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The Mineral Industries of Paraguay and Uruguay

By Alfredo C. Gurmendi

PARAGUAY

In 2011, Paraguay's mineral industries included cement, iron and steel, and petroleum derivatives. Paraguay has considerable industrial mineral resources, such as clays, dolomite, gypsum, kaolin, limestone, magnesium, marble, and semiprecious stones. The country's emerging exploration opportunities included potential mineral deposits, such as diamond, iron and bauxite, natural gas, niobium, petroleum, rare earths, titanium, and uranium. The Government was also planning to install a biogas plant between Concepcion and San Pedro (Webber, 2010b; Melman, 2012; Petróleos Paraguayos, 2012).

Paraguay's gross domestic product (GDP) was $24.0 billion in 2011 compared with a revised $18.3 billion in 2010, which was an increase of more than 31.1%. The leading sectors that contributed to Paraguay's GDP were services (41.4%), agriculture (18.3%), electricity (12.5%), and industry (10.7%). 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, 2012b, p. 2; 2012c, p. 29; Ministerio de Hacienda, 2012, p. 25).

The country's Parana River is an excellent source of hydroelectric power. The Government-owned Administración Nacional de Electricidad (ANDE) was a major producer and exporter of hydroelectric power from three hydroelectric dams—the Central Acaray, which was managed by ANDE; the Itaipu Binacional, which was a joint project with Brazil; and the Yacyreta Binacional, which was a joint project with Argentina. Together, these dams had about 17,000 megawatts (MW) of electrical generating capacity in 2011, of which Paraguay exported 92% and consumed 8%. An additional dam, the Corpus Dam, was being considered for construction along the Parana River in the foreseeable future. In 2011, the cost of Paraguay's mineral fuel imports increased to almost $1.5 billion from almost $1.1 billion in 2010, or by almost 36.4%. The country relied entirely on crude oil imports, which totaled about 26,820 barrels per day (bbl/d) for 2011 (Administración Nacional de Electricidad, 2012, p. 3; Banco Central del Paraguay, 2012a, p. 5, 8; U.S. Energy Information Administration, 2012).

Paraguay continued to treat national and foreign investors on equal terms. The country's foreign direct investment (FDI) inflows decreased to $186 million in 2011 from a revised $228 million in 2010. This investment, mostly from the United States, went mainly to petroleum processing (40%), the industrial sector (30%), the financial sector (20%), and transportation (10%). In 2011, the country's exports amounted to $10.4 billion and included such products as cement, clays, cotton, electricity, leather, meat, soybeans, and wood. Paraguay's leading export partners were Uruguay (16.2%), Brazil (12.8%), Chile (10%), Argentina (8.1%), Italy (5%), the Netherlands (4.4%), Spain (4.3%), and Germany and Turkey (4.2% each). Paraguay's total imports amounted to $12.1 billion worth of consumer goods, chemicals, electrical machinery and equipment, fertilizers, manufactured goods, and petroleum products. Paraguay's leading import partners were Brazil (27.7%), China (17.6%), the United States (16.6%), and Argentina (15.2%) (Banco Central del Paraguay, 2012b, p. 5; Economic Commission for Latin America and the Caribbean, 2012, p. 25, 32; U.S. Central Intelligence Agency, 2012).

Production

In 2011, Paraguay produced mostly cement, clays, limestone for cement and lime, petroleum derivatives, pig iron, and crude steel. Data on the mineral commodities produced are in table 1.

Structure of the Mineral Industry

The cement and petroleum industries of Paraguay continued to be owned by the Government (table 2). Since 2009, the country's mineral industry, including the steel industry and the electricity generating sector, had become a privately owned and Government-controlled regime. Under this new regime, the mineral industry is managed by the Dirección de Recursos Minerales [Mineral Resources Directorate] (DRM), which is under the Paraguayan Ministerio de Obras Públicas y Comunicaciones [Ministry of Industry and Commerce] (MOPC), Viceministerio de Minas y Energía [Vice Ministry of Mines and Energy] (VMME). The DRM helps foreign private companies to navigate the process of obtaining the necessary approvals for permits to conduct hydrocarbon and mineral prospecting, exploration, development, and operation activities in the country. The Paraguayan Strategic Economic and Social Plan 2011–15 formulates policies related to economic growth and transparency and the investment climate (Ministerio de Industria y Comercio, 2012).

