



# 2009 Minerals Yearbook

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## GHANA

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# THE MINERAL INDUSTRY OF GHANA

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Mining continued to be a key industry to Ghana's economy. The country was among the world's top 10 leading producers of gold and was ranked 12th among the world's leading producers of diamond by volume. Ghana was also Africa's second ranked producer of gold and third ranked producer of bauxite. In 2009, the mining sector grew by 8.2% and contributed 5.8% to the country's gross domestic product; this growth was driven mainly by an increase in gold production. The Government attributed the good performance of the mining sector to a rise in the demand for gold and to the ability of gold mining companies operating in the country to increase output levels to meet such demand. Other mineral commodities produced in Ghana included manganese, salt, and silver (Ghana Business News, 2010; Ghana Statistical Service, 2010; Kimberley Process Rough Diamond Statistics, 2010; Ministry of Finance and Economic Planning, undated, p. 19-20).

## Government Policies and Programs

The legislative framework for the mining sector in Ghana is provided by the Minerals and Mining Act 703 of 2006. Under the law, all minerals are owned by the state, and the holder of a mining lease or small-scale mining license must pay a royalty of no less than 3% and no more than 6% of their gross revenues. In the metals sector, reconnaissance licenses may be granted for an initial period not to exceed 12 months and may be extended only once for a period not to exceed an additional 12 months. A prospecting license may be granted for an initial period not to exceed 3 years and may be extended only once for a period not to exceed an additional 3 years. Upon the expiration of a reconnaissance or prospecting license, the holder may apply for a mining lease. A mining lease may be granted for an initial term not to exceed 30 years and may be extended only once for a period not to exceed an additional 30 years. The Government is entitled to a free-carried equity interest of 10% in all mineral ventures (Parliament of the Republic of Ghana, 2006, p. 12-23).

In the industrial minerals sector, reconnaissance and prospecting licenses and mining leases can be granted only to Ghanaian citizens unless the proposed investment exceeds \$10 million. Small-scale mining licenses are also reserved for Ghanaian citizens only and are granted for a period not to exceed 5 years and, upon the expiration of the license, it may be renewed for a period to be determined by the Minerals Commission (MC) (Parliament of the Republic of Ghana, 2006, p. 36-40).

On November 24, a workshop organized by the Ghana Chamber of Mines to discuss Government policy on artisanal and small-scale mining was held in the capital city of Accra. The workshop included representatives from the different Government agencies, departments, and ministries that oversee the mining sector, as well as representatives from private industry, the National Association of Small-Scale Miners, and several nongovernmental organizations (names not disclosed).

The Small Scale Mining Law PNDCL 218 of 1989, which had legalized the operations of small-scale miners, was repealed under the country's current mining law and the Chamber of Mines advocated for the reestablishment of the 1989 law, claiming that it would benefit local economic development and help curtail illegal mining (Ghana Chamber of Mines, 2009).

Airborne geophysical surveys and detailed geologic field mapping were being conducted on about one-third of Ghana's surface area with the support of the European Union under a program known as the Mining Sector Support Program (MSSP). The program was to include the development of an information management system, which would involve the development of various databases, the creation of an intranet to link the various Government agencies involved in the mining sector, and the creation of a Ghanaian mining Web site. During the year, the Ministry of Finance and Economic Planning reported that about 45% of the country's available geologic data, which was to assist prospective investors in the timely capture, analysis, and provision of mineral-related data, was entered into one of the planned database systems. Other projects completed under the MSSP included surveys of the Keta and Voltaian Basin conducted using satellite imagery and magnetic spectrometry; regional time domain electromagnetic airborne surveys for six selected areas (not specified); map sheets for the Central, the Upper West, the Western, and the Volta Regions; and the collection of 1,200 geochemical samples to assist in the exploration of prospective mineral deposits. In addition, the first phase of a mercury pollution abatement project under which 14 training sessions were organized for small-scale miners was completed for seven mining district centers. The purpose of the project was to increase awareness among artisanal miners of the dangers of mercury pollution (Ministry of Finance and Economic Planning, undated, p. 77-78).

## Production

Gold production, which excluded production from artisanal mining, increased by 9.5% to 79,883 kilograms (kg) compared with a revised 72,980 kg produced in 2008 and silver production increased by 22.8% to 3,928 kg from 3,200 kg produced in 2008. Bauxite, diamond, and manganese production decreased by 44.7%, 41.5%, and 20.1%, respectively. Data on mineral production are in table 1.

