

# THE MINERAL INDUSTRY OF DOMINICAN REPUBLIC

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The Dominican Republic is situated in the eastern two-thirds of the island of Hispaniola, in the Caribbean Basin. The Dominican Republic shares Hispaniola with Haiti. Four ranges transverse the country from northwest to southeast. Cordillera Central runs through the center of the Republic and hosts mineral resources. The country is now being mapped and explored to uncover potential mineral deposits.

The small mineral industry in the Republic, which contributed moderately to the national economy, produced cement, gold and silver, gypsum, nickel, and salt. All hydrocarbons were imported as crude or refined products, and some were refined in the country.

The Dominican Republic's mining law dates from 1971 and has not been extensively changed since then. The Government passed Decree 900 in 1983, clarifying the 1971 mining law (Mining Act 146). Mining laws were revised in 1987 (Decree 13-87), eliminating the policy of closing mineralized areas to everyone except the government. The law provided for the establishment of Fiscal Mining Reserves in which any ore can only be exploited by the Government or through special contracts with the Government.<sup>2</sup>

Foreign companies are permitted to own private companies and open exploration offices in the country. Foreign companies began investing in the Republic, including Battle Mountain Inc. of Houston, Texas and Canyon Resources of Denver, Colorado, to evaluate and develop mineral deposits.

Conditions concerning taxes were redefined through a new law on foreign investment, applying to all sectors, including mining.<sup>3</sup> The only nickel producer in the Dominican Republic, Falconbridge Dominicana C. por A (Falcondo), signed a taxation agreement in September 1994, negotiated 2 years ago with the Government. Prior to the agreement, Falcondo paid as much as 65% to 70% in taxes. The new tax may extend the mine life by allowing the treatment of lower-grade nickel ores.<sup>4</sup>

Geological maps were being compiled at scales of 1:50,000 and 1:100,000 under a 3-year program, and 1:250,000 in a 2-year program, incorporating mining and metallogenetic data. The principal objectives were to help promote interest in mining and to train Dominican geologists for a proposed National Geological Survey.<sup>5</sup>

Neither a single environmental law nor a central agency regulates mining in the Dominican Republic, although the country had some environmental laws governing mining. Moreover, no central agency coordinates environmental policy, laws, and regulations. Portions of mining-related

legislation are found in several laws, including the Mining Law, but contain only a general framework. Administrative authority in environment is granted to the Ministry of Forestry because deforestation has been the most important and most visible environmental problem. Decree No. 290 of 1985 deals with deforestation, soil erosion, and water contamination.<sup>6</sup>

In the Dominican Republic, gold, nickel, and silver were mined. The output of nickel increased by about 25% in 1994, while all other metals decreased. Industrial minerals produced included cement, gypsum, lime, limestone, marble, salt, sand and gravel, and also petroleum refinery products. Production of all industrial minerals remained about the same as in the previous year, except salt. (*See table 1*).

The Dominican Republic has preferential access to the U.S. market under the Generalized System of Preferences program and under the Caribbean Basin Initiative. It also has preferential access to the European market under the provisions of the Lome Convention. The Republic is a member of the Association of Caribbean States, whose goals were to liberalize trade, to promote investment opportunities, and to coordinate negotiations on bilateral and multilateral issues.<sup>7</sup>

The Dominican Republic exported ferronickel, gold, and silver to the United States. Nickel accounted for about 25% of the country's export revenues in 1994.<sup>8</sup> Gypsum and limestone were exported to its neighboring countries, primarily to Puerto Rico. The country relied on imports of its coal, crude oil, and petroleum products, primarily from Mexico and Venezuela.

The Dominican Republic's Government agency, the Direccion General de Minería under the Secretaria de Estado de Industria y Comercio, was responsible for promoting mining and metallurgical development in the country, including geological survey functions, formulation, and implementation of mining legislation and relations with potential foreign investors. A holding company, Corporacion Dominicana de Empresa Estatales, controlled most of the mining functions owned by the Government, including the cement plant Fabrica Dominicana de Cemento C. por A (FDC). Gold sales were controlled by Banco Central, while gypsum, salt, and steel production were controlled by the Government. Some companies, including two cement plants and several nickel mines, were privatized. The oil refinery in Haina was jointly owned by the Government and the Netherland's Shell Internationale Petroleum Maatschappij

B.V. (See table 2).

