipitated with pyrite formed from the sulphidation of available reactive iron resident in the host rock. Significant amounts of carbon occur in the host rocks, which is problematic for processing and necessitated the installation of a roaster in 1989 to treat the high-carbon ores.

### Operating and production data for Jerritt Canyon operations

	2000	2001	2002 <sup>(2)</sup>
Pay limit (oz/t) (open-pit)	0.16	Depleted	Depleted
Pay limit (g/t) (open-pit)	5.53	Depleted	Depleted
Pay limit (oz/t) (underground) - average	0.24	0.24	0.22
Pay limit (g/t) (underground) - average	8.06	8.23	7.55
Recovered grade (oz/t) - milled	0.250	0.280	0.231
Recovered grade (g/t) - milled	8.21	9.74	7.91
Gold production (000 oz) 100 %	355	403	338
Gold production (000 oz) 70 %	248	282	237
Total cash costs (\$/oz) <sup>(1)</sup>	226	223	249
Total production costs (\$/oz) <sup>(1)</sup>	315	298	346

Capital expenditure (\$ million) 100 %	22.7	15.1	10.8
Capital expenditure (\$ million) 70 %	15.9	10.6	7.6
Employees (70 %) <sup>(3)</sup>	298	288	291
Outside contractors <sup>(3)</sup>	20	-	6

(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items*

*5A.: Operating results - Total cash costs and total production costs".*

(2) *On February 27, 2003, AngloGold announced that it had entered into a purchase and sale agreement with Queenstake Resources USA*

*Inc (Queenstake) on its interest in the Jerritt Canyon Joint Venture. The transaction is expected to close during April 2003.*

(3) *Average for the year.*

## Operating review

In 2002, a reorganization of labor in the underground mines resulted in reduced productivity in the first quarter, but the resultant improvements were felt from the second quarter onwards. Attributable production decreased by 16 percent to 237,000 ounces in 2002, primarily due to lower first quarter mill tonnages, lower grades mined and completion of the Cortez tolling agreement. Total cash costs increased by 12 percent to \$249 per ounce in 2002.

During 2001, 0.6 million tonnes of ore were mined, producing 282,275 attributable ounces of gold at a total cash cost of \$223 per ounce. Development of the Smith underground mine was completed and production commenced in 2001. The process facilities include grinding, whole ore roasting and CIL processes.

## South American operations

AngloGold's South American operations and joint ventures were acquired as part of the Minorco transaction effective March 31, 1999 and are located in Brazil and Argentina.

Operations in Brazil comprise the wholly-owned Minerao Morro Velho (MMV) mines and a 50 percent interest in the Minerao Serra Grande (MSG) mines. The company has a 92.5 percent interest in the Cerro Vanguardia mine in Argentina, as a result of the acquisition of an additional 46.25 percent stake which took place in July 2002.

- **Cerro Vanguardia (attributable 92.5 percent)**

**Description:** The Cerro Vanguardia (CVSA) operation is located to the north-west of Puerto San Julian in the Province of Santa Cruz, Argentina. AngloGold has a 92.5 percent interest in CVSA while the Santa Cruz Province has a 7.5 percent interest. The company owns the right to exploit the deposit for 40 years based on the Usufruct Agreement signed in December 1996. The operation, which was constructed at a total cost of \$270 million, was commissioned in the fourth quarter of 1998.

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**Geology:** The oldest rocks in this part of Patagonia are metamorphics of the Precambrian-Cambrian age. These are overlain by Permian and Triassic continental clastic rocks which have been faulted into a series of horsts and grabens. These are associated with both limited basaltic sills and dykes and with calc-alkaline granite and granodiorite intrusions. Thick andesite flows of Lower Jurassic age occur above these sedimentary units. A large volume of rhyolitic ignimbrites was emplaced during the Middle and Upper Jurassic age over an area of approximately 100,000 square kilometers. These volcanic rocks include the Chon Aike formation ignimbrite units that host the gold bearing veins at CVSA. Post-mineral units include Cretaceous and Tertiary rocks of both marine and continental origin; the Quaternary La Avenida formation, the Patagonia gravel; and the overlying La Angelita basalt flows. These flows do not cover the area of the CVSA veins. Gold and silver mineralization at CVSA occurs within a vertical range of about 150 to 200 meters in a series of narrow, banded quartz veins that occupy structures within the Chon Aike ignimbrites. These veins form a typical structural pattern related to major north-south (Concepcion) and east-west (Vanguardia) shears. Two sets of veins have formed in response to this shearing. One set strikes about N40W and generally dips 65 to 90 degrees to the east; the other set strikes about N75W and the veins dip 60 to 80 degrees to the south. The veins are typical of epithermal low-temperature, adularia-sericite character. They consist primarily of quartz in several forms: as massive quartz, banded chalcedonic quartz, and quartz-cemented breccias. Dark bands in the quartz are due to finely disseminated pyrite, now oxidized to limonite. Other minerals include minor adularia, sericite, clay, and quartz pseudomorphs after barite. The

veins show sharp contacts with the surrounding ignimbrite which hosts narrow stockwork zones that are weakly mineralized. The veins appear to have been cut by a sequence of north-east-trending faults that have southerly movement with no appreciable lateral displacement.

### Operating and production data for Cerro Vanguardia

	2000	2001	2002
Pay limit (oz/t)	0.30	0.25	0.18
Pay limit (g/t)	10.31	8.60	6.21
Recovered grade (oz/t)	0.327	0.307	0.277
Recovered grade (g/t)	11.22	10.51	9.49
Gold production (000 oz) 100 %	285	292	261
Gold production (000 oz) 46.25 %	132	136	179
Total cash costs (\$/oz) <sup>(1)</sup>	146	133	104
Total production costs (\$/oz) <sup>(1)</sup>	242	235	218
Capital expenditure (\$ million) 100 %	2.6	9.9	3.0
Capital expenditure (\$ million) 46.25 %	1.2	4.6	2.0
Employees <sup>(2)</sup>	294	304	316
Outside contractors <sup>(2)</sup>	175	162	224

(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(2) *Average for the year.*

### Operating review

During 2002, attributable gold production rose by 32 percent from 136,000 ounces in 2001 to 179,000 ounces principally as a result of the acquisition of an additional 46.25 percent stake from Prez Companac in July 2002. Excluding the additional production arising from the acquisition, production declined by 11 percent as a result of water entering the pits and combining with clay in the ore feed to the plant, caused production delays in the third quarter, which are still being addressed. Total cash costs decreased by 22 percent to \$104 per ounce as a result of better cost management and the Peso devaluation.

During 2001, 0.4 million tonnes of ore were treated, producing 136,000 attributable ounces of gold at a total cash cost of \$133 per ounce. The primary intake was successfully installed and works were initiated to install a gravimetric concentration circuit to compensate lower time or residence in the leach tanks as a result of the plant capacity increase.

## **Growth prospects**

Pre-feasibility studies to expand Cerro Vanguardia's ore treatment plant throughput to 1.2 million tonnes per annum and underground mining to produce 300,000 tonnes per annum were both started in 2002. The increase in production is forecast at 75,000 ounces per year at an estimated capital expenditure of \$13 million. Implementation of these projects will be carried out from August 2003 to August 2004 and full production is expected in 2005.

## **Outlook**

In 2003, production at Cerro Vanguardia should rise to 246,000 ounces, at a total cash cost of \$110 per ounce. Capital expenditure in 2002 amounted to \$2 million, and is expected to increase to \$6 million during 2003.

- **Morro Velho (attributable 100 percent)**

**Description:** Through its wholly-owned subsidiary, Morro Velho, AngloGold has mining rights over 29,500 hectares in the state of Minas Gerais, in south-eastern Brazil. The Morro Velho complex is located in Nova Lima near the city of Belo Horizonte.

Ore is currently sourced from the Mina Velha and Cuiab underground operations and the Engenho D'Agua open pit. All ore is treated at the Queiroz Plant. As Mina Velha and Engenho D'Agua are due to close in 2003, future production will be sourced from the low cost Cuiab underground mine and from Crrego do Sitio mine (heap leach), where production commenced in the fourth quarter of 2002.



**Geology:** The Morro Velho mining complex is situated in and around the town of Nova Lima, south-east of Belo Horizonte in the Minas Gerais State of south-central Brazil. The area is host to historic and current gold mining operations. In addition to producing limestone and iron ore from a number of open-pit operations and is known as the Iron Quadrangle. The geology of the Iron Quadrangle is dominated by Proterozoic and Archaean volcano-sedimentary sequences and Pre-Cambrian granitic complexes. The host to the gold mineralization is the volcano-sedimentary Nova Lima Group (NLG) which occurs at the base of the Rio das Velhas SuperGroup (RDVS). The upper sequences of the RDVS are dominated by the sedimentary Maquin Group.

Gold mineralization is associated with sulphides and quartz veins in Banded Ironstone Formation (BIF) and volcanic sequences.

Structural control is the most important factor for gold mineralization with a common association between large-scale shear zones and their associated structures. Where BIF is mineralized, such as at Morro Velho, the ore appears strongly stratiform due to the selective sulphidation of the iron rich layers. Steeply plunging shear zones tend to control the ore shoots which commonly plunge parallel to intersections between the shears and other structures. At Morro Velho the controlling mineralization structures are the apparent intersection of thrust faults with tight isoclinal folds in a ductile environment.

The host rocks at Morro Velho are BIF, Lapa Seca and mafic volcanics (principally basaltic). Mineralization is due to the interaction of low salinity CO<sub>2</sub> rich fluids with the high iron BIF and basalts and the carbonaceous graphitic schists. Sulphide mineralization consists of pyrrhotite and arsenopyrite with subordinate pyrite and chalcopyrite, the latter tends to occur as a late stage fracture fill and is not associated with gold mineralization. Wallrock alteration is typically carbonate, potassic and silicic.

### Operating and production data for Morro Velho

	<b>2000</b>	<b>2001</b>	<b>2002</b>
Pay limit (oz/t)	0.14	0.12	0.13
Pay limit (g/t)	4.72	4.17	4.49
Recovered grade (oz/t)	0.199	0.193	0.196
Recovered grade (g/t)	6.81	6.63	6.71

Gold production (000 oz)	211	209	205
Total cash costs (\$/oz) <sup>(1)</sup>	134	127	131
Total production costs (\$/oz) <sup>(1)</sup>	190	206	205
Capital expenditure (\$ million)	10.5	9.9	17
Employees <sup>(2)</sup>	1,235	1,296	1,257
Outside contractors <sup>(2)</sup>	381	320	394

(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(2) *Average for the year.*

## Operating review

Production declined at Morro Velho marginally in 2002 from 209,000 ounces in 2001 to 205,000 ounces in 2002 because of lower tonnages treated. This was exacerbated by rock mechanic problems experienced at Cuiab mine in the first quarter of 2002 that have since been resolved. Total cash costs increased by 3 percent to \$131 per ounce.

During 2001, 209,000 ounces of gold were produced from the Morro Velho operation, at a total cash cost of \$127 per ounce.

## Growth prospects

The pre-feasibility study for the **Cuiab Expansion Project** was completed in 2002. The project envisages expanding production from 2,300 tonnes per day to 4,000 tonnes per day, yielding an additional 180,000 ounces per year of production at an estimated capital cost of some \$93 million. The feasibility study for the project will be completed during 2003 and, should approval be received, implementation is scheduled for September 2004. Full production capacity would be reached in 2006. The pre-feasibility study of the **Lamego project**, which envisages the exploitation of 6.3 million tonnes of resources at 5.96g/t, is due to start in 2003. Production is forecast to be 45,000 ounces per year for 10 years, with total capital expenditure of \$14 million. Opening of the access ramp to confirm reserves of 600,000 tonnes at 10.78g/t of sulphide ore at **Corrego do Sitio** began in 2002. The pre-feasibility study to treat the sulphide ore will start in 2003 at an estimated capital expenditure of \$13 million. The project is expected to produce 55,000 ounces per year.

## Outlook

Looking to 2003, production is expected to increase to 218,000 ounces, at a total cash cost of \$106 per ounce. Capital expenditure amounted to \$17 million in 2002 and is expected to increase to \$28 million during 2003.

- **Serra Grande (attributable 50 percent)**

**Description:** AngloGold owns a 50 percent interest in, and manages, the Serra Grande joint venture. TVX Gold Inc. owns the other 50 percent. Under the terms of the Serra Grande joint venture agreement, AngloGold has the right to appoint some of the management of the Serra Grande joint venture and has the right to a maximum of 50 percent of the earnings accrued and dividends paid by Serra Grande. Serra Grande controls, or has an interest in approximately 15,300 hectares in and around the Crixs mining district in the north-western areas of the Gois State, located in the central part of Brazil. The property includes two operating mines.

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**Geology:** The Serra Grande operations are located 5 kilometers from the town of Crixs. They constitute two currently operating mines, Mina III and Mina Nova. The deposits occur in the Rio Vermelho and Ribeiro das Antes formations of the Archaean Pilar de Goia's Group which together account for a large proportion of the Crixs Greenstone Belt in central Brazil. The stratigraphy of the belt is dominated by basics and ultrabasics in the lower sequences with volcano-sedimentary units forming the upper successions. The gold deposits are hosted by a sequence of schists, volcanics and carbonates which occur in a typical greenstone belt structural setting. The host rocks are of the Pilar de Goia's Group of the Upper Archaean. Gold mineralization is associated with massive sulphides and vein quartz material associated with graphitic and sericitic schists and dolomites. The oreshoots plunge to the north-west with dips between 6 degrees and 35 degrees. The stratigraphy is overturned and thrust towards the east.

The greenstone belt lithologies are surrounded by Archaean tonalitic gneiss and granodiorite. The metamorphosed sediments are primarily composed of quartz, chlorite, sericite, graphitic and garnetiferous schists. The carbonates have been metamorphosed to ferroan dolomite marble with development of siderite and ankerite veining in the surrounding wallrock, usually associated with quartz veining. The basalts are relatively unaltered but do show pronounced stretching with elongation of pillow structures evident. The ultrabasics form the western edge of the belt and the basic volcanics and sediments form the core of the unit. The northern edge of the belt is in contact with a series of laminated quartzites and quartz

sericite schists of the Lower Proterozoic Araxa Group and a narrow band of graphitic schists and intermediate to ultrabasic volcanics. This latter group is known as the Allocthon Mina Dos Ingleses (AMDI) and is host to a series of garimpos workings north of the town of Crixs where they are mining the talc schists. The general stratigraphy of this unit is similar to that seen in the main greenstone belt although at a smaller scale. However, the mineralization in the northern area exhibits a higher level of base metal mineralization with sphalerite and galena present.

### Operating and production data for Serra Grande

	<b>2000</b>	<b>2001</b>	<b>2002</b>
Pay limit (oz/t)	0.17	0.15	0.13
Pay limit (g/t)	5.73	5.04	4.55
Recovered grade (oz/t)	0.238	0.236	0.229
Recovered grade (g/t)	8.15	8.08	7.84
Gold production (000 oz) 100 %	193	192	187
Gold production (000 oz) 50 %	96	96	94
Total cash costs (\$/oz) <sup>(1)</sup>	112	107	100
Total production costs (\$/oz) <sup>(1)</sup>	208	198	191
Capital expenditure (\$ million) 100 %	5.4	5.7	5.9
Capital expenditure (\$ million) 50 %	2.7	2.9	3.0
Employees <sup>(2)</sup>	502	515	511
Outside contractors <sup>(2)</sup>	140	137	119

(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(2) *Average for the year.*

### Operating review

Attributable production during 2002 decreased by 3 percent to 94,000 ounces from 96,000 ounces in 2001 as a result of a 3 percent fall in grade owing to a depletion of the sulphide orebodies. Total cash costs decreased by 7 % to \$100 per ounce in 2002 from \$107 per ounce in 2001 is mainly due to the devaluation of the Real.

During 2001, 96,150 attributable ounces of gold were produced from the Serra Grande operations, at a total cash cost of \$107 per ounce. Expectations of an improved gold recovery in 2001 from the gravity concentration circuit installed in 2000 did not materialize.

### **Growth prospects**

Exploration work continues at Serra Grande, with the aim of increasing reserves. During 2002, aerial geophysical work was undertaken and studies to verify geophysical anomalies were carried out through geophysics and drilling. During 2003, it is expected that the investigation of such anomalies will intensify.

### **Outlook**

Production is expected to decrease to 90,000 ounces in 2003, at total cash costs of \$90 per ounce. Capital expenditure attributable to AngloGold amounted to \$3 million in 2002, and is expected to increase to \$4 million during 2003.

### **Australian operations**

Acquired at the end of 1999, the Australian operations (formerly Acacia Resources) comprise Sunrise Dam gold mine (AngloGold's interest is 100 percent), Boddington gold mine (AngloGold's interest is 33.33 percent), which is now closed and on care and maintenance, Union Reefs gold mine (AngloGold's interest is 100 percent) and the Tanami mine (AngloGold's interest is 40 percent), which is currently leased for third party ore processing.

- **Sunrise Dam (attributable 100 percent)**

**Description:** Sunrise Dam gold mine lies some 220 kilometers north-northeast of Kalgoorlie and 55 kilometers south of Laverton in Western Australia. Gold production began in March 1997 at the Cleo deposit. Ore is mined by open-pit methods using contract mining and treated in a conventional gravity and leach process plant.

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**Geology:** Sunrise Dam Mine is based on the Cleo deposit, which was discovered by Acacia's exploration team in 1993 under about 40 meters of sand. In addition to the Cleo resource, the Golden Delicious resource has been identified seven kilometers north-east of Cleo. Gold ore at Cleo is structurally controlled and hosted by a banded iron formation and volcanic rocks. The best-developed ore occurs in structures with a shallow westerly dip such as the Sunrise Shear and steep structures such as the Western Shear and Western Deeps. The ore zone has not yet been closed off to the south, north or at depth.

#### Operating and production data for Sunrise Dam

	<b>2000</b>	<b>2001</b>	<b>2002</b>
Pay limit (oz/t)	0.08	0.06	0.08
Pay limit (g/t)	2.67	2.15	2.37
Recovered grade (oz/t)	0.113	0.111	0.102
Recovered grade (g/t)	3.87	3.81	3.49
Gold production (000 oz)	225	295	382
Total cash costs (\$/oz) <sup>(1)</sup>	172	153	177
Total production costs (\$/oz) <sup>(1)</sup>	236	210	230
Capital expenditure (\$ million)	26.8	37.9	25.7
Employees <sup>(2)</sup>	95	115	112
Outside contractors <sup>(2)</sup>	165	360	253

(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(2) *Average for the year.*

## Operating review

During 2002, gold production at Sunrise Dam increased by 30 percent from 295,000 ounces in 2001 to 382,000 ounces as plant throughput rose by 41 percent to an annual rate of 3.4 million tonnes per annum following the capital expansions undertaken in 2001. Total cash costs increased by 15 percent to \$177 per ounce in 2002. In Australian dollar terms, total cash costs increased by 9 percent during the same period. After completion of a major cutback at the end of 2001, mining in the new Mega Pit reached full capacity in the first half of 2002.