## Structure of the Mineral Industry

The Ministry of Lands, Forestry and Mines, through the Geological Survey Department (GSD), the MC, and the Precious Minerals Marketing Co. Ltd. (PMMC), oversees all aspects of Ghana's mineral sector. The MC is responsible for regulating and managing the use of Ghana's mineral resources and for coordinating Government policy related to them. The GSD is responsible for providing reliable and up-to-date

geologic information and serves as the repository of the country's geoscientific data. The PMMC is responsible for marketing the country's precious minerals and jewelry industry. The National Petroleum Authority is the Government agency responsible for overseeing, monitoring, and regulating the activities of the downstream petroleum industry. Ghana National Petroleum Corporation (GNPC) is the Government-owned petroleum company that is in charge of the exploration for and the development and production of petroleum. The Volta River Authority (VRA) produced hydroelectric power from the Akosombo Dam. The VRA also obtained electricity from neighboring Côte d'Ivoire, which has intermittently experienced political instability and civil unrest. The VRA planned to increase its thermal power generation capacity by constructing a 126-megawatt-capacity natural gas thermal powerplant at Tema (Ministry of Lands, Forestry and Mines, 2009).

## Mineral Trade

Ghana was the United States' 96th ranked goods trading partner with about \$831 million in total goods traded in 2009 and was the United States' 79th ranked goods export market and the 114th ranked supplier of imported goods. The U.S. trade surplus with Ghana was \$581 million in 2009, which was a 50.4% increase from that of 2008. Ghana's exports to the United States were valued at about \$135 million in 2009 compared with about \$222 million in 2008 and \$199 million in 2007; \$5.4 million of this export value was from gold; \$2 million, petroleum products; and only \$5,000, gem-quality diamond. Total imports from the United States were valued at about \$716 million in 2009 compared with about \$608 million in 2008 and \$416 million in 2007. This included nearly \$190 million for petroleum products, \$44.5 million for excavating machinery, \$50.3 million for drilling and oilfield equipment, and \$2.2 million for specialized mining equipment. Ghana was a member of the World Trade Organization and the Economic Community of West African States (U.S. Census Bureau, 2009a, b; Office of the United States Trade Representative, 2010).

## Commodity Review

### Metals

**Aluminum.**—Bosai Minerals Group Company Ltd. of China planned to invest \$30 million to acquire Rio Tinto plc's 80% interest in Ghana Bauxite Company Ltd. (GBCL). GBCL was the company that operated the Awaso Mine, which was Ghana's only bauxite operation. Before its decision to sell its stake in GBCL, Rio Tinto had planned to develop an alumina refinery that would have processed bauxite ore from the Awaso Mine. Production of bauxite was hindered in 2009 by the deterioration of the Western Railway line, which impeded the efficient hauling of bauxite ore to the country's port for export. As of yearend, Bosai and Rio Tinto were awaiting Government approval to finalize Bosai's purchase of Rio Tinto's stake in GBCL (Ghana Business News, 2009; Steel Guru, 2009; Rio Tinto plc, 2010, p. 35).

Ghana's only aluminum smelter remained closed throughout the year. In 2008, the Government had become the sole owner of the smelter when it acquired Alcoa Inc.'s 10% stake in Volta Aluminum Company Ltd. (VALCO) for \$2 million. Before the Government's purchase, the smelter had been struggling with fluctuating operating levels, mostly owing to restricted power allocations from the Volta River Authority hydroelectric plant because of low water levels in the Volta River. During the year, the Government announced that although favorable rainfall patterns in 2008 and 2009 had seen the water level at the Akosombo Dam rise, it was unable to reopen the smelter because of the effects of the global financial crisis on the price and demand for aluminum worldwide, which rendered the operation uneconomical (Ghana Web, 2009).

**Gold.**—In June, Adamus Resources Ltd. of Australia, which held a 90% interest in the Southern Ashanti Gold Project (SAGP), announced that it would proceed with the development of a mine based on the positive results obtained from an updated feasibility study. The mine, which was to be located in southwestern Ghana about 280 kilometers (km) west of the capital city of Accra, was expected to be in operation by 2011 and to produce about 3,100 kilograms per year (kg/yr) of gold (Adamus Resources Ltd., 2010, p. 5-7).