The only company producing gold and silver in the Republic was the Rosario Dominicana S.A. The Pueblo Viejo Mine southeast of La Vega was owned by the Government since 1979. Production of gold continued to decline because of depletion of the oxide ore. Research continued to improve the extraction of gold from the deeper sulfide ore. Mining operations in the oxide ore were suspended in 1993, but limited production from stockpiled ore continued. The mine was reopened in May 1994 to extract the sulfide ore. The new sulfide ore processing plant was expected to become operational in 1996. The ore was converted to doré (an alloy of gold and silver), then shipped for smelting in the United States.<sup>9</sup>

In 1994, gold was discovered in the Cordillera Central, southwest of Bonao. The Centenario gold deposit is in the El Higo concession, comprising about 2,725 hectares (ha). The drilling program has identified 2.3 million metric tons of gold ore grading at an average content of 5 grams per metric ton of gold. A contiguous zone, Arroyo Avispa, comprising 3,200 ha also was being explored. Minera Hispaniola S.A. continued to determine the economic potential of the discovery. The company was owned by the Canyon Resources Corp. (40%) and Battle Mountain Gold Co. (60%), both United States companies. The companies have applied to the Government for mining rights.<sup>10</sup>

Gold-silver deposits were being investigated in the Restauracion area, on the Dominican-Haitian border.<sup>10</sup>

Falcondo, a subsidiary of the Canadian company Falconbridge Ltd., jointly owned by Noranda Ltd. of Toronto, Canada, and Trelleborg AB of Trelleborg, Sweden, was the only ferronickel producer in the country. Most of the production was exported to Canada; small amounts went to Western Europe. The lateritic nickel ore is mined from an open pit near Bonao. The ore from the smaller Loma Ortega Mine, southeast of Santiago, was transported 40 kilometers (km) by truck to the processing plant. Falcondo also operated its own powerplant near the mine and smelting facilities, as well as its own oil refinery, producing about 16,000 barrels per day, using Venezuelan crude oil imports. Falcondo located a copper-zinc deposit near to its nickel ore body, and continued to define more precisely the dimensions of that deposit.<sup>12</sup>

The Dominican Republic, Jamaica, and Cuba are the only sources of gypsum in the Caribbean. The only gypsum quarry in the Republic, Loma de Sa y Yeso C. por A., is west of Barahona. Rock salt also was mined from the same deposit. Gypsum and salt were mostly exported. The gypsum and salt deposit were being evaluated to increase the output from the economically depressed area.<sup>13</sup>

Limestone and marble were quarried from a number of places in the Dominican Republic, the most important being near Sanchez and Barahona. Ideal Dominicana S.A. operated a limestone quarry near Cabo Rojo. Rosario and several other companies also quarried limestone.

Marble was quarried in Canoa, Samana, and San Cristobal. Feasibility studies were being conducted to

evaluate the rehabilitation of marble quarries in Samana Peninsula, and marble, travertine, and onyx quarries in Canoa and Vincente Noble, Barahona Province.<sup>14</sup>

Cement was used locally and some was exported. The largest cement plant in the Dominican Republic, FDC, imported on an as-needed basis special types of refined products for the operation of its kilns. FDC was not a profitable operation, receiving subsidies from the Government.<sup>15</sup>

The Dominican Republic imported all of its crude oil, primarily from Mexico (90%) and Venezuela. The Refineria Dominicana de Petroleo S.A. operated the only refinery northwest of Santo Domingo. The Falcondo nickel plant imports semirefined crude oil to power generators at its mine.

Exploration for petroleum continued by three companies: Mobil New Business Developments-Americas, Corp., Petrolera Once-Once S.A., and Consolidated Development Inc., the latter in the Cibao Basin and the offshore shelf in the Samana Bay.<sup>16</sup> Maxus Energy Inc. was evaluating its concession in the Enriquillo Basin, southeast of Cabo Rojo.

The Dominican Republic has only 5,800 km of paved roads. The 1,600 km railroad tracks, having at least four different gauges, are used primarily for the transport of bulk materials, such as gypsum, limestone, marble, salt, and other commodities, to the ports.

