



2009 Minerals Yearbook

MEXICO

THE MINERAL INDUSTRY OF MEXICO

By Alberto Alexander Perez

Mexico's economy, in terms of the gross domestic product (GDP), was the second largest in Latin America, behind only that of Brazil. The GDP in 2009 was \$1.004 trillion calculated using the official exchange rates, which was a 7.7% decrease from that of 2008, or \$1.485 trillion based on purchasing power parity. Mexico's economy had an inflation rate of 3.6% and an official unemployment rate of 5.5%, although the underemployment rate as defined by the U.S. Central Intelligence Agency may have been as high as 25% (U.S. Central Intelligence Agency, 2010).

The mineral industry was one of the most profitable economic sectors of the country and represented a major source of revenue for the Government; however, the international economic slowdown that began in the last semester of 2008 and continued into 2009 and the accompanying variability in the international price of mineral commodities resulted in only a minimal increase in the value of mining production, which increased by less than 1% in 2009. Mining employment decreased by 1.5%, losing about 4,000 jobs.

The principal mineral-rich areas where copper, gold, silver, and zinc were produced are located in the north and the west-central parts of the country. The main oil-producing areas are located in the east and south (Camara Minera de Mexico, 2010, p. 6; U.S. Central Intelligence Agency, 2010).

Mexico is a leading world producer of several mineral commodities. In 2009, the country was the world's second ranked producer of fluor spar and silver and the third ranked producer of strontium. Mexico also was the fifth ranked producer of cadmium, diatomite, lead, and molybdenum; the sixth ranked producer of barite; the seventh ranked producer of salt and zinc; the eight ranked producer of arsenic; the ninth ranked producer of graphite and manganese; the eleventh ranked producer of feldspar, and the twelfth ranked producer of copper ore and gold (Angulo, 2010; Brooks, 2010a, b; Carlin, 2010; Corathers, 2010; Crangle, 2010; Guberman, 2010; Kostick, 2010; Miller, 2010; Polyak, 2010; Secretaría de Economía, 2010b; Tolcin, 2010a, b).

Minerals in the National Economy

The mineral industry was one of the four main sources of foreign currency for the country; the other three main sources were (in order of value) crude oil exports, tourism, and remittances by Mexican emigrants back to their families. Foreign remittances had decreased since 2007 owing to the U.S. economic slowdown and recession, and tourism income had also decreased owing in part to a perception by foreign tourists of increased violence in the country. Crude oil production had consistently decreased in the past 5 years, although, in 2008, Mexico's crude oil exports achieved their highest value. This has positioned the mineral industry as a critical one within the Mexican economy. Mineral commodity prices, however, fell dramatically beginning in the third

trimester of 2008 and continued to decrease through 2009. The mining proportion of the Mexican GDP in 2009 was 1.6%. Investment in the mineral industry was almost \$2.9 billion, which was a decrease of 22% compared with that of 2008 (Camara Minera de Mexico, 2010, p. 7; Secretaría de Economía, 2010b).

Of the total mineral industry production in Mexico in 2009, gold accounted for a 22.9% share of the total followed by silver, 18.3%; copper, 16.6%; zinc, 9%; coke, 6.4%; iron and coal, 5.1% each; molybdenum, 3.5%; lead, 2.5%; and fluorite and salt, 2.2% each; various other minerals constituted the remainder (Camara Minera de Mexico, 2010, p. 7).

In terms of value, the State of Sonora produced almost 22% of Mexico's total nonfuel mineral production in 2009. The State of Zacatecas produced 19%; Chihuahua, 15%; and Coahuila, 13%. The States of Durango and San Luis Potosi also contributed significantly to the value of nonfuel mineral production (Secretaría de Economía, 2010a, p. 60-92).

Government Policies and Programs

Natural resources, and minerals in particular, are considered part of the national patrimony of Mexico under its Constitution. Article 27 deals with issues of ownership and exploitation of natural resources. The Mining Law that became effective in 1992 and that was subsequently modified and expanded in 1996 and again in April 2005, however, clarifies and spells out the legal framework for exploration, production, and processing of the mineral resources of the nation. The law allows a 100% private equity ownership stake in the exploration, production, and development of mineral resources, including resources previously reserved for direct Government exploitation, such as coal, iron, phosphorus, potassium, and sulfur. Oil and its derivatives, as well as radioactive materials, are not covered in this law. Exploration concessions are granted for 6 years and are not renewable. Production concessions then are awarded for 50 years and are renewable for a similar period.

The Mining Law was also revised to decrease the administrative procedures and establish time limits for most of those procedures. The public service manual of mining-related issues, which was published in July 1999, spells out the established regulations and administrative procedures for all mining matters (Secretaría de Economía, 1999).

The mining sector is administered by the Secretaría de Economía, and the Dirección General de Minas is the organization in charge of making revisions to the Mining Law and its regulations, as well as for granting concessions and titles.

Another important law concerning all Mexican resources is the Law of Foreign Investment, which regulates the degree and form of foreign investment in Mexico, and, in particular, in the natural resources sector—an area that was previously barred from foreign investment and ownership. This law was first published in 1993 and has since been revised and amended by decrees in 1995, 1996, 1998, 1999, and most recently, in 2000.

In particular, Articles 10 through 14 deal with foreign investment in the mining sector and the development and exploitation of geographic areas considered restricted by the Government.

The General Law of Ecological Balance and Environmental Protection (LGEEPA), which is the keystone of environmental legislation, was passed in 1988. Those environmental responsibilities that had resided in various Government agencies were transferred to the Secretaría de Medio Ambiente, Recursos Naturales y Pesca (SEMARNAP) in 1994. In 2000, the agency became the Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT). Under SEMARNAT, mineral exploration and mining projects require a number of environmental permits and authorizations to conform to the provisions of the LGEEPA. These requirements include a preliminary environmental impact statement for all major activities of the projects. SEMARNAT also requires all mines and plants to have an operating license, as well as permits for explosives, hazardous materials handling, land use, water discharge, and well usage. Other regulations are concerned with dumps and tailings, electrical transformers, gas and dust emissions, noise, and the storage of oil and fuel.

