



2010 Minerals Yearbook

IRAQ [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF IRAQ

By Mowafa Taib

In 2010, Iraq was the 11th ranked country in the world in terms of the size of its crude oil production, which averaged about 2.5 million barrels per day (Mbbbl/d) and accounted for 3.1% of the world's crude oil output. Iraq was one of the world's top crude oil exporting countries, and its crude oil exports averaged about 1.9 Mbbbl/d in both 2009 and 2010. The Government, which had estimated Iraq's proved crude oil reserves for the past three decades to be 115 billion barrels (Gbbbl) (8.3% of the world total reserves), increased them by 24.4% to 143.1 Gbbbl in 2010. Given the crude oil reserve increases by Iran and Venezuela in 2010, Iraq's crude oil reserves continued to rank fourth in the world in terms of volume after Venezuela (296.5 Gbbbl), Saudi Arabia (264.5 Gbbbl), and Iran (151.2 Gbbbl). Iraq's proved natural gas reserves were estimated to be 3.2 trillion cubic meters, or 1.7% of the world's total reserves. According to Government estimates, the proved mineral reserves of Iraq included 10,000 million metric tons (Mt) of phosphate rock, 8,000 Mt of limestone, 1,200 Mt of kaolin, 600 Mt of native sulfur, 330 Mt of dolomite, 130 Mt of gypsum, 75 Mt of quartz sand, 22 Mt each of glauberite and montmorillonite, 50 Mt of salt, 16 Mt of quartzite, and 2.3 Mt of feldspar. Moreover, Iraq had substantial reserves of standard sand, sandstone, and gravel. In addition to crude oil and natural gas, the country produced modest quantities of bauxite, bentonite, cement, clays, gypsum, kaolin, limestone, salt, and sulfur (State Company of the Geological Survey and Mining, 2011; U.S. Energy Information Administration, 2010; BP p.l.c., 2011, p. 6, 8, 20; Organization of the Petroleum Exporting Countries, 2011, p. 22, 49).

Minerals in the National Economy

According to the International Monetary Fund (IMF), Iraq's real gross domestic product (GDP) increased by only 0.8% in 2010 compared with increases of 4.2% in 2009 and 9.5% in 2008. The IMF projected, however, that Iraq's economy would grow by 9.6% in 2011. The hydrocarbon sector was the country's main economic activity and accounted for 55.5% of the country's GDP. It also accounted for 68.0% of the Government revenue in 2009 compared with 77.6% in 2008. The value of Iraqi exports in 2010 increased by 33% to \$53.4 billion from \$40.6 billion in 2009 but was less than the \$61.7 billion worth of exports in 2008. The value of Iraq's petroleum exports increased by about 23% to \$51.1 billion in 2010 from \$41.7 billion in 2009 compared with a 61% decrease in 2009. The spot reference basket prices of Iraq's Basra light, which was set by the Organization of the Petroleum Exporting Countries (OPEC), was \$76.79 per barrel in 2010 compared with \$60.50 per barrel in 2009. The volume of crude oil and petroleum products exports, which averaged 1.90 Mbbbl/d in 2010, decreased by 1.9% compared with that of 2009, which averaged 1.93 Mbbbl/d (International Monetary

Fund, 2011, p. 74, 77, 87; Organization of the Petroleum Exporting Countries, 2011, p. 55).

Production

Data on mineral production are in table 1.

Government Policies and Programs

The Petroleum Contracts and Licensing Directorate of the Ministry of Oil invited international oil companies (IOCs) to participate in petroleum bidding rounds in accordance with the Law of Private Investment in Crude Oil Refining (law No. 64 of 2007). The first petroleum-licensing round was held in June 2009 and the second was held in December 2009. A third petroleum-licensing round designated for natural gas development was held in October 2010, and a fourth licensing round was scheduled to be held in 2011. Assuming that all the Government's planned development targets are met, production from the existing and new oilfields would increase to 11.1 Mbbbl/d by 2016 from the current (2010) production of about 2.5 Mbbbl/d (Howard, 2010, p. 27–29; Ministry of Industry and Minerals, 2011; State Company of Geological Survey and Mining, 2011).

