

2012 Minerals Yearbook

PARAGUAY AND URUGUAY

THE MINERAL INDUSTRIES OF PARAGUAY AND URUGUAY

By Alfredo C. Gurmendi

PARAGUAY

Paraguay's mineral sector included cement, iron and steel, and petroleum derivatives. In 2012, Paraguay's considerable industrial mineral resources included clays, dolomite, gypsum, kaolin, limestone, magnesium, marble, and semiprecious stones. Mineral exploration companies were exploring for deposits of bauxite, diamond, iron, natural gas, niobium, petroleum, rare earths, titanium, and uranium. The Government was planning to build a biogas plant between the cities of Concepcion and San Pedro (table 1; Webber, 2010b; Uranium Energy Corp., 2012, 2013; Petróleos Paraguayos, 2013).

Paraguay's gross domestic product (GDP) decreased to \$24.6 billion in 2012 from \$25.6 billion in 2011. The leading sectors that contributed to Paraguay's GDP included services (about 46%), agriculture (about 14%), electricity (about 12%), and industry (about 11%). Of all economic sectors, the mining sector contributed the least to the country's economy, accounting for only 0.1% of the GDP (Banco Central del Paraguay, 2013, p. 15, 36; Ministerio de Hacienda, 2013, p. 23).

Paraguay's Parana River provides hydroelectric power that is used extensively in the energy and mineral sectors of four neighboring member countries of the Mercado Común del Sur (MERCOSUR)—Argentina, Brazil, Paraguay, and Uruguay. Venezuela was admitted as a full member on July 31, 2012. Venezuela would be, however, adapted to MERCOSUR's regulations in 4 years (2016). The Government-owned Administración Nacional de Electricidad (ANDE) was engaged in the generation, transmission, and distribution of electric power. ANDE operated three hydroelectric plants. The first was the Itaipu Binacional plant, which was a joint project with Brazil; the installed capacity of the plant was 14,000 megawatts (MW), and one-half of the electricity generated was transmitted to Paraguay. The second was the Yacyreta Binacional plant, which was a joint project with Argentina; the plant had an installed capacity of 3,200 MW, and one-half of the electricity generated was transmitted to Paraguay. The third was Paraguay's 200-MW Acaray hydroelectric plant. The country planned to build an additional hydroelectric plant, the Corpus Dam, along the Parana River. In December 2011, ANDE's transmission system consisted of seven 220-kilovolt lines extending for almost 5,520 kilometers (km) to distribute power throughout the country. In 2012, hydroelectric power generation reached an all-time high despite a 2-month drought; power generation per dam was as follows: Itaipu generated 98,287.1 gigawatt-hours (GWh), Yacyreta generated 20,091.2 GWh, and Acaray generated 7,634.7 GWh. In 2012, Paraguay exported 92% and consumed 8% of the hydroelectricity it produced. Paraguay's fuel imports decreased to almost \$1.4 billion in 2012 from almost \$1.5 billion in 2011,

or by about 6.7%, and consisted of about 25,800 barrels per day (bbl/d) of petroleum (Administración Nacional de Electricidad, 2012, 2013; U.S. Energy Information Administration, 2013).

Paraguay's expected legal reforms would continue to treat national and foreign investors on equal terms and could help improve the country's economy. Paraguay's foreign direct investment (FDI) inflows decreased to \$239 million in 2012 from a revised \$483 million in 2011. This investment, mostly from the United States, went mainly to the petroleum processing sector (40%), the industrial sector (35%), the financial sector (20%), and the transportation sector (5%). In 2012, the country's exports amounted to \$5.1 billion and included such products as cement, clays, and electricity. Paraguay's leading export partners were Uruguay (15%), Brazil (11.4%), Argentina (10.2%), Chile (8.3%), Russia (6.6%), the Netherlands (5.4%), and Germany (4.3%). Paraguay's imports amounted to \$10.7 billion worth of chemicals, electrical machinery and equipment, fertilizers, manufactured goods, and petroleum products. Paraguay's leading import partners were Brazil (27.5%), China (16.9%), the United States (15%), Argentina (14.8%), and Chile (4.4%) (Banco Central del Paraguay, 2013, p. 5; Economic Commission for Latin America and the Caribbean, 2013a, p. 21, 59; 2013b, p. 17; U.S. Central Intelligence Agency, 2013).

