

## SURINAM

*By J. M. Harris*

*Peter W. Harben Inc. Mineral Consultancy, Las Cruces, New Mexico 88011 US (peterharben.com)*

Surinam shares the rich Guiana Shield with its neighbours and gold mineralisation similar to that of Guyane. Ecotourism and its related concerns have also played increasing roles in the country which has given permanent protection to the 1.6 Mha of untouched tropical forests in its dense interior. Nevertheless, every month the gold sector provides more than US\$25 million to the economy, but more than US\$20 million is in the informal sector. The country has had a continuing problem with garimpeiros, often illegal and Brazilian gold miners who may constitute some 10% of the population and also create environmental concerns. Surinam and Brazil are planning to co-operate on a survey of the situation.

Last year Cambior Inc. filed a reserves report on the Gross Rosebel gold property, about 80 km south of Paramaribo, indicating that probable mineral reserves, calculated at a gold price of US\$300/oz, stand at 25.2 Mt at an average grade of 1.7 g Au/t, representing 1.3 Moz of gold contained. The average annual gold production at the Gross Rosebel Property has been forecast at 170,000 oz with an average direct mining cost of US\$168/oz. An initial feasibility study was finished in 1997, but an updated one has reduced the scope of the project to include only the mining and processing of soft rock and transition ore, thus reducing the capital cost; the new project assumes the development of a 3.6 Mt/y conventional carbon-in-leach plant with associated infrastructure and services at a capital cost of US\$40 million.

On October 31, 2001 Cambior announced that it had entered into an agreement with Golden Star Resources Ltd. to acquire its 50% interest in the Gross Rosebel property for a cash consideration of US\$80 million and to complete additional transactions regarding Omai Gold Mines Ltd in Guyana, the Yaou

and Dorlin properties in French Guiana and other exploration properties in the Guiana Shield. The company expects to benefit from the strong synergy with these projects and reduce capital expenditures through the transfer of available equipment from the Omai mine. After discussions with the government, Cambior will close its transaction with Golden Star and intends to complete a final feasibility study by mid-year as well as prepare for construction by the end of the year.

Canarc Resources has also found several gold prospects on the Sara Kreek property over the past few years as well as trying to resolve issues with the government at the Benzdorp property. Vancouver-based Blue Ribbon Resources holds the Bemau, Toeboek and Dijon concessions in the Saramacca River region and the Wetiedede concession in eastern Surinam, as well as the Lawa gold concession. Savanna Resources has also been exploring two gold properties with rights covering over 87,000 ha of land within the eastern main gold-bearing greenstone belt.

However, it is bauxite mining along with refining, and smelting that have been the principal industrial activities in Surinam and the bauxite industry accounts for more than 15% of GDP and 70% of export earnings. South America has about a third of the world's bauxite resources and Surinam has ranked among the top ten bauxite sources, with annual production in the 4 Mt range and estimated reserves at 600 Mt.

Two companies have dominated bauxite production and have also been involved in joint venture mining operations in the country: Surinam Aluminum (Suralco) and Billiton Maatschappij Surinam (BMS); their Paranam refinery, operated as a joint venture between Suralco (55%) and BMS (45%) with Suralco

the operator, produces 1.6 Mt/y of alumina. The total ore reserves of BMS's mining joint venture are 21.6 Mt, grading 53% available alumina and reactive silica of 4.9%; of these, 19.3 Mt, grading 53.1% available alumina and 5% reactive silica are contained in the Lelydorp III deposit. Reserves at the latter are estimated to be adequate to maintain operations at a production rate of 2.2 Mt/y until 2006. The Accaribo Mine and Mt. Lelydorp III deposit are in the Para District about 15 km from the refinery and 35 km south of the capital Paramaribo.

Recently BHP Billiton indicated interest in a concession grant to the Bakhuys area in the west and might leave Surinam after 2006 if it does not materialise. Suralco already has rights in the east and BHP Billiton shareholders have apparently approved the US\$8 million investment. Other minerals were also considered in Surinam, but the company ran into red tape and decided it was profitable to mine bauxite reserves. Operations in the Bakhuys area might include a refinery with greater capacity than Paranam's, their joint venture with Suralco (the two bauxite companies are already co-operating in Brazil), as well as an aluminum smelter. The company has been in close contact with the Ministry of Natural Resources and estimates that with a favourable government decision, operations in west Surinam could start in seven years.

This former Dutch colony, which only became an independent republic in 1975, has for a long time depended on its exports of bauxite, alumina, and aluminium, as well as timber and foodstuffs. They have contributed to an aggregate GDP of some US\$600 million or US\$1,400 for each of its only 450,000 people. These are an interesting mix derived from Dutch colonisation, the early importation of African slaves and later indentured labourers from India and Indonesia.

A small oil industry produces heavy, sweet crude oil from the Tambaredjo and Borneo fields by the state oil company, Staatsolie. Onshore development has resulted in: a proven oil reserve of 167 million barrels of oil, of which 35 million have been produced already; oil production of 12,500 bbl/d by the end of 2000; and the construction and operation of an oil refinery with a processing capacity of 7,000 bbl/d producing diesel, heavy vacuum gas oil, fuel oil, and bitumen. Production from the Tambaredjo oil field will be rapidly increased to 20,000 bbl/d with further expansions from the refinery as well.

Established in 1980, Staatsolie has seen several attempts made by the government to sell it to foreign investors with resulting protests and demonstrations. In the next five years 17 open offshore areas will be offered in different rounds to the international community. A total of US\$9 million has been invested to map the first six open offshore areas through recent seismic research. These areas will be open for bidding, some kind of contracting out, between November 2001 and May 2002.

Apparently, The Netherlands will allow Surinam to use Dutch archives to negotiate a border dispute with Guyana over a rich offshore oil field over land in the south and a maritime area to the north. The US Geological Survey has estimated the entire coastal area off the two countries could contain as much as 15 billion barrels of oil. Tensions flared in 2000 when a Surinamse naval vessel ordered a Canadian oil rig working on a Guyanese contract out of the disputed area north of the Corentyn River bordering the two countries. In January, Guyana President Bharrat Jagdeo and Surinam President Ronald Venetiaan signed a declaration to negotiate possibilities for joint oil exploration in the maritime area, but issues still remain.