



# 2011 Minerals Yearbook

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OMAN

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# THE MINERAL INDUSTRY OF OMAN

By Mowafa Taib

Production of minerals, especially mineral fuels, was an essential component of Oman's economy in 2011. Oman was the seventh ranked crude oil producer and the fifth ranked producer of natural gas in the Middle East region and accounted for about 1.1% and 0.8% of total world production, respectively. Oman exported such minerals and mineral-based commodities as aluminum building materials, chromite, gold, gypsum, laterite (low-grade iron ore used for cement), limestone, marble, silver, and urea in addition to crude oil, natural gas, and refined petroleum products. The country also produced cement, clay, iron and steel, quartz, salt, and silica sand mainly for domestic use (table 1; BP p.l.c., 2012, p. 8, 10, and 22).

Although mining activity had been ongoing in Oman since the Bronze Age more than 4,000 years ago, the country's mineral resources are still relatively untapped, and vast reserves of metals and industrial minerals are present. Oman's mountains host large intact and exposed ophiolites, which contain such metal deposits as chromite, cobalt, copper, gold, lead, magnesium, manganese, nickel, palladium, platinum, silver, vanadium, and zinc. Gypsum resources and reserves were estimated to exceed 1 billion metric tons (Gt) of gypsum in the southern region of Oman, including 165 million metric tons (Mt) of minable gypsum in the Shuwaymiyah area (Industrial Minerals, 2010; Oman Daily Observer, 2010).

## Minerals in the National Economy

The country's gross domestic product (GDP) increased in real terms by 5.5% in 2011 compared with a revised 4.0% in 2010. The hydrocarbon sector, which made up 51% of Oman's GDP, increased in value by 3.8% in 2011 compared with an increase of 5.5% in 2010. Oman's economic growth was driven by higher crude oil prices, which averaged \$102.95 per barrel in 2011 compared with \$76.64 per barrel in 2010, and by an increase of 3% in the volume of crude oil and condensate production. The value of oil and gas revenues equaled 38.8% of the GDP and accounted for 86.8% of Government revenue. The nonoil sector, which contributed 49% of the GDP, increased in value by 11.4% compared with an increase of 11.0% in 2010 in current (2011) prices. The share of the industrial sector, which included aluminum, nitrogen fertilizer, and steel manufacturing, in the overall GDP decreased to 16.5% in 2011 from 17.9% in 2010. Mining and quarrying, which made up 2.5% of the nonoil industrial sector activity, decreased in value by 2.9% in 2011 compared with an increase of 2.3% in 2010. The value of building and construction activity, which made up 9% of the activity of the nonoil industrial sector, increased by 5.8% compared with an increase of 2.1% in 2010 (Central Bank of Oman, 2012, p. 16–18, 36).

## Government Policies and Programs

The Ministry of Commerce and Industry regulated Oman mining activities according to the Mining Law (Royal Decree No. 27/2003), which provided for the issuance of mining licenses, the resolution mining sector disputes, and the protection of the environment. Mining and quarrying activity was an integral part of the Government's economic diversification policy. In 2011, the Government conducted a comprehensive review of the country's mining industry with the aim of introducing best practices in the development and marketing of Oman's mineral resources and to provide counsel on ways of improving and updating guidelines and regulations for the mineral industry. Mineral Development of Oman (MDO) was a partnership between the Government's General Directorate of Minerals and private companies in Oman. MDO was launched in 2008 to encourage direct investment in the production of such industrial minerals as limestone, fertilizer, and silica sand and to ensure the sustainable development of the country's mineral resources.

## Structure of the Mineral Industry

Sohar Aluminium Co. L.L.C. was established by an alliance of Oman Oil Co. S.A.O.C. (OOC) (40% interest), Abu Dhabi National Energy Co. P.J.S.C. (Taqa) (a subsidiary of Abu Dhabi Water and Electricity Authority (ADWEA) of the United Arab Emirates) (40% interest), and Rio Tinto Alcan of Canada (20% interest) (Sohar Aluminium Co. L.L.C., 2012). Takamul Investment Co. S.A.O.C., which was owned by OOC (93.07%), ADWEA (5.01%), and Al Maha Strategic Industries for Investments L.L.C. of the United Arab Emirates (1.92%), financed several metal, mineral, and petrochemical production projects in the country, including Gulf Specialty Steel Industries L.L.C., Oman Aluminium Processing Industries L.L.C., Oman Aluminium Rolling Company L.L.C., and Sohar Sulphur Fertilizers L.L.C. (Takamul Investment Co. S.A.O.C., 2012a–e).

