



# 2009 Minerals Yearbook

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## GUATEMALA

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# THE MINERAL INDUSTRY OF GUATEMALA

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Mineral deposits of barite, copper, gold, lead, nickel, silver, and zinc have been discovered in Guatemala, and coal, cobalt, copper, gold, iron ore, limestone, nickel, petroleum, sand and gravel, tin, and uranium have been identified as minerals that could provide investment potential for further exploration and development in the country. In 2009, gold production accounted for the leading share (48%) of the total value of mineral production in Guatemala compared with the second ranked share (29%) in 2008; production of crude petroleum was estimated to have accounted for the second ranked share in 2009 (35%) compared with the leading share (about 59%) in 2008. Guatemala did not appear to account for 1% or more of the world's production of any mineral produced in the country (Harben, 2007, 2008; Agencia de Promoción de Inversiones de Guatemala, 2008; Dirección General de Minería, 2008, p. 17, 22; 2009; 2010; KPMG Consultores S.A., 2009, p. 64-65; Banco de Guatemala, undated).

## Minerals in the National Economy

In 2009, mineral extraction (not including the manufacturing of mineral commodities, such as cement, crude steel, or petroleum refinery products) accounted for 1.5% of the gross domestic product (GDP) at current prices compared with slightly greater than 1.8% of the GDP in 2008. The value<sup>1</sup> of mineral production (extraction only) in Guatemala decreased to \$560 million in 2009 compared with about \$711 million in 2008, despite an increase in the value of mine output (not including petroleum extraction) in the country to \$363 million compared with \$295 million in 2008. Although reliable data on the value of production of crude petroleum in 2009 was not available, it is estimated that the decrease in the total value of mineral production in Guatemala was primarily owing to the decrease in the value of production of crude petroleum in the country. The increase in the value of production of the mining sector was owing to an increase in the value of mine output of metallic minerals to \$332 million compared with about \$256 million in 2009, which more than compensated for the decrease in the value of production of industrial minerals to about \$31 million compared with about \$39 million in 2008 (Dirección General de Minería, 2010; International Monetary Fund, 2010; Banco de Guatemala, undated).

Not including trade in mineral-based manufactured products, coke oven products, or petroleum refinery products, the mineral trade balance in 2008 (the latest year for which reliable data were available) was estimated to be about \$550 million. Since the main petroleum refinery in the country was closed at the end of 2002, the mineral trade balance has exhibited a considerable deficit if trade in petroleum refinery products is included. In

<sup>1</sup>Where necessary, nominal values have been converted from Guatemalan quetzales (Q) to U.S. dollars (US\$) at an annual average exchange rate of Q7.56=US\$1.00 for 2008 and Q8.16=US\$1.00 for 2009. All values are nominal, at current prices, unless otherwise stated.

2008, adding just the net value of the country's trade in coke oven products and petroleum refinery products to the value of the mineral trade balance above would result in an estimated mineral trade balance equal to about -\$2 billion. In 2008, Guatemala's imports of coke oven and petroleum refinery products were estimated to be valued at about \$2.8 billion, and the value of the country's exports of crude petroleum and natural gas was about \$370 million. According to preliminary data, the value of exports of crude petroleum and natural gas decreased to about \$190 million, but the value of imports of petroleum refinery products decreased to about \$2.3 billion in 2009, which could indicate that the mineral trade balance (if the value of trade in petroleum refinery products were included) might be slightly less negative than that in 2008 (Banco de Guatemala, 2010a, p. 51; 2010b, p. 41, 46; Departamento de Análisis Económico, 2010, p. 4; Dirección General de Minería, 2010).

In 2009, total Government revenue (from royalties, mining-specific taxes, and so forth) from the mining sector (excluding production of mineral fuels) in Guatemala increased to \$4 million compared with about \$3.5 million in 2008. The number of workers employed in minerals extraction in the country (including the extraction of mineral fuels) that were accounted for as contributing to the social security system of the country was about 3,320 compared with 3,790 in 2008, but many more temporary and other employees were believed to have been working in the mineral industry who were not officially listed as paying into the social security system. In 2008 (the latest year for which data were available), foreign direct investment (FDI) in minerals extraction in Guatemala was about \$160 million (Dirección General de Minería, 2008, p. 17-18; 2010; Banco de Guatemala, 2010a, p. 31, 65).