Production

In 2012, Paraguay produced mostly cement, gypsum, petroleum derivatives, pig iron, and crude steel. Data on mineral commodities produced are in table 1.

Structure of the Mineral Industry

The cement and petroleum industries of Paraguay were owned by the Government (table 2). The Dirección de Recursos Minerales, which is under the Ministerio de Obras Públicas y Comunicaciones (MOPC) (Ministry of Industry and Commerce), assists foreign private companies in navigating the process of obtaining approvals of permits and concessions to conduct hydrocarbon and mineral prospecting, exploration, development, and operating activities in the country. The Paraguayan Strategic Economic and Social Plan 2011–15 describes the Government's policies related to economic growth and transparency and the investment climate. Paraguay has abundant hydroelectric generating capacity; however, expanded demand could require additional investments in the energy sector. In 2011, ANDE was negotiating with Telemenia S.A. of Israel to form a joint venture to be named ANDE International S.A., which would provide investment to built facilities to produce and provide hydroelectric power to Paraguay's neighboring countries. In 2012, ANDE's new administration ended the negotiations with Telemenia and no agreement was reached.

The Inter-American Development Bank (IDB) provided a loan (IDB 1835/OC-PR) of \$69.5 million as technical cooperation to modernize ANDE's electricity distribution system. In September 2012, \$52 million had been disbursed by the IDB (Administración Nacional de Electricidad, 2012, p. 3; Ministerio de Industria y Comercio, 2012; Business News Americas, 2013).

Commodity Review

Metals

Aluminum.—For several years, Rio Tinto Alcan Inc. of Canada had been investigating building an aluminum smelter in Paraguay. In 2011, Rio Tinto updated previously announced plans to invest between \$3.5 billion and \$4 billion to build a smelter with the capacity to produce 674,000 metric tons per year (t/yr) of aluminum; the smelter was planned to start operating in 2016. In 2009, Rio Tinto Alcan and ANDE signed a Letter of Intention for negotiations regarding a power purchase agreement for the planned aluminum smelter (Rio Tinto Alcan, 2009; Webber, 2010a; Thomson Reuters, 2011).

Gold.—Paraguay does not have a history of gold production; however, Latin American Minerals Inc. (LAMI) of Canada had recently been exploring for gold within two prospects—the Paso Yobai gold project, which is located about 160 km east of Asunción and southwest of the town of Paso Yobai in the Department of Guaira, and the Tacuru gold target, which is located 3.5 km northeast of LAMI's Independencia Mine. The bulk sampling plant at the Tacuru Mine, which was planned to be inaugurated in February 2012, would include a 5-metric-ton-per-hour concentrator facility and a pilot plant to produce gold dore ingots by August 2012; the ingots would be shipped to the Johnson Matthey Ltd. gold refinery in Brampton, Ontario, Canada (Latin American Minerals Inc., 2013b).

Iron and Steel.—In 2012, Paraguay produced 44,000 metric tons (t) of crude steel compared with 30,000 t in 2011. This increase was owing to the end of a 6-month country-wide labor strike, and the restoration of production by Paraguayan Center for Metallurgical Industries (Cime) at the local steelmaker Aceros del Paraguay S.A. (Acepar). Acepar's production capacity was 12,500 metric tons per month of steel. In 2012, Paraguay produced 68,000 t of pig iron compared with a revised 45,000 t in 2011 (World Steel Association, 2013a, b).

Titanium.—CIC Resources Inc. of Canada announced the discovery of an ilmenite deposit located in the Alto Parana and Canindeyu Provinces of eastern Paraguay close to Brazil. CIC's Parana deposit covers an area of 1,850 square kilometers (km²) and contains estimated resources of 22 billion metric tons of ilmenite ore. On October 10, 2011, CIC completed the construction of a pilot plant to produce a sample of 110 t of ilmenite concentrate that would be tested by Mintek Co. of South Africa as part of a feasibility study (Watts, 2011).

