

THE MINERAL INDUSTRY OF

SURINAME

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Suriname, with a population of about 430,000 in a 163,270-square-kilometer area, had an estimated gross domestic product (GDP) of about \$1.5 billion¹ in terms of purchasing power parity in 1999. The Surinamese real growth rate was -1%, and the average inflation rate for the year was 20%, which was about the same as that of 1998 (Hall, 1999, p. 1A; U.S. Central Intelligence Agency, 2000). Suriname's economy was based largely on bauxite, the main source of alumina and aluminum, which accounted for almost 15% of GDP and 70% of the country's exports of about \$570 million and more than 25% of its GDP (Hall, 1999, p. 1A). The Netherlands, Norway, and the United States were the principal markets for Suriname's mineral commodities trade. The principal mineral export of Suriname remained aluminum, which was produced at a rate of 2,400 metric tons per month (Hall, 1999, p. 14A). Bauxite mining, alumina refining, and aluminum smelting continued to be the principal industrial activities of the country, which ranked among the top 10 bauxite world producers with a production of some 4 million metric tons per year (Mt/yr). Reserves have been estimated to be 575 million metric tons (Mt) (Harris, 1998, p. 2). During the period from 1995 through 1998, Suriname accounted for 8% of U.S. alumina imports and ranked second behind Australia (72%) (Plunkert, 2000).

In recent years, the Government's policies have been aimed at maintaining an open-market economy to attract foreign investment and to reduce Government's role in an effort to allow the development of the private sector. This policy has involved privatization and joint-venture projects, especially in the mineral-resources sector and in particular in the mining sector—the bauxite industry is strong and diamond, kaolin, and gold exploration prospect are promising. Suriname has substantial resources of bauxite, gold, and oil, some of which were prospected, explored, and developed successfully (Alibux, 1999, p. 1).

In spite of the effects of the Asian financial turmoil, the instability in the Brazilian markets, and the lower prices for its major mineral exports, mainly alumina, aluminum, crude oil, and gold, the Government and the private sector were able to cope with such conditions effectively. The Government provided adequate economic incentives and the private sector operated cost effectively under difficult market conditions (Alibux, 1999, p. 3, 6). Government regulations decreased substantially, the corporate income tax rate was reduced to 38% from 50% in 1994, and tariff rates for imports, in general, decreased significantly through a sliding scale mechanism.

The Government has approved a standard mineral agreement (SMA), which allows production and sale of minerals in the

¹Where necessary, values have been converted from Surinamese guilders (sf) to U.S. dollars at the parallel rate of sf1,325=US\$1.00.

open market without restriction, access to foreign exchange at competitive rates, provisions for a tax deduction on reinvestment, and guarantees the repatriation of capital and profits. SMA's benefits included a royalty rate reduction to 2.25%, nominal license fees for exploration and production, and exemptions for mineral rights holders from import duties on equipment used for mining, milling, and future expansions. Expenditures on prospecting, exploration, and other preproduction costs can be written off during the first 5 years of operations (Alibux and Mackenzie, 1998a, p. 3; Alibux, 1999, p. 5).

Under Suriname's current mining law, four types of mining titles, which cover diamond, gold, and other minerals, can be issued. These mining titles acceded reconnaissance rights for up to 200,000 hectares (ha) for a maximum of 3 years; exploration rights for up to 40,000 ha for a maximum of 7 years; exploitation rights for up to 10,000 ha for 25 years; and small mining rights for alluvial or shallow mining (Ministry of Natural Resources, 1999, p. 4). Following successful prospecting or exploration, multiple applications may allow a corporation to hold a larger area for purposes of additional exploration or mine development. Exploration and production titles can be transferred to other qualified parties that have the ability to apply modern mining technology and to establish a competitive mineral industry that cares for the environment. Bauxite and alumina continued to dominate the industry's annual output. Gold produced by small-sized placer mines south and east of the South Benzdorp area was sold to the Government at open-market prices. Gold, dimension stone, petroleum, and sand production were expected to increase in the near term (table 1).

Suriname's privately owned multinational companies mined bauxite and processed alumina and aluminum. The two principal operators in this industry were Billiton Maatschappij Suriname N.V. (BMSNV) of the Netherlands and Suriname Aluminum Co. (Suralco), a subsidiary of the Aluminum Co. of America (Alcoa) of the United States. The Paranam plant, a medium-sized bauxite refinery and aluminum smelter 25 kilometers (km) south of Paramaribo, was jointly owned by Suralco (55%) and BMSNV (45%). Paranam produced about 1.6 Mt/yr of alumina, and its smelter, which has a capacity of 32,000 metric tons per year (t/yr), produced 28,800 metric tons (t) of aluminum (Harris, 1998, p. 2).