The Ministry of Oil and Gas managed the country's hydrocarbon sector. Petroleum Development Oman L.L.C. (PDO), which was owned by the Government (60%), Royal Dutch Shell p.l.c. of the Netherlands (34%), Total S.A. of France (4%), and Partex (Oman) Corp. of Panama (2%), produced more than 80% of the country's crude oil and almost all the supply of natural gas. The Government owned 100% of Oman Oil Co., 75% of Oman Refineries and Petrochemicals Co. L.L.C. (ORPC), 51% of Oman Liquefied Natural Gas L.L.C., and 46.84% of Qualhat Liquefied Natural Gas S.A.O.C.

Oman India Fertilizer Co. S.A.O.C. (OMIFCO), which was a joint venture of OOC (50%), and Indian Farmers Fertiliser Cooperative Ltd. and Krishak Bharati Cooperative Ltd. (25% each) produced nitrogen fertilizer. The other producer of nitrogen fertilizer in Oman was Sohar International Urea & Chemical Industries S.A.O.C. (SIUCI) (a subsidiary of

Suhail Bahwan Group). SIUCI was one of leading privately owned nitrogen fertilizer producers in the Middle East (Oman India Fertiliser Co. S.A.O.C., 2011).

Three companies were responsible for cement production in Oman—Oman Cement Co. S.A.O.C., Raysut Cement Co. S.A.O.C (RCC), and Al Madinah Cement Co. L.L.C. Several small-, medium-, and large-size companies produced chromite in Oman in 2011, including Al Tamman Trading Establishment L.L.C., Gulf Mining and Materials Co., Hatton FZE, and Oman Chromite Co. S.A.O.G. Copper was produced by Mawarid Mining L.L.C., which was a wholly owned subsidiary of MB Holding Co. L.L.C.

In 2011, Oman had more than 500 active industrial minerals mining operations, including 183 for crushed stone; 150 for landfill material; 71 for chromite; 57 for marble; 4 each for clay, gypsum, and laterite; 3 for sandstone; 2 for limestone for cement; and 1 for salt and dune sand. Of more than 1.1 million private sector employees, about 12,800, or 1.1%, were employed in the mining and quarrying industry in 2011, which was an increase of 2% compared with the number employed in 2010 (Central Bank of Oman, 2012, p. 26; Oman Daily Observer, 2012).

### Mineral Trade

In 2011, Oman's total merchandise exports increased in value by about 29% compared with an increase of 33% in 2010. This increase was attributable mainly to higher crude oil prices and an increase in output in 2011 compared with that of 2010. Crude and refined oil and natural gas accounted for 70.8% of Oman's goods exports (including reexports). The value of crude oil exports increased by 33% in 2011 compared with an increase of 50% in 2010. The value of liquefied natural gas exports increased by about 25% from 21% in 2010, and the value of refined petroleum products exports increased by 34% compared with a decrease of 16% in 2010. The value of exports of mineral products decreased by 31% in 2011, whereas the export value of chemical products (which include fertilizer) increased by about 67% and that of base-metal and base-metal-related articles increased by 61% compared with that of 2010 (Central Bank of Oman, 2012, p. 36, 94–96).

In 2011, the United States had a negative trade balance with Oman of \$775 million compared with a positive balance of \$332 million in 2010. Oman exported \$2.2 billion worth of goods to the United States, which was an increase of about 186% compared with that of 2010. Mineral fuels accounted for 77% of the exports; precious stones, 8%; fertilizer, 7%; and iron and steel products, 1%. The value of Oman's imports of goods from the United States increased by about 30% to \$1.4 billion from \$1.1 billion in 2010. The top import categories were, in descending order of the value of imports, machinery, vehicles, electronics, and aircraft (Office of the United States Trade Representative, 2012).

### Production

Notable increases in Oman's mineral production in 2011 compared with that of 2010 included the increase in kaolin, by 205%; gypsum and laterite, by 92% each; marble, by 34%;

copper ore by, 28%; smelted copper, by 25%; quartz, by 16%; and cement and silica sand, by 11% each. Additionally, the total output of refined petroleum products increased by 31% compared with that of 2010, including residual fuel oil, by 61%; gasoline, by 43%; distilled fuel oil, by 42%; and other refined products, by 23%. Chromite production decreased by about 29% compared with that of 2010. Direct-reduced iron (DRI) and manganese were added to the list of mineral commodities produced in Oman for the first time. In terms of volume, the leading mineral commodities produced were sand and gravel, of which 69.4 Mt was produced compared with 70.7 Mt in 2010, followed by limestone and cement, of which about 5.0 Mt each was produced (table 1; Prabhu, 2012).