The Ministry of Industry and Minerals (MIM) called for international companies to invest in the mineral sector of Iraq based on production-sharing principles to rehabilitate the existing public industrial enterprises or to build new plants. Opportunities existed for the production of alumina, cement, feldspathic sand, float glass, iron and steel, native sulfur, nitrogen and phosphate fertilizers, petrochemicals, phosphoric acid, silica sand, sodium activated bentonite, and sulfuric acid (Ministry of Industry and Minerals, 2011).

Structure of the Mineral Industry

The Ministry of Oil managed Iraq's hydrocarbon sector activity through a number of state-owned oil companies. The upstream companies included Iraq Drilling Co., Midland Oil Co., Missan Oil Co., North Oil Co., Oil Exploration Co., Oil Project Co., and South Oil Co. The downstream companies included Gas Filling Co., Midland Refinery Co., North Refinery Co., Oil Marketing Co., Oil Pipeline Co., Oil Products Distribution Co., Oil Tanker Co., South Gas Co., South Refinery Co., and State Oil Marketing Organization (SOMO).

As of yearend 2010, the draft gas and oil legislation known as the Hydrocarbon Law, which was first proposed in 2007, remained stalled because of disagreements among Iraqi parties on wider political issues, including revenue sharing. The proposed law would create an oil and gas council to oversee the country's oil and gas sector and would establish the Iraq National Oil Co. The proposed law also contains arrangements

for petroleum revenue sharing, through the creation of an Oil Revenue Fund and a Future Fund.

In the Kurdistan region of Iraq, the Kurdistan Regional Government (KRG), which is the ruling body of the federated region in northern Iraq, adopted its own hydrocarbon law in 2007 and awarded 39 hydrocarbon licenses in the Kurdistan region. The Ministry of Natural Resources of the KRG included Kurdistan Exploration and Production Co., Kurdistan National Oil Co. (KNOC), Kurdistan Oil Marketing Organization, Kurdistan Organization for Downstream Operations, and Kurdistan Trust Organization.

Iraq's Law No. 91 of 1988 and its amendments regulate investment in mining and other natural resources, and Investment law No. 13 of 2006 covers all areas of investment other than the oil and gas sector. The MIM administered the activity of the nonfuel mineral sector through several state-owned companies, including General Company for Phosphates, Iraqi Cement Co., Iron and Steel State Co., Mishraq Sulphur State Enterprise, State Company of Geological Survey and Mining (Geosurv), Northern Cement Co., Southern Cement State Co. and State Company for Southern Fertilizer Industry. Geosurv conducted geologic studies, mapping, and mineral exploration activity. It also produced industrial minerals, including bauxite, bentonite, clays, construction and silica sand, feldspar, ironstone, kaolin, and salt (Ministry of Industry and Minerals, 2011; State Company of Geological Survey and Mining, 2011).

Commodity Review

Metals

Iron and Steel.—The MIM signed a memorandum of understanding with STX Heavy Industries Co. Ltd. (STX) of the Republic of Korea and an unnamed partner from Turkey to redevelop the Iron and Steel State Co. steel complex, which was located in Khawr az Zubayr in the Basrah Governorate in southern Iraq. The \$3 billion project would include the rehabilitation of the existing infrastructure in the complex by the unnamed Turkish partner, and STX would build a greenfield steel mill and a new power station. The mill would use scrap steel sourced from within Iraq. The proposed project would produce 1.2 million metric tons per year (Mt/yr) of iron bar, 600,000 metric tons per year (t/yr) of section steel, 1.2 Mt/yr of hot-rolled products, and electrical energy from a 500-megawatt power station (Arab Steel, 2010c; Baxter, 2010).

Iron and Steel State Co. began testing operations for the spiral tubes production line, which was expected to produce 200,000 t/yr of spiral tubes. Iron and Steel State Co. was one of the strategically important nonoil companies in Iraq; it specialized in the production of wire rods, steel sections, sponge iron, and tubes. It comprised a group of plants and sections, such as the sponge iron plant, steelmaking plant, rolling mills, and pipes and tubes mill, along with an engineering services section (Arab Steel, 2010b).

