



# 2013 Minerals Yearbook

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**SURINAME**

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# THE MINERAL INDUSTRY OF SURINAME

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In 2013, Suriname's mineral output included alumina, bauxite, cement that was produced from imported clinker, clays, crude oil, crushed stone, gold, gravel, refined petroleum products, and sand. The mining and quarrying sector accounted for about 6.2% of the country's real gross domestic product (GDP), and the construction sector, about 5.3% (Centrale Bank van Suriname, 2014b, c).

In 2013, the value of Suriname's exports was about \$2.34 billion compared with almost \$2.7 billion in 2012. Gold still accounted for 59% of the value of exports from Suriname in 2013 despite a 24% decrease in the value of gold exports (which was partially attributable to the decrease in international gold prices). Alumina accounted for 16% of exports, and crude oil, 1.5%. Mineral-related exports to the United States (which accounted for 1.7% of total exports from Suriname in 2013) consisted primarily of gold, which was valued at about \$32.2 million. In 2013, Suriname's imports were valued at \$2.17 billion compared with a revised value of almost \$2.0 billion in 2012. Imports from the United States included iron and steel products (including finished metal shapes), which were valued at about \$8.7 million; mining equipment, about \$8.5 million; refined petroleum products, \$7.4 million; and oilfield equipment, \$6.2 million (Centrale Bank van Suriname, 2014a, p. 1, 11–12; U.S. Census Bureau, 2014a, b).

The Mining Decree of May 8, 1986, provides the basis for mining agreements; however, mining licenses are negotiated with the Government and promulgated as laws by De Nationale Assemblee (DNA) [the National Assembly]. Modifications and extensions of formal mining licenses are issued as legislative amendments. The Mining Decree also grants exclusive petroleum concession rights to state-owned companies and the Petroleum Law authorizes those companies to enter into agreements with established petroleum companies.

## Production

Notable changes in mineral output in 2013 included that of refined petroleum products, which increased by 20.3% compared with that of 2012. The increase was attributable in part to the resumption of normal operations after a successful maintenance program at the country's only petroleum refinery that was completed in 2012. Data on mineral production are in table 1 (Staatsolie Maatschappij Suriname N.V., 2014a, p. 12–13).

## Structure of the Mineral Industry

The Ministerie van Natuurlijke Hulpbronnen [Ministry of Natural Resources] was responsible for the development and management of the energy, mineral, and water resources

of Suriname. The Geologische Mijnbouwkundige Dienst [Geological Mining Service] was the Government agency responsible for the mining industry. The Bauxiet Instituut Suriname [Bauxite Institute of Suriname] collected data on bauxite. The state-owned Grasshopper Aluminium Co. (Grassalco N.V.) held interest in some bauxite, sand, and stone production operations. State-owned petroleum company Staatsolie Maatschappij Suriname N.V. explored for and produced crude oil, operated the country's petroleum refinery, and entered into production-sharing agreements with domestic and international oil companies. Since 2011, the multicommittee Ordening Goudsector [Planning Commission for the Gold Sector], had been registering small-scale miners, the location of mining operations, and mining equipment in an attempt to restore Government authority over the sector, improve the environmental operational efficiency and the security of small-scale mining operations, and recover tax income (Kabinet van de President, undated).

In addition to domestic companies that recovered crude construction material from clay, sand, and gravel pits, and from stone quarries, a small number of private-sector mineral companies that produced nonindustrial minerals were operating in Suriname. Bauxite was mined and refined into alumina by the joint venture of Suriname Aluminum Company L.L.C. (Suralco) and N.V. Alcoa Minerals of Suriname, both of which were subsidiaries of Alcoa World Alumina L.L.C. Alcoa World Alumina was a joint venture of Alcoa Inc. of the United States (60% equity interest) and Alumina Ltd. of Australia (40%). Vensur N.V., of which Surcol Houdstermaatschappij N.V. owned an 82.24% interest, operated a grinding facility that processed imported cement clinker. Surcol was a joint venture of C. Kersten en Co. N.V. of Suriname and Cementos Argos S.A. of Colombia.

Rosebel Gold Mines N.V., which was a subsidiary of IAMGOLD Corp. of Canada (95% equity interest) and N.V. Grassalco (5%), was Suriname's only large-scale industrial gold producer. Sarafina N.V. and NaNa Resources N.V. were medium-scale domestic gold miners. About 20,000 local small-scale miners, and an additional 12,000 artisanal miners from Brazil who mostly were undocumented immigrants, were estimated to be involved in small-scale gold mining operations, primarily in the Brokopondo, Marowijne, and Sipaliwini Districts. Table 2 is a list of the major mineral industry facilities in Suriname (Kraaijer, 2013; McArarney, 2013).

## Commodity Review

### Metals

**Bauxite and Alumina.**—In 2013, alumina production in Suriname decreased to 1.15 million metric tons (Mt) from a revised 1.20 Mt in 2012. Bauxite production decreased to

<sup>1</sup>Deceased.

