

THE MINERAL INDUSTRY OF

GUYANA

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Guyana, a country of about 800,000 people in a 215,000 square kilometer (km²) area, is located on the northeastern coast of South America. Guyana's estimated gross domestic product (GDP) was \$1.2 billion¹ in 1997. The Central Bank reported that the Guyanese economy attained an annual growth of 6.2%, in spite of the effects of El Niño and the lower prices for its major agricultural and mineral exports. The inflation rate was 4.2% (Meredith, 1998, p. 3).

The legal and land title systems are based on the English common law, and all mineral rights are vested within the State. Mining concessions are negotiated, via Mineral Agreements, with the following Government agencies: the Bauxite Industry Development Co. Ltd. (BIDCO) for bauxite, the Guyana Geology and Mines Commission (GGMC) for gold and diamonds, and the Guyana Natural Resources Agency for oil. For the last 15 years, the Guyana Gold Board (GGB) had been the sole official buyer of gold. As of 1997, 12 private companies had been licensed to join the GGB as purchasers (James, 1997).

The Guyanese Government, through the GGMC, promoted foreign investment and participation in the mineral development of the country. Investment in the mining sector is guaranteed by the Government to provide up to 100% foreign ownership of large-scale prospecting and mining licenses; property rights could be assigned and transferred to third parties; repatriation of funds is allowed. The granting of prospecting and mining licenses and their renewals are, in accordance with the Mining Act of 1989, grouped in three categories—large-scale development of gold, diamonds, and precious stones; large-scale development of bauxite and other minerals, except sand and stones; and small- and medium-scale property titles restricted to Guyanese citizens. Foreign investors, however, could enter into joint-venture agreements (Sucré, 1998, p. 1).

The Government uses four fiscal measures to acquire revenues from the mining industry—royalties, 5% of production or gross revenues; corporate income tax, 35% of taxable income; withholding tax, 6.25% of distributed dividends; and participating in state-owned joint ventures, 5% to 10% of equity, with further buy-in options. Also, equipment, process materials, and spares used for surveys, exploration, and mining by licensees or their contractors are duty free (Sucré, 1998, p. 2).

Mining Permits and Claim Licenses could be leased, but not owned, by foreigners; eventual privatization was, however, being discussed (Barnard, 1997, p. 2). In 1997, exploration efforts were centered on gold and diamonds. The auction of large-scale lease blocks in the country began on September 1 (Graham-Yooll, 1997).

Mining continued to play a very important role in the Guyanese economy. The main mineral commodities were bauxite, diamonds, and gold. The two largest components of the country's mineral

exports were gold and bauxite, which represented about one-fifth of Guyana's GDP. Gold exports increased to \$144.4 million from \$102.1 million in 1996 and \$92.8 million in 1995 (Sucré, 1998, p. 8).

Guyana was the fifth largest bauxite producer in Latin America after Jamaica, Brazil, Venezuela, and Suriname, in order of production (Plunkert, 1998). The state-owned companies Linden Mining Enterprise Ltd. (Linmine) and Berbice Mining Enterprise Ltd. (Bermine) are controlled by BIDCO, but will be privatized in 1998 (Brassington, 1998, p. 4). Other BIDCO holdings include a 50% share in Guybulk Shipping Ltd., a joint venture with the Norwegian shipping company Klaveness Corp., and Bidco America Ltd., a wholly owned subsidiary that handles bauxite sales in the United States. A third active mining company, Aroaima Bauxite Co. (Aroaima), is a joint venture between Reynolds Metals Co. of the United States and the Guyanese Government. International Roraima Gold Corporation of Canada has four wholly owned gold projects (Aranka, Imotai, Quartzstone, and Mariwa-Sardine Hill) in Guyana; about \$6 million was spent proving their value (International Roraima Gold Corporation, 1997).

Hardman Resources NL (40%) of Australia entered into a joint-venture oil project with TM Services Limited (60%) of the United Kingdom for exploring the Takutu Basin, located onshore in western Guyana and covering 11,200 km². The licensing process was in progress (Hardman Resources NL, May 7, 1998, Guyana—South America, in Chairman's report, accessed May 12, 1998, at URL <http://www.ozemail.com.au/~hardburn/hardman.htm>).

In 1997, bauxite production amounted to about 2.5 million metric tons (Mt) of which 75% was produced by Aroaima, or about 2% of the world's bauxite production. Linmine and Bermine produced 200,000 metric tons (t) each; Linmine produced calcinated refractory-grade bauxite, and Bermine produced mainly metal-grade and chemical-grade bauxite. Bermine and Aroaima were major producers of chemical-grade bauxite, 150,000 and 100,000 metric tons per year (t/yr), respectively (Industrial Minerals, 1997). Total bauxite reserves were estimated to be 1.2 billion metric tons, enough to produce all grades of bauxite (Mining Journal, 1996).

