THE MINERAL INDUSTRY OF

# GUINEA

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Guinea was the world's second largest bauxite producer and had the world's largest bauxite resources (Plunkert, 1999). Mining accounted for about 16% of the nation's estimated $3.6 billion gross domestic product and about 80% of the value of Guinea's exports (U.S. Department of State, September 1998, Background notes, accessed November 13, 1999, at URL http://www.eti-bull.net/USEMBASSY/notes.html; World Bank, September 22, 1999, Guinea at a glance, accessed November 10, 1999, at URL http://www.worldbank.org/data/countrydata/countrydata.html).[1] The limited domestic demand for crude minerals resulted in the mineral sector effectively dominating the nation's exports. Less than 10% of mined bauxite was used to produce alumina in Guinea. In 1998, the country's total exports were valued at $843 million compared with $797 million in 1997 (World Bank, September 22, 1999, Guinea at a glance, accessed November 10, 1999, at URL http://www.worldbank.org/data/countrydata/countrydata.html). Guinea supplied about 35% of the U.S. metallurgical-grade bauxite imports in 1998 (P. Plunkert, U.S. Geological Survey, Mineral Industry Surveys—U.S. trade in bauxite and alumina in the first quarter 1999, accessed November 13, 1999, at URL http://minerals.usgs.gov/minerals/pubs/commodity/bauxite/09004199.pdf).

The Mining Code of 1995, as amended by Arrêté No. A98/5874/MRNE/SGG of August 10, 1998, defines incentives, mineral ownership, mining fees, mining titles, royalties, and other taxes. The Government reserves 15% free equity for itself in all gold and gem operations. State participation in bauxite- and iron-ore-mining ventures is subject to negotiation. Mineral beneficiation in Guinea is encouraged. Royalties are 5% on alumina and 3.5% on concentrates of other minerals compared with 10% on bauxite and 7% on other ores. The corporate income tax rate is 35%.

In addition to possessing significant bauxite reserves, Guinea has diamond, gold, granite, and iron deposits. The Government encouraged the foreign participation in the bauxite sector and promoted the diversification of the mineral industry. The investment bank UBS Warburg Dillon Read was advising the Government on the restructuring of the bauxite industry, but the mineral industry privatization program was proceeding slower than expected.

The 14-million-metric-ton-per-year (Mt/yr)-capacity Compagnie des Bauxites de Guinée (CBG) operated a number of open pit bauxite mines in the Boké District, including the Sangarédi Mine. CBG was controlled by the Government (49%) and Halco Mining Inc. (51%), a consortium comprising Alcan Aluminium Ltd. of Canada, Aluminium Pechiney of France, and Alcoa Inc. of the United States. In 1998, to debottleneck production, CBG began rehabilitation and upgrade of the bauxite conveyor system in Kamsar from the rail terminal to the processing plant.

The state-owned Société des Bauxites de Kindia (SBK) proposed to restore its production to the operation's original 3-Mt/yr capacity. SBK's production, about one-half of capacity, was exported to Ukraine.

The dispute between the owners of the Société d'Economie Mixte Friguia continued into 1998. Friguia, owned by the Frialco Holding Co. (51%) and the Government (49%), operated the Fria bauxite mine and the Kimbo alumina refinery. The year began with the Frialco partners (Alcan, 20%; Aluminium Pechiney, 30%; Hydro Aluminium a.s. of Norway, 20%; and Noranda Inc. of Canada, 30%) actively looking to divest their interest in the consortium. The Government was attempting to privatize 34% of its interest in Friguia, but the October 1998 privatization was postponed until 1999. In October, the Government took control of the Frialco consortium's interest in Friguia and subsequently offered to privatize 100% of the equity interest in the company (African Energy & Mining, 1998; Metal Bulletin, 1998).

During 1998, Union Mining NL of Australia awaited Government approval of its reconnaissance permits for the Gaoual bauxite deposits in northwestern Guinea.

Artisanal operators were significant gold producers, accounting for about 80% of the national gold output at the beginning of the year, but by yearend, commercial operations were mining more than 50% of the gold produced in Guinea (European Union, 1998, Mines '98—Guinea, accessed August 25, 1998, at URL http://www.landscape.de/mines98/country/gn/index.htm). Delta Gold Mining (85%), a corporation of the United Kingdom, and Société Minière de Dinguiraye (SMD), owned by the Government (15%), operated the open pit Léro gold mine. Delta's ownership was consolidated in 1998, when Kenor ASA of Norway bought out joint-venture partner Mine Or S.A., the gold operations subsidiary of La Source Group of France. The Léro operation produced 1,717 kilograms (kg) of gold in 1998 compared with 1,504 kg in 1997 (Kenor ASA, 1999). Also on the Dinguiraye concession, SMD started producing ore from the Karta 2 Mine, across the Karta River from the Léro Mine, and began leaching tests on ore from the Fayalala deposit's Faycap 1 Mine, about 8 kilometers (km) east of Léro's facilities. SMD continued exploration on the Tambico prospect, 2 km northwest of Fayalala.