In March, ArcelorMittal of Luxembourg agreed to form a 50-50 joint venture with Dayen Co. of Turkey to build a steel minimill with an electric arc furnace at Suleimaniah; the mill would have an initial production capacity of 250,000 t/yr of

rebar that could be increased to 500,000 t/yr. The plant, which was expected to cost more than \$100 million to construct, would use local scrap metal to make rebar, and was projected to be completed in 2011 (Arab Steel, 2010a).

Industrial Minerals

Cement.—Iraq was one of the leading cement importers in the Middle East in 2010. The country imported about two-thirds of the cement it consumed. The MIM invited investors to build five new cement plants in Iraq to utilize the abundant limestone reserves at different sites in Iraq. The MIM cited the availability of raw materials, the wide-scale local market need, and the low production cost (because the plants would be very close to limestone quarries) as incentives for investing. The design capacity of the five proposed plants would be 2 Mt/yr at the Al-Muthana 1 cement plant, 1.2 Mt/yr at the Al-Muthana 2 cement plant, 1 Mt/yr at the Al-Muthana 3 cement plant, 0.75 Mt/yr at the Al-Najaf cement plant, and 2 Mt/yr at the Nineveh cement plant (Ministry of Industry and Minerals, 2011).

In April, a joint venture of Lafarge S.A. of France, which held between 10% and 13% of Iraq's cement market and planned to increase its share to 25%, and MerchantBridge and Co. of the United Arab Emirates, took control of the Karbala cement plant from Southern Cement State Co. The joint venture signed a 15-year lease agreement with Southern Cement to rehabilitate the plant, which is located in Karbala Governorate in southern Iraq and had the capacity to produce 200,000 t/yr of cement. The joint venture planned to increase the plant's cement production capacity to 1.8 Mt/yr within 30 months. Lafarge would own 51% interest in the project and MerchantBridge would own the remaining 49% interest. The International Finance Corp. (IFC) of the World Bank agreed to loan \$25 million to support Lafarge's rehabilitation of the Karbala cement plant.

The IFC also agreed to invest up to \$25 million in Lafarge's holding company and to provide up to \$50 million in loans to Bazian Cement Co. Bazian Cement was the company that built and operated the Bazian cement plant, which was located in the Kurdistan region of Iraq. Lafarge had 70% interest in Bazian Cement and Faruk Group Holding held the remaining 30% interest (International Finance Corp., 2010).

In August, China National Building Material Co. Ltd. (CNBM) was awarded a \$250 million contract to build a greenfield cement plant near the city of Samawa, which is located in Muthanna Province in southern Iraq. The plant would have an initial cement production capacity of 1 Mt/yr, which could be doubled within 3 years. Al-Doh Investment Co. of Jordan would provide financing to CNBM for the project. In October 2010, Berkeley Petroleum Mesopotamia Asphalt Ltd. and Sonoro Energy Iraq (a subsidiary of Sonoro Energy Ltd. of Canada) signed an exploration and production-sharing agreement with the government of Salah ad Din Province for asphalt production in the Province (Rigzone.com, 2010b; Thomson Reuters, 2010).

Nitrogen.—According to Arab Fertilizers Association, Iraq's State Company for Fertilizers produced 153,000 metric tons (t) of ammonia and 210,000 t of urea in 2010. The company

had the capacity to produce 660,000 t/yr and 1,560,000 t/yr, respectively. The MIM called for investing in three new urea plants in the Governorates of Al-Anbar, Basrah, and Nineveh, respectively. The suggested capacity of the new plants would be between 0.5 and 1 Mt/yr of urea each at a cost of between \$800 and \$900 million per plant. Natural gas needed as a feedstock for these plants would be available in all locations (Arab Fertilizer Association, 2011; Ministry of Industry and Minerals, 2011; State Company for Fertilizers, 2011).

