



# 2012 Minerals Yearbook

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## SAUDI ARABIA

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# THE MINERAL INDUSTRY OF SAUDI ARABIA

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The Kingdom of Saudi Arabia was a leading producer of liquid hydrocarbons, which included condensate, crude oil, and natural gas liquids. The country held about 16% of the world's total proved crude oil reserves, which ranked it first in the world (BP p.l.c., 2013, p. 6).

All mineral deposits are the exclusive property of the state. The Supreme Council for Petroleum and Mineral Affairs defines and approves national hydrocarbon policies and strategies. The Ministry of Petroleum and Mineral Resources implements general policy related to minerals, natural gas, and oil. The Deputy Ministry for Mineral Resources administers activity in the mining sector and promotes the mineral industry. Mining is regulated by Royal Decree No. 47 M (the Mining Investment Code) of 20 Sha'ban 1425 (October 4, 2004). The Saudi-Sudanese Red Sea Commission manages the mineral resources that are located on the Red Sea seabed in water depths greater than 1,000 meters (m).

## Minerals in the National Economy

Saudi Arabia's economy remained strongly linked to hydrocarbon production, although a variety of industrial minerals and metals also were produced in Saudi Arabia. The oil sector accounted for about 50% of the nominal gross domestic product in 2012. The volume of crude oil exported by Saudi Arabian Oil Co. (Saudi Aramco), which was the Government oil company, increased by 4% to 2.52 billion barrels in 2012, and exports of refined petroleum products increased by about 2% to 126 million barrels. In 2012, the value of Saudi Arabia's total exports increased by about 6% to \$388 billion.<sup>1</sup> Mineral products (primarily hydrocarbons) accounted for 87% of total Saudi Arabian exports in 2012, and chemical products (primarily petrochemicals) accounted for 5% (table 1; Saudi Arabian Monetary Agency, 2013, tables 7-1, 7-3, 9-7; Saudi Arabian Oil Co., 2013, p. 53).

In 2012, 53.2% of Saudi Arabia's crude oil exports was shipped to Asia and about 16.5% was shipped to the United States. Asian countries also bought about 50.2% of Saudi Arabian exports of refined petroleum products and about 26.5% of its exports of natural gas liquids (Saudi Arabian Oil Co., 2013, p. 58).

## Production

In 2012, notable increases in production were reported for aggregate and low-grade bauxite. Ammonia output was estimated to have increased significantly after a full year of production from the Ras Al-Khair fertilizer complex, where diammonium phosphate fertilizer production began in 2012. Copper and zinc output was estimated to have increased

significantly with the opening of Al Masane copper-gold-silver-zinc mine. Production from the Az Zabirah Mine accounted for the significant increase in estimated kaolin output. Notable decreases in production were reported for condensate and for sulfur. Data on mineral production are in table 1.

## Structure of the Mineral Industry

Through the Public Investment Fund, the Government maintained majority ownership interest in most of the large companies that operated in the mineral sector, which included Saudi Basic Industries Corp. (SABIC) and Saudi Arabian Mining Co. (Ma'aden). The Ministry of Petroleum and Mineral Resources supervised its affiliate companies in the petroleum sector; these included Aramco Gulf Operation Ltd. and Saudi Aramco. Aramco Gulf Operation and Saudi Arabian Chevron Inc. (a subsidiary of Chevron Corp. of the United States) worked in the Partitioned Neutral Zone between Kuwait and Saudi Arabia on behalf of the Ministry. The Ministry also supervised the Saudi Geological Survey.

Domestic and international companies and their joint ventures were involved in metal exploration and mining activity. Domestic companies dominated operations in the industrial mineral sector. Crude oil exploration and production in Saudi Arabia was restricted to Saudi Aramco, which also formed joint ventures with international firms to explore for natural gas and to refine petroleum.

## Commodity Review

### Metals

**Aluminum.**—In December, the Ma'aden Aluminium Co. initiated production from its aluminum smelter, which was located at Ras Al-Khair, about 90 kilometers (km) northwest of Jubail. The location was formerly known as Ras Az Zawr. Ma'aden Aluminium Co. was owned by Ma'aden (74.9% equity interest) and Alcoa Inc. of the United States (25.1% interest) (Saudi Arabian Mining Co., 2013, p. 69).