The $55.7 million Siguiri Mine began operating in 1998 and soon became the largest gold mine in Guinea, as production reached 6,030 kg for the year (Ashanti Goldfields Co. Ltd.,

[1]Where necessary, values have been converted from Guinean francs (GnF) to U.S. dollars at the average exchange rate of GnF1,225=US$1.00.

January 27, 1999, Ashanti announces strong production and cost reductions for 1998, press release, accessed May 19, 1999, at URL http://www.ashanti.com.gh/pressreleases/current/seann170. htm). Run by Société Ashanti Goldfields de Guinée, the 4-Mt/yr-capacity heap-leach operation at Siguiri was owned by Ashanti Goldfields Co. Ltd. of Ghana (85%) and the Government (15%). At yearend, Société Ashanti Goldfields de Guinée began a $27 million expansion to double ore-processing capacity to 8 Mt/yr (Australia's Paydirt, 1998). Near Siguiri, Société Ashanti Goldfields de Guinée continued its evaluation of the Kosise deposit and the Sanu Tinti pit and was drilling on the Foulata prospect 35 km west of Siguiri. The alliance of Ashanti and IAMGold Corp. of Canada continued evaluation of the Mandiana gold concession and was seeking additional partners for the project.

Les Minéraux SGV S.A., a subsidiary of Semafo (Barbados) Ltd., reevaluated the Gobele and the Jean gold deposits by means of additional drilling in 1998. At yearend, Semafo was negotiating a development agreement. Les Minéraux SGV also was exploring a Simandou area gold prospect.

For many junior mining companies, 1998 was a difficult year to raise funds for exploration and development projects. The decreased availability of financing resulted in several companies pulling out of Guinea or significantly reducing their exploration activity. African Selection Mining Corp. of Canada maintained the EcoGuinée and Bassorides gold exploration permits. International Chalice Resources Inc. of Canada (formerly Chalice Mining Inc.) relinquished the Heremankono property. Goldex AS, a wholly owned subsidiary of Kenor, carried out exploration on the Farabana exploration permit. Leo Shield Exploration NL of Australia was looking for partners for its interest in gold exploration concessions in Guinea. Golden Limbo Rock Ressources S.A., a subsidiary of Mano River Resources Inc. of Switzerland, continued its evaluation of the Gueliban and the Missimana gold properties. Moydow Mines International Inc. of Ireland retained the Kissi Kissi property in Guinea. Prospector International Resources Inc. of Canada (formerly Pacific Galleon Mining Corp.) held the Bananfara concession. Prospex Mining Inc. of Canada was evaluating the Beyla and the Kindia gold concessions and submitted applications for gold exploration permits near Gaoual, Kifaya, and Siguiri. Reunion Mining plc of the United Kingdom and First Quantum Minerals Ltd. of Canada wrote off their interest in the Nyantanina gold permit. SAGEM S.A. of Guinea and New Sage Resources Ltd., the Canadian subsidiary of Striker Resources NL of Australia, wound down exploration of the Sankarani gold deposit. Société Minière de Kérouané, a venture of Lithos Corp. of Canada and local partners, was exploring for gold on the Apredor concession. Voyager Gold NL of Australia acquired several gold permits from West African Gold Mines of Australia, including the Bankole prospect.

Rio Tinto plc of the United Kingdom was exploring the iron deposits in the Simandou Range. Semafo Guinée S.A. was exploring the Kaloum/Mount Kakoulima nickel prospect in a joint venture with AFCAN Mining Corp. of Canada. A geophysical survey was run on the prospect, about 50 km from Conakry.

Nationwide, 70% to 80% of diamond production was of gem quality. More than 80% of production was from indigenous artisanal operations. In February, as part of a legal settlement, Trivalence Mining Corp. of Canada bought out the 25.5% equity interest that Consolidated African Mining Ltd. of South Africa had held in Aredor FCMC S.A. Aredor FCMC's ownership at yearend was First City Mining Co. Ltd., a subsidiary of Trivalence (85%) and the Government (15%). In March, Aredor FCMC commissioned a mobile 4.3-meter (m) pan plant. The plant had a capacity of 720,000-metric-ton-per-year (t/yr) of gravel. The company began upgrading the existing 240,000-t/yr-capacity twin 2.4-m pan plant on the concession. Aredor FCMC also was processing samples from the concession's kimberlite deposits and had a second 4.3-m pan plant that was processing tailings left by the concession's previous operator. Aredor FCMC diamond production in 1998 was about 19,000 carats (Trivalence Mining Corp., 1999).

Through its subsidiaries, Hymex Guineé S.A. and Hymex Milo S.A., Hymex Diamond Corp. of Canada recovered 15,162 stones weighing 9,753 carats from alluvial diamond operations on its Kérouané region concession. Production was significantly lower than that of 1997 as Hymex tested the new 150- cubic-meter-per-hour-capacity wash plant on the Diani permit until company financial difficulties resulted in the operation shutting down in August (Hymex Diamond Corp., October 11, 1999, Form 61—Quarterly report for quarter ending December 31, 1998, accessed November 13, 1999, via URL http://www.sedar.com/dynamic_pages/assoc_docs_e/d00002834.htm).