## Commodity Review

### Metals

**Aluminum.**—The Sohar aluminum smelter, which was owned and operated by Sohar Aluminium, increased its output by 1.6% in 2011 to 373,000 metric tons (t) from 367,000 t in 2010. The company produced hot metal, ingots, and sows. The Sohar smelter used alumina imported from Australia by Oman Shipping Co. S.A.O.C., which had a long-term contract to ship 690,000 metric tons per year (t/yr) of alumina to Oman. Sohar Aluminium was preparing to begin a phase 2 expansion project, which would double the smelter's capacity to 720,000 t/yr from the current capacity of 360,000 t/yr and would cost \$2.4 billion. The project was expected to be completed in 2016 (Baxter, 2012b).

Aluminium Rolling Co. L.L.C., which was established by Takamul as its leading value-added aluminum project in Oman, was building an aluminum rolling mill at the Sohar Industrial Estate at a cost of \$385 million. The mill, which was being constructed by FATA EPC (a subsidiary of FATA S.p.A. of Italy), would have the capacity to produce 140,000 t of multipurpose rolled aluminum sheets and would be completed by yearend 2013. Oman Oil Co. would supply the mill with natural gas (Oman Oil Co. S.A.O.C., 2011; Takamul Investment Co. S.A.O.C, 2012b).

Oman Aluminium Processing Industries L.L.C. (OAPIL), which was also a joint venture of Takamul and Oman Cables Industries, was located in Sohar Industrial Estate near the Sohar aluminum smelter. OAPIL had been producing electrical conductivity rods since 2010 using technology supplied by Southwire Co. of the United States. OAPIL commissioned the facility, which produced commercial overhead electrical transmission line conductors, in 2010 (Takamul Investment Co. S.A.O.C, 2012a).

**Chromium.**—According to Gulf Mining Co., chromite open pit mining is a low cost operation that can be carried out without interruption throughout the year. Gulf Mining produced about 250,000 t/yr of chromite that contained between 24% and 42% of chromium. The entire production was exported to China (70%) and India (30%). The company owned and operated Oman's first chromite ore concentration plant; the plant was located in the Ad Dakhiliyah region in the Samail Wilayat in northern Oman. The plant has the capacity to produce 50,000 t/yr of chromium concentrate grading 38% or higher. The company

planned to double the plant's capacity to 100,000 t/yr by the end of 2012. Gulf Mining had also plans to build a ferrochrome smelter in Sohar (Watts, 2012a).

In 2010, Al Tamman and Indsil Group of India announced a plan to build a \$70 million chromium smelter at the Sohar Industrial Park. The 75,000-t/yr-capacity smelter would export its ferrochromium. Al Tamman was one of the leading exporters and producers of chromite ore in Oman from its Al Ram and Wadi Rajmi Mines (Baxter, 2010a; Al Tamman Trading Establishment L.L.C., 2012).

**Copper and Gold.**—Mawarid, which was the first privately owned mining company in Oman, operated a number of open pit copper mines at the Al Batinah region of Oman. The company owned a copper concentrating facility in Al Batinah. Mawarid held exploration and production permits in Block 1 and Block 2, which are located in northwestern Sohar and the Ghuzayn Block. The company completed a feasibility study in late 2009 for the development of the Mandoos Mine and the Safwa Mine, which are located 53 kilometers (km) and 43 km northwest of Sohar, respectively. The company was also completing a feasibility study for the Ghuzayn 1, 2, and 3 prospects where it had previously identified copper mineralization during the exploration phase. The mineral resources at Ghuzayan 1, 2, and 3 were estimated to be about 10 Mt of copper ore grading between 1.5% to 2.0% copper. Mawarid planned to switch to underground mining at Ghuzayn after exhausting copper resources from open pit mining. In November 2010, Mawarid commenced prestrip production at the Safwa Mine. The company received a blasting license in the third quarter of 2010 (was the first mining company to obtain such a license) and subsequently began drilling and blasting operations in the first quarter of 2011. In July, Mawarid was awarded a mining license at the Mandoos Mine (Mawarid Mining Co. L.L.C., 2012a, b).

