

THE MINERAL INDUSTRY OF OTHER ISLANDS OF THE CARIBBEAN

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The Islands of the Caribbean were modest producers of minerals in 1995. In many cases, production was limited to industrial minerals for internal consumption. Several islands produced cement. The economies of other islands, however, relied heavily on exports of mineral commodities, and a few islands were among the top producers of one or two mineral commodities. Bauxite and alumina, cement, chromite, cobalt, crude petroleum, gold, iron and steel, natural gas, nickel, petroleum refinery products, phosphate rock, and salt were among the mineral commodities produced in the Caribbean Islands. The islands reviewed within this chapter were among the modest producers of mineral commodities in the area.

Antigua and Barbuda

The volcanic Islands of Antigua and Barbuda are east of Puerto Rico. Sand, gravel, and crushed stone industries supported the local construction industry. On Antigua Island, limestone crops out along the north and east coasts and was quarried for the construction industry. Barbuda produced a small amount of salt. Antigua and Barbuda's main trading partners were the Organization of Eastern Caribbean States and the United States.

Aruba

Aruba, of volcanic origin, is northwest of Venezuela. Aruba has few natural resources; thus, mining contributes little to the economy of the island. Coastal Aruba Refining Co. N.V., a subsidiary of Coastal Corp. of Houston, Texas, produced asphalt, diesel fuel, feedstock for Coastal's other refineries, kerosene, and residual fuel oil at the Lago refinery. Petroleum and other mineral products were shipped from the Ports of Oranjestad and Sint Nicolaas.

The Bahamas

The Bahama Islands, on the northern edge of the Caribbean Basin, comprised 20 major islands and thousands of small islands. The islands' coral base rests on the volcanic foundation, but most of the exposed rock is oolitic limestone.

Mineral production on The Bahama Islands was limited to aragonite, cement, petroleum products, salt, sand and gravel, and stone. Aragonite sand was dredged off the Great

Bahamas Bank, south of the Biminis. Limestone and sand were produced by Freeport Aggregate Ltd., in Freeport, for the domestic construction industry. Marine salt was produced in evaporation pans on Great Inagua Island, the southernmost island in The Bahamas archipelago. The Bahamas imported all of its oil for the domestic processing of petroleum products. The Bahamas' mineral exports included aragonite blocks, petroleum products, and salt. The United States was The Bahamas' most significant trading partner.

Barbados

Barbados is a relatively small island of the Lesser Antilles about 160 kilometers (km) east of St. Vincent. The mineral sector contribution to the economy was minor. The principal mineral commodities produced in Barbados were crude petroleum and natural gas. Industrial mineral production included cement, clays, limestone, and sand and gravel. The Arawak Cement Co., operated by Trinidad Cement Ltd., produced cement from imported clinker and was the sole producer of cement on the island, exporting to regional markets. The Barbados National Oil Co. Ltd. was the only operating crude oil company on the island. The company also produced natural gas and liquid petroleum gas. The Mobil Oil Barbados Ltd. petroleum refinery is on the southwestern coast. Trinidad and Tobago, the United Kingdom, and the United States were Barbados main trading partners.

Bermuda

Bermuda is a small archipelago of 7 main islands and about 150 other islands and islets resting on volcanic formations. The islands had an insignificant mineral industry in 1995. All mineral commodity requirements were imported, except for some local stone production, primarily coralline limestone. Quarries are privately owned, with low employment requirements. Lacking rivers and streams, Bermuda collects its fresh water from rainwater and seawater desalination plants. Petroleum was imported. Mineral exports consist almost entirely of the reexport of fuel oil. The United States continued to be one of Bermuda's most important trading partners. Other significant partners included Canada, Italy, and the United Kingdom.

Dominica

The volcanic Island of Dominica is 550 km southeast of Puerto Rico, between Guadeloupe and Martinique Islands, in the Lesser Antilles. In 1995, Dominica produced clay, limestone, pumice, volcanic ash, sand and gravel, and volcanic ash primarily for the construction industry. Dominica was the leading producer of fresh water, exporting it to the other Caribbean islands. The Government supported the use of geothermal energy and drilled a number of test wells. Dominica was dependent on imports for oil and raw and semimanufactured materials. Dominica exported small quantities of sand and gravel and crushed stone mostly to Guadeloupe and the Virgin Islands. In 1993, Dominica became a contracting party to the General Agreement on Tariffs and Trade.

Grenada

The most southern of the Windward Island chain, or Lesser Antilles, Grenada consists of Grenada and several islands near the southern Grenadines, near the south end of the Lesser Antilles off the northeast coast of Venezuela. There are no reported mineral industries in Grenada, although limestone, and sand and gravel are produced for the local construction industry.