## Government Policies and Programs

From June 2009 through the end of the year, the Government suspended approval of any type of mining license (for exploration or exploitation). This moratorium on the approval of mining licenses was expected to continue until Guatemala's congress approves a new mining law. In 2009, 6 new mining licenses were approved compared with 40 in 2008. The mining law that was in effect during 2009 (law Decree No. 48-97) was approved on January 7, 1997, and enacted on July 17, 1997. On January 12, 1998, the rules and regulations for implementing the mining law were agreed upon as part of Governmental Agreement No. 8-98 and were revised on May 11, 2001, through Governmental Agreement No. 176-2001. The main hydrocarbons law that was in force in 2009 was law Decree No. 109-83, which was approved on September 15, 1983. Guatemala's main investment law (law Decree No. 9-98) was enacted on February 4, 1998, and applied to FDI in the mineral industry in 2009. In addition, the Dominican Republic-Central America-United States Free Trade Agreement (CAFTA-DR) was implemented in Guatemala on July 1, 2006, and the

investment chapter of CAFTA-DR helped to strengthen many aspects of the existing investment legislation in the country (for investors based in the CAFTA-DR member countries) through 2009 (Agencia de Promoción de Inversiones de Guatemala, 2008; KPMG Consultores S.A., 2009, p. 68; U.S. Commercial Service, 2009, p. 58-62; Dirección General de Minería, 2010, undated; Dirección General de Hidrocarburos, undated).

Guatemala is part of the San José Pact, which enabled the country to receive crude petroleum under preferential terms and pricing from Mexico and Venezuela. Venezuela was also allowed to provide additional shipments of crude petroleum to Guatemala according to the terms of the Caracas Energy Accord. In July 2008, Guatemala also became a member of the Petrocaribe Energy Cooperation Agreement (PetroCaribe), which could allow Guatemala to be able to acquire even a bit more petroleum from Venezuela, to pay only 50% of the cost of the oil up front, and to pay for the balance of the remaining cost of the oil shipments over a maximum period of 25 years with financing at a fixed interest rate of 1% per year. It was not clear whether Guatemala would significantly increase imports of crude petroleum as a result of membership in PetroCaribe because the country has had only a “mini-refinery” since 2002 (with a capacity to refine crude petroleum that appears to be more than occupied with refining part of Guatemala’s own production of crude petroleum), and it was uncertain whether PetroCaribe might also cover shipments of petroleum refinery products from Venezuela (U.S. Energy Information Administration, 2007; Mander, 2008).

## Production

Data on mineral production are in table 1. From year to year, information concerning the causes of some of the large percentage changes in many of the data series was unavailable. Many of these changes may appear to be large in percentage terms but do not involve globally significant volumes of production. No production of antimony during 2008 or 2009 was reported to the Dirección General de Minería, Ministerio de Energía y Minas (DGM) by Minas de Guatemala S.A., although information was also not available concerning any potential closures of the company’s antimony mines in Huehuetenango (table 1; Dirección General de Minería, 2007, p. 12-13; 2008, p. 19; 2009; 2010).

In 2009, gold and silver mine output increased by about 14% and about 29%, respectively, compared with levels of production in 2008. These increases were almost entirely owing to increased production by Goldcorp Inc. of Canada at the company’s Marlin Mine during the year. The World Steel Association (WSA) reported that Guatemala’s production of crude steel decreased by about 10% in 2009 compared with that of 2008 and by about 28% in 2008 compared with that of 2007. These decreases appeared to be caused by zero production of crude steel in the country during the first quarter of 2008; inconsistent levels of production from April through November 2008; zero production from December 2008 through February 2009 and again in June 2009; and fairly steady production during the second half of 2009. In 2009, iron ore production increased substantially in percentage terms compared

with an unusually low volume of production during 2008 and still did not represent even a regionally significant level of production in terms of tonnage (table 1; Dirección General de Minería, 2009, 2010; Goldcorp Inc., 2010, p. 3, 52; World Steel Association, 2010, p. 4, 37; undated).