Mawarid owned and operated a copper concentrator at Lasail, which is located 35 kilometers (km) west of Sohar. The concentrator increased copper content in the mined copper ore to between 18% and 24% from between 2% and 3% and had a throughput of 120 metric tons per hour. The Government-owned Oman Mining Company L.L.C. (OMC) refined and sold copper concentrates. Mawarid delivered more than 2,000 t of copper contained in concentrate to OMC in July (Mawarid Mining Co. L.L.C., 2012a, b).

OMC was in the process of finalizing the bankable feasibility study (BFS) and environmental application for a copper mine and a copper concentration plant to be built at the Yankul area in Al Dhahira Governorate. The company planned to truck the concentrated copper ore to its smelter in Sohar, which is located 120 km northeast of the proposed mine. OMC projected to produce about 1.8 million metric tons per year (Mt/yr) of copper ore for milling for 10 years (Oman Mining Co. L.L.C., 2011).

Al Fairuz Mining L.L.C and Gentor Resources Inc. of Canada were exploring for copper and gold at Block 5 in northern Oman and targeting massive sulfide mineralization types similar to those present in Cyprus. Under the agreement signed by the two companies, Gentor would earn 65% interest in Al Fairuz Mining following the completion of a BFS. Based on the results of the BFS, Gentor would have the option to invest capital and offer expertise to mine any copper and gold found in Block 5,

and then could recover the cost of exploration, the BFS, and the development from first cash flow. The subsequent earnings would be distributed according to the 65:35 ratio. Gentor had a similar agreement with Al Zuhra L.L.C. for copper-gold exploration in Block 6. Gentor would earn 70% of future earnings and Al Zuhra, 30% (Gentor Resources Inc., 2012).

In August 2010, Alara Oman Operations Pty Ltd., which was a subsidiary of Alara Resources Ltd. of Australia, and Al Tamman formed a joint-venture operating company, Daris Resources L.L.C., to develop and explore for copper and gold in Block 7. This block covers 587 square kilometers (km<sup>2</sup>) and is located in Suwaiyq Wilayat in the Batinah region of Oman. Alara had the right to increase its interest to 70% from 50%. In March, Alara began a 1,000-meter drilling program at the Daris copper-gold project (Alara Resources Ltd., 2012b).

Alara formed another joint venture with Al Tamman to explore for copper and gold in Block 8, which is adjacent to Block 7. The Awtad copper-gold project is located about 130 km of Muscat and covers about 497 km<sup>2</sup>. The project area lies in the Samail Ophiolite belt in northern Oman that extends for more than 500 km. Alara was conducting a scoping study targeting 0.5 Mt/yr throughput of copper and gold ore at the Washihi copper-gold project (Alara Resources Ltd., 2012a).

**Iron and Steel.**—In December 2010, Jindal Steel and Power Ltd. of India commissioned a DRI production unit for hot-briquetted iron at its Jindal Shaded iron and steel plant located in the Sohar Industrial Estate; the commissioning was 5 months ahead of schedule. The plant had the capacity to produce 1.5 Mt/yr of DRI. Jindal planned to invest an additional \$400 million for the second phase of the plant to build an electric arc furnace, a ladle furnace, and continuous caster (Baxter, 2011; Jindal Shaded Iron and Steel, 2012).

Vale Oman Pelletizing Co. L.L.C. (VOPC) (a subsidiary of Vale S.A. of Brazil) completed the construction of a \$1.35 billion direct-reduction pelletizing plant and distribution center located within the Sohar Industrial Estate. The 9-Mt/yr-capacity plant began operations in May. The maritime terminal and distribution center, which was built by VOPC in Sohar Port, had the capacity to handle up to 40 Mt/yr of iron ore and pellet. All iron ore for the pellet plant was shipped from Vale's iron ore mines in Brazil by way of four 400,000-t-capacity ore carriers that were built in China for Oman Shipping Co. (Arab Steel, 2012; Gavin, 2012).

Zoom Steel Co., which was a joint venture of Zoom Group of India and an unnamed local partner, was building a \$665 million steel plant at Sur, which was located in eastern Oman. The plant would have two production lines that would each have the capacity to produce 600,000 t/yr of billets and blooms; production was expected to begin in early 2013 (Baxter, 2010b; Steel Guru, 2010).

Gulf Specialty Steel Industries (GSSI), which was a joint venture of Global Steel Industries Pte Ltd. of Singapore and Takamul, proposed to build steel wire plant in Sohar. The plant would have the capacity to produce 60,000 t/yr of galvanized steel wire and was expected to commence production by the second quarter of 2013 (Takamul Investment Co. S.A.O.C, 2012a).

