THE MINERAL INDUSTRY OF

NICARAGUA

By David B. Doan

Although Nicaragua was the world's 14th or 15th largest gold producer in the 1940's and 1950's, mineral production in 1996 accounted for less than 1% of the country's gross domestic product. The Nicaraguan Mining Corp., or Corporación Nicaraguense de Minas (INMINE), was established in 1988 to organize, administer, direct, and promote the country's mining industry as well as to control permits and licenses for mining concessions. Since 1990, the Government of Nicaragua has devoted increasing attention to modernizing its legal framework. All resources, metallic and nonmetallic, are the property of the state. A new mining law was being put into effect in 1996 that would bring both the awarding of concessions and the tax structure into closer accord with practice in much of the rest of the world. Besides encouraging the formation and investment of private capital, the law would be updated and simplified in the context of current mining technology. Environmental remediation was a growing priority, given that Nicaragua had a poor history of responsibility by past mining operations. Concession holders are required to maintain environmental standards and restore any environmental damage. The social value of small-scale miners, or guiriseros, in rural areas is recognized, and they are given legal access to resources, mainly gold (Mining Journal, 1996, p. 4).

INMINE operated several small metal mines, producing gold and silver, mostly in sparsely populated areas in the northwest, and primarily for export. Most output of bentonite, gypsum, and lime was also exported. Other industrial minerals, such as cement, sand and gravel, and salt were consumed domestically. (See table 1.) The Central Bank of Nicaragua controlled the export of gold and silver. INMINE controlled most of the country's mineral exploration and production operations. Corporaciones Nacionales del Sector Publico's role included returning firms to former owners, selling them to private investors, and closing unprofitable companies.

Nicaragua's largest producer of gold was the El Limon property, operated by Minera de Occidente S.A., 95% of which is owned by Triton Mining Corp. (Canada), including two open pits with an adjacent cyanide processing plant and the underground Talavera mine, 4 kilometers (km) to the west. The mill was expanded to treat 1,000 metric tons per day (t/d), 500 to 600 t/d from the Talavera mine and the remainder from the open pits, an arrangement that enabled production of 36,839 ounces in 1996 and a projection of 50,000 ounces as early as 1997 (David Jenkins, Vice President Exploration, Triton Mining Corp., oral commun., 1997).

Canada-based Greenstone Resources Ltd. acquired a 75% interest in the La Libertad gold mine from the Nicaraguan

Government in 1994. The 120-square-kilometer concession surrounded a small open pit mine. Upon completion of nearly 6,000 meters of reverse-circulation drilling, Greenstone projected reserves of 9.3 million tons containing 2.12 grams per ton of gold at La Libertad concession's Cerro Mojon locality (Greenstone Resources Ltd. 1996, p. 9). By yearend 1996, major stockpiling began for heap leaching and a scheduled gold pour in April 1997 (Greenstone Resources Ltd., 1997, p. 8).

Cement was produced by the state-owned Compania Nacional Productora de Cemento. Empresa Nicaraguense de Minerales No Metalicos controlled several of the state's industrial mineral companies, including bentonite (Empresa Rotowa S.A.), gypsum (Yesera Centroamericana S.A.), and limestone (Empresa Piedra Cal S.A. and Empresa Cal El Pueblo). The Inversiones Mineras S.A. (IMISA) functioned as a holding company to promote and expand its affiliated production companies. IMISA incorporated Arenas S.A. (sand and gravel), Canteras S.A. (dimension stone), and Calizas S.A. (limestone). Salt was produced by private companies.

Nicaragua relied on imports for mineral fuel, especially crude from Venezuela. Esso Standard Oil S.A. Ltd. of Nicaragua supplied most of the country's petroleum products. Geothermal energy was an important energy resource, having an estimated potential of 1,200 megawatts (MW). The 70 MW Momotombo geothermal plant on the north shore of Lake Managua accounted for 20% of Nicaragua's installed capacity.

Mining in Nicaragua had great potential for expansion; the Government planned to revive the industry with financial and technical aid from abroad.

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Major Sources of Information

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 ${\bf TABLE~1} \\ {\bf NICARAGUA:~PRODUCTION~OF~MINERAL~COMMODITIES~1/~2/} \\$

(Metric tons unless otherwise specified)

Commodity 3/		1992	1993	1994	1995 e/	1996 e/
Bentonite		2,816	2,161	704 r/	800 r/	850
Cement		277,400	255,000	308,800	350,000	350,000
Gold, mine output, Au content	kilograms	1,017 r/	1,188 r/	1,241 r/	1,316 r/4/	1,500
Gypsum and anhydrite, crude		9,115	11,078	27,900 r/	12,500	12,500
Lime		2,003	3,630	2,280 r/	3,600	3,600
Petroleum refinery products	thousand 42-gallon barrels	4,810	4,630	4,700	4,800	4,800
Salt, marine e/		15,000	15,000	15,000	15,000	15,000
Sand and gravel	thousand tons	1,288	1,100	1,200 e/	1,300	1,350
Silver, mine output, Ag content	kilograms	2,240	2,237	2,235	2,400	2,500

e/ Estimated. r/ Revised.

TABLE 2 NICARAGUA: STRUCTURE OF THE INDUSTRY FOR 1996

(Thousand metric tons unless otherwise specified)

		Major operating companies		Annual
Commodity		and major equity ownership	Location of main facilities	capacity
Bentonite		Empresa Rotowa S.A. (Corporacion	South of Sebaco, Matagalpa Department	4
		Nicaraguense de Minas (INMINE),		
		(Government, 100%)		
Cement		Companía Nacional Productora de	San Rafael del Sur, Managua Department	700
		Cemento (Government, 100%)		
Gold-silver	kilograms	Minera de Occidente S.A. [Triton Mining Corp.	El Limon Mine, Leon Department	1,150
		(Canada) 95%]		
Do.	do.	Mining of Nicaragua S.A. (Greenstone	La Libertad Mine, Chontales Department	1,000
		Resources Ltd., 75%; Inversiones		
		Mineras S.A., - Grupo IMISA, 25%)		
Gypsum		Yesera Centroamericana S.A.	Santa Rosa del Penon, Leon Department	17
		(INMINE, 100%)		
Petroleum products	thousand 42-gallon barrels	Esso Standard Oil S.A. Ltd. (100%)	Managua, Managua Department	5,400

 $^{1/\}operatorname{Estimated}$ data are rounded to three significant digits.

 $^{2/\}operatorname{Includes}$ data available through May 1, 1997.

^{3/} In addition to the commodities listed, Nicaragua produced a variety of industrial minerals to meet domestic needs. Output of these materials was not reported, and information was inadequate to make reliable estimates.

 $^{4/\}mbox{ Reported figure}.$