The International Lead and Zinc Study Group (ILZSG) reported that annual mine production of zinc in Guatemala (possibly entirely owing to the recovery of zinc from tailings left behind by mining operations that had closed in the 1970s or 1980s) increased substantially in 2006 and 2007, before an apparent stoppage of production in mid-2008 that lasted through 2009. Run-of-mine production of lead was also zero in 2009, possibly owing to zero lead being recovered from the same residual material that was reported as being processed for zinc from 2006 through mid-2008. The ILZSG also reported that production of secondary refined lead in Guatemala increased by 40% in 2009 compared with that of 2008 (table 1; International Lead and Zinc Study Group, 2009, p. 71; 2010, p. 6, 22, 37; Dirección General de Minería, 2010).

Information was not available concerning the exact causes of the substantial changes in the volumes of production of most of the industrial minerals produced in Guatemala, but some of the substantial decreases in production of minerals used in the construction sector of the Guatemalan economy might be partially explained by a presumable decrease in demand owing to a decrease in the value of production in the construction sector by about 12.6% compared with that of 2008. Production of petroleum refinery products at La Libertad mini-refinery near the country’s main oilfields in Peten Department is included in table 1. The only commercial production (for export) from this mini-refinery was of asphalt, and production of asphalt increased substantially despite a significant decrease in domestic production of crude petroleum (table 1; Departamento de Análisis Económico, 2010, p. 11, 15; Banco de Guatemala, undated).

## Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities. During 2009, Goldcorp increased the capacity of its Guatemalan subsidiary to produce gold and silver at the Marlin Mine, and Castle Gold Corp. of Canada was in the process of finishing mining of any new gold ore at the company’s 50%-owned El Sastre Mine by the end of the year. Castle Gold began producing gold at El Sastre in 2006. Minas de Guatemala S.A. is still listed in table 2 despite not reporting any production of antimony to DGM for 2008 or 2009 because the company had a mining license that had not expired and had not reported any mine closures (table 2; Castle Gold Corp., 2009; Goldcorp Inc., 2010, p. 3, 13).

Reliable information concerning the capacities to produce either lead or zinc at the Caquiepec Mine or zinc at La Esperanza Mine was not available, and it was unclear whether Tenango Mining Company S.A. was a subsidiary of another company. According to ILZSG and company Web sites, possible parent companies of Tenango Mining could have included CMM LLC (Chemicals, Metals & Minerals) of France and (or) NRD LLC (Natural Resources Development) of the United States, but

reliable public information on the possible operations of these LLC companies or their subsidiaries in Guatemala was not available. On April 22, 2008, Gerdau S.A. of Brazil acquired a 30% ownership share in Corporación Centroamericana del Acero S.A. (CCA), with subsidiaries that controlled all the production of crude steel in Guatemala, and Gerdau maintained that ownership share in CCA throughout 2009 (table 2; Gerdau S.A., 2009, p. 2-4, 22, 47; 2010, p. 49; International Lead and Zinc Study Group, 2009, p. 71; KPMG Consultores S.A., 2009, p. 65; CMM LLC, undated; NRD LLC, undated).

## Commodity Review

### Metals

**Antimony.**—It has been reported that Minas de Guatemala S.A. produced about 1,000 metric tons per year (t/yr) of antimony in both 2006 and 2007, but DGM did not list any reported production of antimony in Guatemala in 2006. Minas de Guatemala appears to have a mining license that does not expire if the company does not produce antimony for a year or two, and no information was available concerning whether the company planned to produce antimony in 2010 (Dirección General de Minería, 2007, p. 12-13; 2008, p. 19; Harben, 2008).