AngloGold Ashanti Ltd. of South Africa held 100% ownership in the Iduapriem and the Obuasi gold mines. Iduapriem, which is located about 70 km north of the city of Takoradi, is an open pit mine and includes a carbon-in-pulp processing plant. The mine produced 5,910 kilograms (kg) of gold during the year compared with about 6,200 kg in 2008. The decrease in production was the result of downtime at the processing plant associated with the breakdown at one of the mills; rainfall, which caused flooding in the pits; and a 2% decline in the ore grade. The company expected to increase production at Iduapriem to between 6,500 and 6,900 kg in 2010 (AngloGold Ashanti Ltd., 2010, p. 74-75).

Production at the Obuasi underground mine, which is located in southern Ghana about 80 km from Kumasi, increased to about 11,900 kg from about 11,100 kg in 2008. The increase in production was attributed to a better recovery rate and higher ore grade. The mining facilities at Obuasi included a sulfide processing plant, an oxide processing plant, and a tailings processing plant. Production at Obuasi was projected to be between 11,900 and 12,300 kg in 2010 (AngloGold Ashanti Ltd., 2010, p. 76-77).

Gold Fields Ltd. (Gold Fields) of South Africa held a 71.1% interest in the Damang Mine in joint venture with IAMGOLD Corp., which held an 18.9% interest. The Government held the remaining 10% interest. Production from the Damang Mine, which is located in southwestern Ghana about 360 km west of Accra, increased by 3% to 6,221 kg from 6,034 kg produced in 2008. The increase in production was the result of the processing of stockpiled ore, which allowed for a consistent feed to the mill. The company planned to acquire and install a secondary crusher at Damang in 2010 to optimize throughput volumes. Gold Fields also operated the Tarkwa Mine, which is located in southwestern Ghana about 300 km west of Accra, in joint venture with IAMGOLD and the Government. The mine comprised several open pits, including the North (Tarkwa)

and the South (Teberebie) heap-leach operations, and a carbon-in-leach plant. Production at the Tarkwa Mine decreased by 5.3% to 19,035 kg from a revised 20,093 kg produced in 2008. The decrease in production was the result of mechanical problems encountered at the processing plant and of the mining of lower ore grades. The company expected to increase throughput at the carbon-in leach processing plant to 1 million metric ton per month of ore as part of an expansion project scheduled for 2010 (Gold Fields Ltd., 2010, p. 31-32).

Production of gold at the Bogoso/Prestea Mine increased by about 9% to 5,787 kg in 2009 compared with about 5,300 kg in 2008. The mine was owned by Golden Star Resources Ltd. (Golden Star) (90%) through its subsidiary Golden Star Bogoso/Prestea Ltd. The Bogoso/Prestea Mine comprises the adjoining Bogoso and Prestea mining concessions, a 3.5-million-metric-ton-per-year (Mt/yr) processing facility that used bio-oxidation technology to treat refractory sulfide ore, and a 1.5-Mt/yr carbon-in-leach processing facility that treated oxide ore. The company planned to produce about 6,200 kg of gold in 2010 from the mining of sulfide ores (Golden Star Resources Ltd., 2010, p. 9, 41).

Golden Star, through its subsidiary Golden Star (Wassa) Ltd. (GSQL), also owned a 90% interest in the Wassa open pit gold mine and carbon-in-leach processing plant. The Wassa Mine produced 3,901 kg in 2008 compared with 3,920 kg in 2007. GSQL also owned the Benso and the Hwini-Butre concessions in southwestern Ghana. The company expected to produce about 6,200 kg from the Wassa Mine in 2010 (Golden Star Resources Ltd., 2010, p. 9, 41).

Newmont Mining Corp. held 100% interest in the Ahafo Mine, which is located in the Brong Ahafo region about 290 km northwest of Accra. Gold was mined from three of the seventeen existing pits at Ahafo. The development of a fourth pit was underway and expected to be in operation by late 2010. The processing plant at Ahafo consisted of a conventional mill and a carbon-in-leach circuit. Production at the mine increased by 4.9% to 16,995 kg from 16,199 kg produced in 2008 (Newmont Mining Corp., 2010, p. 27).

Red Back Mining Inc. of Canada held a 100% interest in the Chirano gold mine, which is located about 100 km from Kumasi in southwestern Ghana. Drilling at the Akwaaba Deeps deposit in 2007 established a high-grade underground resource, which the company began to develop as an underground operation in 2008. To support the new Akwaaba Deeps development, the company had planned to commission a new crushing circuit in the first quarter of 2009; however, the completion of the plant expansion and the commissioning of the Akwaaba Deeps was not achieved until the fourth quarter. Gold production from the Chirano Mine increased by 52% to 5,705 kg from 3,757 kg produced in 2008. As of yearend, the mine employed 686 people, of which 16 were expatriates (Red Back Mining Inc., 2010, p. 10-11).