Industrial Minerals

Cement.—The Dirección de Recursos Minerales reported that the country produced 650,000 t of cement in both 2010 and 2011 and estimated that the same amount would be produced in 2012. On November 18, the Inter-American Development Bank

approved a loan of about \$51.8 million for the private company Yguazú Cementos S.A. (YCSA) to construct a cement plant at Yguazu Tupi in Villa Hayes. The plant would have a capacity to produce 400,000 t/yr of cement and was expected to satisfy about 40% of the country's cement demand [Editorial AZETA S. A. (ABC Color), 2011; Yguazú Cementos S.A., 2011; Ministerio de Industria y Comercio, 2012].

Diamond.—LAMI was also exploring for diamond at its Itapoty diamond property, which is located about 120 km north of the Paso Yobai gold project. Geologically, the project is part of the Alto Paranaíba igneous province, which extends south from Brazil. Stream sediment sampling on the Itapoty property identified samples with kimberlite indicator minerals (KIMs), and diamond. The distribution of the diamond and the KIMs suggests multiple local sources. Geologic and geophysical evidence suggest emplacement of diatremes and dikes, which could be likely sources for the diamond recovered from the sampling process. On July 5, 2011, LAMI and Olivut Resources Ltd. of Canada entered into an option agreement for all the Itapoty diamond concessions and claims located in the Paraguayan Alto Paranaíba zone. The agreement granted Olivut the right to earn 50% of the project by investing about \$990,000 in exploration and property maintenance during 2011 and 2013 with a minimum investment of about \$247,500 in the first year (Latin American Minerals Inc., 2013a).

Mineral Fuels and Related Materials

Petroleum.—Government-owned Petróleos Paraguayos (Petropar) had a monopoly on all sales and imports of crude oil and petroleum products in Paraguay. Petropar operated the 8,000-bbl/d Villa Elisa facility, which was the country's only refinery. Paraguay consumed 30,000 bbl/d in 2012. Venezuela was considering building a heavy crude oil refinery in Paraguay to produce 20,000 bbl/d of gasoil. If the project comes to fruition, the refinery could help satisfy the country's crude oil demand for the foreseeable future. In 2012, the Paraguayan Government announced that crude oil had been discovered in the western Chaco region as of 2006, and that exploration for crude oil in the Emilia prospect, which is located within the Boqueron field, would continue. The Emilia prospect was considered the country's most prospective project, and its potential recoverable resource was estimated to be 40 million barrels of crude oil (Petróleos Paraguayos, 2013; U.S. Energy Information Administration, 2013).

Uranium.—Uranium Energy Corp. (UEC) (a U.S.-based uranium company located in Corpus Christi, Texas) acquired Cue Resources Ltd. of Canada on March 30, 2012. UEC held 100% interest in a 230,650-hectare uranium exploration property located in southeastern Paraguay known as the Yuty In Situ Recovery uranium project. Yuty's resource as of 2012 was 4,043 t of U₃O₈ measured plus indicated, and 1,010 t of U₃O₈ inferred. Given the proximity of the Yuty project to UEC's Oviedo uranium project, the transaction made possible clear operational synergies and allowed UEC to implement its uranium production strategy (Uranium Energy Corp., 2012).

On October 15, UEC filed a National Instrument 43-101 technical report disclosing an exploration target at its Oviedo

uranium project of 10,400 to 25,400 t (reported as 23 million to 56 million pounds) of U_3O_8 in ore grading from 0.040% to 0.052% U_3O_8 . The technical report was created from the results of UEC's 10,000-meter drilling program on its Oviedo project and the compilation of historical and other geologic data. UEC continued with delineation of the radon anomalies that indicate the potential for shallow uranium mineralization along the Parana Basin margins. Given the uranium resources at Yuty and Oviedo, which have geologic characteristics quite similar to those in southern Texas, both projects have the potential to be large-scale in situ-recovery (ISR)-amenable uranium producers (Uranium Energy Corp., 2013).