In the Dominican Republic, 37 electrical plants were operating, of which 15 were hydroelectric, 14 thermal, and the rest gas-turbine operated. The estimated total capacity of the electrical plants was 1,525 megawatts (MW). Most private businesses, such as Falcondo, had their own powerplants. The Government-owned electric company, Corporacion Dominicana de Electricidad (CDE), supplied only 10 hours a day of electricity, with frequent blackouts.<sup>17</sup> Reportedly, the San Pedro de Macoris 32-MW electrical powerplant resumed operation in 1994, after 4 years of repairs, financed by the Inter-American Development Bank.

Imported crude oil was processed by the only refinery in San Cristobal. Imported crude oil was transported by a pipeline from Las Calderas port to the petroleum refinery in San Cristobal. An oil pipeline from the Haina port delivers semirefined crude to a ferronickel mine near Bonao. Petroleum byproducts were usually transported overland by car tankers from the refinery to Puerto Plata in the north, although some fuel was shipped by barge from Santo Domingo to Puerto Plata.<sup>18</sup>

Following the arrival of U.S. troops in the neighboring Haiti and the return of the elected President, the Dominican Republic became able to concentrate more on tourism and to devote more energy on the promotion of its economy, including mining. The Government continued its attempt to enter into joint ventures with foreign mining and exploration companies. Even though the Government controlled most of its mining and mineral companies, Falcondo, which was mostly privately owned, dedicated itself to upgrading its nickel mineral reserves and to producing more ferronickel in the future. Because only a few gold and other mineral deposits have been discovered in the country, the continuing

geological mapping program could provide additional mineral discoveries. Large oil and gas deposits are not very likely to be found, but in the near future more crude oil will be imported for use at another proposed refinery to satisfy mostly the growing tourist trade. Oil pipelines are now being built to supply fuel to all parts of the country. The ongoing construction of powerplants to satisfy the insufficient supply of electricity also will revitalize the standard of living in the Dominican Republic. The impression that the country is not known for mining, coupled with the continuing improvement in the economy and the attraction of foreign investors, could potentially make the country more self-sufficient in mineral resources.

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<sup>1</sup>Text prepared Apr. 1995.

<sup>2</sup>The Dominican Republic Mining and Oil Review (Santo Domingo) Hispaniola Report, Apr.-June, 1994, p. 10.

<sup>3</sup>Page 5 of work cited in footnote 2.

<sup>4</sup>American Metal Market (New York): Oct. 7, 1994, p. 4.

<sup>5</sup>Work cited in footnote 2.

<sup>6</sup>Page 11 of work cited in footnote 2.

<sup>7</sup>Journal of Commerce (New York): May 16, 1994, p. 5A.

<sup>8</sup>Latin American Economy & Business (London): Mar. 1994, p. 19.

<sup>9</sup>Page 6 of work cited in footnote 2.

<sup>10</sup>The Dominican Republic Mining and Oil Review (Santo Domingo) Hispaniola Report, July-Sept. 1994, p. 2.

<sup>11</sup>Engineering & Mining Journal (Chicago, Illinois): June 1994, p. 10.

<sup>12</sup>Work cited in footnote 8; page 4 of work cited in footnote 1.

<sup>13</sup>Work cited in footnote 9.

<sup>14</sup>The Dominican Republic Mining and Oil Review (Santo Domingo) Hispaniola Report, Jan.-Mar. 1994, p. 2.

<sup>15</sup>Latin American Economy & Business (London): Dec. 1994, p. 16. U.S. Department of State (Washington, DC): Incoming Telegram, July 26, 1994.

<sup>16</sup>U.S. Department of State (Washington, DC): July 26, 1994.

<sup>17</sup>Latin American Economy & Business (London): Dec. 1994, p. 19.

<sup>18</sup>Work cited in footnote 16.

## Major Sources of Information

### Bancon Central

Santo Domingo, Republica Dominicana  
Telephone: (809) 688-2359; Fax: (809) 686-7488

### Corporacion Dominicana de Empresas Estatales

Ave. Gral. Antonio Duverge  
Esq. Jose Contreras  
Santo Domingo, Republica Dominicana

### Direccion General de Minería

Edificio Gubernamental  
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Telephone: (809) 685-8191

## Major Publications

The Dominican Republic Mining and Oil Review. Hispaniola Report. Director General of Mines, Santo Domingo, Dominican Republic, quarterly.