Suralco's bauxite Coermotibo Mine produced 2 Mt/yr and was expected to produce about 4 Mt/yr of bauxite into the next decade. The Acaribo Mine, a joint-venture of Suralco (76%) and BMSNV (24%), produced 1 Mt/yr of bauxite. After its minable reserves are depleted, which will be exhausted soon, bauxite production will come from the Lelydorp III deposit, which has reserves of 19.5 Mt grading about 53% Al₂O₃ and

will produce 2 Mt/yr of ore until 2006. A \$1.4 million feasibility study was conducted on the Bakkuis bauxite project in southwestern Suriname by BMSNV and Alcoa, which led to the discovery of additional reserves estimated to be 400 Mt of bauxite ore (Alibux and Mackenzie, 1998a, p. 3; Harris, 1998, p. 2; Alibux 1999, p. 2).

Suriname is a country believed to be abundant with gold reserves. The expected gold production is about 25 t/yr with more than 15,000 people employed (Alibux and Mackenzie, 1998a, p. 3; Golden Star Resources Ltd., 1998; Alibux, 1999, p. 4).

Gold concessions were negotiated with Grasshopper Aluminum Company N.V. (Grassalco), a state-owned mining company. In 1997, several gold explorations took place. Grassalco and Canarc Resources of Canada entered into a joint venture to explore and develop a mine in the Benzdorp region. In 1998, the Gross Rosebel gold property, which is 80 km south of Paramaribo, was the most advanced gold development in Suriname. Golden Star Resources Ltd. (GSRL) of the United States (50%) and Cambior Inc. of Canada (50%) announced that Gross Rosebel's updated proven and probable reserves amounted to 49 Mt grading 1.6 grams per metric ton (g/t) gold. Conarc Resource Corp. announced that the proposed DP Gold Mine on the Sara Kreek Property would start full operations in September 2000. The minable reserves were estimated to be 490 kilograms (16,000 ounces) of gold contained in 65,000 t of soft saprolite ore grading 7.5 g/t gold. The proposed open pit will be mined with a truck-and-shovel operation and no drilling or blasting, with an 8 to 1 waste-to-ore stripping ratio. Capital and operating costs were estimated to be \$650,000 and \$90 per ounce, respectively (Business Wire, accessed February 8, 2000, at URL http://biz.yahoo.com/bw/000207/canarc_res_1.html).

The mineralization of the vein type gold occurred in the Precambrian Paramaka Formation of Suriname. Gold placers were also worked by garimpeiros (small-scale independent miners) in the Benzdorp area; their estimated gold production could amount to 0.3 t/yr. The Surinamese Government, however, indicated that the country's unrecorded gold production was estimated to be about 1 t/yr (Ministry of Natural Resources, 1999, p. 3).

Grassalco was planning to export dimension stone in the near future. With concessions of 1,600 ha, the company owned granites that have excellent tile and block production potential (Alibux and Mackenzie, 1998a, p. 3).

Petroleum discoveries of 1997 have led the Government to believe that Suriname might have significant deposits of crude oil. Foreign companies, such as Royal Dutch/Shell of the Netherlands, were negotiating with the Government to explore the Tambaredjo area where more than 1 billion barrels of additional crude oil was discovered. Staatsolie Maatschappij Suriname N.V., the state-owned oil company, reported that 10,410 barrels per day (bbl/d) of crude oil was produced from the Borneo and the Tambaredjo fields west of Paramaribo. Staatsolie was expected to increase crude oil output to about 40,000 bbl/d with an investment of \$200 million. In 1998, the Tout Lui Faut Canal refinery, in which \$65 million has been invested, was operating at maximum annual capacity of 3.8 million barrels (Mbbbl) (Alibux and Mackenzie, 1998b, p. 3; Alibux, 1999, p. 3). Some 40% of the crude was exported, and

most of the remainder was used in the bauxite, alumina, and aluminum industries. Staatsolie built a 55-km pipeline from the Catharina Sophia field at Tambaredjo to the Suriname River export terminal at Tout Lui Faut, which is 5 km south of Paramaribo. Staatsolie reported that the Tambaredjo and the Borneo fields have total proven reserves of 25 Mbbbl, with an additional 40 Mbbbl as probable reserves (Harris, 1998, p. 2).

In 1998, Koch Industries Ltd. of Canada was selected by Staatsolie to conduct exploration for crude oil in the onshore areas. A production-sharing agreement was being negotiated. In the offshore areas, negotiations with a consortium led by Shell Exploration International were in the final stages (Alibux, 1999, p. 3).

In the near future, Suralco and BMSNV will continue to control the bauxite mining industry, with GSRL, Cambior, KWG Resources, and Canarc involved in gold exploration. Staatsolie will continue to be involved in the development and production of petroleum (table 2).