Other companies conducting gold exploration in the country included Arizona-based Sunergy Inc.; Australian companies Adamus Resources Ltd., Azumah Resources Ltd., Noble Resources Ltd., Perseus Mining Ltd., and Signature Metals Ltd.; and Canadian companies Keegan Resources Inc., Pelangio Exploration Inc., and PMI Gold Corp.

## *Industrial Minerals*

**Cement.**—Savanna Cement Company Ltd. (SAVACEM), which was a joint venture between Amalgamated Investments Ltd. (AIL) of Ghana and Diamond Cement Ghana Ltd. (DCG) (a company owned by Indian interests), planned to build a new cement plant in the town of Buipe, Central Gonja District, at a cost of \$38.5 million. The plant was expected to produce 350,000 metric tons per year (t/yr) of cement and employ about 200 people. AIL and DCG also formed another company under the name of Savanna Diamond Company Ltd. to mine limestone from the Buipe deposit. The limestone was to be used for the production of clinker, which was then to be milled to produce cement at the SAVACEM plant. Cement production was to be sold to the country's northern regions (Amalgamated Investments Ltd., 2009; Modern Ghana News, 2009d, e).

The South Korean Co., under its subsidiary STX Engineering and Construction Ghana Ltd., planned to build a cement plant in Ghana to complement a \$10 billion real estate deal it had signed with the Government for the construction of 200,000 residential units and 300 nonresidential buildings. The project was expected to deliver 40,000 housing units per year beginning in 2010. No further information concerning the location and annual production capacity of the proposed cement plant was reported as of yearend (BBC News, 2009; Ghana News Agency, 2009).

**Diamond.**—Diamond was recovered by artisanal miners from alluvial deposits near Akwatia in the Birim Valley. The only formal commercial diamond production in the country came from a placer mine in Akwatia, which was operated by Government-owned Ghana Consolidated Diamonds Ltd. (GCD). GCD was idled in September 2007 and remained closed throughout 2009 reportedly owing to lack of capital, an obsolete plant, and inadequate machinery to sustain production. Although the Government was on the search for investors to take over the GCD's mining operations, the divestiture of the company remained uncertain as of yearend. Because of the global economic crisis and the resulting fall in the price of diamond, artisanal diamond miners had reportedly shifted to gold mining, which caused an increase in the amount of people migrating out of the Akwatia area and into the Akantim, the Apinamang, and the Kubriso areas to prospect for gold (Modern Ghana News, 2009a, c; Partnership Africa Canada, 2009, p. 21).

In 2009, Ghana received technical assistance from the European Community, the Kimberley Process Working Group of Diamond Experts, and the U.S. Geological Survey with respect to the characterization of diamonds, registration of illegal miners, registration of traders and the establishment of trading procedures, and the development of a diamond tracking database system to help the country strengthen its system of internal controls in the diamond sector. In 2006, the United Nations had recommended that Ghana look into implementing internal control systems in the diamond sector following the release of a report prepared by the United Nations Group of Experts on Côte d'Ivoire, which indicated that Ghana was being used as a conduit for the export of conflict diamond originating from rebel-controlled areas in Côte d'Ivoire. About 5,000 small-scale diamond miners were registered during the year



(Partnership Africa Canada, 2009, p. 21; United Nations General Assembly, 2009; Ministry of Finance and Economic Planning, undated, p. 77).

Another measure taken by the Government to strengthen the country's internal control systems in the diamond sector was the creation of a Kimberley Process joint task force. The members of the task force included representatives from Customs, the Excise and Preventive Service, the Ghana Immigration Service, the GSD, the MC, the Ministry of Lands, Forestry, and Mines, and the PPMC (Partnership Africa Canada, 2009, p. 21; United Nations General Assembly, 2009).

**Salt.**—Ghana's salt industry was identified by the Government as one of the country's key industries for development. Annual salt production capacity in Ghana was 250,000 metric tons although the country's salt production potential was estimated to be 2.5 Mt/yr. The Ghana Export Promotion Council estimated that the local demand for salt could increase significantly in the near future owing to the expected increase in demand from the country's developing petroleum sector. The increase in demand from the petroleum sector was to come from the use of salt as a lubricant for drilling equipment during the different petroleum exploration stages. Potential also existed for the export of salt to neighboring countries, in particular, Nigeria. The Export Promotion Council reported that the country could earn up to \$2 billion per year in revenues if such a resource were to be developed to its full potential. Chinese investors (name not disclosed) were reportedly looking into developing a salt project in the Kpone-Ada-Keta area in southern Ghana (Ghana Export Promotion Council, 2009; Modern Ghana News, 2009b).