During 2001, the Sunrise Dam operation produced 295,000 ounces of gold at an average total cash cost of \$153 per ounce. The throughput of the operation was 3 million tonnes per annum by end of 2001 as a result of expansions completed during 2001.

## Growth prospects

Very encouraging exploration results were achieved at Sunrise Dam during 2002. In addition, smaller cutback in the Watu section of the Mega Pit, was approved during 2002, giving access to additional ore that had been identified for ongoing drilling.

## Outlook

Production at Sunrise Dam should remain unchanged at 382,000 ounces in 2003 at expected total cash costs of \$192 per ounce. Capital expenditure was \$26 million in 2002 and should be in the order of \$14 million in 2003.

- **Boddington (attributable 33.33 percent)**

**Description:** Boddington gold mine, which closed at the end of 2001, was an open-pit operation approximately 100 kilometers south east of Perth. Formerly operated by Worsley Alumina, since September 2002 it has been operated by the Boddington Gold Mine Management Company under the direction of the Boddington joint venture partners, namely AngloGold (33.33 percent), Newmont Boddington (44.44 percent) and Newcrest Operations (22.22 percent).

**Geology:** Boddington is located in the Archaean Saddleback greenstone belt in south-west Western Australia. The main zone of gold mineralization occurs reasonably continuously over a strike length of over five kilometers and a width of about one kilometer. The oxide gold mineralization forms a semi-continuous blanket within the upper iron-rich laterite, with more erratic gold distribution in the lower zones.

The basement rocks below the oxide zone host gold mineralization with a variety of geological styles, predominantly in andesitic volcanics and diorite dikes.

### Operating and production data for Boddington

	2000	2001	2002
Pay limit (oz/t)	0.02	0.02	-
Pay limit (g/t)	0.68	0.63	-
Recovered grade (oz/t)	0.024	0.027	-
Recovered grade (g/t)	0.82	0.92	-
Gold production (000 oz) 100 %	231	234	6
Gold production (000 oz) 33.33 %	77	78	2
Total cash costs (\$/oz) <sup>(1)</sup>	216	190	-
Total production costs (\$/oz) <sup>(1)</sup>	260	231	-
Capital expenditure (\$ million) 100 %	6.0	1.8	-
Capital expenditure (\$ million) 33.33 %	2.0	0.6	-
Employees <sup>(2)</sup>	114	16	12
Outside contractors <sup>(2)</sup>	237	10	29

(1) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(2) *Average for the year.*

### Operating review



In 2002, production of an attributable 2,000 ounces was from plant clean-up. The plant is on care and maintenance pending commencement of the Boddington expansion project. The feasibility study for the Boddington expansion, or Wandoo project, remains under review by the joint venture partners. During 2002, plant and equipment that will not be required for the expansion was progressively disposed of.

During 2001, the mine produced 78,000 attributable ounces of gold at a total cash cost of \$190 per ounce. Two treatment plants operated at the mine. The milling rate at the Direct Leach plant was 8.3 million tonnes per annum, with 0.5 million tonnes per annum processed at the Basement plant. The feasibility study for the Boddington expansion, or Wandoo project, was completed in 2000 and submitted to the joint venture partners for their review.

### **Growth prospects**

A decision to proceed with the Boddington Expansion Project is expected by the second half of 2003. AngloGold owns 33.33 percent of the Boddington Gold Mine, along with Newmont (44.44 percent) and Newcrest (22.22 percent). A feasibility study completed in 2000 was based on an operation with a throughput of 25 million tonnes per annum, producing an average of 600,000 ounces of gold and 22,500 tonnes of copper per annum over a life of mine of 15 years, at an estimated attributable capital cost of \$90 million. Further work has been undertaken by the respective joint venture partners during 2002 to further test the feasibility study, better understand the project risk and identify opportunities for enhancing returns. This work is likely to continue into the second quarter of 2003. During 2002, Worsley Alumina - the previous manager of the project - was replaced by the Boddington Gold Mining Management Company, which is owned by the joint venture partners in proportion to their interests in the project. Environmental approvals associated with the expansion were received in June 2002 and will remain valid for a period of five years.

- **Union Reefs (attributable 100 percent)**

**Description:** Union Reefs open-pit gold operations lie some 160 kilometers south-east of Darwin between the townships of Pine Creek and Adelaide River in the Northern Territory.

**Geology:** The project areas lie in the central portion of the Pine Creek geosyncline, an Early Proterozoic sequence of deformed sediments which were intruded by a series of granitoids. Gold mineralization at Union Reefs lies within the Pine Creek Shear Zone and is indicated by numerous historic gold workings centered on two north-west trending lines of mineralization which extend over a strike length of 4.5 kilometers. Economic mineralization has been outlined over a strike length of 2.5 kilometers between Crosscourse and Union North and is typically subvertical and associated with quartz-sulphide veining.

### Operating and production data for Union Reefs

	2000 <sup>(1)</sup>	2001	2002
Pay limit (oz/t)	0.04	0.03	0.03
Pay limit (g/t)	1.47	1.11	1.05
Recovered grade (oz/t)	0.040	0.040	0.040
Recovered grade (g/t)	1.36	1.36	1.36
Gold production (000 oz)	174	114	118
Total cash costs (\$/oz) <sup>(2)</sup>	254	230	224
Total production costs (\$/oz) <sup>(2)</sup>	345	386	364
Capital expenditure (\$ million)	1.1	0.3	0.1
Employees <sup>(3)</sup>	80	70	62
Outside contractors <sup>(3)</sup>	215	170	125

(1) *The neighboring Brocks Creek mine closed during 2000. Figures include operations at Brocks Creek until its closure and operations only at Union Reefs subsequently.*

(2) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Items 5A.: Operating results - Total cash costs and total production costs".*

(3) *Average for the year.*

### Operating review and prospects

In 2002, gold production at Union Reefs increased by 4 percent to 118,000 ounces from 114,000 ounces in 2001, despite disruptions to mining in the main Crosscourse pit during the wet season at the beginning of 2002, and an increased focus on mining smaller, satellite resources. Furthermore, total cash costs fell by 3 percent to \$224 per ounce as a result of the higher production and tight cost control. In Australian dollar, total cash costs decreased by 3 percent during the same period. The mine remains in closure mode, with operations expected to cease in the second half of 2003.

In 2001, 114,100 ounces were produced, with total cash costs of \$230 per ounce. The Brocks Creek mine ceased operations during 2000 and was sold in late 2001.

- **Tanami (attributable 40 percent)**

**Description:** The Tanami open-pit gold operations are located in the Tanami desert, 650 kilometers north-west of Alice Springs in the Northern Territory.

**Geology:** The majority of known gold mineralization in the district is hosted by the Mount Charles Beds which consist of Early Proterozoic sediments and volcanic rocks which are metamorphosed, and generally steeply dipping, complexly folded and magnetic. A complex and variable regolith is well developed to depths of up to 70 meters. The exploration tenements are extensively covered by sand, clay, silcrete and calcrete. The dominant mineralization control is structural although there is some stratigraphic control, with basaltic units the preferred host.

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### Operating and production data for Tanami operations

	<b>2000</b>	<b>2001</b>	<b>2002<sup>(1)</sup></b>
Pay limit (oz/t)	0.08	0.05	-
Pay limit (g/t)	2.88	1.8	-
Recovered grade (oz/t)	0.076	0.053	-
Recovered grade (g/t)	2.59	1.81	-
Gold production (000 oz) 100 %	120	32	-
Gold production (000 oz) 40 %	48	22	-
Total cash costs (\$/oz) <sup>(2)</sup>	286	278	-
Total production costs (\$/oz) <sup>(2)</sup>	417	545	-
Capital expenditure (\$ million) 100 %	3.3	1.0	-
Capital expenditure (\$ million) 40 %	1.3	0.4	-
Employees <sup>(3)</sup>	93	-	-
Outside contractors <sup>(3)</sup>	240	-	-

- (1) *There was no production attributable to AngloGold in 2002.*
- (2) *Total cash costs and total production costs are non-GAAP measures. For further information on these non-GAAP measures, see "Item 5A.: Operating results - Total cash costs and total production costs".*
- (3) *Average for the year.*

## **Operating review**

During 2002, there was no production from the mine attributable to AngloGold. The process plant is leased to Newmont North Flinders (NFM) to treat ore from its Groundrush deposit, some 65 kilometers from the Tanami plant. This arrangement will last for up to three years and will result in annual revenues to AngloGold of at least A\$2 million (\$1.12 million).

Operations ceased during the third quarter of 2001 when the remaining stockpiles were exhausted. The ore was processed at the Tanami processing plant, about 23 kilometers north of the open pits. The operation produced 21,500 attributable ounces in 2001, with total cash costs of \$278 per ounce. By year end, the process plant had been leased to Newmont North Flinders (NFM) to treat ore from its Groundrush deposit.

## **Rights to mine and title to properties**

AngloGold's rights to own and exploit mineral reserves and deposits are governed by the laws and regulations of the jurisdictions in which the mineral properties are located.

## **South Africa**

Currently, South African property law provides for the ownership of mineral rights by private individuals, including companies. It is possible for one person to own the surface of a property and for another to own the mineral rights. Mineral rights can be divided into the different minerals, each capable of separate ownership so that, for example, one person can own the coal rights, another the precious metals rights and a third the diamond rights. An owner of mineral rights can lease them, mortgage them or dispose of them at will. The government is also an owner of mineral rights and is treated in the same manner as a private individual. Currently, AngloGold owns the surface rights of areas deemed to be critical to its operations in South Africa as well as the mineral rights to all of its mining areas and possesses all required mining authorizations to conduct its operations.

Rights to mine in South Africa are derived from mining authorizations granted by the State over mineral rights in the name of the holder of those rights pursuant to the Minerals Act No. 50 of 1991. To obtain a mining authorization, the miner must first show that it has the capacity to mine, and the ability to rehabilitate the environment and comply with safety and other requirements. An environmental rehabilitation plan must be filed and approved by various government departments covering the restoration of the surface areas of the mine, the prevention of water and dust pollution and the removal of structures not required for other purposes. Previously, mining rights were held under leases issued by the State under the terms of which a mining lease payment was made to the State as an effective resource tax. Lease payments are now made only where the State owns the mineral rights. All South African operations have indefinite mining licenses under the current legislation (for a full discussion see note 27 to the consolidated financial statements, "Minerals and Petroleum Resources Development Act 2002").

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AngloGold has submitted all required environmental rehabilitation plans relating to its operations to the South African authorities. All these plans have been approved.

### **Mineral and Petroleum Resources Development Act 2002**

In October 2002 the President of South Africa assented to the Mineral and Petroleum Resources Development Act, 2002 which was passed by Parliament in June 2002. It will come into operation on a date to be proclaimed by the President, which is expected to be during or shortly after June 2003. Until then the existing regulatory regime for mineral rights will remain in place whereby the holder of mineral rights is entitled to mine on obtaining a mining authorization from the State. AngloGold owns substantially all the mineral rights for which it holds mining authorizations.

The new Act vests custodianship of South Africa's mineral resources in the State which will issue prospecting rights or mining rights to applicants in the future. The existing common law prospecting, mining and mineral rights will cease to exist but transitional arrangements are provided in order to give holders of existing rights the opportunity to acquire new rights.

Where AngloGold holds mineral rights and mining authorizations and is conducting mining operations on the date on which the new Act comes into effect, it will be able within five years from the date of effectiveness of the new Act to submit the old rights and authorization for conversion to a new mining right.

AngloGold will need to submit a mining work program and thereby to substantiate the area and period of the new right, and also to comply with the requirements of the undermentioned Charter. A similar procedure applies where AngloGold holds prospecting rights and a prospecting permit and is conducting prospecting operations, but AngloGold must apply for conversion to a new prospecting right within two years from the date of effectiveness of the new Act for which purpose a prospecting work program must be submitted. Where AngloGold holds unused rights however, AngloGold will have one year to apply for new prospecting rights or mining rights, the requirements in regard to which are more stringent than for conversion, involving, for example, non-concentration of resources, fair competition, no exclusionary effects, and proof of financial and technical ability.

If AngloGold does not acquire new rights under the new Act, AngloGold would be entitled to claim compensation from the State if it can prove that thereby its property has been expropriated. Whether mineral rights constitute property and whether the new Act does bring about an expropriation are both aspects which are the subject of legal debate which is likely to be settled ultimately by litigation. The factors in determining compensation include not only fair market value but also history of acquisition and use and aspects of redress and reform which could have the effect of reducing the compensation.

AngloGold cannot give assurance that it will be successful in its application for conversion of old rights to new rights under the new Act, but the company is optimistic in this regard. In addition, it is uncertain if and to what extent AngloGold would receive compensation from the State to the extent it would not acquire new rights.

Even where new rights are obtained under the new Act, these rights will not be equivalent to the existing rights. The area covered by the new rights may be reduced by the State if it finds that the prospecting or mining work program submitted by an applicant do not substantiate the need to retain the area covered by the old right. The duration of the new rights will no longer be perpetual but rather, in the case of new mining rights, a maximum of 30 years with renewals of up to 30 years each and in the case of prospecting rights, up to five years with one renewal of up to three years. The new Act provides for a retention period after prospecting of up to three years with one renewal of up to two years, subject to certain conditions, such as non-concentration of resources, fair competition, and non-exclusion of others. In addition, the new rights will be transferable subject to the approval of the Minister of Mines (Minister). Mining or prospecting must commence within one year or 120 days, respectively, of the mining right or prospecting right becoming effective, and must be conducted continuously and actively thereafter.

The new rights can be suspended or cancelled by the Minister on breach or, in the case of a mining right, on non-optimal mining in accordance with the mining work program.

The new rights will be subject to a State royalty calculated on gross revenue as proposed in the draft Mineral and Petroleum Money Bill, 2003, which was released in March 2003 for comment, and which proposes a quarterly payment of royalty of 3 percent of gross revenue in the case of gold. As proposed, royalty payments will commence upon the conversion and granting of a new mining right.

The new Act calls for a Charter to be developed by the Minister within five years of commencement of the new Act, but the content of which has largely been agreed with mining industry representatives (including AngloGold), and with representatives of other stakeholders. The Charter's stated objectives include;

- expansion of opportunities for persons disadvantaged by unfair discrimination under the previous political dispensation,
- expansion of the skills base of such persons,
- the promotion of employment and advancement of the social and economic welfare of mining communities, and
- promotion of beneficiation.

The Charter requires that each mining company achieve 15 percent ownership by historically disadvantaged South Africans of its South African mining assets within five years and 26 percent such ownership within ten years. It contemplates that this will be achieved *inter alia* by disposals of assets by mining companies to historically disadvantaged persons on a willing seller - willing buyer basis at fair market value. In addition, the Charter requires mining companies to formulate plans for achieving employment equity at management level with a view to achieving 40 percent participation by historically disadvantaged persons in management and ten percent participation by women in the mining industry, each within five years. When considering applications for the conversion of existing rights, the State will take a "scorecard" approach, evaluating the commitments of each company to the different facets of promoting the objectives of the Charter. The draft scorecard was published by the government in February 2003.

AngloGold fully supports the notion that the mining industry and the wider South African economy have to find ways of dealing with the legacy of the country's history in a manner that promotes economic development and growth. AngloGold has made progress in adjusting the ownership structure of its South African mining assets and the composition of its management consistent with the Charter's spirit. AngloGold believes that it is well placed to meet the Charter's targets in accordance with the scorecard.

AngloGold has completed a number of asset sales to companies owned by historically disadvantaged persons in the past four years, which meet the requirements of the Charter and the scorecard. According to

AngloGold's estimates based on 2002 operating data, these transactions transfer 24.1 percent of AngloGold's attributable units of production to historically disadvantaged persons. However, AngloGold would expect the State to conduct its own assessment of these transfers when AngloGold submits its conversions. In addition, AngloGold is continuing to evaluate alternative ways in which to achieve objectives of the Charter through, for example, forms of broad-based equity ownership by historically disadvantaged entities, groups or individuals, including employee share ownership and empowerment unit trusts.

AngloGold has made significant progress towards meeting the requirements of the Charter and the scorecard in human resource development, employment equity, mine community and rural development, housing and living conditions, procurement and beneficiation. AngloGold will also reflect these results when it lodges its conversions or applications for acquisition of new rights to replace its existing rights. AngloGold's performance under the criteria set by the Charter and the scorecard will be assessed by the State upon the occurrence of such lodgments or applications. Details of the State's methodology for calculating performance in regard to beneficiation has however not yet been made public.

Any significant adjustment to AngloGold's property ownership structure could have a material adverse effect on AngloGold's financial condition or the value of AngloGold's ordinary shares, and failure to comply with the requirements of the Charter and the scorecard could subject AngloGold to negative consequences, the scope of which has not yet been fully determined.

AngloGold may also incur expenses to give additional effect to the Charter and the scorecard, including costs which it may incur in facilitating the financing of initiatives towards ownership by historically disadvantaged persons as part of the industry-wide commitment to assist such persons in securing R100 billion of financing during the first five years of the Charter's life. There is furthermore no guarantee that any steps AngloGold might take to comply with the Charter would ensure that it could successfully acquire new mining rights in place of its existing rights. In addition, the terms of such new rights may not be as favourable to AngloGold as are those of its existing rights. Having said this, AngloGold believes, based on present indications, that it should be able successfully to acquire new rights on reasonable terms.

The new Act also imposes on mining companies additional responsibilities relating to environmental management and to environmental damage, degradation or pollution resulting from their prospecting or mining activities. AngloGold has a policy of evaluating, minimizing and addressing the environmental consequences of its activities and, consistent with this policy and the new Act, has undertaken a review of



the environmental costs and liabilities associated with its South African operations in the light of the new, as well as the existing, environmental requirements. While this examination could result in an increase in AngloGold's compliance costs and accruals for environmental remediation, it is not certain at this stage whether these costs or liabilities will have a material adverse effect on AngloGold's financial condition or results of operations.

See "Item 3D.: Risk Factors - Changes to mineral rights ownership regimes in countries where AngloGold's mineral deposits are located could have a material impact on AngloGold's financial position".