**Copper, Gold, Silver, and Zinc.**—In 2012, Ma'aden Gold and Base Metals Co., which was a subsidiary of Ma'aden, produced about 1,634 kilograms (kg) of gold from Al Amar Mine; about 1,206 kg of gold from the Mahd Adh-Dahab Mine; about 1,034 kg of gold from the Bulgah Mine's carbon-in-leach facility that processed the mine's lower grade ore [that is, ore containing less than 1 gram per metric ton (g/t) gold]; about 216 kg of gold from the Sukhaybarat plant, which processed the higher-grade ore (that is, ore containing more than 1 g/t gold) from the Bulgah Mine; and about 197 kg of gold from the Al Hajar Mine. Gold mining ceased at Al Hajar in 2012, and heap-leach operations at Al Hajar were expected to end in 2013. A new gold mine at As Suq was under construction and was expected to be operational in 2013 (Saudi Arabian Mining Co., 2013, p. 38, 43–44, 64–65).

<sup>1</sup>Where necessary, values have been converted from Saudi Arabian riyals (SAR) to U.S. dollars (US\$) at the fixed rate of SAR3.75=US\$1.00.

Ma'aden Gold and Base Metals was exploring the Central Arabian Gold Region (CAGR), which included the Ad Duwayhi, Al Humaymah, the Ar Rjum (including the Al Wasimah and the Um Al Na'am deposits), the Bir Tawilah, the Mansourah, the Masarrah, the Shabah, and the Zalim prospects. A prefeasibility study of the undeveloped copper-zinc sulfide deposit at Al Hajar also was underway (Saudi Arabian Mining Co., 2013, p. 45).

The joint-venture company Khnaiguiyah for Mining Company LLC (KMC) of Alara Resources Ltd. of Australia (50% equity interest) and United Arabian Mining Co. (Manajem) reported a new measured and indicated resource estimate for domain 1 and domain 2 of the Khnaiguiyah zinc project of 25.32 million metric tons (Mt) at an average grade of 4.03% zinc and 0.17% copper (Alara Resources Ltd., 2013, p. 2).

The Al Masane copper-gold-silver-zinc mine began commercial operations in July, and by yearend, the company had shipped about 20,000 metric tons (t) of copper and zinc concentrates. The mine, which was located in southwestern Saudi Arabia, was owned by Al Masane Al Kobra Mining Co., which was a joint venture of local investors (about 53% equity interest), Arabian American Development Co. of the United States (about 37% interest), and Arab Mining Co. of Jordan (10% interest) (Arabian American Development Co., 2013, p. 6).

Construction of the processing infrastructure of the Jabal Sayid copper and gold mine was completed in 2012, but commissioning was delayed after Bariq Mining Ltd. of Saudi Arabia, which was a subsidiary of Barrick Gold Corp. of Canada, was notified that the mine site did not meet Saudi Arabian safety and security standards. About 440,000 t of ore at an average grade of 2.25% copper had been stockpiled at the mine site. In December, the Deputy Ministry for Mineral Resources instructed Bariq Mining to cease the commissioning of the plant with the stockpiled ore owing to issues concerning the mining license and mining investment law related to Barrick Gold's acquisition of Equinox Minerals Ltd. of Canada in 2011 (Barrick Gold Corp., 2012, p. 4; 2013, p. 38).

The joint venture of Diamond Fields International Ltd. of Canada and Manafa International Trade Co. of Saudi Arabia continued to evaluate the Atlantis II Deeps copper-silver-zinc project, which is located offshore about 115 km west of Jeddah. The joint venture continued discussions with partners to fund a feasibility study.

In 2012, the Gold and Minerals joint venture of Abdul Rahman Saad Al-Rashid & Sons LLC of Saudi Arabia (60% interest) and Kefi Minerals Plc of the United Kingdom (40% interest) was granted the Hikyrin, the Hikyrin South, and the Jibal Qutman gold and silver exploration licenses. Gold and Minerals completed preliminary exploration of the licenses; the company also completed a 50-hole, 4,569-meter (m) diamond drill program at Jibal Qutman, for which the joint venture expected to complete a prefeasibility study by early 2014. The joint venture also completed an 8-hole, 920-m diamond drill program at its Selib North project (Kefi Minerals Plc, 2013, p. 5, 8–9, 14).