2.71 Mt from 2.87 Mt in 2012, as permitted bauxite deposits were mined out. Bauxite operations included production from the open pits in the Coermotibo mining area and the Onverdacht mining area. The Coermotibo mining area, which included the Bushman Hill, the CBO Explo, the Lost Hill, and the Remnant deposits, is located about 100 kilometers (km) east-southeast of Paramaribo. The Onverdacht mining area, which included the Kaaimgangrasi, the Klaverblad, and the Sumau 1 deposits, is located about 20 km south-southeast of Paramaribo near the Suralco alumina refinery. The Caramacca Mine is located about 25 km east of the Paranam refinery (Alcoa Inc., 2014, p. 9).

The bauxite reserves at Coermotibo, Kaaimgangrasi, and Klaverblad effectively were mined out in 2012, and the Government approved an extension of bauxite production from the Caramacca deposit where Suralco's mining rights expired in 2012. The Caramacca reserves were expected to be mined out in 2014. Bauxite from other mining licenses in eastern Suriname was expected to be mined out in the next few years as well. Alternative sources of bauxite to supply the Paranam refinery were being evaluated; specifically, the redevelopment of the Lelydorp I bauxite deposit, which is located in the Onverdacht mining area about 12 km northwest of the Suralco refinery. This mine had previously been mined in the 1980s, and approximately 3 Mt of bauxite reserves remained at Lelydorp I. Suralco also was evaluating a longer term bauxite mining project in the Nassau area, which is located about 104 km southeast of the Suralco refinery (Environmental Resources Management, 2011, p. ES-1–ES-2, 1-1–1-3).

**Gold.**—The Rosebel gold mine produced about 11 metric tons (t) of gold in 2013 compared with 12.5 t (revised) in 2012. As of December 31, 2013, Rosebel's proven and probable gold reserves amounted to about 133.3 Mt grading 1.0 gram per metric ton (g/t), which contained an estimated 133 t of gold. In 2013, DNA issued a legislative amendment to extend the terms of the existing mineral agreement for the Rosebel Mine by 15 years to 2042. The amendment also established a new joint venture (in which IAMGOLD held a 70% equity interest and the Government held the remaining 30% interest) that was expected to develop the gold resources that surrounded the Rosebel Mine (IAMGOLD Corp., 2014, p. 65, 68, 85).

Suriname Gold Company, LLC (Surgold), which was a joint venture of Alcoa and Newmont Mining Corp. of the United States, received authorization from DNA to proceed with the Merian gold project, which is located approximately 66 km south of the town of Moengo. The project was expected to begin commercial production in 2016 and to produce about 12 to 15 metric tons per year of gold from an open pit operation (Newmont Mining Corp., 2014).

The Government, the Kaloti Jewellery Group of the United Arab Emirates, and domestic companies agreed to build a gold refinery. Construction of the 60,000-kilogram-per-year-capacity Kaloti Suriname Mint House near Wit' Santi, which is located about 50 km south of Paramaribo near the international airport, began in 2013. Initial gold refining was expected to begin in 2014. The facility's full capacity was expected to be commissioned in 2015 (DevSur, 2013; Doran, 2013).

## **Mineral Fuels**

**Petroleum.**—In 2013, Staatsolie, which operated three onshore oilfields, remained the only crude oil producer in Suriname. The country's proven crude oil reserves as of December 31, 2013, were estimated to be 92.5 million barrels (Mbbbl) compared with 76.7 Mbbbl at the start of the year. A number of petroleum exploration programs were active, primarily in the coastal and offshore areas. In 2013, Tullow Suriname B.V., which was a subsidiary of Tullow Oil plc of the United Kingdom, acquired a 30% participating interest in offshore Block 31 from Teikoku Oil (Suriname) Company, Ltd., which was a subsidiary of Inpex Corp. of Japan. Tullow Oil (70% interest) and Statoil Suriname AS (30% interest), which was a subsidiary of Statoil ASA of Norway, were evaluating offshore Block 47. Staatsolie signed production-sharing contacts with Petroliam Nasional Berhad (PETRONAS) of Malaysia for offshore Block 52 and with a joint venture of Statoil and Tullow for Block 54. RWE Dea AG of Germany subsequently acquired a 40% interest in Block 52 from PETRONAS. CEPSA Suriname S.A., which was a subsidiary of Compañía Española de Petróleos, S.A.U. (CEPSA) of Spain, acquired a 25% participating interest in offshore Block 53 from Apache Suriname Corporation L.D.C., which was a subsidiary of Apache Corp. of the United States. Other companies exploring offshore Suriname included the joint venture of Chevron Global Energy Inc. of the United States and Kosmos Energy Co. of Bermuda, which held exploration rights to Blocks 42 and 45, and Murphy Oil Corp. of the United States, which held exploration rights to Block 48 (Staatsolie Maatschappij Suriname N.V., 2014a, p. 65).