## **Mali**

Mineral rights in Mali are governed by the Mining Act and Regulations promulgated in 1991. Exploration is carried out under permits granted by Ministerial Decree following application to the National Director of Geology and Mines from the Ministry of Mines, Energy and Water conveying exclusive title to conduct exploration. The permit is valid for a three-year period and renewable twice. The company applying (in a randomly selected area) for such a permit must provide proof of technical and financial capabilities.

An exploitation permit is required in order to mine a deposit located within the exploration area. This permit grants exclusive title to mine for a maximum period of 30 years (inclusive of renewals) and is granted by the head of State following application to the national director of mines.

Both permits referred to above include a Mining Convention (convention d'tablissement) covering exploration, mining, treatment and marketing in a comprehensive document. This outlines the general conditions with regard to exploration (work program, fiscal and customs regime) and exploitation (formation of a local limited liability company and mining company, State shareholdings, the fiscal and customs regime during construction and exploitation phases, exchange controls, marketing of the product, accounting regime, training programs for local labor, protection of the environment, reclamation, safety, hygiene, and settlement of disputes).

Application for an exploration permit is submitted to the national director of mines based on various documents, including applicant identification, locations, receipts for payment of fixed rights and surface fees and articles of association, together with a draft mining convention. An inter-ministerial committee examines the applications and one company is retained to do the exploration. This company then negotiates a draft of the Mining Convention and the minister of mines grants the exploration permit by an in-house decree published in the Malian Gazette.

Once an economically viable deposit has been identified, an application for an exploitation permit is submitted to the national director of mines. This application must be made prior to the expiry of the exploration permit. The application document also contains a map and coordinates, a receipt for payment of fixed rights and surface fees and a summary of technical and financial capabilities. The exploitation title is granted following a thorough investigation. AngloGold has complied with all applicable requirements and the relevant permits have been issued.

Morila, Sadiola and Yatela have 30-year permits which expire in 2029, 2024 and 2030, respectively.

## **Namibia**

Mineral rights in Namibia vest in the State. In order to prospect or mine, the Ministry of Minerals and Energy initially grants a prospecting license and on presentation of a feasibility study, a mining license is then granted taking into account the abilities of the company, including mining, financial and technical capabilities, rehabilitation programs and payment of royalties. The relevant license has been granted to AngloGold in respect of its mining and prospecting activities in Namibia. The current 15-year license which was to expire in 2003 has been renewed and extended for another 15 years to 2018.

## **Tanzania**

Mineral rights in the United Republic of Tanzania are governed by the Mining Act of 1998 (the Act) and property in and control over minerals are vested in the State of Tanzania. Prospecting for the mining of minerals, except petroleum, may only be conducted under authority of a mineral right granted by the Minister of Mines and Energy under the Act. The three types of mineral rights most often encountered, which are also those applicable to AngloGold, are:

- prospecting licenses;
- retention licenses; and

- mining licenses.

A prospecting license grants the holder thereof the exclusive right to prospect in the area covered by the license for minerals to which the license applies for a period of three years. Thereafter, the license is renewable for two further periods of two years each. A company applying for a prospecting license must, *inter alia*, state the financial and technical resources available to it. On each renewal of a prospecting license, 50 percent of the area covered by the license must be relinquished. Mining is carried out through either a mining license or a special mining license, both of which confer on the holder thereof the exclusive right to conduct mining operations in or on the area covered by the license. A mining license is granted for a period of ten years and is renewable for a further period of ten years. A special mining license is granted for a period of 25 years and is renewable for a further period of 25 years. If the holder of a prospecting license has identified a mineral deposit within the prospecting area which is potentially of commercial significance, but it cannot be developed immediately by reason of technical constraints, adverse market conditions or other economic factors of a temporary character, it can apply for a retention license which will entitle the holder thereof to apply for a special mining license when it sees fit to proceed with mining operations. A retention license is valid for a period of five years and is thereafter renewable for a single period of five years. A mineral right may be freely assigned by the holder thereof to another person, except for a mining license, which must have the approval of the Ministry to be assigned. However, this approval requirement for the assignment of a mining license will not apply if the mining license is assigned to an affiliate company of the holder or to a financial institution or bank as security for any loan or guarantee in respect of mining operations. A holder of a mineral right may enter into a development agreement with the Ministry to guarantee the fiscal stability of a long term mining project and make special provision for the payment of royalties, taxes, fees and other fiscal imposts. AngloGold has complied with all applicable requirements and the relevant licenses have been issued for 25 years and expire in 2024.

## **United States of America**

Mineral rights, as well as surface rights, in the United States of America are owned by private parties, State governments and the federal government. Most lands prospective for precious metals exploration, development and mining are owned by the federal government and are obtained through a system of self-initiated mining claim location pursuant to the Federal Mining Law of 1872, as amended. Individual states typically follow a lease system for state-owned minerals. Private parties have the right to sell, lease or enter into other agreements, such as joint ventures, with respect to minerals that they own or control. All mining activities, regardless of whether they are situated on privately- or publicly-owned lands, are regulated by a myriad of federal, state and local laws, regulations, rules and ordinances, which address matters including environmental protection, mitigation and reclamation. Authorizations and permits setting forth the activities and restrictions pertaining thereto are issued by the responsible governmental agencies at all phases of mining activities.

The Jerritt Canyon joint venture property control consists of owned or leased unpatented mining claims covering 58,000 acres of public lands, and owned or leased property covering 21,000 acres of private lands. Ownership of unpatented mining claims for public lands and ownership of private lands provide the joint venture with the right to mine for an indefinite tenure. Leases of public or private property rights to the

joint venture also convey full mining rights and have terms, which are indefinitely extended so long as operations continue. All life of mine reserves are within these property controls. The mining and reclamation permits issued by the State of Nevada and the US Forest Service are life of mine permits. As announced on February 27, 2003, AngloGold entered into a purchase and sale agreement with Queenstake Resources USA Inc (Queenstake) for its interest in the Jerritt Canyon Joint Venture. The agreement includes inter alia that Queenstake accept full closure and reclamation and other liabilities.

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The Cripple Creek & Victor Gold Mining Company joint venture is almost entirely comprised of company owned patented mining claims for public lands, with a small percentage of private and State lands being leased and the balance owned. The total area of control is approximately 7,100 acres. Patented claims vest ownership in the holder, including the right to mine for an indefinite tenure. All life of mine reserves are within these property controls. The mining and reclamation permits issued by the State of Colorado are life of mine permits.

## **South America**

In Brazil, Mine Manifests (mining titles granted in 1936) and Mining Decrees (mining titles presently granted via a decree signed by the Minister of Mines and Energy) are valid for an undetermined period - until depletion of reserves - provided that the mining title holder complies with present Brazilian mining legislation, as well as with those requirements set out by the DNPM who acts as inspecting entity for mining activities. The difference between a Mine Manifest and a Mining Decree consists in the legal nature of these two mining titles, since it is much more difficult and complicated for the Public Administration to extinct a Mine Manifest than a Mining Decree, although, in practice, it is possible to cancel or become extinct if the abandonment of the mining practices is formally proven. All of AngloGold's operations in Brazil have indefinite mining licenses.

According to Argentinean Mining Legislation, mines are purchased by virtue of legal license granted by competent authority under the provisions of the Mining Code. Regarding those provisions, anyone who owns a mining license can make use of it as any other property under Argentinean legislation within the special dispositions of the Argentine Mining Code. The usual ways used in Argentina to transfer rights over mining licenses are: to sell the license; to lease it; or to assign the rights under such a license by a beneficial interest or Usufruct Agreement. The current license expires in 2036.

## **Australia**

In Australia, with few exceptions, all onshore mineral rights are reserved to the government of the relevant State or Territory. Exploration for, and mining of, minerals is regulated by the general mining legislation of each respective State or Territory and controlled by the relevant State or Territory mining ministry. Where native title has not been extinguished, native title legislation may apply to the grant of tenure and some subsequent administrative processes. Federal and State Aboriginal heritage legislation also operate to protect special sites and areas from disturbance, to date there has not been any adverse impact on any of AngloGold's operating properties.

AngloGold's operating properties are located in the State of Western Australia and the Northern Territory. The most common forms of tenure are exploration and prospecting licenses, mining leases and general purpose leases. In most Australian states, if the holder of an exploration license establishes indications of an economic mineral deposit and complies with the conditions of the grant, the holder of the exploration license has a priority right against all others to apply for a mining lease which gives the holder exclusive mining rights with respect to minerals on the property. It is possible for one person to own the surface of the property and for another to own the mineral rights. Typically the maximum initial term of a mining lease is 21 years, and the holder has the right to renew the lease for a further period of 21 years. Subsequent renewals are subject to the discretion of the respective State or Territory's minister responsible for mining rights. Mining leases can only be assigned with the consent of the relevant minister. Government royalties are payable as specified in the relevant legislation in each State or Territory. A general purpose lease may also be granted for one or more of a number of permitted purposes. These purposes include erecting, placing and operating machinery and plant in connection with mining operations, depositing or treating minerals or tailings and using the land for any other specified purpose directly connected with mining operations.

AngloGold owns the mineral rights and has 21-year term mining leases with rights of renewal to all of its mining areas in Australia, including its proportionate share of joint venture operations, and both it and its joint venture partners are fully authorized to conduct operations in accordance with relevant laws and regulations. The mining leases cover the current life of mines at AngloGold's operations in Australia.

The following tables set out the group's proven and probable ore reserves as of December 31, 2001 and 2002, in both imperial and metric units. The tables for 2001 include the Free State operations (comprising Bambanani, Joel, Tshepong and Matjhabeng) which were sold with an effective date of January 1, 2002. See "Item 4A.: History and development of the company" and note 24 to the consolidated financial statements "Sales of shafts".

Ore reserve estimates in this annual report are reported in accordance with the requirements of the SEC's Industry Guide 7. Accordingly, as of the date of reporting, all reserves are planned to be mined out under the life of mine plans within the period of AngloGold's existing rights to mine, or within the time period of assured renewal periods of AngloGold's rights to mine. In addition, as of the date of reporting, all reserves are covered by required permits and governmental approvals. See "Item 4B.: Business overview - Rights to mine and title to properties", "- Safety and Health", and "Item 4D.: Property, plants and equipment".

AngloGold has standard procedures for the estimation of ore reserves. These procedures are performed by technical personnel at the mining operations and reviewed by regional and corporate competent persons. Firstly, gold content and tonnage are estimated for in situ mineralized material at a mining operation. This mineralized material is not necessarily economically viable. Exclusions on the grounds of safety (for example, stability pillars, shaft pillars) are then defined. Grade and tonnage curves specific for each of the deposits, in conjunction with the cost structure, yield, mine call factor and reserves of the operation and gold price estimates are used to determine an optimal mining mix. This process facilitates the determination of the average grade to be mined by each operation. This grade is then applied to the grade-tonnage curves, which in turn facilitates the determination of the cut-off grade and reserve tonnage for the operation. A full mine design is carried out on the blocks of mineralized material, excluding large mining areas that do not meet the cut-off grade criterion. This mining plan is reviewed to ensure that it satisfies the economic criterion and practical limitations of access and timing. If the review process is positive then the mineralized material (with dilution) included in the mining plan is declared and published as the ore reserve for that operation.

For 2002, ore reserve estimates for South Africa were calculated at \$325 per ounce (2001: \$275 per ounce) at an exchange rate of R9.00 = \$1 (2001: R8.06 = \$1) and at \$325 per ounce (2001:\$300 per ounce) for East and West Africa (except Geita) and North and South America. Geita was calculated at \$300 per ounce. For 2002, ore reserve estimates were calculated at \$234, \$325 and \$308 (2001: \$234, \$300 and \$275) per ounce for Boddington, Sunrise Dam and Union Reefs, respectively, each at an exchange rate of A\$0.55 = \$1; A\$0.57 = \$1 and A\$0.56 = \$1, respectively, (2001: A\$0.55 = \$1).

It should be noted that in Australia and South Africa, AngloGold is legally required to publicly report ore reserves and mineral resources according to the Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code) and the South African Code for Reporting of Mineral Resources and Ore Reserves (SAMREC Code). The SEC's Industry Guide 7 does not recognize mineral resources. Accordingly, AngloGold does not report estimates of mineral resources in this annual report on Form 20-F.

As with last year's report, tonnage and grades are reflected on a delivered-to-mill basis. The gold content estimate will be affected by losses (and gains) in three main areas: differences arising out of statistical and sampling variation; dilution in the mining and transport processes and metallurgical recovery process losses. These factors operate independently of one another.

AngloGold's ore reserve estimates for 2001 in this annual report do not include any reserves located below infrastructure in the case of South Africa, nor any undeveloped reserves at AngloGold's other mines. The ore reserve estimates for 2002 in this annual report include reserves below infrastructure in the case of certain South African mines. These are detailed on page 68.

AngloGold's ore reserve statements have been prepared by the competent persons who manage AngloGold's ore reserves. See "Item 6.: Directors, senior management and employees". Independent parties have not reviewed the majority of the ore reserves during the last three years.

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### Ore reserves: Imperial

	At December 31, 2002						
	Proven ore reserves <sup>(1)</sup>			Probable ore reserves <sup>(1)</sup>			Metallurgical
	Tons	Grade	Gold	Tons	Gradecontent <sup>(1)</sup>	Gold	Recovery
			Content <sup>(1)</sup>			Content <sup>(1)</sup>	
(mill)	(oz/ton)	(mill oz)	(mill)	(oz/ton)	(mill oz)	%	
<b>South African operations</b>							
<b>West Wits</b>							
Mponeng <sup>(10)</sup>	5.2	0.234	1.2	34.1	0.244	8.3	97.4%
Savuka	0.9	0.219	0.2	13.1	0.191	2.5	97.5%
TauTona <sup>(10)</sup>	3.3	0.330	1.1	17.2	0.304	5.2	97.6%
<b>Vaal River</b>							
Great Noligwa	5.3	0.267	1.4	17.1	0.323	5.5	96.7%
Kopanang	4.4	0.229	1.0	21.2	0.235	5.0	96.2%
Moab Khotsoong <sup>(5)</sup> <sup>(10)</sup>	-	-	-	22.8	0.392	9.0	96.0%
Tau Lekoa	7.4	0.127	0.9	26.1	0.113	3.0	95.5%
<b>Surface</b>							
	77.9	0.012	0.9	119.9	0.019	2.3	52-73% <sup>(8)</sup>

Surface sources (including Ergo)

**East and West African operations**

Geita (50%) <sup>(2)</sup>	17.0	0.107	1.8	21.8	0.133	2.9	81-95% <sup>(9)</sup>
Morila (40%) <sup>(2)</sup>	2.1	0.182	0.4	10.1	0.129	1.3	91%
Navachab	1.3	0.041	0.1	10.6	0.055	0.6	87-92% <sup>(9)</sup>
Sadiola (38%) <sup>(2)</sup>	2.6	0.053	0.1	10.7	0.094	1.0	76-95% <sup>(9)</sup>
Yatela (40%) <sup>(2)</sup>	0.7	0.043	-	4.4	0.110	0.5	75-85% <sup>(9)</sup>

**South American operations**

Amapari <sup>(7)</sup>	3.6	0.063	0.2	7.2	0.062	0.4	90%
Cerro Vanguardia (92.5%) <sup>(2)</sup>	8.9	0.218	2.0	0.8	0.296	0.2	96%
Morro Velho	2.6	0.201	0.5	5.5	0.219	1.2	92%
Serra Grande (50%) <sup>(2)</sup>	1.5	0.218	0.3	0.6	0.234	0.1	92-96% <sup>(9)</sup>

**North American operations**

Cripple Creek & Victor	63.3	0.037	2.3	75.3	0.026	2.0	64%
Jerritt Canyon (70%) <sup>(2)</sup>	0.5	0.375	0.2	1.3	0.184	0.2	88%

**Australian operations**

Boddington (33.33%) <sup>(2)</sup>	45.7	0.027	1.3	97.4	0.024	2.4	83-92% <sup>(9)</sup>
Sunrise Dam	7.6	0.126	1.0	11.1	0.146	1.6	82-95% <sup>(9)</sup>
Tanami (40%) <sup>(2)</sup> <sup>(6)</sup>	-	-	-	-	-	-	N/a
Union Reefs <sup>(3)</sup>	0.7	0.048	-	2.1	0.026	0.1	94%

**Total** **262.7** **0.065** **17.0** **530.4** **0.104** **55.3**

(1) Reserves include marginally economic and diluting materials delivered for treatment and allow for losses that may occur during mining.

(2) Reserves attributable to AngloGold's percentage interest shown.

(3) Formerly reported as Pine Creek. Operations in Brocks Creek ceased in 2000. Figures reflect only Union Reefs.

(5) No proven ore reserves as the mine is still in the development stage.

(6) No ore reserves as the mine is planned to be closed down and thus is not in the life of mine plan.

(7) No ore reserves as the mine is still in the feasibility stage and hence is not in the life of mine plan.

(8) Varies between Ergo (52 percent) and other surface sources (72 percent)

(9) Recovery factor varies according to ore type

(10) Probable ore reserves include reserves below infrastructure. See table below.

The 2002 probable ore reserves include reserves below infrastructure in the case of the following South African mines:

Mine	Tons (millions)	Grade (ounces/ton)
------	-----------------	--------------------



			<b>Gold content (million ounces)</b>
Mponeng	17.264	0.256	4.423
TauTona	7.666	0.252	1.928
Moab Khotsong	12.083	0.380	4.589
Total	37.013	0.296	10.940

The reserves in respect of the remaining AngloGold mines do not include any undeveloped reserves.