Outlook

Paraguay's mineral industry accounted for less than 1% of its GDP; however, its economy benefited from a continuing demand for electricity. In the cement industry, production was expected to increase to meet 75% of Paraguay's future cement demand, and the remaining demand was likely to continue to be met by increased domestic output and decreased imports. Mineral exploration by foreign companies is ongoing throughout the country. LAMI was expected to continue exploring for new gold targets. If the ongoing exploration programs at current uranium and titanium prospects yield positive results, more exploration and investment would likely follow. Likewise, Rio Tinto Alcan's aluminum smelter would be a significant investment. Exploration for mineral fuels was set to continue in 2013 and beyond because of the positive exploration results in the Chaco region.

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URUGUAY

Uruguay's GDP growth rate was 3.9% in 2012 compared with a revised 6.5% in 2011. The GDP in 2012 as reported by the Banco Central del Uruguay was \$49.2 billion compared with \$46.7 billion in 2011 as reported by Uruguay XXI, and the rate of inflation was 5.7% in 2012 compared with 6.9% in 2011. Uruguay's foreign direct investment (FDI) inflows increased to \$2.7 billion in 2012 from \$2.5 billion in 2011, which was an increase of 8%. Uruguay had a population of about 3.3 million in 2012. The total labor force was 1.7 million, of which services accounted for 73%; industry, 14%; and agriculture, 13%. In 2012, the mining and mineral processing industries

contributed 0.8% of Uruguay's GDP and employed almost 1% (2,400) of the industry total of 238,000 (Banco Central del Uruguay, 2013, p. 3; Ministerio de Economía y Finanzas, 2013; Uruguay XXI, 2013, p. 6, 16; U.S. Central Intelligence Agency, 2013).

Minerals in the National Economy

Uruguay's leading mineral products in 2012 included, in order of tonnage, sandstone, limestone, cement, clays, iron ore, crude steel, and gold. Uruguay continued to attract interest from mining companies searching for base metals, gold, and iron ore (Zamin Ferrous Ltd., 2011; Gladiator Resources Ltd., 2013a, b; Orosur Mining Inc., 2013b; Uruguay XXI, 2013, p. 12).

Government Policies and Programs

Minerals (metals, industrial minerals, and fuels) and sources of renewable energy are owned by the Government under an arrangement known as the Reglamento General de Minería, which regulates the mining activity in the country. The Mining Law No. 15.242 of January 8, 1982, which was revised in March 2010, and the Energy Law No. 16.517 of July 22, 1994, govern the mineral industry of Uruguay. The Ministerio de Industria, Energía y Minería (MIEM) implements these laws. MIEM is the principal Government mineral-resource agency, and it is involved in policymaking, drafting of budgets and regulations, and technical development of the mineral sector. The Administración Nacional de Combustibles, Alcohole y Portland (ANCAP) is a Government-owned holding company created by law No. 8764 of October 15, 1931. Among its other duties, the ANCAP is involved in the production of alcoholic beverages, petroleum derivatives, and portland cement. The Ministerio de Economía y Finanzas is involved in the promotion and protection of investments under law No. 16.906 of January 7, 1998. Decree No. 455/007 of May 3, 2007, includes objective and measurable criteria for the granting of tax exemptions. Decree No. 2/2012 of February 1, 2012, is an introduction of quality criteria in promotions (Administración Nacional de Combustibles, Alcohole y Portland, 2013a, p. 1–2; 2013b; Ministerio de Economía y Finanzas, 2013; Ministerio de Industria, Energía y Minería, 2013; Orosur Mining Inc., 2013b; Uruguay XXI, 2013, p. 25).

Production

Data on mineral production are in table 1.

Structure of the Mineral Industry

The mineral industry of Uruguay was mostly owned by Uruguayan Government-owned firms and privately owned companies (table 2).