### **Mineral Fuels**

**Petroleum.**—On January 8, Texas-based Kosmos Energy LLC announced that the company had successfully appraised the Jubilee oilfield reservoirs and made its third major oil discovery offshore Ghana on the West Cape Three Points Block. Kosmos, which held a 30.875% interest in the block, was the operator. The remaining interest was held by Anadarko Petroleum Corp. of the United States (30.875%), Tullow Oil plc of Ireland (22.896%), E.O. Group (3.5%), and Sabre Oil and Gas, 1.854%. The GNPC held a 10% carried interest. On January 13, Kosmos announced that the Hyehuda-2 appraisal well offshore Ghana, which is part of the Deepwater Tano Block (DTB) had reached a maximum flow rate of 16,750 barrels per day of petroleum of 37-degree API gravity crude. In addition, the well produced about 595,000 cubic meters per day (reported as 21 million cubic feet per day) of associated natural gas. On March 9, the company made another announcement concerning the discovery of a light hydrocarbon accumulation at the Tweneboa-1 well, which was also part of the DTB. The DTB was operated by Tullow, which held a 49.95% interest in the block in joint venture with Kosmos (18%), the GNPC (10%), and Sabre Oil and Gas (4.05%) (Kosmos Energy LLC, 2009a, c, f; Petroleum Economist, 2009).

On July 15, the Government approved the phase 1 plan to develop the Jubilee oilfield, which included a development plan for the associated gas. The company estimated that the

field could hold recoverable petroleum and gas reserves of between 650 million and 2 billion barrels of oil equivalent. On December 8, the company also announced that the Odum-2 appraisal well confirmed the Odum petroleum discovery, which was made in early 2008, and on December 23, that the Mahogany Deep-2 well on the West Cape Three Points Block had encountered light oil on three stratigraphic intervals (Kosmos Energy LLC, 2009b, d, e).

### **Outlook**

Owing to the recent discovery of petroleum offshore Ghana, the Government is likely to shift its priorities from the nonfuel minerals sector to the fuels sector. Petroleum is likely to displace gold as the country's leading mineral export earner in the next 5 to 10 years if plans to develop the Jubilee oilfield come to fruition. The Government's interest in providing a transparent investment climate may attract foreign direct investment in the mineral sector. Mineral prospecting is likely to increase owing to the Government's ongoing effort to complete airborne geophysical surveys and detailed geologic field mapping of the country.

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TABLE 1  
GHANA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity <sup>2</sup>		2005	2006	2007 <sup>c</sup>	2008 <sup>c</sup>	2009 <sup>c</sup>
Bauxite, gross weight		727	886	748 <sup>3</sup>	796 <sup>r,3</sup>	440 <sup>3</sup>
Cement, hydraulic <sup>e,4</sup>		1,800	1,800	1,800	1,800	1,800
Diamond <sup>5</sup>	thousand carats	1,013	973	895 <sup>3</sup>	643 <sup>3</sup>	376 <sup>3</sup>
Gold, mine output, Au content	kilograms	66,852	69,817 <sup>6</sup>	72,209 <sup>r,3,6</sup>	72,980 <sup>r,3,6</sup>	79,883 <sup>6</sup>
Manganese:						
Ore, processed		1,715	1,659	1,173 <sup>3</sup>	1,261 <sup>r,3</sup>	1,007 <sup>3</sup>
Mn content <sup>c</sup>		600	580	410	440 <sup>r</sup>	350
Petroleum refinery products <sup>e</sup>	thousand 42-gallon barrels	16,000	16,000	16,000	16,000	16,000
Salt		250	123	124	239 <sup>r</sup>	200 <sup>e</sup>
Silver, Ag content of exported dore	kilograms	3,571	3,142	3,300	3,200	3,928 <sup>3</sup>
Steel, secondary, rebar <sup>c</sup>		25	25	--	-- <sup>3</sup>	--

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits. <sup>r</sup>Revised. -- Zero.

<sup>1</sup>Table includes data available through December 22, 2010.