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#### Ore reserves: Imperial

	<b>At December 31, 2001</b>						
	<b>Proven ore reserves</b>			<b>Probable ore reserves</b>		<b>Metallurgical</b>	
	(1)			(1)			
	<b>Tons</b>	<b>Grade</b>	<b>Gold</b>	<b>Tons</b>	<b>Grade</b>	<b>Gold</b>	<b>Recovery</b>
	<b>(mill)</b>	<b>(oz/ton)</b>	<b>Content</b>	<b>(mill)</b>	<b>(oz/ton)</b>	<b>Content</b>	<b>Factor</b>
			<b>(mill oz)</b>			<b>(mill oz)</b>	<b>%</b>
<b>South African operations</b>							
<b>West Wits</b>							
Mponeng	2.6	0.251	0.7	15.4	0.273	4.2	97.6%
Savuka	1.0	0.231	0.2	6.5	0.190	1.2	97.5%
TauTona	2.5	0.338	0.9	12.8	0.364	4.6	97.5%
<b>Vaal River</b>							
Great Noligwa	7.5	0.295	2.2	19.2	0.326	6.3	96.9%
Kopanang	2.3	0.245	0.6	24.1	0.209	5.1	95.9%
Moab Khotsong <sup>(5)</sup>	-	-	-	11.1	0.417	4.7	96.0%
Tau Lekoa	7.7	0.132	1.0	16.6	0.134	2.2	94.8%
<b>Free State</b> <sup>(4)</sup>							
Bambanani	2.8	0.259	0.7	4.3	0.216	0.9	97.0%
Joel	0.9	0.130	0.1	7.7	0.165	1.3	96.5%
Matjhabeng <sup>(6)</sup>	-	-	-	-	-	-	N/a
Tshepong	2.9	0.247	0.7	22.6	0.234	5.3	97.2%
<b>Surface</b>							
Surface sources (including Ergo)	44.6	0.011	0.5	125.4	0.018	2.2	53-83%

**East and West****African operations**

Geita (50%) <sup>(2)</sup>	20.7	0.100	2.1	13.8	0.130	1.8	81-95%
Morila (40%) <sup>(2)</sup>	0.4	0.089	-	11.8	0.141	1.7	91%
Navachab	0.4	0.053	-	4.5	0.048	0.2	87-92%
Sadiola (38%) <sup>(2)</sup>	2.2	0.052	0.1	12.8	0.102	1.3	85-95%
Yatela (40%) <sup>(2)</sup>	0.8	0.065	-	4.6	0.110	0.5	85%

**South American operations**

Amapari <sup>(7)</sup>	-	-	-	-	-	-	N/a
Cerro Vanguardia (46.25%) <sup>(2)</sup>	3.9	0.249	1.0	0.3	0.297	0.1	96.3%
Morro Velho	2.5	0.226	0.6	4.3	0.213	0.9	93.3%
Serra Grande (50%) <sup>(2)</sup>	1.3	0.212	0.3	1.1	0.216	0.2	90-95%

**North American operations**

Cripple Creek & Victor	88.6	0.035	3.1	68.1	0.028	1.9	62%
Jerritt Canyon (70%) <sup>(2)</sup>	1.1	0.325	0.4	1.5	0.210	0.3	87-92%

**Australian operations**

Boddington (33.33%) <sup>(2)</sup>	45.7	0.027	1.3	97.4	0.024	2.4	83-92%
Sunrise Dam	8.7	0.118	1.0	10.0	0.141	1.4	80-95%
Tanami (40%) <sup>(2)</sup> <sup>(6)</sup>	-	-	-	-	-	-	N/a
Union Reefs <sup>(3)</sup>	1.0	0.051	0.1	2.0	0.021	-	93.6%

<b>Total</b>	<b>252.4</b>	<b>0.069</b>	<b>17.5</b>	<b>498.4</b>	<b>0.102</b>	<b>50.8</b>	
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(1) Reserves include marginally economic and diluting materials delivered for treatment and allow for losses that may occur during mining.

(2) Reserves attributable to AngloGold's percentage interest shown.

(3) Formerly reported as Pine Creek. Operations in Brocks Creek ceased in 2000. Figures reflect only Union Reefs.

(4) Free State operations were sold to Free Gold with an effective date of January 1, 2002. See "Item 4A: History and development of the company" and note 24 to the consolidated financial statements "Sales of shafts".

(5) No proven ore reserves as the mine is still in the development stage.

(6) No ore reserves as the mine is planned to be closed down and thus is not in the life of mine plan.

(7) No ore reserves as the mine is still in the feasibility stage and hence is not in the life of mine plan.

**Ore reserves: Metric**

	At December 31, 2002						Metallurgical Recovery Factor %
	Proven ore reserves <sup>(1)</sup>			Probable ore reserves <sup>(1)</sup>			
	Tonnes (mill)	Grade (g/t)	Gold Content (tonnes)	Tonnes (mill)	Grade (g/t)	Gold Content (tonnes)	
<b>South African operations</b>							
<b>West Wits</b>							
Mponeng <sup>(10)</sup>	4.7	8.03	37.8	30.9	8.37	259.0	97.4%
Savuka	0.8	7.50	5.9	11.9	6.55	78.0	97.5%
TauTona <sup>(10)</sup>	3.0	11.31	33.6	15.6	10.43	162.8	97.6%
<b>Vaal River</b>							
Great Noligwa	4.8	9.15	44.0	15.5	11.06	171.2	96.7%
Kopanang	4.0	7.85	31.5	19.2	8.07	154.6	96.2%
Moab Khotsong <sup>(5) (10)</sup>	-	-	-	20.7	13.45	278.8	96.0%
Tau Lekoa	6.7	4.36	29.2	23.7	3.89	92.1	95.5%
<b>Surface</b>							
Surface sources (including Ergo)	70.7	0.40	28.5	108.8	0.65	70.7	52-73% <sup>(8)</sup>
<b>East and West African operations</b>							
Geita (50%) <sup>(2)</sup>	15.4	3.67	56.5	19.8	4.55	90.2	81-95% <sup>(9)</sup>
Morila (40%) <sup>(2)</sup>	1.9	6.23	11.6	9.2	4.42	40.8	91%
Navachab	1.2	1.40	1.7	9.6	1.87	17.9	87-92% <sup>(9)</sup>
Sadiola (38%) <sup>(2)</sup>	2.4	1.82	4.4	9.7	3.23	31.3	76-95% <sup>(9)</sup>
Yatela (40%) <sup>(2)</sup>	0.6	1.49	0.9	4.0	3.77	15.1	75-85% <sup>(9)</sup>
<b>South American operations</b>							
Amapari <sup>(7)</sup>	3.3	2.15	7.2	6.5	2.12	13.8	90%
Cerro Vanguardia (92.5%) <sup>(2)</sup>	8.1	7.48	60.8	0.7	10.15	6.8	96%
Morro Velho	2.4	6.91	16.7	5.0	7.52	37.5	92%
Serra Grande (50%) <sup>(2)</sup>	1.4	7.46	10.7	0.5	8.01	4.2	92-96% <sup>(9)</sup>
<b>North American operations</b>							
Cripple Creek & Victor	57.4	1.26	72.2	68.3	0.90	61.6	64%
Jerritt Canyon (70%) <sup>(2)</sup>	0.4	12.84	5.5	1.1	6.31	7.2	88%
<b>Australian operations</b>							
Boddington (33.33%) <sup>(2)</sup>	41.5	0.94	39.0	88.4	0.84	74.3	83-92% <sup>(9)</sup>
Sunrise Dam	6.9	4.31	29.8	10.1	4.99	50.4	82-95% <sup>(9)</sup>
Tanami (40%) <sup>(2) (6)</sup>	-	-	-	-	-	-	N/a
Union Reefs <sup>(3)</sup>	0.6	1.64	0.9	1.9	0.90	1.7	94%
<b>Total</b>	<b>238.3</b>	<b>2.22</b>	<b>528.3</b>	<b>481.2</b>	<b>3.57</b>	<b>1,720.0</b>	

- (1) *Reserves include marginally economic and diluting materials delivered for treatment and allow for losses that may occur during mining.*
- (2) *Reserves attributable to AngloGold's percentage interest shown.*
- (3) *Formerly reported as Pine Creek. Operations in Brocks Creek ceased in 2000. Figures reflect only Union Reefs.*
- (5) *No proven ore reserves as the mine is still in the development stage.*
- (6) *No ore reserves as the mine is planned to be closed down and thus is not in the life of mine plan.*
- (7) *No ore reserves as the mine is still in the feasibility stage and hence is not in the life of mine plan.*
- (8) *Varies between Ergo (52 percent) and other surface sources (72 percent)*
- (9) *Recovery factor varies according to ore type*
- (10) *Probable ore reserves include reserves below infrastructure. See table below.*

The 2002 probable ore reserves include reserves below infrastructure in the case of the following South African mines:

<b>Mine</b>	<b>Tonnes (millions)</b>	<b>Grade (grams/ton)</b>	<b>Gold content (tonnes million)</b>
Mponeng	15.662	8.78	137.556
TauTona	6.954	8.62	59.979
Moab Khotsong	10.962	13.02	142.727
Total	33.578	10.13	340.262

The reserves in respect of the remaining AngloGold mines do not include any undeveloped reserves.

**Ore reserves: Metric**

**At December 31, 2001**

	Proven ore reserves <sup>(1)</sup>			Probable ore reserves <sup>(1)</sup>			Metallurgical Recovery Factor %
	Tonnes (mill)	Grade (g/t)	Gold Content (tonnes)	Tonnes (mill)	Grade (g/t)	Gold Content (tonnes)	
<b>South African operations</b>							
<b>West Wits</b>							
Mponeng	2.4	8.62	21.0	14.0	9.35	130.6	97.6%
Savuka	0.9	7.92	7.1	5.9	6.50	38.5	97.5%
TauTona	2.3	11.59	26.7	11.6	12.47	144.6	97.5%
<b>Vaal River</b>							
Great Noligwa	6.8	10.13	69.2	17.4	11.16	194.7	96.9%
Kopanang	2.1	8.41	17.7	21.9	7.18	157.2	95.9%
Moab Khotsong <sup>(5)</sup>	-	-	-	10.1	14.30	144.8	96.0%
Tau Lekoa	7.0	4.51	31.6	15.1	4.58	69.0	94.8%
<b>Free State <sup>(4)</sup></b>							
Bambanani	2.5	8.87	22.4	3.9	7.42	29.3	97.0%
Joel	0.8	4.44	3.5	7.0	5.67	39.9	96.5%
Matjhabeng <sup>(6)</sup>	-	-	-	-	-	-	N/a
Tshepong	2.6	8.47	21.6	20.5	8.02	164.6	97.2%
<b>Surface</b>							
Surface sources (including Ergo)	40.5	0.39	15.9	113.8	0.60	68.5	53-83%
<b>East and West African operations</b>							
Geita (50%) <sup>(2)</sup>	18.8	3.42	64.4	12.5	4.46	55.7	81-95%
Morila (40%) <sup>(2)</sup>	0.4	3.06	1.1	10.7	4.83	51.9	91%
Navachab	0.4	1.82	0.7	4.1	1.64	6.8	87-92%
Sadiola (38%) <sup>(2)</sup>	2.0	1.79	3.7	11.6	3.51	40.9	85-95%
Yatela (40%) <sup>(2)</sup>	0.7	2.23	1.5	4.2	3.77	15.9	85%
<b>South American operations</b>							
Amapari <sup>(7)</sup>	-	-	-	-	-	-	N/a
Cerro Vanguardia (46.25%) <sup>(2)</sup>	3.5	8.52	30.2	0.3	10.18	3.5	96.3%
Morro Velho	2.3	7.74	18.0	3.9	7.30	28.4	93.3%
Serra Grande (50%) <sup>(2)</sup>	1.2	7.27	8.4	1.0	7.41	7.1	90-95%
<b>North American operations</b>							
Cripple Creek & Victor	80.4	1.19	96.0	61.8	0.97	59.9	62%
Jerritt Canyon (70%) <sup>(2)</sup>	1.0	11.16	11.1	1.4	7.19	9.8	87-92%
<b>Australian operations</b>							
Boddington (33.33%) <sup>(2)</sup>	41.5	0.94	39.0	88.4	0.84	74.3	83-92%
Sunrise Dam	7.9	4.04	32.0	9.1	4.84	43.9	80-95%
Tanami (40%) <sup>(2)</sup> <sup>(6)</sup>	-	-	-	-	-	-	N/a
Union Reefs <sup>(3)</sup>	0.9	1.76	1.6	1.8	0.73	1.3	93.6%
<b>Total</b>	<b>229.0</b>	<b>2.38</b>	<b>544.4</b>	<b>452.1</b>	<b>3.50</b>	<b>1,581.1</b>	

(1) Reserves include marginally economic and diluting materials delivered for treatment and allow for losses that may occur during mining.

(2) Reserves attributable to AngloGold's percentage interest shown.

(3) Formerly reported as Pine Creek. Operations in Brocks Creek ceased in 2000. Figures reflect only Union Reefs.

- (4) *Free State operations were sold to Free Gold with an effective date of January 1, 2002. See "Item 4A: History and development of the company" and note 24 to the consolidated financial statements "Sales of shafts".*
- (5) *No proven ore reserves as the mine is still in the development stage.*
- (6) *No ore reserves as the mine is planned to be closed down and thus is not in the life of mine plan.*
- (7) *No ore reserves as the mine is still in the feasibility stage and hence is not in the life of mine plan.*

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**Stockpiles: Imperial**

Stockpiles are previously mined ore scheduled for future process plant feed. The proven and probable ore reserves include the following stockpile material:

<b>Stockpiles <sup>(1)</sup></b>	<b>At 31 December, 2002</b>		<b>Gold content (million ounces)</b>
	<b>Tons (million)</b>	<b>Grade (ounces/ton)</b>	
<b>South African operations</b>			
<b>West Wits</b>			
Mponeng	0.000	0.000	0.000
Savuka	0.000	0.000	0.000
TauTona	0.000	0.000	0.000
West Wits Surface <sup>(2)</sup>	0.000	0.000	0.000
<b>Vaal River</b>			
Great Noligwa	0.000	0.000	0.000
Kopanang	0.000	0.000	0.000
Moab Khotsong	0.000	0.000	0.000
Tau Lekoa	0.000	0.000	0.000
Vaal River Surface <sup>(2)</sup>	5.500	0.023	0.100
ERGO <sup>(2)</sup>	72.400	0.011	0.800
<b>East and West African operations</b>			
Geita	0.000	0.000	0.000
Morila	0.929	0.085	0.079
Navachab	1.347	0.041	0.055
Sadiola	2.647	0.053	0.140

Yatela	0.632	0.043	0.027
<b>North American operations</b>			
Cripple Creek & Victor	0.000		0.000
Jerritt Canyon	0.600	0.085	0.051
<b>South American operations</b>			
Amapari	0.000		0.000
Cerro Vanguardia	0.132	0.212	0.028
Morro Velho	0.000		0.000
Serra Grande	0.025	0.327	0.008
<b>Australian operations</b>			
Boddington	0.000	0.000	0.000
Sunrise Dam	0.627	0.079	0.049
Tanami	0.000		0.000
Union Reefs	2.166	0.023	0.049

(1) Attributable to AngloGold.

(2) Centralized operations treating material on surface that was previously generated by several underground operations.

### Stockpiles: Imperial

Stockpiles are previously mined ore scheduled for future process plant feed. The proven and probable ore reserves include the following stockpile material:

Stockpiles <sup>(1)</sup>	At 31 December, 2002		Gold content (million ounces)
	Tons (million)	Grade (ounces/ton)	
<b>South African operations</b>			
<b>West Wits</b>			
Mponeng	0.000	0.000	0.000
Savuka	0.000	0.000	0.000
TauTona	0.000	0.000	0.000

West Wits Surface <sup>(2)</sup>	0.000	0.000	0.000
<b>Vaal River</b>			
Great Nologwa	0.000	0.000	0.000
Kopanang	0.000	0.000	0.000
Moab Khotsong	0.000	0.000	0.000
Tau Lekoa	0.000	0.000	0.000
Vaal River Surface <sup>(2)</sup>	93.700	0.023	1.900
ERGO <sup>(2)</sup>	76.400	0.011	0.800
<b>East and West African operations</b>			
Geita	0.750	0.080	0.060
Morila	2.436	0.050	0.130
Navachab	6.956	0.020	0.150
Sadiola	11.919	0.030	0.420
Yatela	2.249	0.050	0.120
<b>North American operations</b>			
Cripple Creek & Victor	0.000		0.000
Jerritt Canyon	0.777	0.090	0.070
<b>South American operations</b>			
Amapari	0.000		0.000
Cerro Vanguardia	0.140	0.260	0.030
Morro Velho	0.000		0.000
Serra Grande	0.056	0.240	0.010
<b>Australian operations</b>			
Boddington	2.276	0.010	0.030
Sunrise Dam	4.839	0.020	0.120
Tanami	1.676	0.022	0.030
Union Reefs	1.768	0.010	0.030

(1) Attributable to AngloGold.

(2) Centralized operations treating material on surface that was previously generated by several underground operations.



Stockpiles are previously mined ore scheduled for future process plant feed. The proven and probable ore reserves include the following stockpile material:

<b>Stockpiles</b> <sup>(1)</sup>	<b>At 31 December, 2002</b>		<b>Gold content (tonnes)</b>
	<b>Tonnes (million)</b>	<b>Grade (grams/tonne)</b>	
<b>South African operations</b>			
<b>West Wits</b>			
Mponeng	0.000	-	0.000
Savuka	0.000	-	0.000
TauTona	0.000	-	0.000
West Wits Surface <sup>(2)</sup>	0.000	-	0.000
<b>Vaal River</b>			
Great Noligwa	0.000	-	0.000
Kopanang	0.000	-	0.000
Moab Khotsong	0.000	-	0.000
Tau Lekoa	0.000	-	0.000
Vaal River Surface <sup>(2)</sup>	4.990	0.62	3.110
ERGO <sup>(2)</sup>	65.680	0.38	24.883
<b>East and West African operations</b>			
Geita	0.000	-	0.000
Morila	0.843	2.92	2.462
Navachab	1.222	1.40	1.711
Sadiola	2.401	1.82	4.367
Yatela	0.573	1.49	0.853
<b>North American operations</b>			
Cripple Creek & Victor	0.000	-	0.000
Jerritt Canyon	0.544	2.93	1.596
<b>South American operations</b>			
Amapari	0.000	-	0.000
Cerro Vanguardia	0.120	7.27	0.872
Morro Velho	0.000	-	0.000
Serra Grande	0.023	11.20	0.258
<b>Australian operations</b>			
Boddington	0.000	-	0.000
Sunrise Dam	0.569	2.70	1.536
Tanami	0.000	-	0.000
Union Reefs	1.965	0.78	1.526

(1) Attributable to AngloGold.

(2) Centralized operations treating material on surface that was previously generated by several underground operations.