Paraguay has abundant capacity to generate hydroelectricity; however, expanded demand could require additional investments in this sector in the future. In 2011, ANDE was negotiating with Telemenia S.A of Israel to form a joint venture (ANDE International S.A.) that would fund the construction of facilities to produce electricity to be sold to Paraguay's neighboring countries. The Inter-American Development Bank had committed to provide a $69.5 million loan to modernize ANDE's electrical distribution system (Administración Nacional de Electricidad, 2012, p. 3).

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 announced plans to invest between $3.5 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. Also, Rio Tinto Alcan and ANDE signed a Letter of Intention to begin negotiations regarding a power purchase agreement for the planned aluminum smelter (Rio Tinto Alcan, 2009; Webber, 2010a; Côté, 2011; 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 the geologic trend traceable with the dyke-hosted mineralized bodies identified to date on this trend) at the Paso Yobay gold project, which is located 160 kilometers (km) east of Asunción and southwest of the town of Paso Yobai in the Department of Guaira. In December 2011, LAMI completed 3,700 km of airborne electromagnetic and magnetometer surveys and 20 diamond-drill holes on the Tacuru target and identified six potential gold prospects where the company's exploration team planned to focus during 2012 and 2013. Tacuru is located 3.5 km northeast of LAMI's Independencia Mine bulk sampling plant, which was to be inaugurated in February 2012. The company's small-scale commercial program includes a 5-metric-ton-per-hour concentrator facility and a gold 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., 2012b).

Iron and Steel.—In 2011, Paraguay produced 30,000 metric tons (t) of crude steel compared with a revised 59,000 t in 2010. This decrease was owing to a 6-month labor strike. The Paraguayan Center for Metallurgical Industries (Cime) sought to restore production at the local steelmaker, Aceros del Paraguay S.A. (Acepar), which had a production capacity of 8,000 metric tons per month of steel. The country produced about 150,000 t of pig iron in 2011, which was the same amount as in 2010 (Beltran, 2011; World Steel Association, 2012).

Titanium.—According to CIC Resources Inc. of Canada, an ilmenite deposit located in Alto Parana and Canindeyu Provinces of eastern Paraguay close to Brazil. CIC's Parana deposit covers an area of 1,850 square kilometers (km^2) and contains estimated resources of 22 billion metric tons. On October 10, CIC completed a pilot plant to produce a test sample of 110 t of ilmenite concentrate to be tested by Mintek Co. of South Africa as part of a final feasibility study (Industrial Minerals, 2011).

Industrial Minerals

Cement.—In 2011, Industria Nacional del Cemento (INC) produced 650,000 t of cement, which was the same amount that the company produced in 2010. INC was planning to increase the capacity of its cement plant at Vallemi to 2,700 t/d from 2,000 t/d by mid-2013 with an investment of $40 million. The company expected that the plant would be able to meet about 20% of the demand for cement in Paraguay through 2016. In 2011, the National Customs Department expected imports of about 240,000 t of cement to satisfy about 25% of Paraguay's consumption of 970,000 t; the remaining 75% (730,000 t) was expected to be met by domestic production. On November 18, the Inter-American Development Bank approved a loan of about $51.8 million for the private company Yguazu Cementos S.A. (YCSA) to construct a cement plant at Yguazu Tupi that would have a capacity to produce 400,000 t/yr of cement and satisfy about 40% of the country's cement demand for the near future (Editorial AZETA S. A., 2012; 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 Paranaiba 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 KIMs suggests multiple local sources. Geologic and geophysical evidence suggest emplacement of diatremes and dykes, which could be likely sources for the diamond recovered from the sampling process. The property consists of a central exploration concession and three outer exploration claims (Latin American Minerals Inc., 2012a).