Guadeloupe and Martinique

Guadeloupe and Martinique are both Overseas Departments of France. Included are the islands of Basse-Terre, Grande-Terre, Iles des Saintes, La Desirade, Marie-Galante, St. Barthelemy, and the French side of Sint Maarten (Saint Martin). Guadeloupe and Martinique are 500 km and 625 km southeast of Puerto Rico, respectively; both are near the northern end of the Lesser Antilles. The Basse-Terre portion of Guadeloupe is volcanic in origin, and the Grand-Terre area is composed of limestone. Martinique is a dormant volcano.

Industrial minerals, such as cement, clays, lime, pumice, salt, sand and gravel, and stone, were mineral commodities produced in Martinique. All mineral products, except for some cement and sand and gravel, were used domestically. Petroleum products were refined on Martinique from imported crude oil.

Haiti

Haiti is part of the western area of the Island of Hispaniola, which it shares with the Dominican Republic. Economic activity remained depressed in 1995. The small mineral industry in Haiti was involved in the production of cement, the mining of clays and limestone for cement production, the quarrying of a small quantity of marble, the production of marine salt, and the dredging for sand and

gravel and other minerals used in the construction industry. In northern Haiti, there are small undeveloped deposits of chromite, copper, gold, iron ore, lead, manganese, silver, sulfur, tin, and zinc. Refined petroleum products were all imported. Exxon, Royal Dutch Shell, and Texaco oil companies operate gasoline stations in Haiti.

Montserrat

Montserrat, a dormant volcanic island, is just south of Antigua and Barbuda in the Lesser Antilles. Small quantities of sand and gravel and other quarry products constituted its mineral industry. The island's mineral requirements were imported through the Port of Plymouth.

Netherlands Antilles

The two major islands of the Netherlands Antilles, Bonaire and Curaçao, are northwest of the coastline of Venezuela. The rest of the country, the Saba Islands, Sint Eustatius, and the Dutch side of Sint Maarten, are east of Puerto Rico, 800 km to the north. All of the islands are of volcanic origin. In 1995, mining and mineral production contribute little to the economy of the Netherlands Antilles, which did, however, produce limestone, phosphate rock, refined petroleum products, and solar salt in Curaçao. Salt was exported to other Caribbean islands, New Zealand, and the United States from the Port of Willemstad in Curaçao. Refined petroleum products also were exported to the Netherlands and other countries. Refinería Isla S.A. in Curaçao, a Petróleos de Venezuela S.A. (PDVSA) subsidiary, leased the 113-million-barrel-per-year oil refinery at Willemstad from the Government of the Netherlands Antilles. PDVSA also recovered about 40,000 metric tons of sulfur at its refinery. The ocean terminal and facilities on Bonaire, owned by PDVSA, were used for storage and transshipment. AKZO Salt Antilles N.V. operated a 2,226-hectare, 360,000-metric-ton-per-year solar salt facility on the southern end of Bonaire.

A stone-crushing plant was operating on the Saba Island. Aggregate was quarried on Sint Maarten by Bouwwbedrijf Bowne Winden N.V., a subsidiary of Devcon International Corp. of Deerfield Beach, Florida. Production was consumed primarily by the local construction industry. A petroleum transshipment terminal operated on Sint Eustatius.

Saint Kitts and Nevis

Saint Kitts and Nevis are volcanic islands southeast of Puerto Rico. The Federation of Saint Kitts and Nevis consist of Saint Christopher and Nevis islands. Mining contributed little to their economies. Although Saint Kitts and Nevis' mineral industry produced some construction materials and salt, most basic mineral requirements were imported in 1995. Beach sand mining was proscribed under the 1987 National Conservation and Environmental Protection Act.

Saint Lucia

The volcanic island of Saint Lucia is 150 km north of Grenada in the Lesser Antilles. Gravel and sand pits and pumice quarries supplied the island's construction sector, which is tied to hotel expansion. Hess Oil St. Lucia Ltd. maintained a petroleum storage and transshipment terminal near Castries, the island's capital. Geothermal energy studies were conducted at the boiling volcanic sulfur springs near Soufriere on the southwest coast. In 1993, Saint Lucia became a contracting party to the General Agreement on Tariffs and Trade.

Saint Vincent and The Grenadines

The small volcanic islands of Saint Vincent and the Grenadines are between the islands of Saint Lucia in the north and Grenada in the south. A small industrial mineral production supplied sand and gravel and road material needed by the construction industry. Small quantities of salt were privately produced.