<sup>2</sup>In addition to the commodities listed, a variety of crude construction materials (clays, sand and gravel, and stone) are produced, as are limestone and lime for the processing of some gold ore and salt. Output of these commodities is not reported, however, and information is inadequate to make reliable estimates of output.

<sup>3</sup>Reported figure.

<sup>4</sup>All from imported clinker.

<sup>5</sup>Reported by Kimberley Process Certification Scheme.

<sup>6</sup>Excludes artisanal mining output.

TABLE 2  
GHANA: STRUCTURE OF THE MINERAL INDUSTRY IN 2009

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum	thousand metric tons	Volta Aluminum Co. Ltd. (VALCO) (Government, 100%)	Aluminum smelter at Tema (on care and maintenance)	200.
Bauxite	do.	Ghana Bauxite Co. Ltd. (GBCL) (Rio Tinto Alcan, 80%, and Government, 20%)	Bauxite mine at Awaso	600.
Cement	do.	Ghana Cement Co. Ltd. (GHACEM) (HeidelbergCement AG, 93.1%)	Clinker grinding plant at Takoradi	1,200.
Do.	do.	do.	Clinker grinding plant at Tema	1,200.
Do.	do.	Diamond Cement Ghana Ltd.	Cement plant at Aflao; uses imported clinker	600.
Do.	do.	Savanna Cement Company Ltd. (SAVACEM) and Diamond Cement Ghana Ltd.	Town of Buiepe, Central Gonja District	350. <sup>1</sup>
Diamond	thousand carats	Ghana Consolidated Diamonds Ltd. (GCD) (Government, 100%)	Placer mine at Akwatia, Birim Valley	360.
Do.	do.	Artisanal diamond miners	Birim Valley	500 to 900.
Gold	kilograms	AngloGold Ashanti Ltd., 100%	Obuasi surface and underground mine, 80 kilometers from Kumasi	17,000.
Do.	do.	do.	Iduapriem Mine, 70 kilometers north of Takoradi	8,800.
Do.	do.	Investec Bank, 100%	Bibiani Mine, 250 kilometers northwest of Accra	3,400.
Do.	thousand metric tons	Golden Star Resources Ltd., 90%, and Government, 10%	Bogoso carbon-in-leach processing plant, 300 kilometers west of Accra	1,500 ore.
Do.	do.	do.	Bogoso sulfide ore processing plant 300 kilometers west of Accra	3,500 ore.
Do.	kilograms	do.	Bogoso/Prestea open pit mine, 300 kilometers west of Accra	7,300.
Do.	thousand metric tons	do.	Wassa carbon-in-leach processing plant, 250 kilometers west of Accra	3,000 ore.
Do.	kilograms	do.	Wassa Mine, 30 kilometers northwest of Tarkwa	7,000.
Do.	do.	do.	Butre Mine, 50 kilometers south of Wassa Mine	NA.
Do.	do.	Golden Star Resources Ltd., 81%	Prestea underground mine (on care and maintenance)	1,100.
Do.	do.	Gold Fields Ltd., 71.1%; IAMGOLD Corp., 18.9%; Government, 10%	Tarkwa open pit mine and carbon-in-leach and heap-leach plants, 300 kilometers west of Accra	21,800.
Do.	do.	do.	Damang Mine and carbon-in-leach plant, 360 kilometers west of Accra	6,000.
Do.	do.	Newmont Mining Corp., 100%	Ahafo Mine, 290 kilometers northwest of Accra, Brong Ahafo region	17,100.
Do.	do.	Chirano Gold Mine Ltd. (Red Back Mining Inc., 100%)	Chirano Mine, 100 kilometers from Kumasi, southwest Ghana	8,000.
Do.	do.	do.	do.	3,800.
Do.	do.	Artisanal gold miners	Throughout Ghana	4,000 to 8,000.
Limestone and lime	metric tons	Carmeuse Lime Products (Ghana) Ltd. (Carmeuse SA)	Takoradi	NA.
Manganese ore	thousand metric tons	Ghana Manganese Company Ltd. (Ghana International Manganese Co., 90%, and Government, 10%).	Open pit mine at Nsuta-Wassaw Western region	1,500.
Petroleum products	thousand barrels	Tema Oil Refinery (Government, 100%)	Refinery at Tema	16,425.
Salt	metric tons	Panbros Salt Industry Ltd.	Salt pan at Mendskrom, near Accra	250,000.
Do.	do.	Elmina Salt Producers Association	Artisanal salt pan mining near Elmina	NA.

Do., do. Ditto. NA Not available.

<sup>1</sup>Under construction.