Mineral Fuels and Related Materials

Petroleum.—Government-owned Petropar had a monopoly on all sales and imports of crude oil and petroleum products in Paraguay. Petropar operated the about 8,000-barrel-per-day (bbl/d) Villa Elisa facility, which was the country's only petroleum refinery. Paraguay consumed 30,000 bbl/d of petroleum in 2011. 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 would help satisfy almost 70% of the country's crude oil demand in the foreseeable future. The Paraguayan Government announced that crude oil had been discovered in the western Chaco region 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 (Mbbl) of crude oil (Petróleos Paraguayos, 2012; U.S. Energy Information Administration, 2012).

Uranium.—Cue Resources Ltd. (CUE) of Canada was exploring for uranium occurrences within the Parana Basin, which is host to a number of known uranium deposits, including the Amorinopolis and the Figueira deposits in Brazil. CUE was focused in the Yuty uranium project, which is located about 200 km southeast of Asuncion and covered a total of about 890 km^2 (230,650 hectares). The Yuty project was a roll-front uranium deposit. During the period from 2007 through 2010, CUE completed 256 drill holes totaling 31,000 meters (m) of core drilling and acquired a 100% interest in the Yuty project. The title to the Yuty concession was held through a mineral concession contract with the Government (ratified by Law 3575/08), which granted mining rights for a minimum period of 20 years. CUE retained BRS Inc. of the United States to prepare an updated technical report on the project. CUE filed a National Instrument #43–101-compliant updated technical report showing uranium resources for the Yuty property, which

amounted to about 4,000 t (8.914 million pounds) of equivalent uranium oxide (eU_3O_8) measured and indicated, and about 1,000 t (2.226 million pounds) of eU_3O_8 inferred, which were revised and made final in a technical report prepared for CUE titled "Updated Technical Report on the Yuty Uranium Project, Republic of Paraguay" dated August 24, 2011. In early 2011, CUE was planning to drill an additional 30-hole drill program of about 3,500 m (11,500 feet) at a cost of $1 million plus an additional $300,000 for pump testing and a leaching test (BRS Inc., 2012, p. 7–11; Melman, 2012; Uranium Energy Corp., 2012).

Outlook

Paraguay's economy benefited from a continuing demand for electricity. In the cement industry, production was expected to increase to meet 75% of Paraguay's cement demand in the foreseeable future, and the remaining demand was likely to continue to be met by increased domestic output and fewer imports. Also, LAMI was expected to continue exploring for new gold targets. If the current exploration programs at the titanium and uranium discoveries yield positive results, more exploration and investment would likely follow. Likewise, Rio Tinto Alcan's aluminum smelter would be a significant investment. Paraguay's mineral fuels industry was set to continue its exploration activities by 2013 and beyond because of the positive exploration results in the Chaco region.

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URUGUAY

In 2011, Uruguay's GDP increased by 5.7% to $52 billion from $49.1 billion in 2010, and the rate of inflation was 6.9% in 2011 compared with 5.9% in 2010. Uruguay had a population of about 3.3 million. The total labor force was 1.6 million, of which services accounted for 73%; industry, 14%; and agriculture, 13%. In 2011, the mining and mineral processing industries contributed 0.8% of Uruguay's GDP and employed almost 1% (2,200) of the industry total of 224,000 (Banco Central del Uruguay, 2012a, p. 3; International Monetary Fund, 2012, p. 78; Uruguay XXI, 2012, p. 5–6, 29; U.S. Central Intelligence Agency, 2012; U.S. Department of State, 2012).

Minerals in the National Economy

In 2011, Uruguay's leading mineral products included, in order of volume, sand, limestone, gypsum, cement, clays, iron ore, crude steel, and gold. Uruguay continued to attract interest from mining companies searching for base metals, gold, and iron ore (Banco Central del Uruguay, 2012b; Economic Commission for Latin America and the Caribbean, 2012, p. 60; Gladiator Resources Ltd., 2012; Orosur Mining Inc., 2012; Uruguay XXI, 2012, p. 7–8, 21–22; Zamin Ferrous Ltd., 2012).