African Resources Inc. of Canada (formerly Alpha Diamond Corp.) and Gold Rivers of Africa Corp. were dredging on a diamond and gold mining concession on the Konkoure River at Télimélé. The joint venture of Arena Gold Resources Inc. (60%), La Société Minière de Kérouané (SMK) S.A. (25%), and the Government (15%) held an exploration permit for diamond in the Apredor area, north of the permit held by Trivalence. De Beers Consolidated Mines Ltd. of South Africa was evaluating its 13 kimberlite exploration concessions and had applied for an additional 5 diamond concessions.

Total bauxite reserves were estimated to be about 20 billion metric tons grading more than 40% aluminum oxide, according to the Ministry of Natural Resources and Energy. Iron resources were estimated to be about 6 billion tons grading 64% to 68% iron, and gold reserves were estimated to be between 200 and 1,000 metric tons of contained gold. The Government also estimated that reserves of diamond in Guinea were 20 million carats (Ministère des Ressources Naturelles et de l'Energie, 1997).

Major highways have been paved, but the rural transportation infrastructure was inadequate to meet demand. Guinea had two main ports—Conakry and Kamsar. Conakry, the country's main general cargo port, was linked to the Kinda Mine by a 104-km 1.435-m standard-gauge railroad line and to the Fria Mine by a 145-km 1-m narrow-gauge railway. Kamsar, which handled only bauxite shipments, was linked to the Sangarédi Mine by a 135-km standard-gauge railroad line. In addition to the mine railroads, a 661-km 1-m gauge line connected Conakry with Kankan.

Guinea had a nominal installed electricity generating capacity of about 197 megawatts (MW), of which thermal plants accounted for 145 MW and hydroelectric powerplants accounted for 52 MW; however, many thermal plants and the generators at the Kinkon and the Tinkisso dams operated intermittently, resulting in a tangible generating capacity of about 100 MW (Guinéenews, June 1998, Espoirs energétiques en Guinée, accessed November 9, 1998, at URL http://www.myna.com/~boubah/GUINEE/ARCHIVES/9806.htm). Mining companies accounted for about 50% of the thermal power production. At yearend, the Government proposed to privatize the national electric power generating, transmission, and distribution network.

Although the 1995 mining code significantly improved the business climate for the mineral industry, mining operations remained hampered by infrastructural constraints. International funding of mineral deposit development was proceeding more slowly than anticipated. The less-than-expected foreign investment was attributed to the country's perceived political and economic risks and decreased availability of financing for junior mining companies, as well as civil disturbances in the adjacent countries of Guinea-Bissau, Senegal, and Sierra Leone.

Alumina, bauxite, and gold production are expected to continue dominating Guinea's economic activity. Ventures requiring significant electric power availability, such as an aluminum smelter, could become feasible as the nation's power- generation capacity is increased.

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## Major Source of Information

Ministère des Ressources Naturelles et de l'Energie
Centre de Promotion et du Development Minier
P.O. Box 295
Conakry, Republic of Guinea
Telephone: (224) 41-15-44
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## Major Publications


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TABLE 1
GUINEA: PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

| Commodity | | 1994 | 1995 | 1996 | 1997 e/ | 1998 e/ |
|---|---|---|---|---|---|---|
| Alumina: | | | | | | |
| Production: | | | | | | |
| Hydrate | | 648 | 630 | 650 | 527 | 490 |
| Calcined | | 640 | 616 | 640 | 520 | 480 |
| Shipments, calcined | | 545 | 616 | 619 | 500 | 511 |
| Bauxite: | | | | | | |
| Mine production: | | | | | | |
| Wet basis 2/ | | 14,900 | 18,000 | 18,700 | 19,250 | 17,000 |
| Dry basis 3/ | | 13,300 | 15,800 | 16,500 | 17,100 | 15,000 |
| Calcined | | 89 | 244 | 95 | 100 | 100 |
| Shipments (dry basis): | | | | | | |
| Metallurgical | | 11,033 | 12,304 | 13,000 e/ | 14,500 | 14,000 |
| Calcined | | 91 | 89 | 95 | 95 | 100 |
| Diamond 4/ 5/ | thousand carats | 381 | 365 | 205 | 205 | 400 |
| Gold 5/ | kilograms | 5,617 | 7,863 | 6,838 | 7,000 | 14,000 |

e/ Estimated.

1/ In addition to the commodities listed, modest quantities of crude construction materials (clays, sand and gravel, and stone) presumably are produced, but output is not reported. Table includes data available through November 15, 1999.

2/ Metallurgical plus calcinable ore estimated to be 13% water.

3/ Data are for wet-basis ore estimated to be 13% water, reduced to dry basis estimated to be 3% water.

4/ Production is approximately 70% to 80% gem quality.

5/ Figures include artisanal production.