**Gold and Silver.**—Goldcorp expected to increase production of gold at the company's Marlin Mine to about 9,000 kilograms (kg) in 2010 compared with 8,550 kg of gold in 2008. Approximately all the reported production of silver in Guatemala was produced at the Marlin Mine, and production of silver was also expected to increase there in 2010. During 2009, Goldcorp conducted advanced-stage exploration at the company's Cerro Blanco gold-silver project and expected to complete a feasibility study for Cerro Blanco by mid-2011; the company also conducted early-stage exploration at its Escobal silver project in Guatemala. During 2009, Castle Gold mined reduced quantities of ore at El Sastre Mine, and the company expected gold production to decrease steadily in 2010 and 2011 compared with production of about 347 kg of gold at El Sastre in 2009. Starting in 2010, Castle Gold expected still to produce gold at El Sastre Mine from stockpiles and leaching operations. At the end of 2009, however, Argonaut Gold Ltd. of Canada began its acquisition of Castle Gold and completed the acquisition on February 2010. Argonaut Gold reported zero production of gold at El Sastre Mine during the first quarter of 2010, and information was unavailable concerning when or whether Argonaut might resume gold production at El Sastre (Castle Gold Corp., 2009; Argonaut Gold Ltd., 2010a, b; Goldcorp Inc., 2010, p. 6, 13, 52, 61-62).

**Iron and Steel.**—According to the WSA, production of crude steel in Guatemala decreased in 2009 compared with that of 2008, after decreasing much more substantially in 2008 compared with an unusually high volume of production in 2007. The inconsistent production in Guatemala during 2008 and 2009 could have been in response to market conditions. All the crude steel produced in Guatemala is from scrap, most of which is imported. Production of iron ore in Guatemala appears to be entirely by small-scale miners who then sell the iron oxide mineral material in raw form to be used mostly as an additive

in cement manufacturing in Guatemala and El Salvador. The iron oxide deposits currently being exploited for this purpose are located near Chiquimula (which is near to the border with El Salvador), and there has been some exploration of the sands on the Pacific Coast of Guatemala, which reportedly contain magnetite and titanium minerals (KPMG Consultores S.A., 2009, p. 64-65; World Steel Association, 2010, p. 4, 37; undated).

**Lead and Zinc.**—According to KPMG Consultores S.A. (a subsidiary of KPMG International Cooperative of Switzerland), the two most significant deposits of lead and zinc that have been discovered in Guatemala are located in the mining districts of Chiantla-San Sebastián and San Miguel Acatan in the Department of Huehuetenango (in the western part of the country), and near Copan in the Department of Alta Verapaz (in north-central Guatemala). La Esperanza Mine and Firestone Ventures Inc.'s Torlon Hill exploration project are located in Huehuetenango, and the Caquipec Mine, and Firestone Venture's Quetzal lead-silver-zinc project are located in the mining district around Copan in Alta Verapaz. Reportedly, recoverable amounts of silver may be associated with the lead-zinc deposits in both of these areas. The company that was working the Caquipec Mine until sometime in the 1980s reportedly left behind about 100,000 metric tons (t) of already-mined mineralized material that was estimated to be about 18% zinc and 2% lead. Reliable information concerning the gross amount and metal content of any mineralized material at La Esperanza Mine was not available (Harben, 2008; Firestone Ventures Inc., 2009, 2010; KPMG Consultores S.A., 2009, p. 64-65).

**Nickel.**—On August 26, 2008, HudBay Minerals Inc. of Canada acquired Skye Resources Inc. of Canada and thereby acquired the Fenix nickel project on the site of the former Exploraciones y Explotaciones Mineras Izabal S.A. (Exmibal) nickel mine and smelter. Inco Ltd. of Canada owned 70% of Exmibal but placed the mine and plant on care-and-maintenance status in 1980 (which was the last time that it was in operation). Skye Resources acquired Inco's share of Exmibal in 2004, and Exmibal changed its name to Compañía Guatemalteca de Níquel S.A. (CGN). In 2009, HudBay Minerals owned 98.2% of CGN. By the end of September 2010, HudBay Minerals planned to complete updating the feasibility study on the Fenix project. During 2009, HudBay Minerals was attempting to attract joint-venture partners, negotiating with Vale S.A. of Brazil (which acquired Inco in 2006 and still owned the rights to market any ferronickel produced at the former Exmibal site) to be able to market any potential production of ferronickel, and trying to secure a dedicated low-cost source of electricity for the project. HudBay Minerals appeared to consider settlement of the electricity supply issue as most critical in determining whether the company would decide to restart construction of the Fenix project (which was suspended in November 2008) or not (Hill, 2009; HudBay Minerals Inc., 2010, p. 4, 8, 15, 17, 53).