**Iron Ore.**—In 2011, National Mining Co. of Saudi Arabia awarded a preconstruction engineering and design contract for the Wadi Sawawin iron ore project to STX Heavy Industries, which was a subsidiary of the STX Group of the Republic of

Korea. A subsequent dispute indefinitely delayed the start of construction of the Wadi Sawawin Mine and an associated direct-reduced iron facility (London Mining Plc, 2013, p. 31).

### *Industrial Minerals*

**Bauxite and Alumina, Kaolin and Magnesite.**—Ma'aden Industrial Minerals Co. started kaolin production from the Az Zabirah Mine, producing 53,000 t in 2012. The output of low-grade bauxite from the mine was increased significantly, with 760,000 t produced in 2012 compared with 206,000 t in 2011. Ma'aden Industrial Minerals also processed 70,000 t of ore from the magnesite mine at Al Ghazalah and produced 32,000 t of caustic calcined magnesia at its processing plant in the Al Madinah Al-Munawwara industrial city (Saudi Arabian Mining Co., 2013, p. 70–71).

**Nitrogen and Phosphate Rock.**—Ma'aden Phosphate Co. increased production of ammonia to 1.09 Mt in 2012 from 290,000 t in 2011. In February, Ma'aden's 3-million-metric-ton-per-year (Mt/yr)-capacity diammonium phosphate (DAP) fertilizer complex at Ras Al-Khair began commercial production. About 1.43 Mt of fertilizer was produced in 2012 (Saudi Arabian Mining Co., 2013, p. 66–67).

### *Mineral Fuels*

**Natural Gas and Petroleum.**—In 2012, Saudi Aramco reported drilling 199 oil exploration and development wells and 100 gas exploration and development wells. The company announced discoveries of a new oilfield at Aslaf and new gas reservoirs at Sha'ur and Umm Ramil. Development of the offshore Karan sour (high-sulfur content) gasfield in the Persian Gulf was completed in 2012, and full production capacity of 18.6 billion cubic meters per year was reached. Work continued on the development of the Manifa oilfield, which was expected to be completed by 2013. Construction of the Wasit Gas plant, which would handle output from the Arabiyah and the Hasbah gasfields, was expected to be completed by 2014 (Saudi Arabian Oil Co., 2012, p. 23; 2013, p. 16, 21–22).

Crude oil refineries under construction in 2012 included the 400,000-barrel-per-day (bbl/d)-capacity heavy crude oil refinery for Saudi Aramco Total Refining and Petrochemical Co. (SATORP) at Jubail, which began precommissioning in late 2012 and was expected to begin initial operations in 2013; the 400,000-bbl/d-capacity heavy crude oil refinery of Yanbu Aramco Sinopec Refining Company Ltd. (YASREF), which was expected to be completed by 2014 for the joint venture of Saudi Aramco and China Petrochemical Corp. (Sinopec); and the proposed 400,000-bbl/d-capacity heavy crude oil Jazan Refinery and Terminal project, which was scheduled to be operational by 2016. Development of the proposed Rabigh Phase II project, which would expand the Rabigh Refining & Petrochemical Co. (PetroRabigh) refinery and petrochemical plant, was approved in 2012 (Saudi Arabian Oil Co., 2013, p. 32).

Vela International Marine Ltd., which was Saudi Aramco's wholly owned shipping subsidiary, merged with National Shipping Company of Saudi Arabia (Bahri). Bahri also acquired the exclusive right to ship all very-large-crude-carrier (VLCC)

crude oil cargoes produced in the Kingdom and sold by Saudi Aramco under long-term contracts. A VLCC may be defined as any crude oil tanker that displaces between 150,000 to 320,000 deadweight tons (National Shipping Company of Saudi Arabia, 2013, p. 8; World Trade Press, undated).

## Outlook

With its significant crude oil production capacity and resources, Saudi Arabia remained well placed to meet international demand for petroleum. Ongoing infrastructure development, which includes the expansion of the national highway and railroad network and the construction of new cities with associated industrial and residential facilities, is likely to maintain the short-term demand for construction minerals and products, such as cement, glass, sand, steel, and stone. The Kingdom's encouragement of private investment in mineral projects is expected to remain attractive to domestic and international investors.

