

# THE MINERAL INDUSTRY OF

# GUATEMALA

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Guatemala was the third largest producer of antimony in Latin America after Bolivia and Mexico. It also produces gold, iron and steel, and lead; some industrial minerals, particularly marble; a variety of construction materials; and a low-gravity crude oil (table 1). Other minerals known to occur include copper, nickel, sulfur, and zinc; these were not being worked commercially. After 36 years of strife amounting to a civil war, a peace accord was signed between the Government and the revolutionary guerrilla organizations in late December 1996. This was expected to usher in an era of progress and prosperity (Mining Journal, 1997, p. 3). Seemingly, it would hold promise for mineral exploration and production.

In terms of purchasing power parity, the gross domestic product was projected to be about \$47.4 billion in 1999 with a growth rate of about 3.6% in that year (World Bank, 2000, p. 34). According to the Guatemalan Consumer Price Index, a previous inflation rate of 12% was brought down to between 8% and 10% (U.S. Embassy, Guatemala City, Guatemala, 1998a, p. 5-6).

As with the overall economy, the mineral industry was dominated by the private sector. The Ministry of Economy was in charge of approving U.S. projects submitted under the Agreement on U.S. Capital Investment Guarantees between Guatemala and the United States. The band of external tariffs was narrowed to a range of 5% to 20%. Guatemala formed a free-trade area with El Salvador and Honduras and has endeavored to streamline the registration process as an incentive to foreign investors.

Policy for the mineral sector was set by the Ministry of Energy and Mines, which also formulated policy for the petroleum and energy industries. Mining had been governed by Decree Law 69-85 of July 1985, modified by Decree law 125-85, and small-scale mining was covered by Decree law 55-90 of December 1990. Both laws were reformed by Congressional Decree law 41-93 of November 1993. Petroleum activity was covered by the hydrocarbon law (Decree law 109-83) and associated regulations, especially Government Edicts 1034-83 and 203-84. The newest mining law, promulgated in 1997, reduces the royalty payable to the central and municipal governments from a combined 6% to a combined 1%. Further, the newest law simplifies procedures for mining companies to gain access to the site after prospecting or exploitation rights have been granted. International investors are assured equal treatment under Guatemalan law, and no limits have been set on foreign ownership in the mining sector. Mining operations were similarly allowed duty-free imports.

The Government provides incentives for hydrocarbon investments by permitting a 100% deduction on all exploration and exploitation expenses.

Petroleum investors are eligible for tax-free imports of certain goods for 5 years, suspension of duty without bond on items to be reexported, and are allowed to maintain foreign currency deposits outside the country.

Environmental aspects of mining are regulated by the National Environmental Commission (CONAMA), which requires an environmental mitigation statement before exploration begins, and an environmental impact assessment before mining can begin. CONAMA responds promptly to these submittals and generally grants approval if all is in order (U.S. Embassy, Guatemala City, Guatemala, 1998b).

Mineral output in 1999 was estimated to parallel that of the previous 2 or 3 years. Antimony ore and concentrate were produced by Minas de Guatemala S.A. from several mines at Ixtahuacan, near the Department of Huehuetenango in the western region of the country. In addition to the recovery of 94% of the antimony values, flotation also enabled the recovery of a concentrate that assayed about 125 grams per metric ton (g/t) gold (Ministry of Energy and Mines, 1998). Output was exported mainly to Metaleurop Weser Blei GmbH in France. The company was considering the use of biotechnology for maximum recovery of gold values. Lower priced antimony sales by China forced Minas de Guatemala S.A. to suspend operations in mid-1998 pending improvement of antimony market prices, but the company restarted production in January 1999 at 50% of capacity (Minas de Guatemala S.A., written commun., 1998, 2000).

Industria Galvanizadora S.A. (INGASA), which was Guatemala's steel producer, was acquired in toto by Mexico's Grupo IMSA S.A. de C.V., INGASA remained Central America's largest galvanized steel producer, with a capacity of 80,000 metric tons in continuous galvanizing lines. Commercial iron ore deposits are known in eastern Guatemala in the border Departments of Chiquimula and Zapaca, as well as a more-remote area in the Department of El Quiche. Whether any of these deposits are being or had been mined is not known. The steel industry of Guatemala has been dependent on imported crude steel for further processing and fabrication.