### Industrial Minerals

**Cement and Lime.**—In 2009, cement production was estimated to be substantially below the production capacity of

Cementos Progreso S.A. owing to estimated lower demand from the construction sector in Guatemala and from the country's export markets. Reliable information concerning actual production of cement after 2005 was unavailable, however. Cementos Progreso planned to double its lime production capacity at the company's San Miguel plant to 360,000 t/yr (compared with 180,000 t/yr in 2009), but information on a definitive timeline for completion of this expansion was not available. Revised estimates of lime production in table 1 are based on estimated production at only the two lime kilns at the San Miguel plant and do not include possible production of lime at Cementos Progreso's La Pedrera plant (tables 1, 2; World Cement, 2007; Cementos Progreso S.A., 2010; Banco de Guatemala, undated).

### ***Mineral Fuels and Related Materials***

**Petroleum.**—Although the total value of imports of petroleum refinery products decreased in 2009, the volume increased to about 30 million barrels (Mbbbl) of petroleum refinery products compared with about 26 Mbbbl in 2008. In 2009, 32.5% of Guatemala's imports of petroleum refinery products came from the United States, which was by far the country's leading supplier. To reduce dependence on imports of petroleum refinery products, the Government was interested in having the proposed Mesoamerican refinery be built at the Port of Quetzal on the Pacific coast of Guatemala. (An alternative site that had been proposed was the Port of Armuelles in Panama.) In September 2008, however, no offers to build the proposed 360,000-barrel-per-day-capacity refinery were submitted in response to a tender offer by the technical committee of the Mesoamerican energy integration program (PIEM) and pessimism concerning the project continued to increase during 2009 owing to uncertainties in being able to secure the necessary crude petroleum from potential supplier countries, such as Colombia, Ecuador, Mexico, and Venezuela (Woods, 2008; Departamento de Análisis Económico, 2010, p. 4-5).

### **Outlook**

Once revisions to the mining law are approved by the Government and the moratorium on approval of new mining licenses is lifted, many mining projects [including those that might produce gold, lead, nickel, silver, and (or) zinc] could potentially develop from exploration into production. Until these actions take place, however, timelines for mining projects will remain subject to this political uncertainty. In addition, increasing environmental awareness and activism near current and potential mine sites may raise expected costs to a level that could cause companies to delay further investment in mineral property development. During 2009, the price of gold was fairly stable compared with the prices of other minerals that Guatemala appears to have the potential to produce, which could lead to expansion of gold production in the country before restarting production of such minerals as nickel or zinc. The results of the update of the feasibility study for the Fenix nickel project were expected to be forthcoming by the end of

September 2010 and of the feasibility study for the Cerro Blanco gold project by mid-2011. After these results are obtained, more definite timelines for these projects could also be forthcoming (assuming that the moratorium on new mining licenses will have been lifted by then). Definitive information was not available concerning firm timelines for the development of other mineral exploration properties in Guatemala, such as Firestone's lead, silver, and (or) zinc project(s) (Goldcorp Inc., 2010, p. 4; HudBay Minerals Inc., 2010, p. 15).