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TABLE 1  
SAUDI ARABIA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity <sup>2</sup>	2008	2009	2010	2011 <sup>e</sup>	2012 <sup>e</sup>	
METALS						
Bauxite, low grade, for cement	150 <sup>e</sup>	246	284	206 <sup>3</sup>	760 <sup>3</sup>	
Copper content of concentrate	metric tons	1,465	1,719	1,603	6,000	
Gold content of concentrate and bullion	kilograms	4,527	4,857	4,476	4,674 <sup>r,3</sup>	4,347 <sup>3</sup>
Iron and steel:						
Low-grade iron ore, for cement <sup>e</sup>	581 <sup>3</sup>	600	700	750	760	
Direct-reduced iron	4,970	5,000	5,500	5,800	5,700	
Ferroalloys <sup>e</sup>	metric tons	186,000 <sup>r</sup>	178,000 <sup>r</sup>	177,000 <sup>r</sup>	212,000 <sup>r</sup>	196,000
Steel, crude <sup>e</sup>	4,670 <sup>3</sup>	4,700	5,000	5,300	5,200	
Lead content of concentrate	metric tons	600 <sup>e</sup>	347	543	550	550
Silver content of concentrate and bullion	kilograms	8,232	8,527	7,670	7,900	7,900
Zinc content of concentrate	metric tons	3,663	4,952	4,897	4,934 <sup>3</sup>	15,000
INDUSTRIAL MINERALS						
Barite <sup>e</sup>	do.	30,000	30,000	30,000	30,000	32,000 <sup>3</sup>
Cement, hydraulic		31,823	36,500	42,300	48,000	50,000
Clays:						
Kaolin <sup>e</sup>	metric tons	15,000	4,166 <sup>3</sup>	6,200 <sup>r</sup>	5,000	58,000
Other, for brick and tile		5,000	4,700	5,800	6,000	6,000
Feldspar	metric tons	55,000 <sup>e</sup>	55,000	42,300	160,000 <sup>r,3</sup>	168,000 <sup>3</sup>
Fertilizer, phosphatic, P <sub>2</sub> O <sub>5</sub> content <sup>e</sup>		300	300	300	300	960
Gypsum, crude		2,300	2,000	2,100	2,239 <sup>r,3</sup>	2,351 <sup>3</sup>
Magnesite	metric tons	--	--	24,993	159,284 <sup>3</sup>	39,000 <sup>3</sup>
Nitrogen: <sup>e</sup>						
N content of ammonia		2,500	2,400	2,500	2,800	3,700
N content of urea		1,700	1,600	1,700	1,700	2,200
Salt		1,600	1,640	1,800	1,864 <sup>r,3</sup>	1,957 <sup>3</sup>
Sand and stone:						
Aggregate		248,000	259,000	277,000	2,727,000 <sup>r,3</sup>	2,863,500 <sup>3</sup>
Dolomite		465	669	583	616 <sup>r,3</sup>	647 <sup>3</sup>
Granite		1,100	1,100 <sup>e</sup>	1,100 <sup>r,e</sup>	993 <sup>r,3</sup>	1,043 <sup>3</sup>
Limestone:						
Blocks		242	522	704	770 <sup>r,3</sup>	809 <sup>3</sup>
For cement		36,100	46,900	45,749	46,300 <sup>r,3</sup>	48,615 <sup>3</sup>
Marble <sup>e</sup>	metric tons	85,000	85,000	48,000	24,000 <sup>r,3</sup>	25,000 <sup>3</sup>
Pozzolana and scoria		810	802	915	1,010 <sup>r,3</sup>	1,061 <sup>3</sup>
Sand and gravel		22,000	19,000	26,000	25,000 <sup>r</sup>	26,670 <sup>3</sup>
Schist		--	--	573	738 <sup>r,3</sup>	775 <sup>3</sup>
Silica sand (glass sand)		799	709	820	1,303 <sup>r,3</sup>	1,368 <sup>3</sup>
Sulfur, byproduct, hydrocarbon processing	metric tons	3,163,346	3,213,678	3,200,000	4,579,000 <sup>r,3</sup>	4,092,000 <sup>3</sup>
MINERAL FUELS AND RELATED MATERIALS						
Gas, natural:						
Gross	million cubic meters	86,158	88,432	97,000	102,000	111,000
Dry (methane)	do.	68,000	65,000	72,000	76,000	82,000
Ethane	do.	10,600	11,500	13,800	14,500	15,600
Petroleum:						
Crude oil	million 42-gallon barrels	3,266	2,888	2,887	3,310 <sup>3</sup>	3,479 <sup>3</sup>
Natural gas liquids:						
Propane	thousand 42-gallon barrels	146,048	152,262	168,513	175,800 <sup>3</sup>	188,600 <sup>3</sup>
Butane	do.	94,483	100,679	106,640	113,900 <sup>3</sup>	122,600 <sup>3</sup>
Condensate	million 42-gallon barrels	93	83	94	93 <sup>3</sup>	82 <sup>3</sup>
Natural gasoline and other	thousand 42-gallon barrels	68,195	74,468	75,924	78,480 <sup>3</sup>	88,870 <sup>3</sup>

