

THE MINERAL INDUSTRY OF PARAGUAY

By Pablo Velasco

Paraguay's economy remained predominantly agricultural and dedicated mainly to livestock with a small minerals industry that accounted for less than 1% of its gross domestic product (GDP). In 1996, the Paraguayan GDP grew by 3.7% to an estimated \$8.3 billion,¹ compared with 4.0% in 1995.

Paraguay's total exports and imports were \$1.6 billion and \$2.4 billion, respectively. Paraguay had \$800 million in international reserves and a public external debt of about \$1.45 billion, equivalent to 17.5% of its GDP. The inflation increased in 1996 to 16% and the fiscal surplus remained at \$141 million. Paraguay is also a small open economy and is primarily oriented towards services (about 50% of its GDP is derived from agriculture and industry).

Paraguay's strategic geographic location within the MERCOSUR (Mercado Común del Sur or Southern Common Market), and its status as the region's lowest cost provider of electricity and labor, offer important opportunities for industries looking to enter the 200 million consumer MERCOSUR market in which the other participants are Argentina, Brazil, and Uruguay. The abundant hydroelectric power available makes the country attractive for various metallurgical industries.

Paraguay's continued integration into MERCOSUR also offers great potential for growth, but it is closely linked with the success of foreign investment promotion.

Paraguay will become a hub for transport, communication and services for MERCOSUR in South America with a river transport project (hidrovía), the ocean routes, and an air transport center. Some examples of foreign companies established in Paraguay in this kind of business for instance, is Rio Tinto Zinc Corp. (RTZ) of the United Kingdom which has formed a subsidiary in Paraguay to transport minerals by way of the river. RTZ has its offices in the capital city of Asunción under the name of Transbarga Co., which has an initial investment of \$28 million. Industrial zones are planned near the Brazilian border to take advantage of these opportunities. Country Commercial Guide Paraguay, established by recommendation of the Trade Promotion Committee (WWW.ST.AT-USA.GOV).

Mineral production in Paraguay was made up solely of industrial minerals. Mineral-related activities included manufacture of cement and lime, production of pig iron and steel, and petroleum refining all from imported raw materials. (See table 1.)

¹Where necessary, values have been converted from Paraguayan guaraníes (G) to U.S. dollars at the average market rate of G2,300.0=US\$1.00.

In Paraguay, a mineral concession contract was completed between Yamana Resources Inc. (Yamana) of Canada and the Government and promulgated into law. Through its Paraguayan negotiations, Yamana has had a positive impact upon the formulation of national mineral law and the consequent encouragement of exploration and development. After 2 years, Yamana's mineral concession law was passed by the Paraguayan Congress on June 4 and promulgated into law on June 20, 1996. The 150,000-hectare (ha) concession was divided into three equal exploration areas. Yamana has achieved a preeminent position in mineral exploration in Paraguay. This first grant of a mining contract is the underpinning for the new mining regime. Many companies are lining up to follow in Yamana's footsteps. The 150,000-ha concession contract gives the company exclusive mineral exploration and exploitation rights on three areas: Misiones, Paraguari, and Concepción. Field work at the Misiones gold prospect commenced in early July. Exploration results on Yamana's Misiones properties were not encouraging and the program has been terminated after a total of more than 2,000 samples had been collected and analyzed, including soil and rock samples, as well as samples gathered from 117 hand auger holes, 500 meters of back-hoe trenching and from 7 rotary drill holes totaling 338 meters. Exploration continues on the company's other two concessions, Concepción and Paraguari (Yamana Resources South America Mineral Properties World Wide Web at URL <http://www.yamana.com/samap.html>).

Toronto, Canada-based Plata Mining Ltd. reported that its Minera Guaraní Co. subsidiary has been granted a mining concession of over 122,000 ha in two prospects in Paraguay. The concession is one of the first to be granted by the Government and has a tenure of 25 years. Plata Mining was excited about the new concession in Paraguay and considers the country to be "a new frontier in Latin America" (Metals and Minerals Latin America A Metal Bulletin, 1997b). Cement is produced by Industria Nacional del Cemento, a Government-owned company, which operated two plants: the Puerto Vallemí cement plant in Concepción Department with a 400,000t per year (t/yr) capacity and the Itapucumi clinker plant in Villeta Department with a 600,000-t/yr capacity.