Because foreign companies have focused their efforts on gold exploration in Guatemala, the Government had to point out that the country also has antimony, cobalt, copper, chromium, hematite [iron], lead, magnetite [iron], mercury, nickel, pyrolusite [manganese], silver, titanium, tungsten, and zinc. Beyond these minerals, the Government has listed barite, bentonite, limestone, kaolin, diatomite, feldspar, gypsum, jadeite, jasper, marble, mica, opal, perlite, pumice, rock salt, and talc as industrial minerals and lignite as an energy mineral, for which it is promoting exploration interest (U.S. Embassy, Guatemala City, Guatemala, 1998b).

The Canadian firms Intrepid Minerals Corp. and Chesbar Resources Inc. have secured an exploration license for nickel covering a 3,090-hectare (11.9-square-mile) property at Sechol in eastern Guatemala. Here, the lateritic deposits weathered from an ultrabasic parent rock are estimated to grade about 2% nickel, which is thought to be amenable to pressure acid leaching, a hydrometallurgical process that produces metallic nickel, thus bypassing the necessity for smelting (Northern Miner, 1999b).

Aquest Minerals Corporation (Canada), which was thought to be searching for Carlin-type gold deposits at its Annabella site in the western highlands of Guatemala, optioned the property for an extended drilling program. In its effort to determine Annabella's suitability for a multimillion-ounce mining operation (at about 31 metric tons per million troy ounces), the company encountered a 5-kilometer-long trend of gold and antimony mineralization. High-grade antimony lenses have been mined from time to time in the Annabella area since 1960 (Northern Miner, 1999a).

Mar-West Resources Ltd. (Canada), which had carried on a program of reverse-circulation drilling through the so-called sinter cap into a steeply dipping "mineralized corridor" on its Cerro Blanco gold property, was acquired by Vancouver's Glamis Gold Ltd. in August 1998. Continuing the Mar-West drilling program, Glamis calculated a total resource of 28.9 million metric tons at a grade of 1.32 g/t gold and 18.63 g/t silver; of the total resource, 54% was measured and 46% was indicated. Glamis will drill further in 2000 with the object of enlarging the total resource (Mining Journal, 2000).

The cement, ceramics, construction, and glass industries were the country's leading users of industrial minerals. Cement, clays, feldspar, gypsum, lime, and sand and gravel were produced for the local market. The capacity of Cementos Progreso S.A.'s San Miguel plant, which has been continually expanded to meet domestic demand, targeted 2.5 million metric tons per year in 1999. The company also started converting from fuel oil to coal to satisfy energy requirements in its grinding operations. A 10% growth in demand, which was projected for 1999, is thought to have been at least partially fulfilled (Global Cement Report, 1998).

A significant increase in Guatemalan mineral extraction during 1999 was registered by the petroleum industry. Although the Government's goal had been to achieve an output of 40,000 barrels per day (bbl/d) by 2000, according to Oil & Gas Journal (1997), the actual rate of production achieved during 1999 was about 24,200 bbl/d of crude, which represented a decrease of about 5% from that of 1998. Reserves of crude remained about even at 526 million barrels on January 1, 1999, and January 1, 2000. Natural gas reserves remained even at 109 billion cubic feet on the same dates (Oil & Gas Journal, 1999). Much of Guatemala's oil came from the Xan field in the Peten basin, where workovers were resulting in the production of new crude from old shut-in wells. Basic Petroleum International Ltd. had started a small refinery in the Peten area to produce asphalt,

diesel fuel, distillate fuel oil, kerosene, and naphtha.

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## Major Sources of Information

- Ministerio de Energia y Minas  
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## Major Publications

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Santiago, Chile: Anuario Estadístico de la Siderurgia y  
Minería del Hierro de América Latina, annual.
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annual.