The regulation mandating environmental impact statements was initiated in 2000. Under the new rules, environmental impact reports for beneficiation plants, gas and oil pipelines, and mines must be approved by SEMARNAT. According to this agency, the level of sites considered contaminated with dangerous byproducts, including from mining and manufacturing, remained stable since 2006 at 330 registered sites; however, this was an increase from 297 registered sites in the 2000-04 period. In its index of the physical volume of production of dangerous residuals produced by the mining sector, SEMARNAT estimated that there was a steady increase since 2000 of more than 8% of dangerous residuals measured in terms of the total value of production. In total volume of production, this was still lower than that produced by the manufacturing sector as a whole (Secretaría de Medio Ambiente y Recursos Naturales, 2008, p. 1).

Production

Mexico's mineral production in 2009 was affected by the continuing economic recession and the general decline in the price of mineral commodities. Decreases in the production of antimony (which decreased by 80.5%), common clays (75.2%), ferromanganese (56.7%), refined gold (48.6%), diatomite (37.1%), wollastonite (36.5%), manganese (30.2%), graphite (29.3%), iron metal (22.8%), and crude steel products (18.9%) were the most notable. The mineral commodities for which production increased included metallurgical coal (production of which increased by 147%), vermiculite (120%), talc (90%), fuller's earth (63.5%), phosphate rock (46.7%), molybdenum (30.1%), nitrogen (16.9%), and sulfur (7%) (table 1; Secretaría de Economía, 2010a, p. 221-530).

The global economic downturn affected Mexico's mineral industry in 2009, particularly during the first half of the year. According to data released by the Instituto Nacional de Estadística Geografía e Informática (INEGI), the volume of production of the metal mining industry in Mexico decreased by

9.6% compared with that of 2008, mostly owing to the decrease or only slow increase in the production of copper, gold, gypsum, iron, lead, silver, and zinc.

Labor disputes at the Cananea Mine in the State of Sonora, which was considered one of the leading copper mines in the world and was operated by Grupo Mexico S.A.B. de C.V., continued into 2009, and the mine was not operational for the year. The mine's lack of production contributed to the continued decrease in the production of copper and silver in the country (Grupo Mexico S.A.B. de C.V., 2010, p. 80; Instituto Nacional de Estadística, Geografía e Informática, 2010, p. 5).

Mexico, which was the leading producer of sodium sulfate in the world in terms of the volume of output, produced 646,000 metric tons (t) in 2009. Mexico's production of magnesium sulfate reached a record of 43,000 t in 2008 (the latest year for which data were available), which was 25% more than in 2007. Quimica del Rey S.A. de C.V. was the leading processor of sodium sulfate in North America and Europe (table 1; Camara Minera de Mexico, 2009, p. 18).

Crude oil production by Petróleos Mexicanos (PEMEX), which was the state-owned oil monopoly, was greater than 949 million barrels (Mbbbl), or 6.8% lower in 2009 than in 2008. Natural gas production increased slightly to greater than 135 Mbbbl, which was 1% more than in 2008 (table 1; Petróleos Mexicanos, 2010, p. 2).

Structure of the Mineral Industry

A few large domestic companies produced a significant portion of Mexico's metallic mineral output, such as Cementos Mexicanos S.A. de C.V. (CEMEX), Empresas Frisco S.A. de C.V. (Frisco), Fresnillo plc, Grupo Acerero del Norte S.A. de C.V. (GAN), Grupo Mexico, Industrias Peñoles, S.A.B. de C.V., and Minera Autlan S.A. de C.V., whereas medium- and small-size companies produced many of the industrial minerals. State-owned PEMEX controlled the crude petroleum, refining, and natural gas production sector (table 2).

The Secretaría de Economía reported that, in 2009, a total of 279 mining companies with direct foreign investment were working on 718 projects. Of these projects, 599 were in the exploration phase, 65 were in the production phase, 14 were in the development phase, and 40 had suspended production. Of these companies, 209 had their central offices in Canada; 42, in the United States; 7, in Australia; 6, in the United Kingdom, 4, in Japan; 2 each, in China and North Korea; and 1 each in Chile, Luxembourg, India, Peru, Switzerland, Italy, and the Netherlands.

The State of Sonora produced 27% of the total mineral output; Chihuahua, 12%; Zacatecas, 16%; Coahuila, 15%; and the rest was produced in other States. Precious metals, in particular gold and silver, were the primary targets for 452 of these projects. Polymetallic projects accounted for 133 of the projects, 95 were projects involving copper, and 24 were iron projects; the rest involved a variety of minerals. Total investment in these projects by national and foreign companies reached almost \$2.9 billion during 2009 (Secretaría de Economía, 2010a, p. 552-555).

Mineral Trade

In 2009, Mexico was a net exporter of nonfuel minerals, in terms of value, and registered a trade surplus of \$5.17 billion. This was mostly because the country was a net precious minerals exporter; in 2009, Mexico exported 21.7% more precious metals than in 2008.

The value of Mexico's total mineral production in 2009, excluding mineral fuels, was \$10.21 billion, of which 93% was metallic minerals and 7% was nonmetallic minerals. Industrial metals accounted for 38% of all nonfuel mineral exports.

Nonfuel mineral imports were valued at \$5.04 billion in 2009, and the most important component, in terms of both the value and share of total imports, was industrial metals, which were valued at \$3.26 billion and accounted for 64.7% of all nonfuel mineral imports (a decrease of 5.3% compared with that of 2008) (Camara Minera de Mexico, 2010, p. 83).

Mexico's principal export partners were the United States and Canada (which were members of the North America Free Trade Agreement) followed by, in order of the value of trade, Spain, Japan, Germany, Colombia, and China. Mexico's principal import partners were the United States and China; other significant sources of imports were Japan, the Republic of Korea, Germany, Canada, and Brazil (UN Comtrade, 2010).

The role of China in the mineral industry of Mexico had increased since 2007, not only as a consumer of minerals produced in Mexico and the world in general, but also as a direct participant in exploration. In March 2008, the Chinese company Jinchuan Group acquired the Calgary-based company Tyler Resources for exploration at the Bahuerachi project in Chihuahua—a property that contains copper, zinc, molybdenum, silver, and gold mineralization (Bloomberg Businessweek, 2009).

Commodity Review

Metals

Copper.—Of the total nonferrous metal production in Mexico, copper accounted for 51.9%, in terms of value, in 2009. Mexican copper production by volume decreased by 15.2% compared with that of 2008, and the value of production was \$1.58 billion, which was a decrease of 12.2% compared with that of 2008. Mexican copper production in 2009 was the lowest of the past 20 years.