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TABLE 1  
GUATEMALA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2005	2006	2007	2008	2009
<b>METALS</b>					
Antimony	1,007	--	1,000 <sup>e</sup>	-- <sup>r</sup>	--
Gold, mine output, Au content kilograms	741	5,036	7,497 <sup>r</sup>	7,837 <sup>r</sup>	8,897
Iron and steel:					
Iron ore, gross weight <sup>3</sup>	11,268	7,341	31,006	452 <sup>r</sup>	5,463
Steel, crude thousand metric tons	207	292	349	250	224
Semimanufactures do.	252	304	301	306	250 <sup>e</sup>
Lead:					
Run of mine, Pb content	23	28	165 <sup>r</sup>	53 <sup>r</sup>	--
Metal, secondary <sup>e</sup>	6,000	8,000	8,000	10,000	14,000
Silver, mine output, Ag content kilograms	7,074	49,719	88,250	99,923 <sup>r</sup>	128,420
Zinc, run of mine, Zn content <sup>e,4</sup>	11 <sup>5</sup>	6,000	20,000 <sup>r</sup>	14,000 <sup>r</sup>	--
<b>INDUSTRIAL MINERALS</b>					
Barite	181	--	--	--	--
Cement, hydraulic <sup>e</sup> thousand metric tons	2,365 <sup>r,5</sup>	2,400 <sup>r</sup>	2,500	2,500	1,500
Clays:					
Bentonite do.	135	20	24 <sup>r</sup>	63 <sup>r</sup>	14
Ferruginous, including shale do.	90	202	142	190 <sup>r</sup>	219
Fuller's earth (attapulgitite)	--	19	109	-- <sup>r</sup>	--
Kaolin	4,107	4,395	2,663 <sup>r</sup>	2,803 <sup>r</sup>	1,879
Unspecified cubic meters	--	--	51,827	18,412	900
Feldspar	3,808	17,176	30,234	45,854 <sup>r</sup>	5,762

See footnotes at end of table.

TABLE 1—Continued  
GUATEMALA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2005	2006	2007	2008	2009	
INDUSTRIAL MINERALS—Continued						
Gypsum, crude	thousand metric tons	350	227	495	127 <sup>r</sup>	19
Jadeite		27	419	411	41 <sup>r</sup>	18
Lime, hydrated <sup>c</sup>	thousand metric tons	150 <sup>r</sup>	150 <sup>r</sup>	150 <sup>r</sup>	150 <sup>r</sup>	150
Magnesium compounds (magnesite)		5,636	1,084	7,612	11,758 <sup>r</sup>	17,247
Pumice	thousand cubic meters	-- <sup>r</sup>	-- <sup>r</sup>	220	394 <sup>r</sup>	395
Rhyolite		2,707	236	--	--	--
Salt <sup>c</sup>	thousand metric tons	60	60 <sup>r</sup>	60 <sup>r</sup>	60 <sup>r</sup>	50
Stone, sand and gravel:						
Stone, crude:						
Basalt	thousand cubic meters	1 <sup>e</sup>	1,604	2,085	1,583 <sup>r</sup>	57
Of which, andesite	cubic meters	512	--	33,690	-- <sup>r</sup>	--
Dolomite		8,585	2,333	7,540 <sup>r,e</sup>	2,860 <sup>r,e</sup>	799
Flagstone, phyllite	cubic meters	513	18	60 <sup>r,e</sup>	84 <sup>r</sup>	86
Granite		--	1,761	423 <sup>e</sup>	3,783	1,584
Limestone, crude	thousand metric tons	140	4,938	8,470 <sup>r,e</sup>	5,470 <sup>r,e</sup>	6,090
Of which, dimension stone	do.	64	29 <sup>e</sup>	14 <sup>r</sup>	-- <sup>r</sup>	--
Marble, including chips and pieces	do.	45	50	20 <sup>r,e</sup>	14 <sup>r,e</sup>	9
Schist, slate	thousand cubic meters	--	582	199	160 <sup>r</sup>	174
Stone, round, unworked	do.	6	69	46	17 <sup>r</sup>	62
Sand and gravel, natural:						
Building (foundation) sand	do.	--	--	20	14	14
Gravel, unspecified	do.	60	120	6	12 <sup>r</sup>	3
River sand and gravel	do.	367	502	140 <sup>r</sup>	192 <sup>r</sup>	174
Sand and gravel, common	do.	82	447	100 <sup>r</sup>	287 <sup>r</sup>	118
Silica sand		474	57,692	67,548	65,343 <sup>r</sup>	35,933
Stone dust	thousand cubic meters	--	44	--	37 <sup>r</sup>	9
Volcanic ash and sand	do.	49	417	354	342 <sup>r</sup>	356
Talc and steatite		1,631	526	586 <sup>r</sup>	1,030 <sup>r</sup>	6,355
Tuff	cubic meters	--	590	39,906	22,096	39,222
MINERAL FUELS AND RELATED MATERIALS						
Coal, lignite		--	--	5	3 <sup>r</sup>	--
Natural gas, gross <sup>c</sup>	thousand cubic meters	560	490	460 <sup>r</sup>	430 <sup>r</sup>	410
Petroleum:						
Crude	thousand 42-gallon barrels	6,728	5,893	5,584 <sup>r</sup>	5,158 <sup>r</sup>	4,933
Refinery products:						
Asphalt	do.	278	272	349	210	389
Naphtha	do.	5	5	3	1	1
Kerosene	do.	2	5	7	5	8
Diesel	do.	161	137	161	144	167
Refinery gas	do.	26	29	28	20	16
Total	do.	472	448	548	380	580