Latin American Mining Institute, Washington, DC: Mexico and Central America Investment and Mining Guide, annual. (includes a section on the Dominican Republic).

Latin American Newsletter, London, UK: Latin American Economy & Business, monthly.

Miida Limited, London, UK: Latin American Mining Letter, weekly.

U.S. Department of State, Washington, DC: Foreign Economic Trends and Their Implications for the United States. The Dominican Republic, semiannual.

TABLE 1  
DOMINICAN REPUBLIC: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/		1990	1991	1992	1993 e/	1994 e/
Aluminum: Bauxite, dry equivalent, gross weight	thousand tons	85	7	--	--	--
Cement, hydraulic	do.	1,060	1,230	1,370	1,300	1,200
Coal, subbituminous e/		600	600	600	600	600
Gold	kilograms	4,350	3,160	2,380	1,500 r/	1,300
Gypsum	thousand tons	78	118	83	85	83
Iron and steel:						
Ferroalloys, ferronickel		71,800	72,700	68,800	65,300 4/	70,000
Steel, crude		35,800	39,100	33,000 r/ e/	-- r/	--
Lime		4,000	--	--	--	--
Limestone		491,000	449,000	589,000	500,000	550,000
Nickel:						
Mine output, Ni content		28,700	29,100	27,500	23,900 r/ 4/	30,500
Metal:						
Smelter, Ni content of ferronickel		28,700	29,100	27,500	23,900 r/ 4/	30,500
Shipments, Ni content of ferronickel		28,700	28,000	27,200 r/	25,600 r/ 4/	30,000
Petroleum refinery products:						
Liquefied petroleum gas	thousand 42-gallon barrels	272	318	320 e/	315	320
Gasoline, motor	do.	2,210	2,350	2,350 e/	2,300	2,350
Kerosene and jet fuel	do.	692	1,140	1,150 e/	1,150	1,150
Distillate fuel oil	do.	2,050	2,760	2,800 e/	2,800	2,850
Residual fuel oil	do.	2,690	3,730	3,750 e/	3,800	3,850
Total	do.	7,920	10,300	10,400 e/	10,400	10,500
Salt e/ 5/		11,300 4/	11,400	12,000	11,500	10,000
Sand	thousand tons	4,240	4,880	5,130	5,000	5,500
Silver	kilograms	21,600	22,000	15,000	13,000	10,000

e/ Estimated. r/ Revised.

1/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant digits; may not add to totals shown.

2/ Table includes data available through Mar. 31, 1995

3/ In addition to commodities listed, crude construction materials (gravel, 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.

4/ Reported figure.

5/ Rock salt only.

TABLE 2  
DOMINICAN REPUBLIC: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement		Fábrica Dominicana de Cemento C. por A (Government, 78%; private, 22%)	Santo Domingo, Distrito Nacional	700
Do.		Cementos Cibao C. por A (private, 100%)	Santiago Province	400
Do.		Cementos Nacionales S.A. (private, 100%) (Private, 100%)	San Pedro de Macorís, San Pedro de Macorís Province	560
Dore (gold and silver)	kilograms	Rosario Dominicana S.A. (Government, 100%)	Pueblo Viejo Mine, Cotui, Sánchez Ramírez Province	5,000
Gypsum		Loma de Sal y Yeso C. por A (Government, 100%)	Barahona Province	200
Nickel		Falconbridge Dominicana C. por A (Government, 10%; Falconbridge Ltd., 86%; Redstone Resources, Ltd., 4%)	Mine and plant at Bonao, La Vega Province	35
Petroleum products	thousand 42-gallon barrels per day	Refinería Dominicana de Petróleo S.A. (Government, 50%; Shell Oil Co., 50%)	Haina, Distrito Nacional	11
Do.	do.	Falconbridge Dominicana C. por A (Government, 10%; Falconbridge Ltd., 90%)	La Peguera, La Vega Province	3
Salt		Loma de Sal y Yeso C. por A (Government, 100%)	Barahona Province	20
Steel		Metaldom (Government, 100%)	Santo Domingo, Distrito Nacional	100