Mineral Trade

Uruguay's exports amounted to \$9.8 billion in 2012 compared with a revised \$9.2 billion in 2011 and included such mineral commodities as dolomite, gold, and other, nonmineral, commodities. The country's export partners included Brazil (19.3%), China (14.2%), Argentina (6.8%), Germany (6%),

Venezuela (4.3%), and others (49.4%). Imports of such goods as chemicals, machinery, petroleum and derivatives, and vehicles were valued at \$11.6 billion in 2012, compared with a revised \$10.7 billion in 2011. The country's import partners included Brazil (16.3%), China (15%), Argentina (13.4%), the United States (9.4%), Paraguay (7.1%), Venezuela (6.7%), and others (32.1%). Uruguay had no proven crude oil or natural gas reserves but it does have substantial hydroelectric capacity (Banco Central del Uruguay, 2013, p. 5; Economic Commission for Latin America and the Caribbean, 2013a, p. 23; 2013b, p. 17; Uruguay XXI, 2013, p. 11; U.S. Central Intelligence Agency, 2013).

Commodity Review

Metals

Gold.—Orosur Mining Inc. (OMI) of Canada operated the San Gregorio gold mine in Uruguay. San Gregorio produced 1,725 kilograms (kg) (55,458 troy ounces) of gold in 2012 compared with a revised 1,736 kg (55,817 troy ounces) in 2011. OMI's 5-year mine plan was to produce between 1,710 and 2,180 kilograms per year (55,000 and 70,000 troy ounces per year) of gold from the San Gregorio Mine; its three main pits are the Arenal, the San Gregorio, and the Santa Teresa. OMI's exploration program was quite active at the Mahoma vein deposit in southern Uruguay. In 2012, Mahoma's resources included 150,000 t grading 10.2 grams per metric ton (g/t) gold for the open pit portion and 410,000 t grading 7.8 g/t gold for the underground portion (Orosur Mining Inc., 2013a).

Iron and Steel.—In 2012, Uruguay produced 139,000 t of crude steel compared with 80,000 t in 2011 (table 1; World Steel Association, 2013).

Iron Ore.—Gladiator Resources Ltd. (Gladiator) of Australia, which was a company focused on mineral exploration in Uruguay, entered into an option and joint-venture agreement with OMI in 2010. Under the agreement, Gladiator could earn up to an 80% interest in the iron ore, manganese ore, and base metals in OMI's project area at the Isla Cristalina iron belt by completing a feasibility study by December 2015. Gladiator's recent drilling results had confirmed that a high-grade magnetite concentrate could be produced in Uruguay, and Gladiator had successfully lodged an application for a prospecting permit for a mineral reserve recently released by the Uruguayan Government. Depending on the results of a bankable feasibility study, Gladiator could begin production of 400,000 t/yr of iron ore by early 2016. As part of the project, two blast furnaces with a capacity of 200,000 t/yr each were planned to be built near the Isla Cristalina iron ore belt in northern Uruguay (Gladiator Resources Ltd., 2013a, b).

Zamin Ferrous Ltd. of Switzerland was a mining and trading company involved in iron ore development and exploration projects in Brazil and Uruguay. Zamin Ferrous's iron-ore project feasibility study for an 18-million-metric-ton-per-year pellet feed project had not been approved by the Government owing to increased resistance from the farming and tourism sectors. The opposition was based on concerns regarding the potential effects of open pit mining and a proposed 215-km slurry pipeline to transport the iron ore to a port to be built on the coast.

Zamin's main development project, the Valentines project, had 980 million metric tons of iron ore resources (MercoPress Co., 2011; Zamin Ferrous Ltd., 2011).

Industrial Minerals

Cement.—Cementos Artigas S.A. (CASA) was owned by Cía. Uruguaya de Cemento Portland S.A. (Cemolins International SL of Spain, 50%, and Votorantim Andina S.A. of Chile, 50%). CASA was the only cement producer in Uruguay; it had a production capacity of 620,000 t/yr. In 2012, CASA produced at full capacity (table 1; Cementos Artigas S.A., 2013).