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity <sup>2</sup>	2008	2009	2010	2011 <sup>c</sup>	2012 <sup>c</sup>	
MINERAL FUELS AND RELATED MATERIALS—Continued						
Petroleum—Continued:						
Refinery products:						
Liquefied petroleum gases	thousand 42-gallon barrels	11,300	13,677	12,846 <sup>4</sup>	12,000	11,300
Gasoline and naphtha	do.	200,610	180,076	167,807 <sup>4</sup>	196,000 <sup>r</sup>	200,000
Jet fuel and kerosene	do.	69,680	56,674	45,957 <sup>4</sup>	58,000 <sup>r</sup>	60,000
Distillate fuel oil	do.	247,440	210,778	196,453 <sup>4</sup>	222,000 <sup>r</sup>	225,000
Residual fuel oil	do.	174,380	158,944	122,705 <sup>4</sup>	144,000 <sup>r</sup>	160,000
Unspecified <sup>5</sup>	do.	17,960	17,034	18,212 <sup>4</sup>	18,700	17,700
Total	do.	721,370	637,183	563,980	651,000 <sup>r</sup>	674,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through November 15, 2013.

<sup>2</sup>In addition to commodities listed, aluminum, carbon black, lime, methanol, and phosphate rock were produced, but available information is inadequate to make reliable estimates of output.

<sup>3</sup>Reported figure.

<sup>4</sup>Does not include refined output of Rabigh Refining & Petrochemical Co.

<sup>5</sup>Includes asphalt.

TABLE 2  
SAUDI ARABIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity	
Aluminum	Ma'aden Aluminium Co. [Saudi Arabian Mining Co. (Ma'aden), 74.9%, and Alcoa Inc, 25.1%]	Ras Al-Khair, about 90 kilometers northwest of Jubail	740.	
Bauxite, low-grade for cement	Ma'aden Industrial Minerals Co. [Saudi Arabian Mining Co. (Ma'aden)]	Central zone, Az Zabirah area	800.	
Cement:				
Gray portland	Al Jouf Cement Co.	South of Turaif	1,700.	
Do.	Arabian Cement Co. Ltd.	Rabigh	4,800.	
Do.	Eastern Province Cement Co.	Al Khursaniyah	3,400.	
Do.	Najran Cement Co.	About 160 kilometers northwest of Najran	3,000.	
Do.	Northern Region Cement Co.	About 190 kilometers west-northwest of Arar	1,700.	
Do.	Qassim Cement Co.	Jal al Watah, 18 kilometers north of Buraydah	4,000.	
Do.	Riyadh Cement Co.	About 30 kilometers southwest of Riyadh	3,800.	
Do.	Saudi Cement Co.	Al Hofuf, about 120 kilometers southwest of Dammam	8,600.	
Do.	Southern Province Cement Co. (Government, 52%)	Suq Al Ahad, 10 kilometers northeast of Jizan	2,600.	
Do.	do.	Bishah, 550 kilometers southeast of Jiddah	2,000.	
Do.	do.	Tihama	1,800.	
Do.	Tabuk Cement Co.	Tabuk	1,300.	
Do.	Yamama Cement Co. Ltd.	Riyadh	6,300.	
Do.	Yanbu Cement Co.	Yanbu	4,000.	
White	Al-Gharbiah Cement Factory	Jeddah	250.	
Do.	Saudi White Cement Co.	About 30 kilometers southwest of Riyadh	200.	
Copper, Cu content of ore	Ma'aden Gold and Base Metals Co. [Saudi Arabian Mining Co. (Ma'aden)]	Al Amar Mine, Ar Riyadh Province, and Mahd Adh-Dahab Mine, Al Madinah Province	1.	
Do.	Al Masane Al Kobra Mining Co. (local investors, about 53%; Arabian American Development Co., about 37%; Arab Mining Co., 10%)	Al Masane Mine	9.	
Gold	kilograms	Ma'aden Gold and Base Metals Co. [Saudi Arabian Mining Co. (Ma'aden)]	Al Amar Mine, Ar Riyadh Province; Al-Hajar Mine, Asir Province; Bulgah Mine, Al Madinah Province; Mahd Adh-Dahab Mine, Al Madinah Province; and Sukhaybarat plant, Al Madinah Province	8,000.

