

THE MINERAL INDUSTRY OF

GUATEMALA

By David B. Doan

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

The gross domestic product was projected at about \$18 billion in 1990 constant dollars, with a growth rate of about 3.1% in 1996 that increased to 4.1% in 1997, the latest year for which data are available. According to the Guatemalan Consumer Price Index, a previous inflation rate of 12% has been brought down to between 8% and 10% (U.S. Embassy, Guatemala City, Guatemala, 1998a).

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 and established at 5% to 20%. Meanwhile, Guatemala formed a free trade area with El Salvador and Honduras. Guatemala welcomed foreign investors and has endeavored to streamline the registration process as an incentive.

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. 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 there are no limits on foreign ownership in the mining sector. Mining operations were similarly allowed duty-free imports.

The Government provided incentives for hydrocarbon investments by permitting a 100% deduction on all exploration and exploitation expenses. Petroleum investors were 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 were regulated by the National Environmental Commission (CONAMA), which required an environmental mitigation statement before exploration begins and an environmental impact assessment before mining begins. CONAMA responded promptly to these submittals and generally granted approval if all is in order (U.S. Embassy, Guatemala City, Guatemala, 1998b).

Mineral output in 1998 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 assaying 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 to suspend operations in mid-1998 pending improvement of antimony market prices.

Guatemala's steel producer Industria Galvanizadora SA (INGASA) was acquired in to by Mexico's Grupo Industrial Minera Mexico S.A. de CV for \$12.1 million. INGASA, Central America's largest galvanized steel producer, had a capacity of 80,000 metric tons (t) in continuous galvanizing lines. Its yearly sales were between \$25 million and \$30 million (Grupo IMSA SA de CV, July 17, 1997, Mexico IMSA acquires Guatemala steelmaker, press release, accessed July 18, 1997, at URL <http://biz.yahoo.com/news/mining.html>).

As with most of the Central American countries, exploration proceeded apace, primarily for gold, although the Government of Guatemala pointed out that the country has antimony, cobalt, copper, chromium, hematite [iron], lead, magnetite [iron], mercury, nickel, pyrolusite [manganese], silver, titanium, tungsten, and zinc, in addition to the gold on which foreign companies have focused their efforts. Beyond these minerals, the Government 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 Government auctioned several gold properties, including the Pato Poxte gold prospect, found by a United Nations exploration project, estimated to contain a resource of about 14 t (Mining Journal, 1996, p. 9). Mar-West Resources Ltd. (Canada), in an untitled company briefing on its Central American activities, noted that it applied for a total of 10 concessions in Guatemala targeting gold and copper porphyry deposits. Otherwise, Mar-West concentrated on its Cerro Blanco gold property, carrying on a program of reverse-circulation drilling through the so-called sinter cap into a steeply dipping "mineralized corridor" averaging 1.68 g/t but ranging up to grades of 11.17 g/t and 28.34 g/t in two samples (Mining Journal, 1998). Mar-West was acquired by Vancouver's Glamis Gold Ltd. in August.

Although serious harm by Hurricane Mitch to any exploration efforts in Guatemala was not reported, it may be too early to assess possible damage or weakening of bridges, roads, and other infrastructure.

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 was continually expanded to meet domestic demand, targeting 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 was projected for 1999 (Global Cement Report, 1998).

The most significant increase in Guatemalan mineral extraction during 1998 was registered by the petroleum industry, which achieved a total rate of production of 19,545 barrels per day (bbl/d) of crude. The Government's goal had been to achieve an output of 40,000 bbl/d by 2000 (Oil & Gas Journal, 1997). Although not yet close to 40,000 bbl/d, the rate of output in 1998 represented an increase of about 35% over that of 1997. Reserves of crude climbed from 200 million barrels (Mbbbl) on January 1, 1998 to 526 Mbbbl on January 1, 1999. Likewise, natural gas reserves jumped from 10 billion to 109 billion cubic feet during the same period (Oil & Gas Journal, 1998). 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. 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
Diagonal 17, entre 20 y 30 Calles, Zona 11 Guatemala City,
Guatemala
Telephone: (502) (2) 76-0679 or 76-3091
- Direccion General de Minería
Diagonal 17, 29-78, Zona 11
Apartado Postal 1421
Guatemala City, Guatemala
- Direccion General de Hidrocarburos
Diagonal 17, 29-78, Zona 11
Guatemala City, Guatemala
Telephone: (502) (2) 76-2044
Fax: (502) (2) 76-3175