Major Sources of Information

Antigua

Ministry of Economic Development and Energy
Queen Elizabeth Highway
Saint John's, Antigua

Aruba

Central Voor de Statistiek
Windstraat 21
Oranjestad, Aruba

The Bahamas

Ministry of Agriculture, Trade and Industry

Nassau, The Bahamas

Barbados

Ministry of Trade, Industry, and Commerce
Bridgetown, Barbados, West Indies

Grenada

Ministry of Communications
Saint George's, Grenada

Guadeloupe and Martinique

Bureau de Recherches Geologiques et Minière
Abymes, Guadeloupe, French West Indies

Bureau de Recherches Geologiques et Minière
Fort-de-France, Martinique, French West Indies

Service des Mines et de L'Industries
Poin-a-Pitre, Guadeloupe, French West Indies

Service des Mines et de L' Industries
Fort-de-France, Martinique, French West Indies

Haiti

Bureau des Mines et de Ressources Energetiques
Port-au-Prince, Haiti

Saint Lucia

Ministry of Trade, Industry, and Agriculture
Castries, Saint Lucia

Saint Vincent and the Grenadines

Ministry of Trade, Industry, and Agriculture
Kingstown, Saint Vincent

TABLE 1
ARUBA, NETHERLANDS ANTILLES, AND SAINT KITTS AND NEVIS:
PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1991	1992	1993	1994	1995 e/	
Aruba:						
Petroleum refinery products	thousand 42-gallon barrels	26,977 r/	35,569 r/	45,199 r/	50,670 r/	52,070 3/
Sulfur, byproduct of petroleum		1,650 r/	9,340 r/	34,300 r/	34,000 r/	31,700 3/
Netherlands Antilles:						
Petroleum refinery products	thousand 42-gallon barrels	78,913	75,323	75,592	72,416	73,657 3/
Phosphate rock e/		15,000	15,000	10,000	15,000	--
Salt e/		350,000	350,000	300,000	420,240 r/ 3/	421,000
Sulfur, byproduct of petroleum		42,500	31,900	31,900	42,500	42,500 3/
Saint Kitts and Nevis, salt e/		5000	5000	5000	5000	5000

e/ Estimated. r/ Revised.

1/ Table includes data available through Apr. 16, 1996.

2/ In addition to commodities listed, crude construction materials (lime, sand, stone, etc.) may also be produced. But data on such production are not available, and information is inadequate to make reliable estimates of output levels.

3/ Reported figure.

TABLE 2
THE BAHAMAS: PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons)

Commodity 2/	1991	1992	1993 e/	1994 e/	1995 e/
Salt	1,100	809	850	900	900
Stone, aragonite	1,210	871	1,100	1,200	1,200

e/ Estimated.

1/ Table includes data available through Apr. 16, 1996.

2/ In addition to commodities listed, crude construction materials (sand and gravel, etc.) may also be produced. But data on such production are not available, and information is inadequate to make reliable estimates of output levels.

TABLE 3
BARBADOS: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

Commodity 2/	1991	1992	1993	1994	1995	
Cement, hydraulic	thousand metric tons	200	175	62 r/ 3/	78 r/ 3/	80
Gas, liquefied petroleum	42-gallon barrels	18,900 3/	18,900 3/	18,000	20,000	20,000
Gas, natural:						
Gross	million cubic meters	35	33	33	35	35
Marketed	do.	17	15	15	15	15
Petroleum:						
Crude	thousand 42-gallon barrels	455 r/ 3/	479 r/ 3/	462 r/ 3/	474 r/ 3/	475 3/
Refinery products	do.	2,200	2,120	2,200	2,250	2,250

r/ Revised.

1/ Table includes data available through Apr. 16, 1996.

2/ In addition to commodities listed, crude construction materials (clays, sand and gravel, stone, etc.) were also produced. But data on such production are not available, and information is inadequate to make reliable estimates of output levels.

3/ Reported figure.

TABLE 4
 GUADELOUPE AND MARTINIQUE: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Commodity 2/	1991	1992	1993	1994	1995
Guadeloupe:					
Abrasives, natural, pumice	230	220	210	210	210
Cement	240	235	230	230	230
Martinique:					
Cement, hydraulic	245	240	220	220	220
Lime metric tons	5,000	5,000	5,000	5,000	5,000
Petroleum refinery products thousand 42-gallon barrels	4,800	4,800	4,800	4,800	4,800
Pumice	150	140	130	130	130
Salt	200	200	200	200	200

1/ Table includes data available through Apr. 16, 1996.

2/ In addition to commodities listed, crude construction materials (sand and gravel, stone, etc.) may also be produced. But information is inadequate to make reliable estimates of output levels.

TABLE 5
 HAITI: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1991	1992	1993	1994	1995
Cement, hydraulic	250,000	200,000	100,000	75,000	50,000
Clays, for cement	40,000	30,000	10,000	10,000	7,000
Sand and gravel:					
Gravel cubic meters	3,900,000	3,000,000	1,000,000	750,000	750,000
Sand do.	2,200,000	2,000,000	500,000	250,000	250,000
Stone:					
Limestone, for cement	250,000	220,000	100,000	75,000	50,000
Marble cubic meters	600	500	200	100	100

1/ Table includes data available through Apr. 16, 1996.

2/ In addition to commodities listed, asphalt, lime, and salt may also be produced, but data on such production are not available, and information is inadequate to make reliable estimates of output levels.