**Manganese.**—The Government reported that Oman produced manganese ore (41,350 t) for the first time in 2011. Al Tamman had the capacity to produce 60,000 t/yr of manganese ore

grading 25% manganese at the Al Qabil open pit mine, which was located 220 km south of Muscat. The company completed scoping studies, geologic mapping, and a topographic survey for manganese ore concessions in the Al Mintirib, the Al Mudhaybi, the Al Qabil, and the Ja'alan sites in the Al Sharqiya region of Oman. Al Tamman was in talks with Indsil Group of India to build a 100,000-t/yr manganese smelter at Freezone Sohar to add value to the manganese that would be produced from the Al Mintirib concession (Prabhu, 2011; Al Tamman Trading Establishment L.L.C., 2012; Ministry of Commerce and Industry, 2012).

### **Industrial Minerals**

**Cement.**—Oman imported about 25% of its local market needs in 2011, and the country's consumption of cement was estimated to increase to 6.5 Mt/yr in 2013. Oman's cement industry was projected to grow by more than 10% in 2012 (Baxter, 2012a). Production of cement by Oman Cement increased to 1.88 Mt from 1.7 Mt in 2010. China National Building Material Equipment Corp. installed a third production line for OCO as part of an expansion plan that included an upgraded packaging and loading facility. The new line, which was completed in 2011, doubled the company's clinker production capacity to 2.4 Mt/yr and added about 1.5 Mt/yr of cement output. RCC increased its cement production capacity to 3.8 Mt/yr in 2010 from 2.9 Mt/yr with the installation of a fourth mill. In 2011, RCC produced 2.1 Mt of clinker compared with 2.2 Mt in 2010 and 1.8 Mt of cement compared with 2.1 Mt in 2010 at its plant in Salalah (Raysut Cement Co. S.A.O.C., 2011, 2012; Oman Cement Co. S.A.O.C., 2012).

To fulfill its goal of being able to supply a variety of cement-based products, RCC acquired 50% ownership in Oman Portuguese Cement Products Co. L.L.C. (OPCP), which was located in Sohar. OPCP produced ready mix concrete, precast concrete, blocks, and interlock paving. Al Madinah Cement Co. L.L.C., which was a member of the Al Buraimi Group, completed the construction of a greenfield cement plant at Wadi Saa in the Buraimi Governorate. The plant had the capacity to produce 750,000 t/yr of cement (Zawya, 2010; Raysut Cement Co. S.A.O.C., 2012).

**Nitrogen.**—OMIFCO and SIUCI produced and exported nitrogen fertilizer in Oman. OMIFCO produced about 1.4 Mt/yr of ammonia and 2.1 Mt/yr of granulated urea at its plant in the Sur Industrial area. OMIFCO's entire output was exported to India under a long-term take-or-pay offtake agreement. SIUCI produced ammonia and urea at its plant located at the Sohar Industrial Estate. The plant's initial production capacity was 1.2 Mt/yr of granular urea. The project, which comprised a 2,000-metric-ton-per-day (t/d)-capacity ammonia production plant and two granular urea plants with a combined capacity of 3,500 t/d, was built by Mitsubishi Heavy Industries Fertilizer Project Contracting and Construction Co. L.L.C. (a subsidiary of Mitsubishi Heavy Industries Ltd. of Japan). The plant used natural gas as a feedstock supplied through overland pipeline and Seawater Intake/Outfall Facility in the Sohar Industrial Estate for cooling and desalination (Arab Fertilizers Association, 2011, p. 19, 23; Suhail Bahwan Group, 2011).

**Sulfur.**—In 2011, Sohar Sulphur Fertilizers L.L.C. (SSF) was formed as a joint venture of Takamul (the majority shareholder), Awtad Projects and Development Co. L.L.C., and CoreSulphur Inc. of the United States to manufacture sulfur bentonite fertilizer and other micronutrients. SSF had the capacity to produce 30,000 t/yr of sulfur-bentonite fertilizer at its plant, which was located in the Sohar Industrial Estate; its products included a combination of sulfur with multiple micronutrients, such as boron, magnesium, copper, iron, and zinc. SSF signed an agreement with ORPIC for ORPIC to supply 30,000 t/yr of sulfur to SSF from ORPIC's refinery in Sohar (Takamul Investment Co. S.A.O.C., 2012e).