**Stockpiles: Metric**

Stockpiles are previously mined ore scheduled for future process plant feed. The proven and probable ore reserves include the following stockpile material:

<b>Stockpiles</b> <sup>(1)</sup>	<b>At 31 December, 2002</b>		<b>Gold content (tonnes)</b>
	<b>Tonnes (million)</b>	<b>Grade (grams/tonne)</b>	
<b>South African operations</b>			
<b>West Wits</b>			
Mponeng	0.000	-	0.000
Savuka	0.000	-	0.000
TauTona	0.000	-	0.000
West Wits Surface <sup>(2)</sup>	0.000	-	0.000
<b>Vaal River</b>			
Great Noligwa	0.000	-	0.000
Kopanang	0.000	-	0.000
Moab Khotsong	0.000	-	0.000
Tau Lekoa	0.000	-	0.000
Vaal River Surface <sup>(2)</sup>	5.003	0.690	59.097
ERGO <sup>(2)</sup>	69.309	0.350	24.883
<b>East and West African operations</b>			
Geita	0.680	2.740	1.860
Morila	2.210	1.830	4.040
Navachab	6.310	0.730	4.660
Sadiola	10.813	1.210	13.095
Yatela	2.040	1.840	3.760
<b>North American operations</b>			
Cripple Creek & Victor	0.000	-	0.000
Jerritt Canyon	0.705	3.350	2.360
<b>South American operations</b>			
Amapari	0.000	-	0.000
Cerro Vanguardia	0.127	9.060	1.150
Morro Velho	0.000	-	0.000

Serra Grande	0.051	7.950	0.400
<b>Australian operations</b>			
Boddington	2.065	0.460	0.960
Sunrise Dam	4.390	0.850	3.730
Tanami	1.520	0.730	1.120
Union Reefs	1.604	0.580	0.930

(1) Attributable to AngloGold.

(2) Centralized operations treating material on surface that was previously generated by several underground operations.

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### Drill hole spacing: Imperial

In determining the proven and probable ore reserves, AngloGold applied the following drill hole spacings:

	Drill Hole Spacings	
	Proven reserves	Probable reserves
<b>South African operations</b>		
Underground sources	Ore body opened up, developed and sampled on a 7 - 10 feet spacing on raise lines and on a 16 x 16 grid thereafter	From a 130 x 130 foot spacing up to 3200 x 3200 feet spacing
Surface Sources	Variable sampling strategies: Belt samplers, cross stream residue samplers and bulk sampling campaigns	Variable sampling strategies: Belt samplers, cross stream residue samplers
<b>East and West African operations</b>		
Geita	66 x 66 feet	66 x 131 feet
Morila	33 x 33 feet r	115 x 197 feet
Navachab	33 x 33 feet	98 x 98 feet

Sadiola	33 x 33 feet	82 x 164 feet
Yatela	39 x 82 feet	82 x 148 feet
<b>North American operations</b>		
Cripple Creek & Victor	150 x 150 feet	150 x 150 feet
Jerritt Canyon	10 x 30 feet	150 x 150 feet
<b>South American operations</b>		
Amapari	66 x 164 feet	141 x 164 feet
Cerro Vanguardia	131 x 131 feet	131 x 262 feet
Morro Velho	Two adjacent levels of ore body opened up, developed and sampled on a 217 x 7 feet interval	Two adjacent levels of ore body opened up, developed and sampled on a 217 x 7 feet interval
Serra Grande	33 x 85 feet	164 x 328 feet
<b>Australian operations</b>		
Boddington	Must lie within the A\$650 shell and have a borehole within 56 feet of block centroid	Must lie within the A\$650 shell and have a borehole within 110 feet of block centroid
Sunrise Dam	82 x 82 feet	164 x 82 feet
Tanami	66 x 66 feet	141 x 141 feet
Union Reefs	More than 4 holes within 98 feet of block	More than 3 holes within 213 feet

### Drill hole spacing: Metric

In determining the proven and probable ore reserves, AngloGold applied the following drill hole spacings:

	Drill Hole Spacings	
	Proven reserves	Probable reserves
<b>South African operations</b>		
Underground sources	Ore body opened up, developed and sampled on a 2 - 3 meter spacing on raise lines and on a 5 x 5 grid thereafter	From a 40 x 40 meter spacing up to 1000 x 1000 meter spacing

Surface Sources	Variable sampling strategies : Belt samplers, cross stream residue samplers and bulk sampling campaigns	Variable sampling strategies : Belt samplers, cross stream residue samplers
<b>East and West African operations</b>		
Geita	20 x 20 meter	20 x 40 meter
Morila	10 x 10 meter	35 x 60 meter
Navachab	10 x 10 meter	30 x 30 meter
Sadiola	10 x 10 meter	25 x 50 meter
Yatela	12 x 25 meter	25 x 45 meter
<b>North American operations</b>		
Cripple Creek & Victor	150 x 150 feet	150 x 150 feet
Jerritt Canyon	10 x 30 feet	150 x 150 feet
<b>South American operations</b>		
Amapari	20 x 50 meter	40 x 50 meter
Cerro Vanguardia	40 x 40 meter	40 x 80 meter
Morro Velho	Two adjacent levels of ore body opened up, developed and sampled on a 66 x 2 meter interval	Two adjacent levels of ore body opened up, developed and sampled on a 66 x 2 meter interval
Serra Grande	10 x 25 meter	50 x 100 meter
<b>Australian operations</b>		
Boddington	Must lie within the A\$650 shell and have a borehole within 17 meter of block centroid	Must lie within the A\$650 shell and have a borehole within 34 meter of block centroid
Sunrise Dam	25 x 25 meter	50 x 25 meter
Tanami	20 x 20 meter	40 x 40 meter
Union Reefs	More than 4 holes within 30 meter of block	More than 3 holes within 65 meter

## Research and development

AngloGold is committed to research and development of new mining techniques, metallurgical processes and engineering systems, in line with its strategic objective of operational excellence. This objective encompasses improved safety, and a contemporary workplace involving less manual labor and improved productivity. These objectives determine the selection of projects. These projects involve independent research institutions (Council for Scientific and Industrial Research, Miningtek, Mintek and Center for Mining, Technologies and Equipment (CMTE)), tertiary education institutions, consultants and suppliers of equipment, to utilize the best skills available. AngloGold is well advanced with testing incremental new production technologies, all of which are expected to contribute to lower costs, improved safety and better margins, thereby growing earnings. To this end, AngloGold's Technical Development Services has been refocused to concentrate on technology transfer, and is now known as AngloGold Mining Technologies (AMT). Research and development expenditure amounted to \$1 million, \$2 million and \$8 million during 2002, 2001 and 2000 respectively. A number of major programs continued in 2002 ranging from exploration, mining and metallurgy to developing new industrial applications for gold. Technology transfer is a priority, with workshops held in-house to capitalize on the depth and spread of technical expertise.

The same commitment and drive comes from AngloGold's operating mines, with teams working on technology and innovative initiatives. Projek Katleho, situated on Kopanang Mine was established to combine contemporary work practices with new technology in an operating underground environment. Although still in its early stages, some 22,000 m were mined during 2002 using a suite of appropriate technologies which includes stope drill rigs and development drill rigs.

Through Project Technology, a new initiative aimed at extending the concept of Project Katleho, the operating mines have enhanced their preliminary lessons learned. An example is Great Nologwa's "Hypermine" which incorporates novel mining layouts, technologies and associated work practices.

AMT continues to focus on mining methods and equipment within the South African operations. Phase 1 testing of electric drills was conducted during 2002, and a second phase will continue into 2003. Following extensive tests on rockbreaking methods aimed at producing continuous mining cycles, internal research has been discontinued due to environmental risk considerations. However, lessons learnt during these trials have resulted in further test work aimed at improving fragmentation through blast optimization. From an engineering perspective, suppliers and the operations continue to focus on enhancing contemporary electric powered locomotives and energy recovery systems.

AngloGold and Mintek, South Africa's national metallurgical research organization, launched Project AuTEK in 2000 to research and develop industrial applications for gold. In 2001, the project team was instrumental in staging - in South Africa - the first conference ever held to stimulate interest in the use of gold as a catalyst. Attended by 85 delegates from 15 countries, the event has led to the establishment of an international community of researchers interested in gold catalysis.

AngloGold is one of three mining companies sponsoring the Future Mine collaborative project, with a focus on establishing contemporary methodologies at existing operations. The needs of this project are driven by the mining companies, but involve government, labor, tertiary education institutions and research organizations. In 2002, which was the first full year of the project, focus was placed on addressing a number of areas, including amongst others, sampling techniques (aimed at further improving ore reserve confidence), underground communication technologies, long-hole stoping methods and non-explosive rock-breaking using impact-ripper technology.

Through Advanced Mining Software Limited (AMS), AngloGold has a 100 percent interest in ISS International Limited (ISSI). ISSI is a world leader in seismic monitoring for mines, engineering structures and earthquakes. ISSI provides seismic technical services and equipment to AngloGold's operations as well as to other South African deep-level mines, in addition to being active on a global scale.

## Global exploration

AngloGold's global exploration strategy seeks both to extend the life of existing operations (through brownfields exploration) and to establish new mines (through greenfields exploration). This strategy is achieved through cost-effective, focused exploration in geological terrains most likely to host significant gold deposits. The more isolated the prospect is from existing operations, the less existing infrastructure development or the higher the country and other risks associated with the project, the more significant the deposit must be to meet AngloGold's investment criteria.

During 2002, the exploration focus continued in countries in which AngloGold already has operations, namely in Argentina, Australia, Brazil, Tanzania, Mali, Namibia, South Africa and the United States. In addition, exploration was pursued in highly prospective areas in Alaska, Canada and Peru.

AngloGold's greenfields exploration program targets the addition of some 13 million new ounces to AngloGold's production between 2001 and 2015, at a discovery cost of below \$30 per ounce. This program comprises projects in Australia, Canada, southern Mali, Peru and the United States. Exploration expensed for 2002 amounted to \$28 million.

## Exploration expensed by region (\$ million)

	<b>2001</b>	<b>2002</b>
South Africa	2	-
East & West Africa	3	4
North America	4	6
South America	10	11
		127

Australia	5	4
Corporate (includes target generation)	2	3
<b>Total</b>	<b>26</b>	<b>28</b>

## Gold marketing

AngloGold is committed to developing the market for gold and its marketing program aims to increase the desirability of its product, to sustain and grow demand for gold and to deregulate the market in key economies. As a company, AngloGold aims to extract value from gold wherever possible throughout its value chain.

During 2002, AngloGold spent some \$17 million on gold marketing initiatives, of which 73 percent was spent through the World Gold Council (WGC). Gold marketing costs in 2001 and 2000 amounted to \$16 million and \$12 million, respectively. This organization underwent a major restructuring during the year and has allocated increased resources to support the market for gold investment purposes.

Independently of its support for the WGC, AngloGold is active in a number of other marketing projects in support of gold, and AngloGold remains the only gold company in the world that has committed this level of resources to marketing the metal it produces.

Among existing downstream initiatives, the company continues as a partner in GoldAvenue, an Intranet collaboration between AngloGold, JP Morgan Chase and Pamp MKS of Geneva. During 2002, GoldAvenue published two new gold jewellery catalogues focused on uniquely designed, high-value gold jewellery aimed at the US market. Both sales and market penetration improved, with further growth anticipated during the year ahead. This business is being developed in association with Vivre, a luxury goods catalogue business operation in which GoldAvenue has taken an equity interest. AngloGold has provided additional support to this venture through product development, sourcing and product selection.

AngloGold holds a 25 percent stake in OroAfrica, the largest manufacturer of gold jewellery in South Africa, as an investment in the downstream gold value chain. AngloGold and OroAfrica have co-operated in a number of projects including OroAfrica's development and launch of an African gold jewellery brand. An important strategic step has been the establishment of a Jewellery Design Centre at OroAfrica at a cost of \$250,000. The purpose of the center is to generate new gold jewellery designs, and to improve product standards through technology, design and innovation.

In the area of design innovation, AngloGold's current Riches of Africa Gold Jewellery Design Competition was established in 1998 to showcase South African jewellery designers, to enhance jewellery manufacturing technical skills and to support the local gold jewellery industry. Training workshops for



competition entrants are held each year, while the award-winning works are exhibited and used in fashion shows and other events both locally and abroad.

A gold jewellery design competition in Brazil was launched by AngloGold in 2002, and is the first such competition in that country. The competition generated unprecedented interest, with a high quality of design and craftsmanship. Some 43 finalists contributed towards a collection of 52 pieces of innovative, high quality gold jewellery. Some of these pieces have been acquired for sale in the United States through GoldAvenue.

The Gold of Africa Museum, inaugurated by AngloGold in 2001 with the permanent endowment of the Barbier Mueller collection of West African gold objects purchased by the company in 1998, enjoyed its first full year of operation and has proved to be an attractive museum venue in Cape Town. The museum also serves as a facility for training in the jewellery industry in Cape Town.

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AngloGold and Mintek, South Africa's national metallurgical research organization, launched Project AuTEK in 2002 to research and develop industrial applications for gold. In May 2002, the project unveiled the first working prototype of a room temperature air purification unit based on a gold catalyst. The new unit is expected to be considerably cheaper to manufacture than designs based on other types of catalysts and could be used in restaurants, hospitals, hotels and office blocks.

AngloGold remains a key sponsor of the Atteridgeville Jewellery Project, established in 2000 by the Vukani-Ubuntu Community Development Project to create opportunities in the jewellery industry in South Africa for the previously disadvantaged through training and development. A new project initiated during the year by Vukani-Ubuntu and funded by AngloGold was the production and marketing of the "Kwaito" jewellery range, strongly association with South African Kwaito music through the slogan "Rhythm you can wear". The focus is on affordable gold jewellery that is ready to wear and that can be mass produced by the Atteridgeville project.

AngloGold undertook two new ventures with gold in the fashion industry abroad. The first was the Afridesia project, involving the sponsorship and creation of a South African clothing and gold jewellery collection at the 2002 New York Fashion Week. This project created a platform for South African designers and craftspeople at this very important forum. It also showed the value of cross fertilization with the fashion industry for gold jewellery design. In the second important overseas project, AngloGold co-sponsored and participated in the International Herald Tribune Luxury Conference in Paris in December 2002. This

participation provided AngloGold with the opportunity to access fashion industry leaders and luxury brand name retailers, and to present a case for the introduction of new gold jewellery branded products to these businesses. Both of these initiatives were well received and have given rise to further opportunities to be pursued in 2003.

An important feature in many of AngloGold's marketing projects has been the beneficiation of gold, particularly in South Africa. AngloGold's commitment to adding value to gold extends beyond mining and contributes towards the upliftment of people and the sustainability of communities.

The challenge for marketing gold today is bigger than it has ever been, given the sharp fall-off in physical demand for gold in the major developing markets resulting from the rise in price and volatility. This market has now been stagnant for well on a decade as gold jewellery has had to compete with other luxury consumer goods. AngloGold will continue its work with the WGC but will continue also to work independently in other areas of the gold market where it can exercise strategic influence.

### **Marketing channels**

Gold produced by AngloGold's mining operations is processed to saleable form at various precious metals refineries. Once refined to a saleable product - either a large bar weighing approximately 12.5 kilograms and containing 99.5 percent gold, or smaller bars, weighing 1.0 kilogram or less with a gold content of 99.99 percent - the metal is sold directly by the refineries to bullion banks and the proceeds are paid to the company. Bullion banks are registered commercial banks which deal in gold, play a role in the gold market of buying and selling gold, and distribute physical gold bullion from the mining company/refinery into physical offtake markets worldwide. For example, bullion banks hold consignment stocks in major physical markets such as India or South East Asia, and finance such consignment stocks from the margins charged by them to physical buyers over and above the amounts paid by the bank to the mine for the bullion bars.

Where forward sales contracts exist against which AngloGold elects to deliver physical product, the same channel is used, with the single exception that the finished gold bars are delivered to the specific bullion bank with which the forward contract is held. The physical delivery of the appropriate amount of gold fulfils AngloGold's obligations under contract, and AngloGold is paid by the relevant bullion bank the price as fixed under the forward contract, rather than the spot price of the day.

### **Competition**

As gold mining is a mature and regulated industry, and very significant volumes of gold and gold derivatives trade in the world markets independent of gold mine supply, AngloGold does not consider that competition

for sales plays any role in its operations as a gold producer. Gold producers do compete against each other for acquisition and exploration opportunities.

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### **Intellectual property**

AngloGold and its subsidiary companies hold the right to use certain proprietary technology and intellectual property, including patented technology and other forms of protected intellectual property. These rights relate to various aspects of the company's business, from routine software and related computer technology in support of office operations, to intellectual property contained and/or used in the mining and mineral processing operations. AngloGold, as a group, is not dependant on these various forms of intellectual property for the conduct of its business as a whole.

AngloGold uses a proprietary technology for the treatment of refractory ore at its Jerritt Canyon operation. This ore treatment technology allows AngloGold to heat the ore to high temperatures, helping to liberate the gold from the native rock, thereby enhancing gold recovery. While AngloGold is dependent on this technology for the conduct of its operations at Jerritt Canyon, AngloGold holds sufficient rights thereto to allow it to conduct its business as currently conducted.

### **Safety and health**

The safety and health of employees remains fundamental to the sustainability of AngloGold's business. The company is committed to working with employees, trade unions and government bodies towards improving safety and health in the workplace. Considerable resources and effort are dedicated to identifying and implementing best practice across the company, as well as addressing specific problem areas as they arise. A core team of safety and health experts, located at the corporate office, reports to a board sub-committee on safety and health, and advises and assists the on-mine safety and health practitioners and mine management. Every fatal accident is subject to an executive review, over and above the region-specific regulatory and mine-based investigations, in an effort to identify the root causes of fatalities and to prevent a recurrence.

In 2002, AngloGold's performance on the safety and health front was encouraging in some areas and disappointing in others. The long-term trend in lost time injuries continued to decrease - to 8.86 per million man hours in 2002 - the lowest ever for AngloGold and reflecting an improvement of 16 percent for the year. This should be seen in the context of some 53,000 employees having worked 142 million hours during the year.

Regrettably, however, fatal accidents continued, with 44 employees losing their lives in the course of work during 2002; 39 of these fatal accidents were in the South Africa region where most of the company's deep-level operations and employees are based. As a result, the fatal injury frequency rate (FIFR) increased to 0.31 per million man hours.

Despite the tragedy of these deaths, there were a number of exceptional safety performances at various operations.

- In South Africa, the Great Norigwa mine achieved one million fatality-free shifts during the year, as did TauTona post year-end.
- The Serra Grande mine in Brazil recently recorded one million hours worked without a single lost-time injury. Serra Grande was also awarded the inaugural AngloGold Global Safety Award in January 2003.
- TauTona, one of the deepest mines in the world, is also one of the safest, with no rockfall-related fatalities recorded since September 2001. TauTona won the South Africa region Safety Shield for 2002.
- The Cripple Creek & Victor mine in Colorado completed its two-year expansion program, without injury.

Extensive efforts at emphasizing and improving safety continue with the company's intranet and mine-based newsletters, as well as a monthly safety newsletter from the chief operating officer, used to communicate with all employees.