Government Policies and Programs

Minerals, including metals, industrial minerals, mineral 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 on March 2010, and the Energy Law No. 16.517 of July 22, 1994, govern the mineral industries of Uruguay. The Ministerio de Industria, Energía y Minería (MIEM) implements these laws. MIEM is the principal Government mineral-resource agency; it sets policy, develops regulations, and oversees the technical development of the mineral sector. The Administración Nacional de Combustibles, Alcoholes y Portland (ANCAP) is a Government-owned holding company created by law No. 8764 of October 15, 1931. Among its other duties, ANCAP is involved in the production of petroleum derivatives and portland cement. The Ministerio de Economía y Finanzas helps promote and protect investments through law No. 16.906 of January 7, 1998 (Administración Nacional de Combustibles, Alcoholes y Portland, 2012a, p. 1–2; 2012b; Ministerio de Economía y Finanzas, 2012; Ministerio de Industria, Energía y Minería, 2012).

Production

Data on mineral production are in table 1.

Structure of the Mineral Industry

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

Mineral Trade

Uruguay's exports amounted to $8 billion and included such commodities as dairy products, dolomite, fish, gold, leather, meat, rice, and wool. Export partners included Brazil (20%), Argentina and China (7% each), Russia (4.9%), and others (61.1%). Imports of such goods as chemicals, machinery, petroleum and derivatives, and vehicles were valued at $10.7 billion in 2011. Import partners included Argentina and Brazil (19% each), China (13%), the United States (10%), Venezuela (4%), and others (35%). Uruguay had no proven crude oil or natural gas reserves but it does have substantial hydroelectric capacity (Banco Central del Uruguay, 2012a, p. 3, 5; U.S. Central Intelligence Agency, 2012; U.S. Department of State, 2012).

Commodity Review

Metals

Gold.—Orosur Mining Inc. (OMI) of Canada was a gold producer focused on identifying and developing gold projects in Latin America. The company operated the San Gregorio gold mine in Uruguay. San Gregorio produced 1,725 kilograms (kg) (55,460 troy ounces) of gold in 2011 compared with 1,736 kg (55,820 troy ounces) in 2010. OMI's mine plan through 2017 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 using three main pits—Arenal, San Gregorio, and Santa Teresa. OMI's exploration program also included the Mahoma vein deposit in southern Uruguay; Mahoma's current open pit resources included 150,000 t grading 10.2 grams per metric ton (g/t) gold and underground resources totaled 410,000 t grading 7.8 g/t gold (Orosur Mining Inc. 2012).

Iron and Steel.—In 2011, Uruguay produced 80,000 t of crude steel compared with a revised 65,000 t in 2010 (table 1; World Steel Association, 2012).

Iron Ore.—Gladiator Resources Ltd. (Gladiator) of Australia was focused on mineral exploration in Uruguay, which included the Isla Cristalina iron belt joint-venture project with Orosur Mining Inc. Under the agreement, Gladiator could earn up to an 80% interest in this highly prospective mineralized region in the iron belt by completing a feasibility study by December 2015. Gladiator's recent drilling results appear to confirm that a high-grade magnetite concentrate could be produced in Uruguay, and Gladiator had applied for a prospecting permit for a mining concession recently released by the Government. Based upon the bankable feasibility study, Gladiator could begin production of 400,000 t/yr of iron ore by early 2016 if the mining permit is obtained. Two 200,000-t/yr-capacity mines were slated to be built near the Isla Cristalina iron ore belt in northern Uruguay by Gladiator (Gladiator Resources Ltd., 2012, p. 2).

Zamin Ferrous Ltd. of Switzerland had two world-class iron ore exploration and development projects in Brazil and Uruguay. Zamin Ferrous's feasibility study for an 18-million-metric-ton-per-year iron-ore pellet feed project had not been approved by the Government and faced growing resistance from the farming and tourism sectors, which feared the effects of open pit mining and of a 215-km slurry pipeline that would transport the iron ore to a port to be built along prime ocean coast. Zamin Ferrous's Valentines main development project had 980 million metric tons of iron ore reserves, and according to the company, it could be a greenfield magnetite mining, processing, and exporting facility (MercoPress Co., 2012; Zamin Ferrous Ltd., 2012).