In 2009, 95.1% of all copper production took place in the following four States: Sonora (66.9%), Zacatecas (14.3%), San Luis Potosi (8.3%), and Chihuahua (5.6%). The recovery in the price of copper after its fast drop in 2008 helped to offset the lower levels of production and reduced the decrease in total production value compared with that of 2008. The strike at the Cananea Mine in the State of Sonora continued to interrupt production throughout 2009. The Mexicana de Cobre la Caridad copper mine (also commonly referred to as Nacozari owing to its proximity to the town of the same name), which was operated by Mexicana de Cobre S.A. de C.V. (a subsidiary of Grupo Mexico), produced 130,616 t of copper in 2009 whereas Industrias Peñoles produced 20,345 t at its Milpillas Mine, and

Frisco produced more than 11,000 t at its Maria and Tayahua Mines, which are located in the State of Sonora and the State of Zacatecas, respectively. Negociacion Minera de San Luis Potosi (NEMISA) produced 17,646 t at its Santa Maria de La Paz unit in the State of San Luis Potosi (Camara Minera de Mexico, 2010, p. 7).

Gold.—In 2009, the value of gold production in Mexico surpassed the value of silver production, as it also had in 2008, and accounted for 22.9% of the total value of the country's mineral industry. Mexico's gold mine output was, in terms of gold content, 51,393 t, which was an increase of 2% compared with that of 2008 and the country's highest level of production ever (table 1; Camara Minera de Mexico, 2010, p. 7).

In 2008, Goldcorp Inc. of Canada became the leading producer of gold in Mexico. In 2009, the output from the company's mines represented 36% of the national production. Goldcorp owned Los Filos gold mine in the State of Guerrero; the mine produced 7.4 t of gold in 2009. It also owned the El Sauzal Mine in the State of Chihuahua, which produced 6.3 t, whereas the San Dimas Mine in the State of Durango and the Peñasquito Mine in the State of Zacatecas produced 3.51 t and 2.8 t, respectively. The Peñasquito Mine started its operations in May 2008; when the mine reaches its total capacity of 12.4 metric tons per year, it is expected to account for a projected 25% of the nation's gold production.

Fresnillo produced 8.04 t of gold at its La Herradura Mine in the State of Sonora and 3.11 t at its La Cienega Mine in the State of Durango (table 1; Camara Minera de Mexico, 2010, p. 8). Gammon Gold Inc. produced 3.38 t of gold at its Ocampo Mine in the State of Chihuahua, and Alamos Gold Inc. of Canada produced 5.55 t at its Mulatos Mine in the State of Sonora. The Cerro San Pedro Mine in San Luis Potosi, which was owned by Minera San Xavier S.A. (a subsidiary of the Canadian company New Gold Inc.) produced 2.9 t of gold in 2009.

In April, Coeur D'Alene Mines Corp. of the United States reported that its Palmarejo Mine, which is located in the State of Chihuahua, started production. Production by the end of the year was reported to be 1.8 t. Production by the end of 2010 was projected to increase to 3.3 t (Camara Minera de Mexico, 2010, p. 8).

Lead.—The output of lead mine production in Mexico increased by 1.8% in 2009, although primary metal production fell by 6.5%. According to the Camara Minera de Mexico (CAMIMEX), the total value of lead production for 2009 amounted to \$2.42 million, which was 7% more than in 2008. Mexico produced 3.6% of the world's total output of lead in 2009 (table 1; Camara Minera de Mexico, 2010, p. 13).

Industrias Peñoles, which owned the Naica Mine located in the State of Chihuahua, continued to be the leading producer of lead in Mexico with an output of 20,747 t in 2009; this was a slight decrease compared with the production level obtained in 2008. In 2009, the Santa Barbara Mine, which is also located in Chihuahua and owned by Grupo Mexico, produced 12,316 t. The Fresnillo Mine, which was owned by Fresnillo and located in Zacatecas, produced 11,180 t of lead as a byproduct of the mine's silver operation (table 1; Camara Minera de Mexico, 2010, p. 13).

Molybdenum.—Molybdenum production in the country increased by 30% compared with a record production of 10,166 t in 2008, which represented an increase of 303% from the 2006 levels of production. The output was valued at \$242 million, which was a decrease of 49% compared with that of 2008 owing to the decrease of international prices. The value of molybdenum production was responsible for 10.9% of the total value of the mineral production in Mexico in 2009, placing it among the five top ranked mineral commodities in Mexico.

Grupo Mexico owned La Caridad Mine in the State of Sonora; the mine produced 98% of all molybdenum output in the country. Most of La Caridad Mine production was processed in the facilities in Cumpas, State of Sonora, where it was processed into molybdenum trioxide, which was mostly exported (table 1; Camara Minera de Mexico, 2010, p. 14).

Silver.—Mexico was the second ranked producer of silver in the world in 2009; it accounted for 15.1% of the world's production. Its silver mine output was 3,554 t, which was a historic high for the country and represented a growth in production of 9.8% compared with the production level in 2008 (table 1).

On May 14, 2008, Fresnillo became the first Mexican company listed on the London Stock Exchange. Fresnillo was the leading silver producer in the world, and it placed 25% of its shares (valued at \$2 billion) on the London Stock Exchange. The Fresnillo Mine remained the richest silver mine in the world, producing 1,178 t in 2009 and accounting for 36% of total national production (Camara Minera de Mexico, 2010, p. 9).

The Alamo Dorado Mine, which is located in the State of Sonora, produced 165.5 t in 2009, which was a decrease of 24% compared with production in 2008; the mine was owned by the Canadian company Pan American Silver Corp. and began operations in 2007. La Colorada Mine, which is located in the State of Zacatecas and was also owned by Pan American Silver, produced 107.8 t, which was a decrease of 12% compared with 2008 production. Gammon Gold Inc., which operated the Ocampo Mine in the State of Chihuahua, produced 124 t in 2009 (Camara Minera de Mexico, 2010, p. 10).

Strikes continued at the Cananea, the San Martin, and the Taxco Mines, which are located in the States of Sonora, Zacatecas, and Guerrero, respectively. As a result, Grupo Mexico was not able to produce silver from these operations in 2009. The Tizapa Mine, which is located in the State of Mexico and owned by Industrias Peñoles, produced 132 t, which was an increase of 38% compared with that of the previous year. The total value of production of silver in Mexico in 2009 was \$1.27 billion, which was 2% higher than in 2008 (Camara Minera de Mexico, 2010, p. 9; Secretaría de Economía, 2010b).