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through July 14, 2010.

<sup>2</sup>In addition to the commodities listed, some additional construction materials (clays, gravel, miscellaneous rock, and sand) are produced to meet domestic needs, but available information is inadequate to make reliable estimates of output.

<sup>3</sup>Includes combined production of hematite and iron oxide as reported by the Dirección General de Minería, Ministerio de Energía y Minas, Guatemala. Any or all of the reported production may not be of high enough grade for metallurgical use and is used mostly as an additive in the manufacturing of cement.

<sup>4</sup>Source of data from 2006 through 2008: Monthly bulletin of the International Lead and Zinc Study Group. Any or all zinc production could be attributable to the reprocessing of tailings from mining operations that had been discontinued since at least the 1980s.

<sup>5</sup>Reported figure.

TABLE 2  
GUATEMALA: STRUCTURE OF THE MINERAL INDUSTRY IN 2009

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity <sup>c</sup>
Antimony	metric tons	Minas de Guatemala S.A. (private, 100%)	Clavito, La Florida, and Los Lirios Mines, Ixtahuacan, Huehuetenango Department	1,000
Cement		Cementos Progreso S.A. (Holcim Ltd., 20%, and other private, 80%)	San Miguel plant, Sanarate, El Progreso Department, and La Pedrera plant, Guatemala City	3,000
Gold	kilograms	Montana Exploradora de Guatemala S.A. (Goldcorp Inc., 100%)	Marlin Mine, near municipalities of San Miguel Ixtahuacan and Sipakapa, Department of San Marcos	9,000
Do.	do.	Castle Gold Corp., 50%, and Rocas El Tambor S.A., 50%	El Sastre Mine, near San Antonio la Paz, El Progreso Department	350
Lead, run of mine		Tenango Mining Company S.A., 100%	Caquiepec Mine, Alta Verapaz Department	NA
Lime		HORCALSA S.A. (Cementos Progreso S.A., 100%)	San Miguel plant, Sanarate, El Progreso Department	180
Petroleum, crude	thousand 42-gallon barrels	Perenco plc, 100%	Rubelsanto and West Chinaja fields, Alta Verapaz Department, and Caribe, Tierra Blanca, and Xan fields, Peten Department	6,000
Silver	kilograms	Montana Exploradora de Guatemala S.A. (Goldcorp Inc., 100%)	Marlin Mine, near municipalities of San Miguel Ixtahuacan and Sipakapa, Department of San Marcos	130,000
Steel:				
Crude		Siderúrgica de Guatemala S.A. (SIDEGUA) {Corporación Aceros de Guatemala S.A. [Corporación Centroamericana del Acero S.A. (Gerdau S.A., 30%, and other private, 70%), 100%], 100%}	Electric arc furnace, near City of Escuintla, Escuintla Department	500
Semimanufactures		Indeta S.A. (INDETA) {Corporación Aceros de Guatemala S.A. [Corporación Centroamericana del Acero S.A. (Gerdau S.A., 30%, and other private, 70%), 100%], 100%}	Rolling mill at Colonia San Ignacio, Mixco, near Guatemala City	250
Do.		Industria Galvanizadora, S.A. (INGASA) (Industrias Monterrey S.A. de C.V., 100%)	Plant near Guatemala City	74
Zinc, run of mine		Tenango Mining Company S.A.	Caquiepec Mine, Alta Verapaz Department, and Esperanza Mine, Huehuetenango Department	NA

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits. NA Not available.