Mineral Fuels and Other Sources of Energy

Natural Gas.—According to the U.S. Energy Information Administration, Uruguay imported 85 million cubic meters (3 billion cubic feet) of natural gas in 2011 (the latest year for which data were available). Two pipelines supplied Uruguay with natural gas from Argentina. The CR. Federico Slinger or Gasoducto del Litoral runs 20 km from Colon, Argentina, to Paysandu, Uruguay. The pipeline was constructed and operated by ANCAP, and it had an operating capacity of 138,800 cubic meters per day (4.9 million cubic feet per day). The Gasoducto Cruz del Sur (GCDS), which was operated by a consortium led by British Gas plc. of the United Kingdom, extends 210 km from Argentina's natural gas grid to Montevideo and had an operating capacity of 5.1 million cubic meters per day (180 million cubic feet per day). The GCDS project also held a concession for a possible pipeline extension of 870 km to Porto Alegre, Brazil. Argentina continued to consider plans for the construction of a liquefied natural gas regasification plant in Uruguay to supply both countries with natural gas (Administración Nacional de Combustibles, Alcohol y Portland, 2013a; U.S. Energy Information Administration, 2013).

Petroleum.—In 2012, Uruguay imported about 38,000 bbl/d, which was about the same amount imported in 2011. In Uruguay, petroleum products were the leading energy source and represented about 60% of the country's energy consumption. Uruguay relied completely on crude oil imports, mostly from Venezuela, of 54,100 bbl/d to feed its 50,000-bbl/d-capacity refinery. In 2012, ANCAP launched Uruguay's offshore licensing round, offering 11 blocks for crude oil and natural gas exploration that covered areas ranging in size from 4,000 to 8,000 km² each, with water depths ranging from 50 to 1,450 m. According to ANCAP, investment in eight offshore blocks awarded through Uruguay's latest tender licenses was expected to exceed \$1.5 billion. BP Group of the United Kingdom was awarded three licenses in the Ronda Uruguay II tender, and France's Total S.A. and Ireland's Tullow Oil plc each received one block. ANCAP was to hold interests of between 22% and 35% in each block. The diversification of Uruguay's energy sources could reduce its petroleum dependency to 38% by 2015 (Fowler, 2012; Ministerio de Industria, Energía y Minería, 2013; U.S. Energy Information Administration, 2013).

A consortium composed of Argentina's YPF (40%), Brazil's Petrobrás Uruguay (40%), and Portugal's GALP Energia, SGPS, S.A. (20%) won the exploration rights for two offshore blocks in the Punta del Este basin. The consortium had an initial 4-year period to conduct seismic surveys of the area and identify production prospects. The consortium was currently (2012) obligated to complete only seismic work, and drilling was not expected to begin until 2014. ANCAP also planned to offer 15 additional offshore exploration blocks in its Uruguay Round II tender (Fowler, 2012; Administración Nacional de Combustibles, Alcohol y Portland, 2013b).

Renewable Energy.—ANCAP planned to increase energy production from biomass. ANCAP's goal was to produce energy based on petroleum (54%), hydroelectricity (25%), wood (14%), biomass and natural gas (3% each), and coal (1%) (Administración Nacional de Combustibles, Alcohol y Portland, 2013a, p. 2).

Outlook

To encourage foreign investment, the Government of Uruguay has set no restrictions on the transfer of profits or the repatriation of capital and has established policies to promote and protect investments, including tax exemptions for productive enterprises. Uruguay is expected to attract large foreign investments in the coming years (2014 to 2017) owing to its favorable business climate, trade openness, macroeconomic stability, political and social stability, strategic location, and modern infrastructure. In addition to foreign investment, Uruguay's future prosperity will also be enhanced by the development of identified onshore mineral resources and potential offshore hydrocarbons, as well as continued high prices for its exports, a strong currency, low international interest rates, economic stability within the MERCOSUR, and reliable supplies of imported natural gas and petroleum, particularly from MERCOSUR's new country member, Venezuela (Ministerio de Economía y Finanzas, 2013; Ministerio de Industria, Energía y Minería, 2013; Uruguay XXI, 2013, 12).