Zinc.—The production of zinc metal in Mexico increased in 2009 by 2.5% compared with that of 2008, and the levels of zinc mine output increased by 7.9%. The total value of zinc production was \$685 million, which represented a decrease of 4.7% compared with that of 2008 (Camara Minera de Mexico, 2010, p. 12; Secretaría de Economía, 2010b).

The Charcas Mine in the State of San Luis Potosi, which was owned by Minera Mexico S.A. de C.V., continued to be the leading producer of zinc in the country. In 2009, the mine produced 62,033 t of zinc, which was a 3% decrease compared

with the 2008 level of production. Industrias Peñoles owned the Bismarck Mine in Chihuahua and the Francisco I. Madero Mine in Zacatecas. These mines produced 47,722 t and 47,169 t of zinc, respectively, which resulted in an increase of 20% and a decrease of 16%, respectively, compared with 2008 levels of production, and made them the second and third richest zinc mines in the country, respectively (Camara Minera de Mexico, 2010, p. 13).

Industrial Minerals

Mexico was an important world producer of industrial minerals, ranking among the top 10 producers in the world. The value of production of industrial minerals in 2009 reached \$800 million, which was a decrease of 10.5% compared with that of 2008 (table 1; Camara Minera de Mexico, 2010, p. 17; Secretaría de Economía, 2010b).

The nonmetallic minerals that had the largest increases in value were, in order of increase, salt (22.6%), fluorspar (21.9%), silica sand (13.8%), phosphate rock (13.4%), sodium sulfate (9.5%), gypsum (6.5%), and barite (2.5%). Celestite production had dropped dramatically in 2008 (by 69%) but in 2009, production increased by almost 22% (table 1; Secretaría de Economía, 2010a, p. 18).

Fluorspar.—Total fluorspar production decreased slightly to 1.04 million metric tons (Mt) in 2009 from 1.05 Mt in 2008, or by 1%. The principal States that produced fluorspar were Coahuila and San Luis Potosi (table 1; Camara Minera de Mexico, 2010, p. 18; Secretaría de Economía, 2010b).

Gypsum.—The volume of production of gypsum increased by 12.1% compared with that of 2008. The municipality of Mulege, which is located in the State of Baja California Sur, was where more than 55% of the national production of gypsum takes place. The principal producer of gypsum in Mexico was Compañía Occidental Mexicana S.A. de C.V.; this company reported production of 1.6 Mt of gypsum in 2009 (table 1; Camara Minera de Mexico, 2010, p. 18; Secretaría de Economía, 2010b).

Phosphate Rock.—The reactivation of the Rofomex phosphate rock mine in San Juan de la Costa, which is located in the State of Baja California Sur and operated by Roca Fosforica de Mexico (a subsidiary of Grupo Fertinal S.A. de C.V.), showed an increase in production of phosphate rock of 1,962% in 2008 with respect to that of 2007 and 46.7% in 2009 compared with that of the previous year. The mine had been inactive since 2001 owing to damage to the installations by Hurricane Juliette and later because of litigation between Fertinal and its insurers (Insurance Journal, 2007).

Mineral Fuels

Coal.—The total production of coal in 2009 was 23.1 Mt, which represented an increase of 45% compared with that of the previous year. The main companies that produced coal were Carbonifera San Patricio S.A. de C.V., GAN, Grupo Mexico, and Materiales Industrializados S.A. de C.V. (Minsa). The distribution of reserves among the main concession holders was as follows: GAN (54.7%), Minsa (32.5%), and Grupo Mexico

and Carbonifera San Patricio (7.9% each); the remainder was apportioned to Energía y Minería del Noroeste S.A. de C.V. (table 1; Cámara Minera de México, 2010, p. 16; Secretaría de Economía, 2010b).

Crude Petroleum and Natural Gas.—Although demand for petroleum had increased, PEMEX's levels of crude petroleum production had been decreasing in the past years, partly owing to Mexico's declining reserves and partly owing to a lack of investment, exploration, and development of new projects. In 2009, production was 6.8% lower than in the previous year and reached an estimated 949 Mbbl in 2009. Gross natural gas production increased by 1.6% compared with that of the previous year and the production of petrochemicals increased by 3% compared with the 2008 levels of production (table 1; Petróleos Mexicanos, 2010, p. 2).

Outlook

The precious metals sector was the most dynamic and profitable sector of the mineral industry in Mexico. In the future, gold and silver exploration are expected to continue, as these mineral commodities have proven to be profitable and to have stable prices. Industrial minerals will likely continue to play an important role in Mexico's exports and imports; however, their production and further investment in the industry will depend on the world demand for these products. Although the mineral industry as a whole is still a small part of the total GDP, it represents a very important source of foreign currency, competing with the oil industry, tourism, and remittances by nationals living abroad. The Mexican Government expects that the economy's main macroeconomic variables will improve and that the economy will stabilize after the economic shock at the end of 2008/beginning of 2009. A growth of 3% is predicted for 2010, and the Government expects to continue with a controlled inflation. The Mexican Government estimates that growth in the coming years will be closely tied to that of the United States, as the United States is Mexico's principal commercial trading partner. Keeping the exchange rate stable is a priority of the Government, and it has been moderately successful in creating a stable currency base for Mexico's trade. The promotion of investment in the mineral sector is expected to continue as evidenced by the Government's creation in 2007 of the Subsecretaría de Minas—an agency created exclusively to coordinate and promote the development of the mining industry in Mexico.

The challenges that remain the most daunting for the mineral industry are mostly tied to the level of world prices for mineral commodities and the demand for these products. The reactivation of the copper industry will be a priority for the sector, as it is such a substantial part of the country's mineral industry.

For the third year in a row, the total mineral value of production was affected by strikes and by problems within local communities. Investment of more than \$14.8 billion in the mining sector is projected for the period 2007-12, so long as fuel prices remain competitive and infrastructure and labor issues are treated as a priority by the Government (Cámara Minera de México, 2009).