Tullow Oil transferred its 40% interest in the onshore Coronie Block to Paradise Oil Company N.V. of Suriname, which was a subsidiary of Staatsolie, and withdrew from the prospect. Paradise also was exploring offshore Block 4, and, onshore, on the Coesewijne, the Nickerie, the Weg naar Zee, and the Uitkijk Blocks.

Staatsolie's crude oil refinery's processing capacity was about 7,500 barrels per day (bbl/d); however, an expansion of the refinery capacity to 15,000 bbl/d was expected to be completed in late 2014. Once the expansion was completed, Staatsolie's refinery products would include asphalt, low-sulfur diesel, fuel oil, and gasoline (Staatsolie Maatschappij Suriname N.V., 2014a, p. 13; 2014b).

## **Outlook**

Suriname's trade is expected to continue to be dominated by mineral industry output—in particular, by bauxite and gold exports. Because of the contribution of the mineral industry to the economy through dividends, royalties, and taxes, Government revenue also is subject to the volatility of international commodity prices. The revenue that the Government received from the mineral industry has decreased in the past 3 years. This trend is expected to continue, at least in the short term (International Monetary Fund, 2014, p. 32).

Proposals for mineral exploration in the country's undeveloped regions of the interior, which are inhabited by indigenous communities, have long raised the concerns of

environmentalists and human rights groups. The influx of unregulated gold-mining activities in the interior in recent years and the associated environmental, security, and social problems have exacerbated those concerns (Weitzner, 2008, p. iv–xi).

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

(Thousand metric tons unless otherwise specified)

Commodity <sup>2</sup>	2009	2010	2011	2012	2013	
<b>Aluminum:</b>						
Bauxite, gross weight	3,388	3,104	3,236	2,874 <sup>r</sup>	2,706	
Alumina	1,536	1,486	1,421	1,203 <sup>r</sup>	1,150	
Cement, hydraulic <sup>e</sup>	65	65	65	65	65	
Gold, mine output, Au content	kilograms	29,342 <sup>r</sup>	31,048 <sup>r</sup>	32,308 <sup>r</sup>	33,474 <sup>r</sup>	34,213 <sup>p</sup>
<b>Petroleum:</b>						
Crude	thousand 42-gallon barrels	5,860	5,800	5,990	5,940	5,980
Refined petroleum products	do.	2,740	2,700	2,630	2,310	2,780

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits. <sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Table includes data available through December 31, 2014.

<sup>2</sup>In addition to the commodities listed, clay, gravel, sand, and crushed stone also were produced in Suriname, but information is inadequate to make reliable estimates of output.

TABLE 2  
SURINAME: STRUCTURE OF THE MINERAL INDUSTRY IN 2013

(Thousand metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina		Joint venture of Suriname Aluminum Company, L.L.C. (Suralco), 55%, and N.V. Alcoa Minerals of Suriname, 45%)	Suralco refinery at Paranam, about 25 kilometers south-southeast of Paramaribo	2,207 <sup>1</sup>
Bauxite		do.	Caramacca Mine, about 40 kilometers southeast of Paramaribo	NA
Do.		do.	Coermotibo area open pit mines, about 100 kilometers east-southeast of Paramaribo	2,000
Do.		do.	Onverdacht area open pit mines, about 20 kilometers south-southeast of Paramaribo	NA
Cement		Vensur N.V. (Surcol Houdstermaatschappij N.V., 82.24%)	Clinker grinding facility near Livorno, about 5 kilometers south of Paramaribo	60
Gold:				
Ore	kilograms	Rosebel Gold Mines N.V. (IAMGOLD Corp., 95%, and N.V. Grassalco, 5%)	Rosebel Mine, Brokopondo District, about 80 kilometers south of Paramaribo	12,500
Do.	do.	NaNa Resources N.V.	Lawagebied, Benzdorp area	NA
Do.	do.	Sarafina N.V.	Aqua Azul	NA
Do.	do.	Artisanal miners	Various locations, including the Brokopondo, the Marowijne, and the Sipaliwini Districts	25,000 <sup>c</sup>
Refined metal	do.	Kaloti Suriname Mint House (Government, Kaloti Jewellery Group, and private investors)	Wit' Santi, about 50 kilometers south of Paramaribo	60,000 <sup>2</sup>
Petroleum:				
Crude oil	thousand 42-gallon barrels	Staatsolie Maatschappij Suriname N.V. (Government, 100%)	Calcutta field, Tambaredjo field, and Tambaredjo North West field, Saramacca District	6,100
Petroleum products	do.	do.	Crude oil refinery at Tout Lui Faut, near Livorno, about 5 kilometers south of Paramaribo	2,800 <sup>3</sup>

<sup>c</sup>Estimated. Do., do. Ditto. NA Not available.

<sup>1</sup>An additional 870,000 metric tons per year of capacity has been idled since 2009 pending development of additional bauxite resources in Suriname and renewed demand by the international alumina market.

<sup>2</sup>Under construction.

<sup>3</sup>The ongoing expansion of the facility's production capacity to about 5.5 million barrels per year was expected to be completed in 2014.