Major Publications

- Instituto Latinoamericano Del Fierro y el Acero
(ILAFA), Santiago, Chile: Anuario Estadístico de la
Siderurgia y Minería del Hierro de America
Latina, annual.
- Ministerio de Energia y Minas, Guatemala: Informe
Estadístico de Energia y Minas, annual.
- Ministerio de Energia y Minas, Guatemala: Memoria de
Labores, annual.

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

(Metric tons unless otherwise specified)

Commodity	1994	1995	1996	1997 e/	1998 e/
METALS					
Antimony:					
Mine output, Sb content	296	665	880	880	880
Trioxide	105	262	336	350	350
Gold e/ kilograms	12	30	30	100 r/	100
Iron and steel:					
Iron ore, gross weight	3,000 e/	1,680	4,889	3,300	3,500
Steel, semimanufactures e/	49,790	50,000	50,000	50,000	50,000
Lead metal, including secondary	274	8	5	10	10
INDUSTRIAL MINERALS					
Barite	3,591	570	2,776	2,800	2,800
Cement thousand tons	1,200	1,152	1,090	1,280 r/	1,500 p/
Clays:					
Bentonite	4,410	5,839	3,755	3,750	3,800
Kaolin	--	76	109	110	110
Unspecified	1,600 e/	6,512	12,871	12,500	12,500
Feldspar	10,085	7,673	11,060	11,000	11,000
Gypsum	89,000	1,011,065	27,761	30,000	30,000
Lime e/	70,000	72,000	73,000	73,000	73,000
Pumice cubic meters	282,185	339,227	64	6,000	6,350
Salt e/	47,500	48,000	48,000	48,000	48,000
Stone, sand and gravel:					
Dolomite	25,413	25,587	16,202	15,000	15,000
Limestone thousand tons	1,146	1,407	1,280	1,500	1,500
Marble					
Block cubic meters	3,067	3,108	1,260	2,800	2,800
Chips and pieces	21,973	13,028	16,568	17,000	17,000
Sand and gravel thousand tons	697	380	623	1,000	1,000
Silica sand	55,521	55,228	47,495	49,000	50,000
Stone, crushed thousand tons	1,100	1,200	1,200	1,300	1,300
Talc	560	807	694	700	700
MINERAL FUELS AND RELATED MATERIALS					
Gas, natural, gross e/ thousand cubic meters	12,000	12,500	20,000	25,000	35,000
Petroleum:					
Crude thousand 42-gallon barrels	2,630	8,415	5,326	8,395 3/	9,600 3/
Refinery products do.	5,281 3/	5,300	6,000	7,300 3/	8,000

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

1/ Estimated data are rounded to three significant digits or less.

2/ Table includes data available through June 1, 1999.

3/ Reported figure.

TABLE 2
GUATEMALA: STRUCTURE OF THE MINERAL INDUSTRY IN 1998

(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 Anabella 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
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
Iron and steel (semimanufactures)	Grupo Industrial Minera Mexico S.A. de C.V. (IMSA) , 100%	Guatemala City	80
Petroleum:			
Crude	thousand 42-gallon barrels	Norcen Energy Resources Ltd. (Canada; public company)	9,600
Products	do.	Texas Petroleum Co. (Texaco Inc., 100%)	6,200
Do.	do.	Norcen Energy Resources Ltd. (Canada; public company)	7,300

1/ Ownership equity change in 1991.