Gold production increased to 14.3 t from 11.8 t in 1996 and 8.7 t in 1995 (Sucré, 1998, p. 6). Following a failure in the main section of the tailings dam in August 1995, the Omai Mine's, which is owned by Omai Gold Mines Ltd. (OGML), production increased to 10.3 t from 7.9 t in 1996 and 5.9 t in 1995 (White, 1997, p. 19). Omai's gold production for 1998 was projected to be near 11 t and sustained at about 10.3 t/yr into the next decade. A small amount of silver, equivalent to approximately 5% of gold output, was recovered during refining of the gold. Recorded production of diamonds exceeded 50,000 carats in 1997. (See table 1.)

Several international companies were involved in the Guyanese mining industry. (See table 2.) The Canadian firm, Cambior Inc.

¹Where necessary, values have been converted from Guyanese dollars (G\$) to U.S. dollars at the rate of G\$142=US\$1.00.

(65%) and the Denver-based Golden Star Resources Ltd. (GSRL, 30%) owned a 95% interest, and the Guyanese Government held a 5% interest in OGML (Veneroso, 1997). The completion of OGML's mill expansion in early 1996 increased milling capacity to about 20,000 metric tons per day (t/d) from 12,000 t/d in 1995. OGML accounted for about 20% of Guyana's GDP and 25% of its exports. Omai's gold reserves, based on a \$350 gold price, were about 54.1 Mt grading 1.4 grams per metric ton (g/t), representing some 2,518,000 ounces (78.3 t) of contained gold (Golden Star Resources Ltd., 1998).

Despite the scandal that surrounded Bre-X Minerals Ltd.'s claim to have discovered a world-class gold deposit in Indonesia (Symonds et al., 1997) and its aftermath, some South American gold mines (Carajás in Brazil, El Indio in Chile, Omai in Guyana, and Yanacocha in Peru) were expanding, and operating cost effectively and competitively. As a result of low gold prices, however, current exploration programs were reduced, in particular, on the Guiana Shield (northern Brazil, French Guiana, Guyana, Suriname, and southeastern Venezuela). GSRL, for instance, has reduced exploration activities in Guyana except on its high-priority Eagle Mountain prospect, where the company calculated a resource of 4 Mt grading 1.4 g/t of gold (MacLean, 1998). The project could supply mill feed to the Omai mill, which is 50 kilometers southwest of the discovery.

In 1997, GSRL identified about 14 kimberlite targets on the Five Stars project. In addition, the Upper Mazuruni and the Upper Potari diamond properties in western Guyana also had the potential for diamond-bearing intrusives, but exploration was at an early stage.

Other participants for gold and diamonds in Guyana were BHP Corp. (BHP) of Australia and International Roraima Gold Corp., Placer Dome Inc., Seahawk Minerals Ltd., and Toscana Resources Ltd., all of Canada. BHP's main interests were the potential for world-class gold (Yanacocha-type in Peru) and iron ore (Carajás-type in Brazil) deposits. GSRL's interests were Omai-type gold deposits and Five Stars-type diamond prospects.

The Government continued to seek private investment for the exploitation of mineral deposits. The Mining Act of 1989 limits small- and medium-scale mining to Guyanese citizens only and restricts foreigners to large-scale mining. These provisions immediately led to problems in the definition of size. Foreign investors are, however, allowed to participate in the case where a claim operator specifically requests foreign technical assistance and the GGMC supports the work permit application. Joint ventures between local and foreign companies are encouraged.

While maximizing the returns from its natural resources, Guyana also desires to minimize the social and environmental costs and biodiversity losses (Sawh, 1998, p. 4). The Government created the Guyanese Environmental Protection Agency (GEPA) in 1997. The GEPA will require an environmental impact assessment (EIA) for all mining operations. A detailed EIA forms part of the mining license process. Mining companies must observe environmental guidelines, such as in designing tailing dams and ponds to prevent milling or leaching discharges, maintaining air and water quality during operations, using large dredges in the Essequibo River, and protecting emerging environmental problems, including mercury contamination of soils and waters, resulting from gold recovery by individuals, as well as small dredges.