Progressive and encouraging safety initiatives continue to be developed and implemented. In the Australia region, for example, safety performance is now being measured against leading indicators in addition to the traditional trailing indicators. This means that progress is assessed in terms of safety initiatives being undertaken, and on the level of employee commitment and knowledge, and not simply on the number of lost-time injuries.

South Africa remains the greatest challenge in terms of safety. Task teams are working to bring about major improvements in five areas, namely safety management systems, falls of ground and seismicity, dust, the effect of illness and HIV/AIDS on the workplace and safety, and developing a safety mindset. To assist in creating this safety mindset, an external consultant - DuPont - has completed an assessment of the company's operations and an in-house team has been established to tackle the implementation of this campaign.

#### **Lost time injury frequency rate (LTIFR) (per million man hours)**

	<b>2001</b>	<b>2002</b>
South Africa	11.58	9.98
East & West Africa	1.30	2.93
North America	1.58	4.95
South America	8.16	4.21
Australia	13.47	11.22
<b>Group</b>	<b>10.55</b>	<b>8.86</b>

#### ***South Africa region***

**Safety** in the mines in South Africa is governed by the Mine Health and Safety Act of 1996. AngloGold believes that it continues to comply with the provisions of this Act.

Tragically, 39 employees lost their lives in mine accidents during 2002. This includes 11 employees who lost their lives in three multiple fatal seismic accidents at Great Noligwa and Savuka. As a result, the FIFR rose to 0.34 in 2002 from 0.28 the previous year.

The primary cause of fatal accidents remains falls of ground, which caused 57 percent of fatal accidents during the year. AngloGold launched a high-profile Fall of Ground Safety Campaign during the first quarter of 2002 in an attempt to increase awareness associated with particularly non-seismic falls of ground, and this campaign has largely been successful. Transport-related accidents were the second biggest problem area and accounted for a further 25 percent of occupational accidents. AngloGold launched a program to

address this involving training, infrastructure improvement and audits, in the last quarter of 2002 and will continue during 2003.

Overall success has been achieved in decreasing the LTIFR by 14 percent to 9.98, the best-ever level.

### Safety performance

	LTIFR		FIFR	
	2001	2002	2001	2002
Great Noligwa	9.61	11.06	0.19	0.47
Kopanang	11.12	12.91	-	0.22
Tau Lekoa	13.53	17.94	0.37	0.51
Ergo	3.86	1.53	0.20	-
TauTona	12.22	7.67	0.16	0.08
Savuka	21.00	17.12	1.06	1.24
Mponeng	13.77	10.91	0.47	0.47
Moab Khotsong	4.65	6.82	0.17	0.19

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### Safety statistics

	1998	1999	2000	2001	2002
<b>FIFR</b>	0.41	0.38	0.24	0.28	0.34
<b>LTIFR</b>	15.18	14.35	11.98	11.58	9.98

The primary areas of focus in respect of **occupational health** within AngloGold's South African operations are noise-induced hearing loss (NIHL), occupational lung diseases (OLD) and tuberculosis (TB). AngloGold provides occupational health services to its employees at two fully-equipped regional occupational health centers. These are staffed by occupational medical practitioners, professional nurses, audiologists and other support staff. In addition, each mine has an occupational health nurse on site.

During 2002, 52,742 occupational medical surveillance examinations (initial, periodical, transfer and exit) were performed. There were 1,087 new cases of NIHL in 2002. This translates into a rate of 26 per 1,000 employees, compared with 12 per 1,000 in 2001. Regarding OLD, 186 employees were diagnosed, reflecting a rate of 4 per 1,000 employees, the same rate as in 2001; 983 new cases of TB were treated in 2002, a rate of 23 per 1,000 employees, also the same rate as in 2001.

Stricter screening for NIHL, in preparation for a new compensation rule requiring base-lining of all employees, has meant an increase in NIHL rates, which are now expected to decrease. No increase in liability is anticipated.

Results of efforts made by AngloGold to silencing all machine drills and over 88 percent of noisy fans over the past three years may soon become evident in NIHL results as ambient noise levels have been significantly reduced.

AngloGold continues to make advances in the control of underground dust. New and more accurate measuring methods have been introduced; better engineering practices are evident; a more standard approach to respiratory protective equipment has been implemented and employees detected as having very early OLD are moved to lower risk areas.

TB remains an area of focus in the sphere of occupational health. More effective detection methods are resulting in earlier diagnosis and treatment, which is limiting the onward transmission of the disease.

The South African government, by way of a Cabinet minute in 1999, has proposed a possible merger and alignment of benefits between the Occupational Diseases in Mines and Works Act ("ODMWA") that provides for compensation to miners who have occupational lung diseases, being mainly silicosis, TB and combinations thereof, and the Compensation for Occupational Injuries and Diseases Act ("COIDA") that provides for compensation to non-miners who have similar occupational lung diseases, as well as compensation to both miners and non-miners who suffer accidental injury in the workplace.

For the same occupational lung disease, the COIDA provides for compensation payments, being a pension liability if the permanent disability is above a certain threshold, or a lump sum compensation payment if the permanent disability is below a certain threshold, whilst the ODMWA only provides for a lump sum compensation payment. The capitalized value of a pension liability is usually greater than that of a lump sum compensation payment. In addition under COIDA compensation becomes payable at a lower threshold of permanent disability than under ODMWA.

Current claims by AngloGold employees under the ODMWA to the Compensation Commissioner are of the order of R12 million (\$1.5 million) per annum. It is estimated that under COIDA about two to three times as many of AngloGold's employees could be compensable than under ODMWA. The South African Chamber of Mines has briefed actuaries to develop actuarial models so as to estimate the potential liabilities that may arise under various scenarios should the proposed merger and alignment of benefits between the ODMWA and COIDA proceed. This actuarial work is, however, in a preliminary stage. Consequently, AngloGold has not been able to estimate with reasonable certainty what the impact of this change will have on its results or operations.

AngloGold has and continues to implement initiatives that are at the forefront of dust control and limiting the prevalence of occupational lung disease. For example, these initiatives have informed the new "Guideline for Airborne Pollutants" which is now mandatory in South African mining. Initiatives with respect to refining engineering controls, dust filtering, administrative and personal protective equipment continues to provide a safer environment. The benefits from these efforts will become apparent in future years.

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HIV is the major factor contributing to increased TB rates in South Africa. It is expected that the HIV Wellness Program and introduction of anti-retroviral therapy (ART) by AngloGold will have a positive impact on the TB problem and a project aimed at preventing transmission of TB, through mass prophylaxis, is planned for 2003.

The prevention of **HIV/AIDS** infections and the compassionate care of those afflicted with the disease remains a priority for the South Africa region. AngloGold's core intervention comprises four elements, namely:

- prevention, that is, restricting the spread of the disease through education, the provision of condoms and the effective treatment of sexually transmitted infections, is a key component of the program. Some 1,082 employees participated in AngloGold's Voluntary Counselling and Testing program during 2002, which is an improvement on the previous year and a significant achievement, considering the stigma associated with the disease;
- care for employees infected with the virus through comprehensive hospital benefits and the company's Wellness Clinics, where patients receive preventive treatment against opportunistic infections and where an ART trial project was recently



introduced;

- support for those employees no longer able to fulfil their role in the company is provided through a compassionate ill-health retirement program linked to home-based care programs that AngloGold funds in labor-sending or near-mine communities;  
and
- fundamental research into the disease and its treatment, funded by AngloGold and conducted through Aurum Health, a wholly-owned subsidiary of AngloGold Health Service. Best practice interventions identified and developed by Aurum guide the company's medical strategy.

AngloGold's AIDS strategy, which determines and guides these interventions, is a collaborative joint effort that has been defined in the agreement signed by the company and all five of its unions in July 2002.

A noteworthy program development was the introduction of ART, which was announced in August 2002. This is being implemented for employees who are medically eligible for the treatment and are willing to participate in the project. The first phase of this project aims to develop an understanding of and find solutions to the challenges inherent in the provision of ART in the gold mining industry. The project will identify the operational requirements of providing ART, particularly around supporting patient adherence to the drug regimen, and making the provisions of ART a part of primary rather than specialist healthcare, so as to make it accessible in the volumes required. Included in this will be the monitoring of patients' capacity to carry out their duties in underground working conditions, and of drug sensitivity. Some 200 employees have been invited to participate in the initial program before roll-out to all eligible employees in April 2003, for which the company has budgeted \$1.5 million.

Because HIV/AIDS is not a notifiable disease, no reliable data exists on prevalence levels. However, based on available information, it is estimated some 30 percent of AngloGold's South African workforce is HIV-positive and some 3,000 current employees have developed advanced AIDS, making them eligible for ART. Some 1,500 employees are currently participating in AngloGold's Wellness program. Some 600 employees left the company as part of the ill-health retirement program during the year, alternative employment was found for 87 employees and 300 employees died in service during the year, largely as a consequence of AIDS-related conditions.

### ***East and West Africa region***

In the East and West Africa region there were 45 lost time injuries in 2002. One fatal accident occurred at Morila and three fatal accidents at Geita. The main contributing factors were identified and action plans were implemented to address the deficiencies. The LTIFR and the FIFR for the region were 2.93 and 0.26

respectively.

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During the year, Geita maintained its NOSA 4-star rating, while Navachab retained its NOSA 5-star rating.

### Safety performance

	LTIFR		FIFR	
	2001	2002	2001	2002
Morila	1.68	6.27	-	0.33
Geita	0.65	2.11	-	0.49
Sadiola	-	1.54	-	-
Navachab	2.98	3.05	-	-
Yatela	2.52	2.07	-	-

With the ever-present threat of **malaria** at most of the African operations, prevention and treatment programs are running effectively at the Malian and Tanzanian operations. The focus is on education, malaria vector control, the issuing of mosquito nets and early detection and treatment.

**HIV/AIDS** programs have been implemented in the region with the primary focus on prevention through education and awareness. At all operations, education programs have been conducted in the local communities and throughout the workforce. Peer educators have been identified and have received professional training. Partnerships have been formed with NGOs and other stakeholders in the local communities. Awareness programs and condom distribution initiatives are ongoing.

### *North America region*

Safety in the mines in the US is governed by the Federal Mine Safety and Health Act, which is similar to the Mine Health and Safety Act in South Africa.

In 2002, safety performance continued at levels experienced in previous years at the North American operations. The overall LTIFR was 4.95, which compared favorably with the Ontario benchmark of 6.5. Jerritt Canyon's Smith mine was once again recognized by the Nevada Mining Association as having the lowest reportable injury rates for calendar 2002, while the Murray mine achieved one million man-hours without a lost time injury.

CC&V was recognized by the Colorado Mining Association for achieving over 728,000 contractor man-hours without a lost time injury during the recent project expansion. CC&V's Safety Supervisor was also recognized by the Colorado Mining Association for his active involvement in this achievement.

### ***South America region***

In 2002, safety performance in the region recorded an overall LTIFR - at 4.21 - below the Ontario benchmark of 6.5. Regrettably, a fatal accident occurred at Cerro Vanguardia on July 17, 2002. Following a complete review of risk management procedures in November 2002, Cerro Vanguardia was re-audited and maintained a NOSA 5-star rating and ISO14001 Certification.

Serra Grande was audited during the first quarter and gained a NOSA 4-star rating. At the end of November, the mine was re-audited and achieved a NOSA 5-star rating - the first underground mine in the world to achieve this distinction. The mine was awarded the inaugural Dick Fisher Safety Award, for the best performance across AngloGold's operations, based on year-on-year safety improvements.

Morro Velho was also audited in the first quarter and was awarded a NOSA 3-star rating. A re-audit will take place in the first quarter of 2003.

### **Safety performance**

	<b>LTIFR</b>		<b>FIFR</b>	
	<b>2001</b>	<b>2002</b>	<b>2001</b>	<b>2002</b>
Morro Velho	9.07	5.73	0.58	-
Serra Grande	6.42	0.70	-	-
Cerro Vanguardia	7.54	3.72	-	0.93

### ***Australia region***

The Australia region (including Union Reefs, Sunrise Dam and Boddington) recorded an LTIR of 11.22 for the year, down some 17 percent on the previous year, combined with a 38 percent decrease in all injuries. The SafeGold initiative, launched by Bobby Godsell at the Australian operations in late 2001, contributed to the improved safety performance. Further safety initiatives will be introduced in 2003.

Union Reefs was the recipient of the Northern Territory Government's recognition award for resource development in 2002.

### **Safety performance**

	<b>LTIFR</b>	
	<b>2001</b>	<b>2002</b>
Sunrise Dam	11.56	11.0
Union Reefs	5.08	-

## **4C. Organizational structure**

### **Head office structure and operations**

AngloGold's operations are organized on a geographical basis, and are controlled from its Johannesburg office.

Management of AngloGold is entrusted to the executive committee, comprising the four executive directors. This executive committee is supported by the executive officers. See "Item 6: Directors, senior management and employees". Day-to-day management of the operations vests with executive teams

based in South Africa (Johannesburg), North America (Denver), Brazil (Morro Velho) and Australia (Perth).

## **Corporate activities**

Activities provided in the corporate area fall into three categories. First, support is provided to the executive officers in managing AngloGold as a whole. Second, certain activities are managed centrally, including strategic and business planning, marketing, corporate finance, treasury, exploration, technology and innovation, corporate secretarial and corporate affairs. Third, certain specialized services are directed from the center although they are managed by operations. These include mining, engineering, metallurgy, mineral resource management, safety and health, the environment and human resources.

AngloGold has investments in numerous principal subsidiaries and joint venture interests, see "Item 19.: Exhibits" for details.

## **4D. Property, plants and equipment**

For a discussion on AngloGold's mining properties, plants and equipment, see "Item 4B.: Business overview".

## **Sustainable development: Environment and social investment**

AngloGold's operations are subject to the applicable environmental laws, rules and regulations of the various countries and jurisdictions within which they are conducted. Except as set out elsewhere herein, AngloGold believes its operations are in substantial compliance with all material environmental laws, rules and regulations which are applicable to it. In some of the jurisdictions within which AngloGold operates, AngloGold is required to provide financial assurance in a form prescribed by law to cover the cost of some

or all of the anticipated closure and final rehabilitation costs for its operations. The form, amount and other requirements associated with this financial assurance for each of the jurisdictions is set out in detail in each of the applicable laws, rules and regulations.

AngloGold's board of directors approved an Environmental Policy on October 28, 1999, which provides that AngloGold will, at a minimum, comply with all applicable legal requirements. In addition, the policy commits AngloGold to operating in an environmentally responsible manner through effective communications, establishment of management systems, provision of adequate financial resources, training and awareness programs for employees and contractors, public participation processes, conducting environmental audits, and continually improving its environmental performance.

Environmental audits of AngloGold's operations are performed periodically to evaluate performance of the operations against applicable requirements.

AngloGold's estimated future environmental rehabilitation obligations as at December 31, 2002 are as follows:

	<b>2002 contribution to Trust Fund</b>	<b>Balance in Trust Fund</b>	<b>Total estimated liability</b>	<b>Note</b>	<b>Balance in provision</b>
South African operations	(3) 6.5	32.1	68.4	(2)	45.2
East and West African operations	-	-	23.4	(1)	8.7
North American operations	-	-	68.3	(1)	43.3
South American operations	-	-	37.7	(1)	23.6
Australian operations	-	-	24.1		19.4
<b>Total</b>	<b>6.5</b>	<b>32.1</b>	<b>221.9</b>		<b>140.2</b>

All figures are in \$ millions.

(1) *For East and West Africa, North America and South America, the obligations are based upon the company's net interest in millions of US dollars. For East and West Africa, North America and South America, the obligations will be funded from existing cash resources and future cash flows. AngloGold North America has posted reclamation bonds aggregating approximately \$59 million with various federal and governmental agencies to cover potential environmental obligations. AngloGold has provided a guarantee for these obligations.*

(2) *All calculations are based upon the 2003 business plan.*

(3) *Includes growth in the Trust Fund of \$3.4 million. Excludes funds transferred in respect of the Free State disposal of \$23.0 million.*

While the ultimate cost to be incurred in the future is uncertain, AngloGold has estimated that the total cost for mine rehabilitation and closure, in current monetary terms, will be \$221.9 million.

## **South African operations**

**Environment:** South African law requires that AngloGold calculate its estimated environmental closure and final rehabilitation costs for operations which are subject to the requirements of the law. The law also requires that this estimate be used by AngloGold to make periodic cash contributions to an environmental trust fund (or use some other approved funding mechanism), created in accordance with rehabilitation obligations of those operations. It is anticipated that these estimates are likely to change as additional, operation-specific information is gained and if, and as, closure and final rehabilitation requirements change. A review of the previous closure and rehabilitation cost estimates was completed during 2001. This revised estimate was used as the basis for determining the funding obligation associated with the environmental trust fund for 2002.

Certain amounts have been contributed to an irrevocable rehabilitation trust under AngloGold's control for rehabilitation of the mines and related facilities located in South Africa. The monies in this trust are invested primarily in interest bearing debt securities.

AngloGold intends to finance the ultimate rehabilitation costs from the monies invested with the rehabilitation trust fund, from the proceeds on sale of assets and gold from plant clean-up at the time of mine closure as well as from internally generated funds.

Estimated rehabilitation liabilities for the South African operations at December 31, 2002 are:

	<b>2002 contribution to trust fund <sup>(1)</sup></b>	<b>Balance in trust fund</b>	<b>Total estimated liability</b>	<b>Balance in provision</b>
Vaal River	2.7	14.1	37.4	21.0
West Wits	1.7	6.7	17.0	11.3
ERGO	2.1	11.3	14.0	12.9
<b>Total</b>	<b>6.5</b>	<b>32.1</b>	<b>68.4</b>	<b>45.2</b>

(1) Includes growth in the trust fund of \$3.4 million. Excludes funds transferred in respect of the Free State disposal of \$23.0 million.

Under South African law, mining companies are required to submit Environmental Management Program Reports (EMPRs) to the Government Mining Engineer's office. EMPRs identify individual impacts, mitigation measures and rehabilitation requirements and must also be approved by other South African government departments, including, but not restricted to, the Department of Water Affairs and Forestry. In response to changed legal requirements in respect of water management issues, AngloGold has applied for and received the required water permits.

In order to maintain compliance with the EMPRs, AngloGold meets periodically with the relevant government departments to review its operations in the light of the provisions contained within the relevant EMPRs.

Since the South Africa region employs by far the most people, and has the largest number of operations, its community and environmental impact is greater there than anywhere else. The aim of the South Africa region is to create a balance between the impact on the natural and social environments in which it operates while at the same time, ensuring that it delivers significant and lasting benefits to employees, their communities and other stakeholders, in partnership with government, international agencies, labor, health and NGOs. As a result of historical and current social-economic imperatives, the role played by the company in social issues is significant.