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TABLE 1
MEXICO: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2005	2006	2007	2008	2009
METALS					
Aluminum, metal, secondary ^{e,3}	574,100	600,000	600,000	600,000	600,000
Antimony ⁴	565	778	414	380	74
Arsenic ⁵	1,664	1,595	513	--	--
Bismuth:					
Mine output, Bi content ⁶	970	1,186	1,170	1,132	854
Metal, refined	970	1,186	1,170	1,132	854
Cadmium:					
Mine output, Cd content	1,627	1,399	1,605	1,550	1,510
Metal, refined	1,627	1,396	1,605	1,550	1,510
Copper:					
Mine output, Cu content:					
By concentration or cementation	336,367	280,840	276,530	214,644 ^r	170,597
Leaching, electrowon	92,675	46,696	58,972	53,975	57,151
Total	429,042	327,536 ^r	335,502	268,619 ^r	227,748
Metal:					
Anode and blister, primary	301,200	260,200	222,600	200,200	169,000
Refined:					
Primary	410,375	373,400	345,904	308,000	255,700
Secondary ^c	6,000	6,000	6,000	6,000	5,000
Total	416,375	379,400	351,904	314,000	260,700
Gold:					
Mine output, Au content kilograms	30,356	38,961	43,710	50,365 ^r	51,393
Metal, refined do.	26,782	29,200	30,226	37,760	19,410
Iron and steel:					
Iron ore, mine output:⁷					
Gross weight thousand metric tons	11,687	10,983	10,916 ^r	11,688	11,677
Fe content do.	7,012	6,590	6,550 ^r	7,013	7,073
Metal:					
Pig iron do.	4,047	3,790	4,078	4,450	3,925
Direct-reduced iron do.	5,973	6,167	6,265	6,012 ^r	4,147
Total do.	10,020	9,957	10,343	10,462	8,072
Ferrous alloys, electric arc furnace:⁸					
Ferromanganese do.	90	62	70	97	42
Silicomanganese do.	105	97	109	114	85
Total do.	195	159	179	211	127
Crude steel do.	16,202	16,447 ^r	17,563	17,209 ^r	13,957
Rolled products ⁹ do.	13,702	14,473 ^r	14,985	14,174 ^r	12,767
Lead:					
Mine output, Pb content	134,388	135,025	137,133	141,173	143,838
Metal:					
Smelter:					
Primary ¹⁰	116,539	117,315	89,838	91,364	85,411
Secondary ^c	110,000	110,000	110,000	110,000	110,000
Total ^c	227,000	227,000	200,000	201,364	195,411
Refined:					
Primary ¹¹	103,691	117,315	89,838	91,364	85,411
Secondary ^c	110,000	110,000	110,000	110,000	110,000
Total ^c	214,000	227,000	200,000	201,000	195,000
Manganese ore:¹²					
Gross weight ^e	369,000	346,000	423,000	471,964	329,400
Mn content	132,872	124,417	152,446	169,907	118,577
Mercury, mine output, Hg content ^e	15	15	15	15	15
Molybdenum, mine output, Mo content	4,245	2,519	6,491	7,811	10,166

See footnotes at end of table.

TABLE 1—Continued
MEXICO: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2005	2006	2007	2008	2009
METALS—Continued					
Silver:					
Mine output, Ag content kilograms	2,894,161	3,028,395	3,135,430	3,236,312	3,553,841
Metallurgical products, Ag content:					
In copper bars do.	251,838	272,432	238,755	154,266	104,922
Mixed gold and silver bars do.	83,076	147,089	224,765	207,457	353,930
Metal, refined, primary do.	2,014,304	1,749,144	1,665,618	2,101,454	1,845,029
Tin:					
Mine output, Sn content	-- ^r	-- ^r	-- ^r	-- ^r	--
Metal, smelter, primary	17	25	19	15	--
Zinc:					
Mine output, Zn content	455,625	468,924	452,012	453,588	489,766
Metal, refined, primary	327,205	279,734	321,932	305,188	313,044
INDUSTRIAL MINERALS					
Abrasives, natural ¹³					
Barite	268,657	199,605	185,921	140,066	152,790
Cement, hydraulic ¹⁴ thousand metric tons	37,452	40,362	40,670	37,139 ^r	35,160
Clays:					
Bentonite	425,630 ^r	435,273	613,895	374,933	511,429
Common	41,190,217	38,527,423	37,970,190	40,522,818	10,036,832
Fuller's earth	107,265	102,400	34,175	66,123	108,139
Kaolin	877,147	961,800	86,784	85,092	78,086
Diatomite	62,132	62,948	82,519	128,536	80,807
Feldspar	373,411	459,209	438,696	445,519	347,510
Fluorspar:					
Acid-grade thousand metric tons	325	466	630	592	641
Metallurgical-grade do.	551	470	303	466	405
Total do.	876	936	933	1,057 ^r	1,046
Graphite, natural, amorphous	12,357	11,773	9,900	7,229	5,105
Gypsum and anhydrite, crude (yeso)	6,251,969	6,075,893	5,963,715	5,135,151	5,756,936
Lime, hydrated and quicklime ^e thousand metric tons	-- ^r	-- ^r	-- ^r	-- ^r	-- ^r
Magnesium compounds:					
Magnesite	27,900	33,000	33,900	43,053	34,700
Magnesia ¹⁵	89,957	87,520	79,135	85,477	72,600
Mica, all grades	120	150	9,600	5,000	5,000
Nitrogen, N content of ammonia	422,508	486,624	624,720	736,512	861,034
Perlite	91,724	81,719	54,405	43,180	51,395
Phosphate rock ¹⁶	350	7,500	14,100	290,728	426,547
Salt, all types thousand metric tons	9,508	8,378	8,032	8,809	7,445
Sodium compounds: ^e					
Carbonate, soda ash, synthetic	290,000	290,000	290,000	290,000	290,000
Sulfate, natural, bloedite ¹⁷	647,000	652,000	645,000	658,000	646,000
Stone, sand and gravel:					
Calcite, common	3,712,097	1,934,483	2,483,605	2,352,109	2,555,544
Dolomite	1,308,977	1,282,590	1,123,225	1,233,993	982,650
Limestone thousand metric tons	57,568	69,822	62,600	64,857	62,000
Marble	3,595,970	4,404,288	3,547,081	2,495,649	2,800,512
Quartz, quartzite, glass sand (silica)	2,120,878	2,661,770	2,950,438	2,779,075	2,483,605
Sand thousand metric tons	62,199	62,248	68,141	72,570	89,172
Gravel do.	65,927	68,017	78,233	87,416	78,777
Strontium minerals, celestite	110,833	128,321	96,902	29,621	36,127
Sulfur, elemental, byproduct:					
Of metallurgy ^e thousand metric tons	750	650	550	700	700
Of petroleum and natural gas do.	1,020	1,074	1,026	1,041	1,114
Total ^e do.	1,770	1,720	1,580	1,741	1,814

See footnotes at end of table.