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TABLE 1
PARAGUAY AND URUGUAY: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Country and commodity		2008	2009	2010	2011	2012 ^e
PARAGUAY ²						
Cement, hydraulic	thousand metric tons	600	600	650	650	650
Gypsum ^c		4,500	4,500	4,400 ³	4,500	4,500
Iron and steel:						
Pig iron		145,420	145,500 ³	150,000 ^e	45,000 ^{r,4}	68,000 ^{3,4}
Semimanufactures ^c		45,120 ³	45,200	45,200	45,200	45,200
Steel, crude		129,600	130,000	59,000	30,000 ⁴	44,000 ^{3,4}
Petroleum, refinery products ^c	thousand 42-gallon barrels	2,660	2,660	2,660	2,660	2,660
Stone:						
Crushed and broken	do.	13,500	13,500	13,500	14,795	14,800
URUGUAY ^{2,5}						
Cement, hydraulic ⁶	thousand metric tons	620	620	620	620	620
Clays		64,000	64,000	64,000	70,000	70,000
Gold ⁷	kilograms	2,182	1,690	1,740 ^r	1,736 ^r	1,725 ³
Iron and steel, steel, crude ⁴		86,000	57,000	65,000	80,000	139,000
Petroleum, refinery products ⁸	thousand 42-gallon barrels	15,300	15,300	15,300	15,300	15,300

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. do. Ditto.

¹Table includes data available through April 30, 2013.

²In addition to the commodities listed, construction materials (clays, limestone, marble, miscellaneous rock, sand, and weathered tuffs) were presumably produced, but available information is inadequate to make reliable estimates of output.

³Reported figure.

⁴Source: Worldsteel Association, Iron and steel production 2011–12.

⁵In addition to the commodities listed, gemstones, iron ore, and stone were presumably produced, but available information is inadequate to make reliable estimates of output.

⁶Source: Dirección Nacional de Minería y Geología (Minerals Questionnaire 2011–12) and Cementos Artigas S.A., April 2013.

⁷Source: Orosur Mining Inc. Data are for the fiscal year, which ends on March 31.

⁸Source: Administración Nacional de Combustible, Alcohol y Portland (ANCAP). Numbers were converted into 42-gallon barrels (bbl) from thousand cubic meters using the U.S. Energy Information Administration conversion factor of 1 cubic meter = 6.289812 bbl.

TABLE 2
PARAGUAY AND URUGUAY: STRUCTURE OF THE MINERAL INDUSTRIES IN 2012

(Thousand metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity ^e
PARAGUAY				
Cement		Industria Nacional del Cemento (INC), 100%	Plantas Vallemi y Villeta	730
Petroleum, refinery products	thousand 42-gallon barrels	Petróleos Paraguayos (Petropar)	Villa Elisa refinery at Villa Elisa municipality	2,700
Steel		Consorcio Siderúrgico de Paraguay (Cerro Lorito, 67%, and Cooperativa de Trabajadores de ACEPAR, 33%)	ACEPAR steel mill at Villa Hayes	150
URUGUAY				
Cement		Cementos Artigas S.A. (Cia. Uruguay de Cemento Portland S.A., 100%)	Mine and clinker plant in Lavalleja Department	620
Gold	kilograms	Uruguay Mineral Exploration Inc. (UME), 100%	Minas de Corrales Gold in Rivera Department	3,000
Do.	do.	Orosur Mining Inc. of Canada	Mina de San Gregorio in Rivera Department	2,000
Iron and steel	thousand metric tons	Gerdau Laísa S.A.	Gerdau Laísa S.A.	70
Petroleum, refinery products	thousand 42-gallon barrels	Administración Nacional de Combustibles, Alcohol, y Portland (ANCAP)	La Teja oil refinery near Montevideo	18,000

^eEstimated. Do., do. Ditto.