An amended Environmental Management Program Report for the West Wits and Vaal River operations was submitted to the Department of Minerals and Energy in November 2002. It is anticipated that feedback will be received on this, early in 2003.



Water usage and management remains a key area of focus. Water balances were updated and redesigned to ensure a more user-friendly and comprehensive system. Water monitoring programs and procedures for ground and surface water were developed and implemented at the Vaal River and West Wits operations and a quarterly reporting and analysis system was rolled out across the region. Geotechnical assessment of rock dumps and tailings storage facilities, indicating pollution potential and associated time periods, were completed. This is the first time such an assessment has been undertaken in the South African gold mining industry. The main focus for 2003 will be the reduction in potable water usage and the treatment of mine water to reduce the contamination potential on water resources.

During 2002, the region committed itself to the development of a web-based electronic Environmental Management System. The system is based on ISO14001 principles. The first of four phases, involving policy development and planning, was completed in 2002.

During 2002, the region's Environmental Incident Review system was also further refined, with the emphasis placed on implementation within the operations.

AngloGold is currently funding a study being undertaken by the genetics department of the University of Pretoria into the yellowfish population at the Vaal River. This study will develop genetic fingerprints of two particular species to assist in the formulation of fisheries management regulations. Both the Vaal River and West Wits operations are part of the greater Vaal River catchment area.

Progress was made with rehabilitation trials at the Ergo Daggafontein tailings dam. The dam was decommissioned in December 2001 and will be rehabilitated to environmental closure standards in terms of the Minerals Act.

**Sustainable development and social investment:** In South Africa, the company's corporate social investment initiatives are directed by the AngloGold Fund and the AngloGold Educational Trust Fund. During 2002, some \$1.5 million was committed to a range of initiatives, both large and small. The primary area of investment remains education, welfare and development, community health, health projects related to HIV/AIDS, and skills and entrepreneurial development. Although the Funds support projects which have a national impact, the focus is on those regions and communities in which the company operates or has a major impact.

## East and West African operations

**Environment:** Mine closure costs and their associated provisions are reviewed on an annual basis. The region is working towards standardizing the approach and assumptions used for closure provision estimation at the various operations. Estimates are revised as the understanding of site-based issues that influence closure provision evolves due to technical studies undertaken in the previous year (example: techniques required for rehabilitating heap leach stacks at Yatela). The dynamic nature of the operations and ongoing rehabilitation means that closure costs can be revised either up or down. Increased closure provisions at a number of operations reflects the development of new infrastructure (example: satellite pits at Geita).

At the Navachab operation in Namibia, the final closure provision is currently estimated at \$1.32 million. This is lower than the \$1.9 million estimated in 2001. This discrepancy is attributable to fluctuations in the exchange rate, and the estimate is currently under review and is likely to increase due to the construction of an additional tailings dam. Navachab is wholly-owned by AngloGold.

At Sadiola in Mali, the mine closure provision has been revised from \$8.2 million to \$11.3 million, which reflects the development of two satellite pits. AngloGold owns 38 percent of Sadiola and therefore, its share of mine closure liability is \$4.29 million. Other shareholders include IAMGOLD, the IFC and the Malian Government.

Construction of the Yatela project in Mali was completed and production commenced in 2001. Closure liability has been revised from \$2.8 million to \$8.6 million. AngloGold has a 40 percent interest in Yatela and therefore, its share of mine closure liability is \$3.44 million. Other shareholders include IAMGOLD and the Malian Government.

The Morila mine in Mali has decreased its mine closure liability estimate from \$10.46 million to \$8.4 million. Significant funds will be realized from the sale of assets at the end of the mine life and these realized funds have been included in the closure plan, thereby reducing the total final liability. Morila's shareholders include AngloGold, RandGold and the Malian Government. AngloGold has a 40 percent interest in Morila and therefore, its share of mine closure liability is \$3.36 million.

The Geita mine in Tanzania is subject to six monthly surveillance audits to maintain its ISO4001 certification. The mine has increased its estimated closure liability from \$12 million to \$22.2 million and is

making on-going monthly financial provisions for closure on the basis of this estimate. AngloGold has a 50 percent stake in Geita and therefore, has a net mine closure liability of \$11.1 million. Ashanti is the other shareholder.

**Sustainable development and social investment:** AngloGold's aim of ensuring sustainable development is particularly pertinent in these regions of Africa, where mining operations are frequently located in inaccessible areas, largely untouched by industrial and economic development. Responsible mining practices, with the full involvement of local communities and governments, can ensure that long-term benefits accrue to the regions, even after mining has ceased.

Localization programs have been implemented at all operations with the main focus on the implementation of technical and managerial training programs to fast-track the career development of local employees. Artisan training and business skills, safety and metallurgical training are in place at the operations. Progress has been made, with at least 60 percent of supervisory and managerial positions now being held by local employees.

Sustainable social development strategies have been implemented at all the operations. At Sadiola and Yatela mines, farmers from the local communities have been trained in sustainable farming projects, including vegetable cultivation and poultry farming. Similar programs are being investigated at other operations. As a result of a major drought in the local communities surrounding the Malian operations, boreholes are being installed to improve the security of water supply. AngloGold has a number of community development initiatives and projects implemented in the communities surrounding its operations, including the support of housing initiatives and the upgrading of healthcare facilities in Geita village.

A community development trust consisting of mine management, NGOs and local community representatives is in the process of being formed by Morila mine. An initial contribution of \$500,000 has been made by the mine to this trust. The main aim of the trust will be to manage the allocation of funds towards sustainable development projects and to monitor the success of these projects.

AngloGold is also involved in the upgrading and extension of schools in the surrounding areas.

## **North American operations**

**Environment:** The US operations were subject to environmental inspections by the major environmental federal and state regulatory authorities during 2002 and were in substantial compliance with permit requirements with the possible exception of a water quality matter at the CC&V operation, which is

discussed more fully below.

Activities continued at the CC&V operation in the State of Colorado under approvals previously obtained from various government entities to expand the operations at the Cresson Project. The approvals obtained in August 2000 included an assessment by the State of Colorado of rehabilitation and closure costs for the expanded operation. This estimate requires CC&V to provide financial assurance in the amount of approximately \$52.0 million to cover rehabilitation and closure obligations associated with the full build-out of the expansion. The total financial assurance now posted under Colorado law for the CC&V operation is approximately \$34.8 million to cover rehabilitation and closure obligations, which amount has been posted with the State of Colorado in the form of a surety bond by AngloGold via a major US insurance company.

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Certain allegations were raised by the US Environmental Protection Agency (EPA) in 2001 related to self-reported excursions of CC&V's discharge permits in 1996 - 1999. EPA and the Colorado Water Quality Control Division (WQCD) evaluated significant information provided by CC&V relating to the allegations and after months of negotiations entered into administrative settlements with CC&V and others in September 2002 to resolve EPA's allegations. Notwithstanding various available defenses, no in-stream exceedances, and the last alleged excursion occurring nearly three years ago, CC&V and its joint venture partners made a conscious decision that attempting to settle the matter, rather than continuing with protracted and divisive litigation, was in the best interests of their employees and the communities where CC&V operates.

Activities at the Jerritt Canyon Project in the State of Nevada continued to be conducted solely by underground mining at four mines. Concurrent rehabilitation and closure activities continued during 2002 in areas no longer needed for current mine-related activities. Financial assurance totalling approximately \$24.2 million which was to be posted with the State of Nevada and the United States Forest Service (USFS) in the form of surety bond by AngloGold via a major US insurance company. (This amount includes the approximate \$3.0 million posted for the Big Springs mine and mill in Nevada as described in the next paragraph.) As announced on February 27, 2003, AngloGold entered into a purchase and sale agreement with Queenstake Resources USA Inc (Queenstake), which agreement, inter alia, makes provision that Queenstake will accept full closure and reclamation and other liabilities.

In Nevada, final rehabilitation and closure activities continued at the Big Springs mine and mill. These rehabilitation activities have progressed to a stage that release of a majority of the posted financial assurance of approximately \$3.0 million with the State of Nevada and the USFS can be pursued in 2003.

**Sustainable development and social investment:** In North America, AngloGold's operations make a positive contribution to the communities in which they operate. AngloGold supports projects with potential social, economic or environmental benefits. These projects include the development, in conjunction with other mining companies and state and federal government agencies, of a voluntary program to reduce mercury air emissions, and continued support towards the construction of a regional medical center.

## **South American operations**

**Environment:** The South American operations were subjected to environmental inspections by state environmental authorities during 2002 and were in material compliance with permit requirements.

During early 2002, Cerro Vanguardia received a joint ISO14001 and NOSA 5 Platinum Star Integrated System rating (NOSA 5-star). The denomination "Integrated" means integrated to safety, health and environment management systems. This integrated rating was superseded in late 2002, with CVSA being awarded a NOSA 5 Platinum Stars Certification.

Serra Grande also achieved a NOSA 5-star rating.

At Morro Velho (MMV), work to evaluate the impact of old tailings was concluded and remedial proposals are being analyzed by state environmental regulatory authorities. One of the MMV underground mines, Mina Velha, is expected to be decommissioned by July 2003. Morro Velho has achieved a NOSA 4-star integrated rating.

The Crrago do Stio mine, was granted a renewal of its operating permit in 2002, which is now valid until July 2007. Progress was made with environmental rehabilitation on the mine with about 163 hectares having been replanted up to December 2002.

The total anticipated life of mine environmental rehabilitation and closure costs for the South American operations is estimated at \$40.7 million, of which AngloGold's attributable share is estimated at \$37.7 million.

Environmental and social issues continue to receive attention. Ongoing environmental work at Morro Velho includes a stepped-up waste collection and recycling campaign during the year, significantly reducing the

amount of waste generated by the company. This program has been bolstered by an extensive communications network to instill further awareness of the campaign. The Ecological Preservation Centre established by Serra Grande some 18 months ago together with students, teachers and community leaders provides courses on environmental awareness and received visits from more than 400 people during the year.

**Sustainable development and social investment:** In line with AngloGold's policy of sustainable development, the South American operations are actively involved in forming partnerships with local municipalities, communities and other institutions towards the upliftment of communities in which its operations are found. Examples of these are the agreement with the National University of Southern Patagonia for the monitoring of the flora, fauna and soil in the region of Cerro Vanguardia mine, aimed at preserving animal and plant species and maintaining water and soil quality, and an educational campaign in the Nova Lima area. In addition, approximately 600 employees participated in courses and workshops at The Harry Oppenheimer Centre for Environmental Education implemented by the company.

### **Australian operations**

**Environment:** Environmental management and compliance, as well as the promotion of social development in the regions in which the company operates, continued as a matter of priority during 2002. AngloGold Australia improved its environmental performance, reducing the number of Category 3 incidents during the year to two, compared with eight incidents in 2001.

An Environmental Performance Report covering AngloGold's Australian operations was published. The publication is a requirement for signatories to the Australian Minerals Industry Code for Environmental Management (Code). AngloGold's Australian operations are a signatory to the Code. The operations were in substantial compliance with material requirements of applicable Australian law.

The Union Reefs operation is scheduled to close in late 2003. A detailed closure plan, addressing environmental, stakeholder and community issues, was approved by the Northern Territory Government. Rehabilitation of worked out open-pits, waste rock dumps and tailings disposal areas was advanced during 2002.

Where possible at Sunrise Dam during 2002, disturbed land was progressively rehabilitated.

The Boddington oxide operation closed during the final quarter of 2001. Rehabilitation of those parts of the operation that will not be affected by the future expansion operations were undertaken during 2002. Redundant plant and equipment were disposed of and progressively removed from site.

The Tanami process plant and associated service and tailings disposal facilities were leased to a third party for processing third party ore for a period of up to four years from 2001. The Tanami joint venture partners are not liable for the impact of these third party activities. Those parts of the Tanami operation that were not subject to the lease agreement are progressively being rehabilitated.

Estimated rehabilitation liabilities for the Australian operations at December 31, 2002 are:

<b>Mine</b>	<b>2001</b>	<b>2002</b>
	<b>\$ 000 <sup>(1)</sup></b>	<b>\$ 000 <sup>(1)</sup></b>
Boddington	10,238	9,898
Union Reefs	1,265	1,343
Tanami	2,283	2,518
Sunrise Dam	6,342	10,351
Other	1,669	-
Total	21,797	24,110
Total (A\$ 000)	A\$42,787	A\$43,091

(1) *Figures shown in \$ thousands converted from Australian dollars at an exchange rate of A\$1.7873 = \$1*  
*(2001: A\$1.9631 = \$1).*

**Sustainable development and social investment:** The company was involved in a number of community development and support initiatives during the year and maintained its commitment to training, employment and business support in indigenous communities. In recognition of its positive contribution to indigenous issues in the Tanami region, the Darwin exploration team received a Community Service Award.

For further discussions of AngloGold's property, plants and equipment, see "Item 4B.: Business overview" as well as note 16 to the consolidated financial statements - "Provision for environmental rehabilitation".

## **Item 5: Operating and financial review and prospects**

The following operating and financial review and prospects are based on the US GAAP financial statements of AngloGold for the years ended and as at December 31, 2002, 2001 and 2000 which are included under Item 18 of this annual report.

### **5A. Operating results**

#### **Introduction**

AngloGold's revenues are derived primarily from the sale of gold produced at its mines. As a result, AngloGold's operating results are directly related to the price of gold which can fluctuate widely and are affected by numerous factors beyond its control, including industrial and jewellery demand, expectations with respect to the rate of inflation, the strength of the US dollar (the currency in which the price of gold is generally quoted) and of other currencies, interest rates, actual or expected gold sales by central banks, forward sales by producers, global or regional political or economic events, and production and cost levels in major gold-producing regions such as South Africa. In addition, the price of gold sometimes is subject to rapid short-term changes because of speculative activities. The current demand for and supply of gold may affect gold prices, but not necessarily in the same manner as current supply and demand affect the prices of other commodities. The supply of gold consists of a combination of new production from mining and



existing stocks of bullion and fabricated gold held by governments, public and private financial institutions, industrial organizations and private individuals.

As the amounts produced in any single year constitute a very small portion of the total potential supply of gold, normal variations in current production do not necessarily have a significant impact on the supply of gold or on its price. If revenue from gold sales falls for a substantial period below AngloGold's cost of production at its operations, AngloGold could determine that it is not economically feasible to continue commercial production at any or all of its operations or to continue the development of some or all of its projects. AngloGold's weighted average total cash costs per ounce of equity attributable production for its world-wide operations was \$161 per ounce of gold produced in 2002, \$178 in 2001 and \$213 in 2000.

On March 31, 2003, the afternoon fixing price for gold on the London Bullion Market was \$334.85 per ounce.

AngloGold's costs and expenses consist primarily of production costs, royalties and depreciation, depletion and amortization. Production costs are incurred on labor, consumable stores which include explosives, timber, other consumables and utilities incurred in the production of gold. Labor is the largest component of production costs as AngloGold's mining operations consists mainly of a combination of the use of both deep level underground mining methods as well as open-pit operations, which are labor intensive.

AngloGold is a global company, with operations in several regions on several continents, including South Africa, East and West Africa, North and South America and Australia, and is therefore exposed to a number of factors, which could impact on its profitability, resulting from exchange rate fluctuations, inflation and other risks relating to these specific countries. These factors are inherent in conducting mining operations on a global basis, and AngloGold applies measures, such as hedging instruments, intended to reduce its exposure to these factors.

In conducting mining operations, AngloGold recognizes the inherent risks and uncertainties of the industry, and the wasting nature of assets. The costs and expenses relating to the production of gold are either expensed or capitalized to mining assets. Recoverability of capitalized amounts is reviewed on a regular basis.

### **Effect of exchange rate fluctuations**

Currently, the majority of AngloGold's revenues are generated in South Africa, and to a lesser extent in South America and Australia, and most of its production costs, therefore, are denominated in local currencies, such as the South African rand, the Brazilian real, the Argentinean peso and the Australian

dollar. In 2002, AngloGold derived 73 percent of its revenues from these countries, mainly in South Africa, and incurred 76 percent of its production costs in these local currencies, mainly the rand. As the price of gold is denominated in US dollars and AngloGold realizes the majority of its revenues in US dollars, devaluation of these local currencies against the US dollar improves AngloGold's profitability in the short-term. Mainly as a result of its hedging instruments, a small portion of AngloGold's revenues are denominated in South African rands and Australian dollars, which partially offsets the effect of the US dollar's strength on AngloGold's profitability. Based upon average rates during the respective years, the rand and the real weakened by 22 percent and 38 percent respectively, against the US dollar in 2002 compared to 2001. The Argentinean peso which was pegged against the US dollar at 1:1 in 2001, traded freely against the US dollar from January 1, 2002, and by February 28, 2003 had devalued to 3:1 against the US dollar. Sustained weakness in these currencies could, however, have an inflationary effect and may result in increased costs.

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The Australian dollar, based on the average rates during the respective years, strengthened by 5 percent against the US dollar in 2002 compared to 2001.

In addition, to fund local operations and comply with South African exchange controls, AngloGold holds funds in local currencies, such as the rand and Australian dollar. The US dollar value of these currencies may be affected by exchange rate fluctuations and, as a result, AngloGold's cash and cash equivalents reported in US dollars could change. At December 31, 2002, approximately 47 percent of AngloGold's cash and cash equivalents were held in such currencies.

Certain exchange controls are currently in force in South Africa. Although the exchange rate of the rand is primarily market determined, its value at any time may not be considered a true reflection of the underlying value of the rand while exchange controls exist. The government has indicated its intention to lift exchange controls over time. When this occurs, rand exchange rates will be more closely tied to market forces. It is not possible to predict when this will occur or the future value of the rand. For a detailed discussion of these exchange controls, see "Item 10D.: Exchange controls".

### **Effect of inflation**

AngloGold's operations have not been materially adversely affected by inflation in recent years. However, AngloGold is unable to control the prices at which it sells its gold (except to the limited extent that it utilizes commodity instruments) and it is possible, therefore, that if there is to be significant inflation in South Africa,

and to a lesser extent in South America and Australia, without a concurrent devaluation of the local currency or an increase in the price of gold, there could be a material adverse effect upon AngloGold's results and financial condition.