### **Mineral Fuels**

**Coal.**—Oman Power and Water Co. S.A.O.C. shelved a plan to build the first imported coal-fired independent water and power project (IWPP) at Ad Duqm in the Wusta region on the east coast of Oman. The project was put on hold because of unspecified environmental concerns. The Ad Duqm IWPP, which was projected to cost about \$2 billion to construct, was expected to have 1 gigawatt of capacity and to begin initial power production in April 2015. The plant was expected to consume several million metric tons per year of imported coal from Indonesia (Oman Power and Water Co. S.A.O.C., 2009; Ratcliffe, 2012).

### **Outlook**

The mineral industry of Oman is expected to continue to grow significantly in the next 5 years as international investors make use of the country's strategic geographic location as a distribution center to Africa, Asia, and Europe. Production of higher grade chromite is expected to continue during the next 5 years following the construction of a chromite ore concentration plant. Ferrochrome will also likely be produced following the completion of a ferrochrome smelter so the country can benefit from the value added, which is lost by exporting raw chromite ore. Investors from Brazil, Canada, India, and countries of the Gulf region are expected to continue to build iron and steel plants in Oman. The capacity to export industrial minerals is expected to increase following of the completion of the General Dry Bulk and Aggregate Terminal in Sohar. In July 2012, Zawawi Minerals L.L.C. entered into a partnership agreement with USG Corp. of the United States to develop a gypsum mine in southern Oman. USG is expected to invest \$60 million to build the mine and a plant to make plasterboard in Salalah Free Zone (Watts, 2012b).

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

(Thousand metric tons unless otherwise specified)

Commodity	2007	2008	2009	2010	2011
<b>METALS</b>					
Aluminum	--	49	351	367	373
Chromium:					
Ore, gross weight	408	865	798	865 <sup>r</sup>	617
Metal content (35% chromic oxide)	143	302	279	303	216
Copper:					
Mine output	39	78	82	87	111
Metal, Cu content	1	2	2	2	2
Smelter output, Cu content	14	12	16	16	20
Refined, Cu content	14	12	15	15	16
Gold kilograms	125	43 <sup>r</sup>	28	27 <sup>r</sup>	--
Iron and steel:					
Crude steel <sup>c</sup>	84	84	84	84	84
Direct-reduced iron	--	--	--	--	1,110
Laterite	295	359	392	375 <sup>r</sup>	722
Manganese	--	--	--	--	41
Silver kilograms	51	9	15	10	--
<b>INDUSTRIAL MINERALS</b>					
Cement, hydraulic	3,880	4,000	4,000	4,500	5,000
Clay	77	146	148	156	170
Gypsum	183	349	254	653 <sup>r</sup>	1,254
Kaolin	--	--	9	47	143
Limestone	3,098	3,845	3,353	4,638 <sup>r</sup>	4,995
Marble	312	501	631	695 <sup>r</sup>	931
Nitrogen:					
N content of ammonia	1,000	1,000	1,000	1,119	1,120
N content of urea	830	830	830	955	955
Quartz	212	191	209	187	217
Salt	10	11	31	12	12
Sand and gravel:	61,467	67,600 <sup>r,2</sup>	69,251 <sup>r,2</sup>	70,686 <sup>r,2</sup>	69,391
Silica sand	26	29	32	34	38
Sulfur <sup>c</sup>	50	50	50 <sup>r</sup>	50 <sup>r</sup>	50
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Gas, natural:					
Gross million cubic meters	30,261 <sup>r</sup>	30,230 <sup>r</sup>	31,022 <sup>r</sup>	33,259 <sup>r</sup>	34,257
Dry do.	24,082 <sup>r</sup>	23,975 <sup>r</sup>	25,140 <sup>r</sup>	27,086 <sup>r</sup>	28,595
Natural gas liquids <sup>c</sup> thousand 42-gallon barrels	21,608 <sup>r</sup>	31,974 <sup>r</sup>	36,464 <sup>r</sup>	38,726 <sup>r</sup>	38,508
Petroleum:					
Crude and condensate do.	259,293	276,971	296,600	315,575	325,215
Refinery products:					
Liquefied petroleum gas do.	402 <sup>r</sup>	3,832 <sup>r</sup>	4,125 <sup>r</sup>	3,248 <sup>r</sup>	3,212
Gasoline do.	5,256 <sup>r</sup>	19,126 <sup>r</sup>	18,396 <sup>r</sup>	16,242 <sup>r</sup>	23,250
Jet fuel and kerosene do.	1,387 <sup>r</sup>	6,242 <sup>r</sup>	5,840 <sup>r</sup>	4,599 <sup>r</sup>	4,891
Distillate fuel oil do.	6,460 <sup>r</sup>	14,746 <sup>r</sup>	13,396 <sup>r</sup>	11,132 <sup>r</sup>	15,804
Residual fuel oil do.	14,198 <sup>r</sup>	7,300 <sup>r</sup>	5,804 <sup>r</sup>	2,263 <sup>r</sup>	3,650
Other do.	21,607 <sup>r</sup>	27,074 <sup>r</sup>	27,479 <sup>r</sup>	21,416 <sup>r</sup>	26,303
Total do.	49,310 <sup>r</sup>	78,320 <sup>r</sup>	75,040 <sup>r</sup>	58,900 <sup>r</sup>	77,110