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 2011, CASA produced at full capacity (table 1; Cementos Artigas S.A., 2012).

Mineral Fuels and Other Sources of Energy

Natural Gas.—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 the ANCAP and 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., Uruguay, 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 agreed to consider a plan that calls for the construction in Uruguay of a degasification plant to supply both countries with natural gas (U.S. Energy Information Administration, 2012).

According to ANCAP, investment in eight offshore blocks awarded through Uruguay's latest tender licenses was expected to exceed $1.5 billion. BP Group was awarded three licenses in the Ronda Uruguay II tender, and Total S.A. of France and Tullow Oil plc of Ireland received one block each. ANCAP would hold between 22% and 35% interest in each block (Fowler, 2012).

Petroleum.—The Government-owned oil company ANCAP and its Venezuelan counterpart, Petróleos de Venezuela S.A. (PDVSA), signed an agreement to enlarge Uruguay's La Teja refinery to increase its processing capacity to 100,000 barrels per day (bbl/d) from 50,000 bbl/d by early 2013, as well as to create a joint venture between ANCAP and PDVSA to exploit crude oil in the Orinoco oil belt. 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; it imported 54,100 bbl/d to feed a 50,000-bbl/d-capacity refinery. In June, ANCAP launched Uruguay's first 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 km^2 with water depths ranging from 50 to 1,450 m. The diversification of Uruguay's energy sources could reduce its petroleum dependency to 38% by 2015 (Ministerio de Industria, Energía y Minería, 2012; Petróleos de Venezuela S.A, 2012; U.S. Energy Information Administration, 2012).

YPF S.A. of Argentina (a subsidiary of the Spanish oil firm Repsol YPF S.A.) won a bid to explore for oil along the coast of Punta del Este basin. Exploration was to take place in the first quarter of 2010. YPF would have a 40% stake in the project; the other partners were Petrobrás Uruguay (40%), which was a subsidiary of Petrobrás, and Portugal's GALP Energia, SGPS, S.A. (20%). YPF would operate the deepwater exploratory Block 3 and Petrobrás would operate the shallow water exploratory Block 4; both are located along the coast of Punta del Este. BP p.l.c. of the United Kingdom and Petrobrás were also part of the consortium (40%), and they invested a combined $100 million in the project in 2010. A consortium composed of YPF, Petrobrás, and Galp won the exploration rights for two offshore blocks in the Punta del Este basin as well. ANCAP planned to offer 15 offshore exploration blocks in its upcoming Uruguay round II tender. The consortium did not plan to begin until 2014 (Fowler, 2011).

Renewable Energy.—ANCAP projected that the country could increase production of energy from biomass in the future. ANCAP's stated 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, 2012a, p. 2).

Outlook

Uruguay sees its natural resources as key to future growth and is seeking to develop what it estimates are large offshore hydrocarbon resources. Investors were looking with interest at biotechnology and technology exchange opportunities in the Atlantic-coast country as well. Uruguay's economy is expected to continue to grow during the period 2012 through 2016. This growth, however, is dependent on continued high prices for its exports, a strong currency, low international interest rates, economic stability within the Mercado Comun del Cono Sur, and reliable supplies of imported natural gas and petroleum (Ministerio de Economía y Finanzas, 2012; Ministerio de Industria, Energía y Minería, 2012; Uruguay XXI, 2012).