TABLE 1—Continued
MEXICO: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2005	2006	2007	2008	2009	
INDUSTRIAL MINERALS—Continued						
Talc	64,827	40,535	32,410	17,576 ^r	33,421	
Vermiculite	233	177	102	132	291	
Wollastonite	27,132	44,280	50,809	46,844	29,728	
MINERAL FUELS AND RELATED MATERIALS						
Coal:						
Run of mine:						
Metallurgical	thousand metric tons	4,653	4,309	4,755	5,491	13,555
Steam	do.	7,097	6,573	7,132	10,403	9,496
Total	do.	11,750	10,882	11,887	15,894	23,051
Washed metallurgical coal ^c	do.	2,000	2,000	2,000	2,000	2,000
Coke:¹⁸						
Metallurgical	do.	1,447	1,529	1,449	1,459	1,315
Breeze	do.	45	40	87	88	88
Total	do.	1,492	1,569	1,536	1,547	1,403
Gas, natural:						
Gross	million cubic meters	49,803	55,364	62,613	71,523	72,660
Marketable (dry)	do.	32,530	35,610	36,654	31,897 ^r	32,237
Petroleum:						
Crude	thousand 42-gallon barrels	1,216,545	1,188,440	1,124,930	1,019,080	949,365
Condensate, natural gas liquids	do.	155,490	155,855	144,175	133,590	135,050
Total	do.	1,372,035	1,344,295	1,269,105	1,152,670	1,084,415
Refinery products:						
Liquefied petroleum gas	do.	11,169	9,271	9,709	9,454	9,891
Motor gasoline	do.	166,112	166,513	166,586	164,506	172,097
Jet fuel	do.	23,105	23,652	24,200	23,360	20,841
Distillate fuel oil, diesel	do.	116,143	119,757	121,910	125,378	123,005
Lubricants	do.	1,898	1,862	1,898	1,862	1,533
Residual fuel oil	do.	128,042	118,698	110,048	105,376	115,413
Asphalt	do.	10,695	11,790	11,644	12,520	11,643
Other, refinery fuel and losses	do.	31,316	33,798	33,212	34,201	36,900
Total	do.	488,480	485,341	479,207	476,655	491,323

⁶Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. do. Ditto. NA Not available. -- Zero.

¹Table includes data available through December, 27, 2010.

²In addition to the commodities listed, additional types of crude construction materials are produced, but output is not reported, and available information is inadequate to make reliable estimates of output.

³Primary production of aluminum ceased by the closure of Aluminios y Derivados de Veracruz (Aluder) owing to high energy costs.

⁴Sb content of antimonial lead.

⁵Arsenic content of white arsenic.

⁶Refined metal. Bismuth content of impure smelter products no longer reported.

⁷Iron ore pellets.

⁸Reported by Cámara Nacional del Hierro y del Acero.

⁹Includes flat, nonflat, and seamless pipe steel products.

¹⁰Lead content of impure bar, antimonial lead, and refined metal.

¹¹Includes lead content of antimonial lead.

¹²Mostly oxide nodules; includes smaller quantities of direct-shipping carbonates and oxide ores for metallurgical and battery applications.

¹³The previous series, which was based on exports comprising mostly pumice stone and emery (a granular, impure variety of corundum), is believed to be incomplete. Available information is inadequate to make reliable estimates of output.

¹⁴Includes grey and white portland and masonry cement.

¹⁵Reported by Industrias Peñoles, S.A.B. de C.V. as the only major producer. Includes caustic, electromelt, hydroxide, and refractory.

¹⁶Includes only output used to manufacture fertilizers.

¹⁷Series reflects output reported by Industrias Peñoles, S.A.B. de C.V. plus an additional 40,000 metric tons of estimated output by other producers.

¹⁸Includes coke made from imported metallurgical coal.

TABLE 2
MEXICO: 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 ¹	Annual capacity
Antimony	Cía. Minera y Refinadora Mexicana, S.A. (private Mexican, 51%, and Cookson Ltd., 49%)	San Jose Mine, Catorce, S.L.P.	365.
Barite	Barita de Sonora, S.A. [Grupo Acerero del Norte, S.A. de C.V. (GAN), 100%]	Mazatan, Son.	219.
Do.	Minerales y Arcillas, S.A. de C.V. (private Mexican, 100%)	San Francisco del Huerto Mine in San Pedro, Coah., La Escondida and Angelita Mines and plant in Galeana	55.
Do.	Barita de Santa Rosa, S.A. de C.V. (private Mexican, 100%)	Muzquiz, Coah.	256.
Bismuth	metric tons Met-Mex Peñoles, S.A. de C.V. (Industrias Peñoles, S.A.B. de C.V., 100%)	Torreón, Coah.	1,200.
Cement	CEMEX México (CEMEX, S.A.B. de C.V., 100%)	Ensenada, B.C.N.; Torreón, Coah.; Barrientos, D.F.; Arotonilco and Huichapan, Hgo.; Guadalajara and Zapotilic, Jal.; Hidalgo and Monterrey, N.L.; Tepeaca, Pue.; Tamuin and Valles, S.L.P.; Hermosillo and Yaqui, Son.; and Merida, Yuc.	26,650.
Do.	Cementos Apasco, S.A. de C.V. (Holcim Group, 49%, and other, 51%)	Apasco, Mex.; Ramos Arizpe, Coah.; Macuspana, Tab.; Tecoman, Col.; Orizaba, Ver.; and Acapulco, Gro.	8,900.
Do.	Cooperativa La Cruz Azul, S.C.L. (private Mexican, 100%)	Cruz Azul, Hgo., Lagunas, Oax.	5,000.
Do.	Cementos de Chihuahua, S.A. de C.V. (CEMEX México, 36%, and private Mexican, 64%)	Chihuahua, Ciudad Juárez, and Samalayuca, Chih.	2,000.
Do.	Lafarge México (Lafarge Group, 100%)	Vito, Hgo.	600.
Do.	Corporación Moctezuma, S.A. (Cementos Molins, S.A., 50%, and Buzzi Unicem SpA, 50%)	Tepetzingo, Mor.	2,400.
Do.	do.	Cerritos, S.L.P.	2,400.
Coal	Minera Monclova, S.A. [Altos Hornos de México, S.A. de C.V. (AHMSA), 100%]	Mimosa and Palau Mines and Muzquiz washing plant at Palau, Coah., and coking plant at Monclova, Coah.	3,000.
Do.	Carbonifera de San Patricio, S.A. de C.V. (private Mexican, 100%)	Progreso, Coah.	1,314.
Do.	Industrial Minera México, S.A. de C.V. (IMMSA) (Grupo México, S.A.B. de C.V., 90%)	Nueva Rosita, Coah.	1,500.
Do.	Minera Carbonífera Río Escondido, S.A. [Grupo Acerero del Norte, S.A. de C.V. [Altos Hornos de México (AHMSA), 100%]	Mina I, Mina II, and Tajo I at Nava and Piedras Negras, Coah.	6,500.
Copper	Mexicana de Cobre, S.A. de C.V. (Grupo México, S.A.B. de C.V., 90%)	La Caridad Mine, smelter, refinery, SX-EW ² plant, and rod plant at Nacozari de García, Son.	350 smelter, 50 SX-EW, ² 300 refinery, 150 rod plant.
Do.	Mexicana de Cananea, S.A. de C.V. (Grupo México, S.A.B. de C.V., 90%)	Mine and SX-EW ² plant at Cananea, Son.	29,200 mill, 33 SX-EW. ²
Do.	Minera María S.A. de C.V. (Grupo Frisco, 100%)	Mine and SX-EW ² plant at Cananea, Son.	20 SX-EW. ²
Do.	Cobre de México, S.A. de C.V. (Grupo ConduMex)	Primary refinery in Mexico City and secondary refinery in Villagrán, Gto.	150.
Ferroalloys	Cía. Minera Autlán, S.A.B. de C.V. (Grupo Ferrominero, S.A. de C.V., 54%; Minas de Basis, S.A. de C.V., 32%; BHP Billiton Ltd., 14%)	Plant in Tamos, Ver.	140.
Do.	do.	Plant in Teziutlán, Pue.	38.
Do.	do.	Plant in Gómez Palacio, Dgo.	35.