<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 July 31, 2012.

<sup>2</sup>Reported figure.

TABLE 2  
OMAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum	Sohar Aluminium Co. L.L.C. [Oman Oil Co. S.A.O.C. (OOC), 40%; Abu Dhabi Energy Co. P.J.S.C. (Taqa), 40%; Rio Tinto Alcan, 20%]	Smelter at Sohar	360,000.
Cement	Oman Cement Co. S.A.O.C. (Ministry of Commerce and Industry, 30.4%)	Kilns and mills at Rusayl	2,500,000.
Do.	Raysut Cement Co. S.A.O.C. (RCC)	Kilns and mills at Salalah	2,700,000.
Do.	Al Madinah Cement Co. L.L.C.	Kilns and mills at Wadi Saa	750,000.
Chromite:			
Ore	Al Tamman Trading Establishment L.L.C.	Al Ram Mine and the Wadi Rajmi Mine	250,000.
Do.	Global Mining Co., L.L.C.	Ad Dakhiliyah	250,000.
Do.	Hatton FZE	Mines south of Muscat	200,000.
Do.	Gulf Mining and Materials Co.	Wadi Mahram area	200,000.
Do.	Oman Chromite Co. S.A.O.G. (Ministry of Commerce and Industry, 15%)	Mines near Sohar	200,000.
Do.	Northern Minerals Co. L.L.C.	Al Batinah and Ad Dakhiliya	NA.
Concentrated	Global Mining Co., L.L.C.	Ad Dakhiliyah	50,000.
Clays	NA	NA	185.
Copper:			
Ore	Mawarid Mining L.L.C. (MB Holding Co. L.L.C., 100%)	Open pit mines at Ajib and Shinas	80,000.
Refined metal	Oman Mining Co. L.L.C. (Government, 100%)	Lasail, near Sohar	16,000.
Gold:			
Ore	do.	Rakah Gold Mine, Hayl As Safi	NA.
Metal	kilograms do.	Lasail, near Sohar	100.
Gypsum	Cement Gypsum Products Co. S.A.O.G., Global Mining Co. L.L.C., and Gulf Mining and Materials Co.	Buraimi and Thumriat	180.
Do.	Global Mining Co., L.L.C.	Sohar	65,000.
Iron and steel:			
Iron ore (laterite)	Gulf Mining and Materials Co.	Barka	300,000.
Crude steel	Modern Steel Mills L.L.C. (Oman International Development and Industrial Co. S.A.O.G., Assarain Group of Companies, Dharamsey Group, and others)	Rusayl	84,000.
Direct-reduced iron	Shadeed Iron and Steel L.L.C. (Jindal Steel and Power Ltd., 100%)	Sohar	1,500,000.
Rolled-steel products (rebar)	Sharq Sohar Steel Rolling Mills L.L.C.	do.	250,000.
Do.	Hadid Majan L.L.C.	Bait Al Falaj	100,000.
Rolled-steel products (tubes)	Al Jazeera Tube Mills Co. S.A.O.G.	Sohar	300,000.
Kaolin	NA	NA	150,000.
Limestone	Oman Cement Co. S.A.O.G. (Ministry of Commerce and Industry, 30.4%)	Rusayl	2,400,000.
Do.	Northern Minerals Co. L.L.C.	Wadi Al Jizzi, Al Batinah	900,000.
Do.	Global Mining Co., L.L.C.	Sohar	NA.
Magnesium	House of Natural Minerals L.L.C.	NA	NA.
Manganese	do.	NA	2,000.
Do.	Al Tamman Trading Establishment L.L.C.	Al Qabil	60,000.
Marble	do.	Buraimi	700,000.
Do.	Companies that quarried marble included Al Ajmi Marble Co., Al Madinah Marble Co., Al Nasser Marble Co., Al Rushaidi Marble Co., Al Shanfri Marble Co., Al Zarabi Marble Co., Gulf Mining Materials Co., International Marble, and Omani Marble Co.	Quarries located primarily in Ibri Wilayah and the Buraimi area	450,000.