Aceros del Paraguay S.A. operated a steel plant at Villa Hayes, 20 kilometers (km) north of Asunción, as a joint Paraguayan-Brazilian venture estimated to have cost \$290 million, based on iron ore and coal imported from Brazil. Representatives of the steel industries of Argentina, Brazil, Paraguay, and Uruguay have set up Mercofer, MERCOSUR's steel council, designed to promote co-operation and free and fair

competition between companies in the four original countries of the MERCOSUR. (Metals and Minerals Latin America A Metal Bulletin, 1997a). MERCOSUR is nonetheless successfully becoming a free trade zone and will be extended in the near future to [Bolivia and Chile]. They are currently associate members of MERCOSUR (Metals and Minerals, Latin America, Metal Bulletin, 1997a).

The Government-owned company, *Petróleos Paraguayos S.A.*, produced refined petroleum products for domestic consumption at its Santa Elisa refinery in Asunción. Paraguay's oil needs continued to be met by imports from Algeria and Argentina, although dependency was reduced somewhat by the increased use of the country's large hydroelectric potential, estimated at 56,000 megawatts.

In 1996, electricity was supplied mainly from the hydroelectric plants at the Itaipú Dam complex, a joint Brazilian-Paraguayan hydroelectric powerplant on the Paraná River; and the Yacyretá-Apipé Dam, a joint Argentinean-Paraguayan hydroelectric project 320 km downstream from Itaipú.

In the near future, the Corpus Dam, which will be privatized, will also provide hydroelectric power. The transportation system in Paraguay comprised 28,300 km of highways, 970 km of railroads, and 3,100 km of inland waterways. Argentina, Bolivia, Brazil, Paraguay, and Uruguay moved closer to the integration of river transportation with the inauguration of two locks in the Tiete River in Brazil. After completion of this waterway, the cost per ton of transportation of Paraguayan minerals and goods reportedly will decrease from the current

\$29 to about \$10.

References Cited

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———1997b, Plata Mining Ltd. follows Yamana Resources into virgin Paraguay: Metal Bulletin, v. 2, no.1 January 15, 1997, p. 4.
———1997c, Bolivia and Chile became associate members of MERCOSUR In 1996: Metal Bulletin, v. 2, no. 1, January 15, 1997, p. 2.

Major Sources of Information

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Asunción, Paraguay
Palma 1084 y Hernandéras
Asunción, Paraguay
Dirección General de Recursos Minerales (DGRM)
Oliva y Alberdi
Asunción, Paraguay

Major Publications

- Administración Nacional de Combustibles, Alcohol y Portland,
Asunción, Paraguay: Memoria y Balance, annual report.
Banco Central del Paraguay, Asunción, Paraguay: Boletín Estadístico, annual report.
Central Intelligence Agency, Washington, DC: The World Factbook, annual.

TABLE 1
PARAGUAY: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1992	1993	1994	1995	1996
Cement, hydraulic thousand tons	326	490 3/	570 3/	580 3/	600
Clays:					
Kaolin	74,000	74,000	74,000	66,300 3/	74,000
Other thousand tons	1,900	1,900	1,900	1,900	1,900
Gypsum	4,500	4,500	4,500	4,500	4,500
Iron and steel:					
Pig iron	92,136 r/ 3/	81,233 r/ 3/	90,000 r/ 3/	103,000 3/	100,000
Steel, crude	86,000 3/	86,000 3/	85,000 r/ 3/	96,000 3/	95,000
Lime	100,000	100,000	100,000	100,000	100,000
Petroleum, refinery products:					
Liquefied petroleum gas thousand 42-gallon barrels	100	100	100	100	100
Gasoline do.	560	560	600	600	600
Jet fuel do.	160	160	200	200	200
Kerosene do.	40	40	50	50	50
Distillate fuel oil do.	740	740	800	800	800
Lubricants:					
Oil do.	20	20	20	20	20
Grease do.	5	5	5	5	5
Residual fuel oil do.	350	350	350	350	350
Refinery fuel and losses do.	25	25	25	25	25
Total do.	2,000	2,000	2,150	2,150	2,150
Pigments, mineral,natural, ocher	330	330	330	300	300
Sand, including glass sand thousand tons	2,000	2,000	2,000	7,000 3/	7,000
Stone:					
Dimension do.	70	70	70	70	70
Crushed and broken:					
Limestone (cement and lime) do.	600	600	600	600	600
Other do.	2,000	2,000	2,000	2,000	2,000
Marble	750	750	750	750	750
Talc, soapstone, pyrophyllite		200	200	200	200

r/ Revised.

1/ Includes data available through April 1997.

2/ In addition to commodities listed, construction materials (clays, gravel, miscellaneous rock, sand, and weathered tuffs) were presumably produced. Available information is inadequate to make reliable estimates of output levels of these commodities.

3/ Reported figure.