The rand/US dollar exchange rate, based upon average rates during the respective years, and the local annual inflation rate, as measured by the South African Producer Price Index (PPI), are set out in the table below:

<b>Year ended December 31</b>	<b>2002</b>	<b>2001</b>	<b>2000</b>
The average South African rand/US\$ exchange rate weakened by:	22.1	26.5	11.0
PPI (inflation rate) increase:	14.2	8.4	9.2
<b>Net effect</b>	<b>7.9</b>	<b>18.1</b>	<b>1.8</b>

### **Effect of commodity instruments**

AngloGold has utilized commodity instruments to protect the selling price of some of its anticipated gold production. Although the use of these instruments may protect a company against low gold prices, it will only do so for a limited period and only to the extent the hedge book can be sustained. The use of such instruments may also prevent full participation in subsequent increases in the market price for gold with respect to covered production. For a discussion of AngloGold's commodity instruments, see "Item 11.: Quantitative and qualitative disclosures about market risk".

### **Acquisitions and dispositions**

The global gold mining industry has experienced active consolidation and rationalization activities in recent years. Accordingly, AngloGold has been, and expects to continue to be, involved in a number of acquisitions and dispositions as part of this global trend and to identify value-adding merger and acquisition opportunities.

During July 2002, AngloGold acquired an additional 46.25 percent interest in the Cerro Vanguardia mine in Argentina doubling its interest in this operation to 92.5 percent. The transaction was effective from July 1, 2002. With effect from October 1, 2002 AngloGold disposed of its wholly-owned subsidiary, Stone and Allied Industries, to a joint venture of that company's existing management and a group of black entrepreneurs.

In 2001, AngloGold announced the sale of its Free State operations in South Africa effective January 1, 2002. The sale closed in April 2002. AngloGold also announced the sale of its Normandy shares in January 2002 after its offer to purchase all of the outstanding share capital of Normandy Mining Limited in Australia expired without it obtaining control of Normandy.

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In February 2001, AngloGold sold its Deelkraal and Elandsrand mines at the West Wits operations in South Africa and in July 2001 sold its interest in No. 2 Shaft at the Vaal Reefs operations also in South Africa.

In 2000, AngloGold acquired interests in the Morila and Geita joint ventures in Mali and Tanzania, respectively.

The Morila, Geita and Cerro Vanguardia acquisitions have each been accounted for as a purchase business combination under US GAAP. The consolidated financial statements reflect the operations and financial condition of the acquisitions and dispositions from the effective date of these transactions. Therefore, the consolidated financial statements are not necessarily indicative of AngloGold's financial condition or results of operations for future periods. For a more detailed discussion of the transactions, see "Item 4A.: History and development of the company".

On February 27, 2003, AngloGold announced that, pursuant to an unsolicited offer from Queenstake Resources USA Inc (Queenstake), the company had entered into a purchase and sale agreement for the disposal of its 70 percent interest in the Jerritt Canyon Joint Venture in North America acquired in 1999, as part of the Minorco transaction. The consideration payable by Queenstake to the Joint Venture partners will comprise: \$8 million on closure of the transaction which is expected to close during April 2003, \$6 million in deferred payments and certain additional royalty payments. In terms of the agreement Queenstake has undertaken to accept full closure and reclamation and other liabilities. The financial effects of this sale are not included in the consolidated financial statements as at and for the year ended December 31, 2002. See note 30 to the consolidated financial statements "Subsequent events". AngloGold does not expect that the sale will have a material impact on its earnings and financial position.

On March 13, 2003, AngloGold announced that its wholly-owned subsidiary, AngloGold Australia Limited signed a new joint venture agreement with Striker Resources NL and De Beers Australia Exploration Limited, covering a large ground holding in the east Kimberley region of Western Australia. AngloGold, as manager of the joint venture, has agreed to spend an initial \$356,940 on gold exploration and has the right to earn 51 percent in all the tenements subject to the agreement, via a series of joint venture agreements,

for total combined expenditure of \$4.61 million. The agreement comprises the right to earn 51 percent in the Oombulgurri Gold Project by spending \$3 million, and two options to earn 51 percent by spending a combined \$1.64 million on tenements in which Striker holds joint interest with AKD Limited in one case, and with Ellendale Resources NL in another. The area of influence covered by the agreements totals more than 17,000 square kilometres and both Striker and De Beers will provide AngloGold with access to their databases for the region, including drill and sample material. See note 30 to the consolidated financial statements "Subsequent events".

## **Projects and growth opportunities**

*Approved capital projects.* AngloGold currently has five capital projects recently completed or in development. Two of these projects, Sunrise Dam in Australia and Cripple Creek & Victor (in the US) have been completed, with the other three (Mponeng, TauTona and Moab Khotsong in South Africa) on track for completion on time and within budget. Together, these five projects are expected to yield approximately 13 million additional ounces of gold production over their lives. For a discussion of capital expenditures that AngloGold incurred in relation to these projects, see "Item 5B.: Liquidity and capital resources". For a more detailed description of these projects, see "Item 4B.: Business overview".

*Growth opportunities.* In addition to continuously monitoring and evaluating prospective acquisitions, AngloGold's management has identified a number of immediate to long-term organic growth opportunities for the company. In addition to the approved capital projects, a further 11 expansion projects at the company's existing operations in South Africa, South America and Australia are expected to add a further 18 million ounces to AngloGold's production over the life of these operations, assuming a gold price of \$325 per ounce in real terms, at a capital cost of some \$740 million. These projects are subject to a formal capital approval process. For a discussion of each of these projects, see "Item 4B.: Business overview".

## **South African political, economic and other factors**

AngloGold is a South African company and a majority of its operations are in South Africa. As a result, AngloGold is subject to various economic, fiscal, monetary and political factors that affect South African companies generally.

South African companies are subject to exchange control regulations. Governmental officials have from time to time stated their intentions to lift South Africa's exchange control regulations when economic conditions permit such action. From 1998, certain aspects of exchange controls for financial institutions and individuals have been incrementally relaxed. It is, however, impossible to predict when the South African government will remove exchange controls in their entirety. South African companies remain subject to restrictions on their ability to export and deploy capital outside of the Southern African Common Monetary Area, unless dispensation has been granted by the South African Reserve Bank. For a full discussion of exchange controls, see "Item 10D.: Exchange controls".

In October 2002, the President of South Africa assented to the Mineral and Petroleum Resources Development Act, 2002 which was passed by Parliament in June 2002. The Act will become effective, on a date to be proclaimed by the President. The new Act vests custodianship of South Africa's mineral resources in the State which will issue prospecting rights or mining rights to applicants in the future. The existing common law prospecting, mining and mineral rights will cease to exist but transitional arrangements are provided in order to give holders of existing rights, the opportunity to acquire new rights. The new rights will be subject to a State royalty calculated on gross revenue as proposed in the draft Mineral and Petroleum Money Bill, 2003, which was released in March 2003 for comment, and which proposes a royalty of 3 percent of gross revenue in the case of gold. The company is currently evaluating and have not yet established the impact of the Mineral and Petroleum Resource Development Act, 2002 and the draft Mineral and Petroleum Money Bill, 2003 on its earnings and financial position. For a full discussion of the Mineral and Petroleum Resources Development Act, 2002, see "Item 4B.: Business Overview - Rights to mine and titles to properties - Mineral and Petroleum Resources Development Act 2002".

## **Gold market in 2002**

In 2002, the spot price of gold opened at \$279 per ounce in January and closed at \$348 per ounce in December, an increase of 25 percent, compared with \$272 per ounce in January 2001 and \$278 per ounce in December 2001. At its lowest, the spot price was \$277 per ounce in 2002, 6 percent higher than \$262 per ounce, the lowest spot price of gold for 2001. During 2002, the highest spot price of gold was \$354 per ounce compared to a high of \$298 per ounce for 2001. The average spot price of gold was \$310 per ounce during 2002, almost \$40 per ounce, or 14 percent, higher than \$271 per ounce, the average spot price in 2001.

The factors which AngloGold believes drove the gold price during 2002 appeared to have made a particularly strong impact in the final quarter of 2002. These factors included US dollar weakness, international political tension, equity market declines and a halt to the dismantling of producer hedging. This last factor appeared to have the effect of both lowering gold producer selling in the spot market, and introducing some buying in the market. During the final quarter of 2002, AngloGold believes the price was influenced most significantly by dollar weakness and by escalating conflict over Iraq. Over 2002, the spot price appeared to have responded almost perfectly to the US dollar's fall against the euro. AngloGold

believes the additional tension in the Middle East provided the lift to take gold up further. AngloGold believes all of the factors that have been positive for gold in 2002 remain firmly in play, and there is good reason to expect higher gold prices in 2003.

Under the favorable price performance of gold, AngloGold continued to see weakness in the physical market throughout 2002. AngloGold has seen a general decline in physical demand for gold in both the jewellery and the investment sectors, with exceptions in only a few countries. Compounding the effects of this lower demand, AngloGold has seen scrap sales and gold recycling increase sharply in the face of higher gold prices. AngloGold believes the negative impact of these factors in the physical market was mitigated to a degree by slightly lower new mine production, and by the reduction in supply occasioned by the run-down in gold producer hedging referred to above. As is the case in all periods of rising gold prices and gold price volatility, the physical market should revive once the price returns to a stable trading range for a period of time. However, with further gold price volatility expected in 2003, a resurgence of physical demand should not be expected immediately.

AngloGold believes a critical factor in the strength of the gold market in 2002 has been the return of investor and speculator interest in the metal. This interest has not translated particularly into demand for physical gold, but can most certainly be seen in the derivative markets, and particularly in the futures and options positions on the New York Comex and, from time to time, on the Tokyo Comex. There is no doubt also a considerable over-the-counter derivative trade in gold, although this is not easily measured. Buying in the derivatives markets is directly influenced by the factors referred to above, and is directly responsible for moving the price of gold.

### Comparison of operating performance in 2002, 2001 and 2000

The following table presents operating data for the AngloGold group for the three year period ended December 31, 2002:

Operating data for AngloGold	Year ended December 31		
	2002	2001	2000
Gold production (thousand ounces)	5,939	6,983	7,243
Total cash costs (\$/oz)	161	178	213
Total production costs (\$/oz)	218	235	276
Capital expenditure (million US dollars)	261	278	290

**Gold production**

For the year ended December 31, 2002, AngloGold's total gold production decreased by 1,044,000 ounces, or about 15 percent, to 5.94 million ounces from 6.98 million ounces produced in 2001. Gold production from operations located in South Africa decreased by 27 percent from 4,670,000 ounces produced in 2001 to 3,412,000 ounces in 2002. This was mainly the result of the disposal of the Free State assets, which produced 1,199,000 ounces in the year ended December 31, 2001, as well as the disposal of Deelkraal and Elandsrand, which produced 35,000 ounces in 2001. Excluding production from these operations, total gold production would have increased by 3 percent from 5,749,000 ounces produced in 2001 to 5,939,000 ounces produced in 2002 and South African gold production would have decreased by 1 percent from 3,436,000 ounces produced in 2001 to 3,412,000 ounces produced in 2002. Gold production in East and West Africa increased by 25 percent or 217,000 ounces from 868,000 ounces in 2001 to 1,085,000 ounces in 2002. The main contributors were Morila where gold production increased by 169,000 ounces due to an unusually high recovered grade during 2002; at Geita, where gold production increased by 17,000 ounces in 2002; at the Yatela project in Mali, where gold production increased by 55,000 ounces; and at Sadiola where gold production decreased by 22,000 ounces during 2002. Gold production in the North America region decreased by 7 percent or 34,000 ounces from 496,000 ounces in 2001 to 462,000 ounces in 2002. This decrease in gold production was mainly due to Jerritt Canyon where gold production decreased by 45,000 ounces. Cripple Creek & Victor's gold production increased by 11,000 ounces in 2002 partially offsetting the decrease at Jerritt Canyon. South American operations recorded increasing gold production of 478,000 ounces in 2002, compared with 441,000 ounces in 2001 due mainly to the acquisition during the third quarter of 2002 of an additional 46.25 percent interest in the Cerro Vanguardia mine located in Argentina. The Australian operations produced 502,000 ounces of gold during 2002, compared with 508,000 ounces in 2001. This is mainly as a result of the closure of operations at Boddington and Tanami during 2001 and 2002, which produced a total of 100,000 ounces of gold in 2001 compared with 2,000 ounces of gold in 2002. The decrease in gold production was partially offset by an 87,000 ounce increase in gold produced at Sunrise Dam.

For the year ended December 31, 2001, AngloGold's total gold production decreased by 260,000 ounces, or about 4 percent, to 6.98 million ounces from 7.24 million ounces produced in the same period in 2000. This change was mainly due to the sale of the Deelkraal and Elandsrand mines located in South Africa that produced an aggregate of 530,000 ounces of gold in 2000, as well as a decrease during 2001 in gold produced by other mines located in South Africa (excluding the Deelkraal and Elandsrand mines) of 252,000 ounces, or about 5 percent, to 4,637,000 ounces from 4,889,000 ounces recorded in the same period in 2000, mainly due to rationalization of operations, including closure of aging shafts at Matjhabeng and downsizing at Joel, in AngloGold's Free State operations. This decrease was offset by production at the Morila, Geita and Yatela projects that produced 577,000 ounces of gold during 2001.



A more detailed review of gold production at each of AngloGold's operations is provided under "Item 4B.: Business overview".

### ***Total cash costs and total production costs***

The total cash cost for the year ended December 31, 2002 was \$161 per ounce, \$17 per ounce, or 10 percent, lower than cash costs of \$178 per ounce recorded in 2001. Of the \$17 per ounce reduction in total cash costs over 2002, \$24 per ounce related to the weakening of the South African rand against the US dollar. This change is mainly due to substantially lower cash cost recorded in the South African operations (\$158 per ounce in 2002 compared to \$184 in 2001). Total cash costs at the South African operations decreased mainly for two reasons in 2002: firstly, due to the devaluation of the South African rand relative to the US dollar and, secondly, due to the disposal of relatively high cost producing operations, such as the disposal in February 2001 of Deelkraal and Elandsrand that recorded cash costs of \$331 per ounce and \$362 per ounce, respectively, in 2001, as well as the disposal in January 2002 of the Free State assets and Joel that recorded cash costs of \$204 per ounce and \$345 per ounce, respectively, in 2001. North America's total cash cost increased from \$211 per ounce in 2001 to \$222 per ounce in 2002, mainly due to the higher usage and pricing of consumables and contract services focused on achieving higher production. East and West African, South American and the Australian regions recorded total cash costs in 2002 of \$126 per ounce, \$126 per ounce and \$193 per ounce, respectively, compared to \$129 per ounce, \$134 per ounce and \$194 per ounce, in 2001.

Total cash costs for 2001 were \$178 per ounce, \$35 per ounce, or 16 percent, lower than the cash cost of \$213 per ounce recorded in the same period in 2000. This change is mainly due to the devaluation of the South African rand, the Brazilian real, Argentinean pesos and the Australian dollar, the currencies in which most of the production costs are incurred, relative to the US dollar, the currency in which sales revenues are predominantly realized, and the low cost operations of Morila (\$103 per ounce), Geita (\$147 per ounce) and Yatela (\$149 per ounce) for the year ended December 31, 2001, that were reflected in the 2001 results and the disposal in February 2001 of Deelkraal and Elandsrand that recorded cash costs of \$294 per ounce and \$281 per ounce, respectively, in 2000.

Total production costs per ounce decreased from \$235 per ounce to \$218 per ounce over 2002 and from \$276 per ounce to \$235 per ounce over 2001.

A more detailed review of total cash costs and total production costs at each of AngloGold's operations is provided under "Item 4B.: Business overview".

***Reconciliation of total cash costs and total production costs to financial statements***

Total cash costs and total production costs are calculated in accordance with the guidelines of the Gold Institute industry standard and are not US GAAP measures. The Gold Institute is a non-profit international association of miners, refiners, bullion suppliers and manufacturers of gold products, which has developed a uniform format for reporting total production costs on a per ounce basis. The standard was first adopted in 1996 and revised in November 1999.

Total cash costs, as defined in the Gold Institute industry standard are production costs as recorded in the statement of operations, less offsite (i.e. central), general and administrative expenses (including head office costs charged to the mines, central training expenses, industry association fees, refinery charges and social development costs) and rehabilitation costs, plus royalties and employee termination costs.

Total cash costs as calculated and reported by AngloGold include costs for all mining, processing, administration, royalties and production taxes, as well as contributions from by-products, but exclusive of depreciation, depletion and amortization, rehabilitation, employment severance costs, corporate administration costs, capital costs and exploration costs. Total cash costs per ounce are calculated by dividing total cash costs by ounces of gold produced. Total cash costs have been calculated on a consistent basis for all periods presented.

Total production costs, as defined in the Gold Institute industry standard are total cash costs, as calculated using the Gold Institute industry standard, plus amortization, depreciation and rehabilitation costs.

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Total production costs as calculated and reported by AngloGold include total cash costs, plus depreciation, depletion and amortization, employee severance costs and rehabilitation and other non-cash costs. Total production costs per ounce are calculated by dividing total production costs by ounces of gold produced. Total production costs have been calculated on a consistent basis for all periods presented.

Total cash costs and total production costs should not be considered by investors in isolation or as alternatives to production costs, net income/(loss) applicable to common stockholders, income/(loss) before income tax provision, net cash provided by operating activities or any other measure of financial performance presented in accordance with US GAAP or as an indicator of the company's performance.

While the Gold Institute has provided definitions for the calculation of total cash costs and total production costs, the calculation of total cash costs, total cash costs per ounce, total production costs and total production costs per ounce may vary significantly among gold mining companies, and by themselves do not necessarily provide a basis for comparison with other gold mining companies. However, the company believes that total cash costs and total production costs in total by mine and per ounce by mine are useful indicators to investors and management of a mine's performance as they provide:

- an indication of a mine's profitability, efficiency and cash flows;
- the trend in costs as the mine matures; and
- an internal benchmark of performance to allow for comparison against other mines.

A reconciliation of production costs as included in the company's audited financial statements to total cash costs and to total production costs for each of the three years in the period ending December 31, 2002 is presented below. In addition the company has also provided below detail of the ounces of gold produced by mine for each of those periods.

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### For the year ended December 31, 2002

#### South African operations <sup>(6)</sup>

(in \$ millions, except as otherwise noted)

	Mponeng	Tau Tona	Savuka	Great Noligwa	Kopanang	Tau Lekoa	ERGO	Surface operations	Corporate <sup>(2)</sup>
<b>Production costs</b>	77	79	56	101	83	57	53	15	13
<i>Less:</i>									
Rehabilitation costs & other non-cash costs	-	(1)	-	(1)	(2)	(1)	(7)	(1)	-
<i>Plus:</i>									
Inventory movement	1	1	-	2	(1)	1	-	-	-
Royalties	-	-	-	-	-	-	-	-	-