See footnotes at end of table.



TABLE 2—Continued  
SAUDI ARABIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2012

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Kaolin		Ma'aden Industrial Minerals Co. [Saudi Arabian Mining Co. (Ma'aden)]	Central zone, Az Zabirah	55,000.
Magnesium:				
Magnesite ore		do.	Mine at Al Ghazalah	NA.
Magnesia, caustic calcined		do.	Processing plant, Al-Madinah Al-Munawwara industrial city, southwest of Medina	39.
Nitrogen, N content of ammonia		Ma'aden Phosphate Co. [Saudi Arabian Mining Co. (Ma'aden)]	Ras Al-Khair, about 90 kilometers northwest of Jubail	900.
Petroleum:				
Crude	million barrels	Saudi Arabian Oil Co. (Saudi Aramco) (Government, 100%)	Eastern Province, Najd Region, and offshore; includes the Ghawar, the Hawtah, the Khurais, the Safaniya, and the Shaybah fields	4,500.
Refined products	do.	Jeddah Oil Refinery Co. [Saudi Arabian Oil Co. (Saudi Aramco), 100%]	Jeddah	38.
Do.	do.	Rabigh Refining & Petrochemical Co. (PetroRabigh) [Saudi Arabian Oil Co. (Saudi Aramco), 50%, and Sumitomo Chemical Co., 50%]	Rabigh	140.
Do.	do.	Riyadh Oil Refinery Co. [Saudi Arabian Oil Co. (Saudi Aramco), 100%]	Riyadh	50.
Do.	do.	Saudi Arabian Oil Co. (Saudi Aramco) (Government, 100%)	Ras Tanura	193.
Do.	do.	do.	Yanbu	82.
Do.	do.	Saudi Aramco Mobil Refinery Co. Ltd. [Saudi Arabian Oil Co. (Saudi Aramco), 50%, and Mobil Yanbu Refining Company Inc., 50%]	do.	140.
Do.	do.	Saudi Aramco Shell Refining Co. [Saudi Arabian Oil Co., (Saudi Aramco), 50%, and Shell Saudi Arabia Refining Ltd., 50%]	Al Jubayl	110.
Phosphate rock		Ma'aden Phosphate Co. [Saudi Arabian Mining Co. (Ma'aden), 70%, and Saudi Basic Industries Corp. (SABIC), 30%]	Al Jalamid	11,600 ore, 5,000 concentrate.
Steel, crude		National Steel Co. Ltd. (Al Tuwairqi Group, 100%)	Dammam	800.
Do.		Saudi Iron and Steel Co. (Hadeed) [Saudi Basic Industries Corp. (SABIC), 100%]	Al Jubayl	5,200.
Titanium dioxide		The National Titanium Dioxide Co. Ltd. (Cristal) (Gulf Investment Corp. of Kuwait; National Industrialization Co. of Saudi Arabia; Shairco Trading Industry and Contracting of Saudi Arabia)	Yanbu	100.
Zinc, Zn content of ore		Ma'aden Gold and Base Metals Co. [Saudi Arabian Mining Co. (Ma'aden)]	Al Amar Mine, Ar Riyadh Province, and Mahd Adh-Dahab Mine, Al Madinah Province	2.
Do.		Al Masane Al Kobra Mining Co. (local investors, about 53%; Arabian American Development Co., about 37%; Arab Mining Co., 10%)	Al Masane Mine	25.

Do., do. Ditto. NA Not available.