Traditionally, independent gold miners (garimpeiros/"porkknockers") had smuggled much of their recovered gold into Brazil or Venezuela. Now, they may sell gold to the GGB or to licensed buyers (Barnard, 1997, p. 3). The GGB's monopoly status was replaced with a system of licensed and bonded gold buyers. Independent and/or small-scale gold miners will be encouraged to form cooperatives that may qualify as licensed buyers, that will then be responsible for paying royalties to the Government. The royalty rate of 5% was considered to be high by international standards. One of the options under consideration by the Government was to reduce such rate by 50% and perhaps phase it in over a period of time. A portion of the royalty payment would, however, be deductible from the income tax. The result of these provisions would reduce the attractiveness of smuggling or other forms of evasion and would provide an incentive to declare profits.

The private sector dominated the production of gold and diamonds. Five companies held large-scale mining licenses. About 1,200 prospecting licenses for gold and precious stones and a number of license applications were on file. Local subsidiaries of private foreign firms carried out petroleum exploration with little discernible success (Sucré, 1998, p. 10).

Baracara Quarries and Toolsie Persaud Ltd. produced gravel near Bartica. The Government's Teperu-Itabu Quarry reopened in response to the overwhelming demand for construction materials, and consideration was given to using Omai gold mine waste rock for aggregate and boulders.

Guyana has diversified the formerly bauxite-oriented mineral industry by means of its 8-year gold and diamond promotion programs. In general, the Guiana Shield of South America is considered to be the last major craton unexplored for diamonds (White, 1997, p. 19). Foreign participation and internationally funded exploration activity has resulted in augmented gold production, which is considered to be sustainable into the next decade. Large-scale gold operations would significantly strengthen Guyana's economy, such as those of the Omai Mine, which is the second largest gold producer in Latin America after Yanacocha Mine of Peru.

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Major Sources of Information

Bank of Guyana (Central Bank)

1 Avenue of the Republic

Georgetown, Guyana

Telephone: (592) 2-63261; Fax: (592) 2-72965

Bauxite Industry Development Co. Ltd. (BIDCO)

71 Main St.

Georgetown, Guyana

Telephone: (592) 2-57780

Georgetown Chamber of Commerce

157 Waterloo Street

Telephone: (592) 2-55846; Fax: (592) 2-63519

Guyana Geology and Mines Commission

P.O. Box 1028

68 Upper Brickdam

Georgetown, Guyana

Telephone: (592) 2-66549; Fax: (592) 2-71211

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International Bauxite Association: IBA Quarterly Review, quarterly.
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TABLE 1
GUYANA: PRODUCTION OF MINERAL COMMODITIES 1/

Commodity 2/		1993	1994	1995	1996	1997
Aluminum, bauxite, dry equivalent, gross weight	thousand metric tons	2,125 r/ 3/	1,732 r/ 3/	2,028 r/ 3/	2,485 r/ 3/	2,502 3/
Diamond	carats	50,000 3/	50,000	50,000	50,000	50,000
Gold, mine output, Au content	kilograms	9,614 3/	11,811 3/	8,709 r/ 3/	11,819 r/ 3/	14,308 3/
Stone, crushed	metric tons	75,000	136,000	136,000	136,000	136,000

r/ Revised.

1/ Includes data available through May 1998.

2/ In addition to the commodities listed, a variety of crude construction materials (clays and sand) and semiprecious stones was also produced. Available information was inadequate to make an estimate of production.

3/ Reported figure.

TABLE 2
GUYANA: STRUCTURE OF THE MINERAL INDUSTRY IN 1997

(Thousand metric tons, unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Bauxite	Guyana Mining Enterprise Ltd. (Guymine) (Government, 100%)	Kara Kara, Northeast Dorabece, and East Montgomery mines, MacKenzie, Linden, and West Demerara District	3,500
Do.	do.	Block 2 Manaka, North, South mines. Kwakwani, East Berbice District	1,500
Do.	do.	Processing plant at Linden	900
Do.	do.	Processing plant at Everton, East Berbice District	700
Do	C. A. Dayco (private, Venezuela, 100%) (Guymine contract)	Kwakani area	500
Do.	Green Mining Inc. (Green Construction Co., United States, 100%) (Guymine contract)	Dacouria Mine, Linden	NA
Do.	Aroaima Mining Co. (Government, 50%; Reynolds International, United States, 50%)	Aroaima, East Berbice District	1,500
Alumina	Guymine	Alumina refinery at Linden	300
Gold	kilograms Omai Gold Mines Ltd. (Cambior Inc., Canada, 65%; Golden Star Resources Ltd., United States, 30%; Government of Guyana, 5%)	Omai Mine, Mazaruni-Potaro District	10,500
Gravel	Baracara Quarries (private)	Quarry near Bartica, Mazaruni-Potaro District	100
Silica sand	Minerals and Technology Ltd. (Minerals and Chemicals of Texas, United States)	Sand Hills, Demerara River, West Demerara District	300

NA Not available.