TABLE 1  
GUATEMALA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1995	1996	1997 e/	1998 e/	1999 e/
<b>METALS</b>					
Antimony:					
Mine output, Sb content	665	880	880	440 r/	440
Trioxide	262	336	350	250	250
Gold e/ kilograms	30	30	100	100	50
Iron and steel:					
Iron ore, gross weight	1,680	4,889	3,300	3,500	3,000
Steel, semimanufactures e/	50,000	50,000	50,000	50,000	50,000
Lead metal, including secondary	8	5	10	10	10
<b>INDUSTRIAL MINERALS</b>					
Barite	1,152 r/	1,090 r/	1,200 r/	1,200 r/	1,250
Cement thousand tons	1,152	1,090	1,280	1,500	1,600
Clays:					
Bentonite	5,839	3,755	3,750	3,800	3,800
Kaolin	76	109	110	110	110
Unspecified	6,512	12,871	12,500	12,500	12,500
Feldspar	7,673	11,060	11,000	11,000	11,000
Gypsum	27,000	27,761	30,000	30,000	30,000
Lime e/	72,000	73,000	73,000	73,000	74,000
Pumice cubic meters	339,227	64	6,000	6,350	6,400
Salt e/	48,000	48,000	48,000	48,000	50,000
Stone, sand and gravel:					
Dolomite	25,587	16,202	15,000	15,000	1,600
Limestone thousand tons	1,407	1,280	1,500	1,500	1,600
Marble:					
Block cubic meters	3,108	1,260	2,800	2,800	2,800
Chips and pieces	13,028	16,568	17,000	17,000	17,500
Sand and gravel thousand tons	380	623	1,000	1,000	1,100
Silica sand	55,228	47,495	49,000	50,000	50,000
Stone, crushed e/ thousand tons	1,200	1,200	1,300	1,300	1,350
Talc	807	694	700	700	750
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Gas, natural, gross e/ thousand cubic meters	12,500	20,000	25,000	35,000	33,000
Petroleum:					
Crude thousand 42-gallon barrels	8,415	5,326	8,395 3/	9,308 r/ 3/	8,833 3/
Refinery products e/ do.	5,300	6,000	7,300 3/	7,300	7,300 3/

e/ Estimated. p/ Preliminary. r/ Revised.

1/ Estimated data are rounded to no more than three significant digits.

2/ Table includes data available through May 1, 2000.

3/ Reported figure.

TABLE 2  
GUATEMALA: STRUCTURE OF THE MINERAL INDUSTRY IN 1999

(Thousand metric tons unless otherwise specified)

Commodity	Major operating company and major equity owners	Location of Main facilities	Annual capacity
Antimony	Minas de Guatemala S.A. (private, 100%)	Los Lirios and Annabella Mines, Ixtahuacan, Huehuetenango Department	1.9
Cement	Cementos Progreso S.A. (Lambert Freres et Cie. 69.8%; other, 30.2%)	San Miguel plant, Sanarate, El Progreso Department, and La Pedrera plant, Guatemala City	1,800
Iron and steel (semimanufactures)	Grupo Industrial Minera Mexico S.A. de C.V. (IMSA) , 100%	Guatemala City	80
Nickel	Exploraciones y Explotaciones Mineras Izabal, S.A. [(Exmibal) (Inco, 70%; and Government, 30%)] 1/	Mine and processing plant near El Estor, Izabal Department (inactive)	9
<b>Petroleum:</b>			
Crude	thousand 42-gallon barrels Norcen Energy Resources Ltd. (Canada; public company)	Rubelsanto, West Chinaja fields, Alta Verapaz Department, and Caribe, Tierra Blanca and Xan fields, Peten Department	9,600
Products	do. Texas Petroleum Co. (Texaco Inc., 100%)	Refinery at Escuintla, Escuintla Department	6,200
Do.	do. Norcen Energy Resources Ltd. (Canada; public company)	Refinery near Santa Elena, El Naranjo, Peten Department	7,300

1/ Ownership equity change in 1991.