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TABLE 1

PARAGUAY AND URUGUAY: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Country and commodity		2007	2008	2009	2010	2011[e]
PARAGUAY[2]						
Cement, hydraulic	thousand metric tons	600	600	600	650 [3]	650 [3]
Clays:		230,000	230,000	230,000	300,000 [3]	300,000 [3]
Kaolin		6,000	6,000	6,000	6,000 [3]	6,000 [3]
Other, unspecified		2,000	2,000	2,000	2,000 [3]	2,000 [3]
Gypsum[e]		4,500	4,500	4,500	4,400 [3]	4,500
Iron and steel:						
Pig iron		148,000	145,420	145,500 [3]	150,000 [r, e]	150,000
Semimanufactures[e]		51,500	45,120 [3]	45,200	45,200	45,200
Steel, crude[4]		132,000	129,600	130,000	59,000 [r]	30,000
Lime[e]		90,000	90,000	90,000	90,000	90,000
Petroleum, refinery products[e]	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	13,500 [r, 3]	14,795 [3]
Limestone, for cement and lime		100,000	100,000	100,000	100,000 [3]	100,000 [3]
Marble		2,000	2,000	2,000	2,000 [3]	2,000 [3]
URUGUAY						
Aluminum, secondary[e]		45	45	45	45	45
Bentonite[e]		530 [3]	530 [r]	530 [r]	530 [r]	530
Cement, hydraulic[5]	thousand metric tons	620	620	620	620	620
Clays		63,987 [r, 3]	64,000 [r]	64,000 [r]	64,000 [r]	64,000
Gemstones, semiprecious:[5]						
Agate		16,671 [r, 3]	16,700 [r]	16,700 [r]	16,700 [r]	16,700
Amethyst		487 [r, 3]	490 [r]	490 [r]	490 [r]	490
Gold[6]	kilograms	2,820	2,182	1,690	1,736	1,725 [3]
Iron and steel:						
Iron ore		19,275 [r, 3]	19,300 [r]	19,300 [r]	19,300 [r]	19,300
Steel, crude[4]		71,000	86,000 [r]	57,000 [r]	65,000 [r]	80,000
Lime[e]	thousand metric tons	1,404 [r, 3]	1,400 [r]	1,400 [r]	1,400 [r]	1,400
Petroleum, refinery products[7]	thousand 42-gallon barrels	15,300	15,300	15,300	15,300	15,300
Sandstone[e]	thousand metric tons	1,991 [r, 3]	2,000 [r]	2,000 [r]	2,000 [r]	2,000
Stone:[e]						
Granite:						
Dimension		6,514 [r, 3]	6,500 [r]	6,500 [r]	6,500 [r]	6,500
Crushed and broken, alum schist	thousand metric tons	802 [r, 3]	800 [r]	800 [r]	800 [r]	800
Diorite	do.	488 [r, 3]	490 [r]	490 [r]	490 [r]	490
Dolomite		14,345 [r, 3]	14,300 [r]	14,300 [r]	14,300 [r]	14,300
Limestone	thousand metric tons	1,156 [r, 3]	1,200 [r]	1,200 [r]	1,200 [r]	1,200
Marble, in blocks and broken, onyx		126 [r, 3]	130 [r]	130 [r]	130 [r]	130
Marl		6,600 [r, 3]	6,600 [r]	6,600 [r]	6,600 [r]	6,600

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. do. Ditto.

[1]Table includes data available through April 30, 2012.

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

[3]Reported figure.

[4]Source: International Iron and Steel Institute.

[5]Source: Dirección Nacional de Minería y Geología (Minerals Questionnaire 2010–11) and Cementos Artigas S.A., July 2012.

[6]Source: Orosur Mining Inc. Data are for fiscal year ending March 31, 2012.

[7]Source: 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 2011

Country and commodity		Major operating companies or deposits	Location or deposit name	Annual capacity
PARAGUAY				
Cement	thousand metric tons	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	thousand metric tons	Consorcio Siderúrgico de Paraguay (Cerro Lorito, 67%, and Cooperativa de Trabajadores de ACEPAR, 33%)	ACEPAR steel mill at Villa Hayes	150
URUGUAY				
Cement	thousand metric tons	Cementos Artigas S.A. (Cia. Uruguaya de Cemento Portland S.A., 100%)	Mine and clinker plant in Lavalleja Department	620
Gold	kilograms	Uruguay Mineral Explration Inc. (UME), 100%	Minas de Corrales Gold in Rivera Department	3,000
Iron and steel	thousand metric tons	Gerdau Laisa S.A.	Gerdau Laisa 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