Because mineral rights in Suriname continue to be vested within the Government, exploration rights will be granted by the State. The primary mineral produced was bauxite, but deposits of other minerals, such as gold, nickel, platinum, and tin, may attract further exploration. There are also a number of future prospects for diamond, dimension stone, kaolin, and silica. The prospects for the Surinamese economy also improved because of its strong bauxite-alumina-aluminum industries and the Government's commitment to creating an environment that will attract private investment. Foreign investors, particularly from Canada, the Netherlands, Norway, and the United States, were giving closer attention to the gold deposits, diamond prospects, and significant crude oil deposits in Suriname.

References Cited

- Alibux, L.A.E., and Mackenzie, Chris, 1998a, Suriname—Mining sector holds promise for foreign investors: Washington Times Special International Report, November 24, 12 p.
- 1998b, Suriname strikes oil and gold deposits: Washington Times Special International Report, November 24, p. 3.
- Alibux, L.A.E., 1999, Suriname—A history of mining success in South America: Annual Investing in the Americas Conference, 8th, Miami, Florida, March 28-30, 1999, 6 p.
- Golden Star Resources Ltd., 1998, 3d quarter report 1998—An open letter to our shareholders: Denver, Colorado, Golden Star Resources Ltd., September 30, p. 15.
- Hall, K.G., 1999, Suriname offers gold to be mined, but getting to it poses problems: Journal of Commerce, v. 419, no. 29379, January 5, p. 1A-14A.
- Harris, J.M., 1998, Suriname—Mining annual review: Morris, New York, Peter W. Harben Inc., Folio 956, March, 2 p.
- Ministry of Natural Resources, 1999, Some remarks about the mineral potential: Paramaribo, Geological and Mining Service of Suriname, February, 6 p.
- Plunkert, P.A., 2000, Bauxite and alumina: U.S. Geological Survey Mineral Commodity Summaries, January, p. 32-33.
- U.S. Central Intelligence Agency, 2000, Suriname: World Factbook, p. 399-401.

Major Sources of Information

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Major Publications

Engineering & Mining Journal, Latinomineria, Revista Oficial,
Information Sources, G&T International (BVI) Ltd., Cutlass

Building, Wickham's Cay, Road Town, Tortola, British
Virgin Islands, bimonthly.
Latin American Economy & Business, Latin American
Newsletters, Information Sources, 61 Old St., London
EC1V9HX, England, monthly.
Metals & Minerals Latin America, North American Investment
Supplement, Metal Bulletin Journals Ltd., a subsidiary of
Metal Bulletin Plc. Information Sources, 16 Lower Marsh,
London SE1A7RJ, England, monthly.
The Mining Journal Ltd., Country Supplement, Advertisement
Supplement to Mining Journal, Information Sources, 60
Worship St., London EC2A2HD, England, weekly.
U.S. Department of Commerce, International Trade
Administration, International Economic Policy, annual.
U.S. Geological Survey, Mineral Commodity Summaries,
annual.
U.S./Latin Trade, The Magazine of Trade & Investment in the
Americas, Warner Publisher Services, Inc. A Time Warner
company, First Union Financial Center, 200 South Biscayne
Boulevard, Miami, Florida, USA, monthly.

TABLE 1
SURINAME: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Commodity	1995	1996	1997	1998	1999
Aluminum:					
Bauxite, gross weight	3,530 2/	3,695 2/	3,877 2/	4,000	4,000
Alumina	1,589 2/	1,600 2/	1,600	1,600	1,600
Metal, primary	28 2/	32 2/	32	29 2/	29
Cement, hydraulic	60 r/	60 r/	60 r/	65 r/	65
Clays, common	20	20	20	20	20
Gold, mine output, Au content kilograms	300	300	300	300	300
Petroleum, crude thousand 42-gallon barrels	1,500	1,825 2/	2,000	3,832 2/	3,800
Sand and gravel:					
Gravel	35	35	35	35	35
Sand, common	160	160	160	160	160
Stone, crushed and broken	50	50	50	50	50

r/ Revised.

1/ Includes data available through April 2000.

2/ Reported figure.

TABLE 2
SURINAME: STRUCTURE OF THE MINERAL INDUSTRY IN 1999

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Suriname Aluminum Co. (Suralco) [Aluminum Co. of America (Alcoa), 55%; Billiton Maatschappij Suriname N.V. (BMSNV), 45%]	Refinery at Paranam, District of Para	2,000
Aluminum	Suralco, 55%, BMSNV, 45%	Smelter at Paranam, District of Para	50
Bauxite	do.	Mines at Accaribo, Coermotibo, and Lelydorp III, District of Marowijne	4,000
Do.	Suralco, 76%; BMSNV, 24%	Accaribo Mine, District of Para	1,000
Cement	Vensur N.V. (private, 100%)	Paramaribo, District of Para	60
Gold	No major operating companies	South and east Suriname	NA
Petroleum barrels per year	Staatsolie Maatschappij Suriname N.V. (Government, 100%)	Tambaredjo, District of Saramacca	1,825

NA Not available.