See footnotes at end of table.

TABLE 2—Continued
MEXICO: 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 ¹	Annual capacity
Fluorspar		Cía. Minera Las Cuevas, S.A. de C.V. (Mexichem, S.A. de C.V.)	Salitera (Zaragoza), S.L.P.	520.
Do.		Fluorita de México, S.A. de C.V. (Corp. Alfíl, 51%, and Applied Industrial Minerals Corp., 49%)	Mines at La Encantada district and plant at Muzquiz, Coah.	150.
Gold, mine	kilograms	Fresnillo plc (Industrias Peñoles, S.A.B. de C.V., 77.1%), 100%	Proaño (Fresnillo) Mine, Zac.	1,200.
Do.	do.	Minas de las Altas Pimerias, S.A. de C.V. (Goldcorp Inc., 100%)	El Sauzal Mine, Chih.	10,000.
Do.	do.	Fresnillo plc, 56%, and Newmont Mining Corp., 44%	La Herradura Mine, Son.	6,900.
Do.	do.	Luismin, S.A. de C.V. (Goldcorp Inc., 100%)	San Dimas Gold, Dgo. (two mines)	6,500.
Do.	do.	Gammon Lake de Mexico, S.A. de C.V. (Gammon Lake Resources Inc., 100%)	Ocampo Mine, Chih.	5,000.
Do.	do.	Minera Mexicana La Ciénega, S.A. de C.V. (Industrias Peñoles, S.A.B. de C.V., 100%)	La Cienega Mine, Dgo.	4,500.
Do.	do.	Animas Resources Ltd., 100%	Santa Gertrudis Mine, Son.	1,600.
Do.	do.	Cía. Minera El Cubo, S.A. de C.V. (Gammon Lake Resources Inc., 100%)	El Cubo Mine, Gto.	1,200.
Do.	do.	Pediment Gold Corp., 100%	La Colorada Mine, Son.	800.
Do.	do.	Alamos Gold Inc., 100%	Mulatos Mine, Son.	4,700.
Do.	do.	Great Panther Silver Ltd., 100%	Guanajuato, Gto.	438.
Gold, refined	do.	Met-Mex Peñoles, S.A. de C.V. (Industrias Peñoles, S.A.B. de C.V., 100%)	Torreón, Coah.	22,700.
Graphite		Grafitos Mexicanos, S.A. (Cummings Moore Graphite Co., 25%, and private Mexican, 75%)	Lourdes and San Francisco Mines, Son.	60.
Do.		Grafito Superior, S.A. de C.V. (Superior Graphite Co., 100%)	Covalmar, Santa Clara, and Rio Mayo Mines, and plant in Son.	25.
Gypsum		Cía. Occidental Mexicana, S.A. (private Mexican, 51%, and Domtar, Ltd., 49%)	Santa Rosalia on San Marcos Island, B.C.S.	2,500.
Iron ore		Consorcio Minero Benito Juárez Peña Colorada, S.A. de C.V. (ArcelorMittal Holdings AG, 50%, and Grupo Imsa, S.A. de C.V., 50%)	Peña Colorada mine and pellet plant near Manzanillo, Col.	3,500.
Do.		Altos Hornos de Mexico, S.A. de C.V. (AHMSA) [Grupo Acerero del Norte, S.A. de C.V. (GAN), 78.9%]	La Perla Mine, Chih.; Hercules Mine, Coah.; and Cerro de Mercado Mine, Dgo.	5,000.
Do.		Siderúrgica Lázaro Cárdenas-Las Truchas, S.A. de C.V. (SICARTSA) (Grupo Villacero, 100%)	Ferrotepec, Volcan, and Mango deposits in Las Truchas project area and pellet plant, Mich.	2,350.
Do.		Hylsamex, S.A. de C.V. (Ternium S.A., 86.68%)	Cerro Nahuatl, Col. and Aquila Mine, Mich.	1,500.
Lead and zinc		Industrial Minera México, S.A. de C.V. (IMMSA) (Grupo México, S.A.B. de C.V., 90%)	Charcas, S.L.P.; San Martín, Zac.; Santa Eulalia, Chih.; Taxco, Gro.; Rosario, Sin.; Santa Barbara, Chih.; Velardena, Dgo; lead refinery at Monterrey, N.L.; and zinc refinery at S.L.P.	70 lead, mine; 110 refined zinc.
Do.		Industrias Peñoles, S.A. de C.V. (private Mexican, 100%)	Mines at La Encantada, Coah.; Fresnillo, Zac.; Naica, Chih.; Bismark, Son; Rey de Plata, Gro. (Industrias Peñoles, S.A.B. de C.V., 51%, and Dowa Mining Co., 39%); metallurgical complex at Torreón, Coah., with silver, lead, and zinc smelter and refineries operated by Met-Mex Peñoles (Industrias Peñoles, S.A.B. de C.V., 100%)	180 refined lead, 240 refined zinc.