See footnotes at end of table.

TABLE 2—Continued  
OMAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Natural gas	million cubic meters	Petroleum Development Oman L.L.C. (PDO) [Government, 60%; Royal Dutch Shell plc, 34%; Total S.A., 4%; Partex (Oman) Corp., 2%]	Gasfields and oilfields with associated natural gas in the Kauther/Yibal, the Saih Niyahda, and the Saih Rawl clusters	27,000.
Natural gas, liquefied	do.	Oman Liquefied Natural Gas L.L.C. [Government, 51%; Shell Gas B.V., 30%; Total S.A., 5.54%; Korea LNG, 5%; Mitsubishi Corp., 2.77%; Mitsui E&P Middle East B.V., 2.77%; Partex (Oman) Corp., 2%; Itochu Corp., 0.92%]	Two trains at Qalhat	6,600,000.
Do.	do.	Qalhat Liquefied Natural Gas S.A.O.C. (Government, 46.84%; Oman Liquefied Natural Gas L.L.C., 36.8%; Union Fenosa S.A., 7.36%; Mistubishi Corp., 3%; Oskas Gas Co. Ltd., 3%; Itochu Corp., 3%)	One train at Qalhat	3,300,000.
Nitrogen fertilizer		Oman India Fertiliser Co. S.A.O.C. [Oman Oil Co. S.A.O.C. (OOC), 50%; Indian Farmers Fertiliser Cooperative Ltd., 25%; Krishak Bharati Cooperative Ltd., 25%]	Sur	923,450 urea.
Do.		Sohar International Urea & Chemical Industries (SIUCI) (Suhail Bahwan Group, 100%)	Sohar	1,300,000 urea.
<b>Petroleum:</b>				
Crude	barrels per day	Petroleum Development Oman L.L.C. (PDO) [Government, 60%; Royal Dutch Shell plc, 34%; Total S.A., 4%; Partex (Oman) Corp., 2%]	About 100 oilfields in the Bahja, the Fahud, the Harweel, the Lekhwair, the Marmul, the Nimr, the Qam Alam, and the Yibal clusters	900,000.
Do.	do.	Oxy Oman, Inc (Occidental Petroleum Corp., 65%, and Mitsui E&P Middle East B.V., 35%)	Blocks 9 and 27, includes the Safah and Al Sunienah fields	55,000.
Do.	do.	Daleel Petroleum Co. L.L.C. (Mazoon Petrogas S.A.O.C., 50%, and Mazoon Petrogas B.V.I., 50%)	Block 5, includes the Bushra, the Daleel, the Mezoon and the Shadi fields	16,000.
Do.	do.	Occidental Mukhaizna, L.L.C. [Occidental Petroleum Corp., 45%; Oman Oil Corp. S.A.O.C., 20%; Shell Oman Trading Co. Ltd., 17%; Liwa Energy Ltd., 15%; Total Exploration and Production Oman, 2%; Partex (Oman) Corp., 1%]	Block 53, Mukhaizna field	8,500.
Do.	do.	Partnership of LG International Corp., 50%; Indago Oman Ltd., 40% (operator); Eagle Energy (Oman) Ltd., 10%	Block 8, Bukha field	1,100.
Refined	million barrels per year	Oman Refineries and Petrochemicals Co. L.L.C. (ORPC) (Ministry of Finance, 75%, and Oman Oil Co. S.A.O.C., 25%)	Refinery at Sohar	41.
Do.	do.	do.	Refinery at Mina Al-Fahal	39.
Quartz		Gulf Stone Co. S.A.O.G.	Sohar	180.
Salt, crude, industrial		Modern Salt Co. L.L.C.	Ibri Wilayat	10.
Sand		NA	NA	20.
Silver	kilograms	Oman Mining Co. L.L.C.	Sohar and Yankul	50.
<b>Sulfur:</b>				
Elemental	do.	Oman Oil Refineries and Petroleum Industries (ORPIC)	Refinery at Sohar	50,000.
Fertilizer	do.	Sohar Sulphur Fertilizers L.L.C.	Sohar Industrial Estate	30,000.

Do., do. Ditto. NA Not available.