See footnotes at end of table.

TABLE 2—Continued
MEXICO: 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 ¹	Annual capacity
Lead and zinc—Continued		Industrias Peñoles, S.A. de C.V. (private Mexican, 97%, and private United States, 3%)	Francisco I. Madero Mine, Zac.	100,000 zinc.
Do.		Minera San Francisco del Oro, S.A. de C.V. (Empresas Frisco, S.A. de C.V., 100%)	San Francisco del Oro, near Hidalgo del Parral, Chih., and Tayahua, Zac.	15 lead, 21 zinc.
Manganese		Cía. Minera Autlán, S.A. de C.V. (Grupo Ferrominero, S.A. de C.V., 81.75%, and private Mexican, 18.25%)	Molango, Naopa, and Nonoalco Mines, Hgo.	600 ore and concentrate.
Molybdenum		Mexicana de Cobre, S.A. (Grupo México, S.A.B. de C.V., more than 90%)	La Caridad Mine and molybdenum plant, Son.	6.
Petroleum ³	thousand barrels per day	Petróleos Mexicanos (PEMEX) (Government, 100%)	Comalcalco, Poza Rica, Ver., and Gulf of Campeche, Cam.	3,500.
Salt		Exportadora de Sal, S.A. (Fideicomiso de Fomento 51%, and Mitsubishi Corp., 49%)	Solar salt complex at Guerrero Negro, B.C.S.	6,000.
Silver	kilograms	Fresnillo plc (Industrias Peñoles, S.A.B. de C.V., 77.1%)	Proaño (Fresnillo) Mine, Zac.	1,100,000.
Do.	do.	Minera Mexicana La Ciénega, S.A. de C.V. (Industrias Peñoles, S.A.B. de C.V., 100%)	La Ciénega Mine, Dgo.	65,800.
Do.	do.	Minera Bismark, S.A. de C.V. (Industrias Peñoles, S.A.B. de C.V., 100%)	Bismark Mine, Chih.	7,000.
Do.	do.	Co. Minera Sabinas, S.A. de C.V. (Industrias Peñoles, S.A.B. de C.V., 100%)	Sabinas Mine, Zac.	157,000.
Do.	do.	Minera Tizapa, S.A. de C.V. (Industrias Peñoles, S.A.B. de C.V., 51%; Dowa Holdings Co., Ltd., 39%; Sumitomo Corp., 10%)	Tizapa Mine, Mex.	140,000.
Do.	do.	Minas Peñoles S.A. de C.V. (Industrias Peñoles, S.A.B. de C.V., 50%)	Francisco I. Madero Mine, Zac.	63,000.
Do.	do.	Industrial Minera México, S.A. de C.V. (IMMSA) (Grupo México, S.A.B. de C.V., 90%)	San Martín Mine, Sombrerete, Zac.; Taxco, Gro.; Charcas, S.L.P.; Santa Eulalia, Chih.; and refinery at Monterrey, N.L.	335,000.
Do.	do.	Pan American Silver Corp.	La Colorada Mine, Zac.; Alamo dorado, Son.	100,000.
Do.	do.	Met-Mex Peñoles, S.A. de C.V. (Industrias Peñoles, S.A.B. de C.V., 100%)	Torreón, Coah.	2,900,000 refinery.
Do.	do.	Mexicana de Cobre, S.A. de C.V. (Grupo México, S.A.B. de C.V., 100%)	La Caridad metallurgical complex, Son.	466,500.
Sodium sulfate		Química del Rey, S.A. de C.V. (Industrias Peñoles, S.A.B. de C.V., 100%)	Plant at Laguna del Rey, Coah.	620.
Steel		Altos Hornos de México, S.A. de C.V. (AHMSA) [Grupo Acerero del Norte, S.A. de C.V. (GAN), 78.9%]	Steelworks at Monclova, Coah.	3,316 steel, 3,800 pellet.
Do.		Hylsamex, S.A. de C.V. (Ternium S.A., 86.68%)	Steel works and direct-reduction units at Monterrey, N.L., and Puebla, Pue.; pelletizing plant in Col.	3,100 steel, 1,500 pellet.
Do.		DEACERO, S.A. de C.V. (private Mexican, 100%)	Steelworks at Saltillo, Coah., and Celaya, Gto.	1,450.
Do.		Mittal Steel Lazaro Cardenas (Mittal Steel, 100%)	Facilities at Lazaro Cardenas, Mich.	5,300 steel, 4,000 pellet.
Do.		Siderúrgica Lázaro Cárdenas-Las Truchas, S.A. de C.V. (SICARTSA) (Grupo Villacero, 100%)	Port Lazaro Cardenas, Mich.	2,350 steel, 1,850 pellet.
Do.		Tabos de Acero de México, S.A. (private Mexican, 100%)	Veracruz, Ver.	1,000.

See footnotes at end of table.

TABLE 2—Continued
MEXICO: 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 ¹	Annual capacity
Strontium (celestite)	Cía. Minera La Valenciana (private Mexican, 100%)	San Agustin Mine, Torreon, Coah.	50.
Sulfur	Petróleos Mexicanos (PEMEX)	Nationwide petroleum operations	890.
Tin ⁴	Fundidora Marni, S.A.	San Luis Potosi, S.L.P.	NA.
Do.	PIZUTO, S.A.	do.	NA.

Do., do. Ditto. NA Not available.

¹State abbreviations used in this table include the following: Baja California Norte (B.C.N.), Baja California Sur (B.C.S.), Campeche (Cam.), Chihuahua (Chih.), Coahuila (Coah.), Colima (Col.), Distrito Federal (D.F.), Durango (Dgo.), Guanajuato (Gto.), Guerrero (Gro.), Hidalgo (Hgo.), Jalisco (Jal.), Mexico (Mex.), Michoacan (Mich.), Morelos (Mor.), Nuevo Leon (N.L.), Oaxaca (Oax.), Puebla (Pue.), San Luis Potosi (S.L.P.), Sinaloa (Sin.), Sonora (Son.), Tabasco (Tab.), Veracruz (Ver.), Yucatan (Yuc.), and Zacatecas (Zac.).

²Solvent extraction-electrowinning.

³Petróleos Mexicanos (PEMEX) operated six refineries with an installed capacity of 1.68 million barrels per day.

⁴Smelter output from mostly imported concentrates.