Phosphate Rock.—The MIM invited companies to invest in the extraction and concentration of phosphate deposits in partnership with the General Company for Phosphates. Phosphate rock deposits were found in the Paleocene Akashat Formation in Iraq's Western desert. The deposits are located about 15 to 20 kilometers northeast of the Akashat Mine and cover an area of 40 square kilometers (km²). The U.S. Geological Survey (USGS) and Geosurv estimated Iraq's phosphate rock deposits at four sites in the Western desert (Akashat, Ethna, H3, and Swab) to be more than 5,750 Mt, which would be 9% of the world's total phosphate rock reserves. The largest phosphate rock deposits were at the Swab site (3,503 Mt of phosphate rock grading 22% P₂O₅), followed by the Akashat site (1,765 Mt grading 21% P₂O₅), the H3 site (332 Mt grading 18% P₂O₅), and the Ethna site (219 Mt grading 18% P₂O₅). The phosphate rock deposits (discovered as part of the USGS Iraq Minerals project) could rank Iraq as the second country in the world after Morocco in terms of the size of its phosphate rock reserves. The MIM also invited international companies to build a phosphate rock processing plant at Akashat in Al-Anbar Governorate. The plant would have the capacity to produce 1 Mt/yr of phosphate fertilizer and phosphoric acid and would cost \$50 million to construct. The proposed plant would produce phosphoric acid and phosphogypsum as a byproduct from treating phosphate concentrates with sulfuric acid. Phosphate rock would be supplied from the Wadi Hirri deposit at Akashat in Al-Anbar Governorate. Sulfuric acid would be produced from the hydration of native sulfur at the Mishraq deposit in Nineveh Governorate (Blair, 2011; Fernette and others, 2011; Ministry of Industry and Minerals, 2011; Watts, 2011).

Silica.—The MIM invited interested companies to invest in mining silica sand deposits at Al-Anbar Governorate, which had the capacity to produce 150,000 t/yr at a cost of \$4 million to \$6 million. The silica sand produced would supply the ceramic and glass industries as well as the proposed white cement plant. The MIM also proposed to build a 100,000-t/yr-capacity flat glass plant in Al-Anbar Governorate. The materials needed for the plant, which include alumina oxide, limestone, silica sand, sodium carbonate, and sodium sulfate, were available at several sites in western Iraq. The proposed flat glass plant was estimated to cost \$150 million to build, and the flat glass produced would be used to supply the local market (Ministry of Industry and Minerals, 2011).

Mineral Fuels

Natural Gas.—Although an initial agreement between the Government and Royal Dutch Shell plc (Shell) of the

United Kingdom to establish the joint-venture Basra Gas Project was signed in September 2008, the final agreement had not been signed as of yearend 2010 because of legal and economic issues in the agreement and the need to amend old Iraqi oil laws. The South Gas Project was proposed as a 25-year joint venture of South Gas Co. (51% interest), Shell (44% interest), and Mitsubishi Corp. of Japan (5% interest) to capture flared gas from a 19,000-km² area in the Governorate of Basrah in southern Iraq. The project area was extended to include the Majnoon, the Rumaila, the West Qurna 1, and the Zubair fields. Natural gas would be captured, treated, and processed for use locally or exported as liquefied natural gas. Natural gas production from the project was expected to reach 70.8 million cubic meters per day (U.S. Energy Information Administration, 2010; Basrah Gas, 2011).

In October, the Ministry of Oil offered three of Iraq's gasfields for development. The Akkas gasfield, which is located in the western desert of Anbar Province near the Syrian border, had estimated reserves of about 158 billion cubic meters (5.6 trillion cubic feet) of gas; the Al Mansuriyah gasfield, which is located in eastern Iraq, had an estimated 128 billion cubic meters (4.5 trillion cubic feet) of gas reserves; and the Siba gasfield, which is located in southeastern Iraq, had 3.2 billion cubic meters (1.13 trillion cubic feet) of gas reserves. The contract for the development of the Akkas gasfield was awarded to a 50-50 joint venture of KazMunaiGas of Kazakhstan and Korean Gas Corp. (Kogas) of the Republic of Korea. The contract for the development of the Al Mansuriyah gasfield was awarded to Türkiye Petrolleri Anonim Ortaklığı (TPAO) of Turkey (50%), Kuwait Energy (30%), and Kogas (20%), and that for the development of the Siba gasfield was awarded to Kuwait Energy (60%) and TPAO (40%) (Howard, 2010, p. 25; Mirza, 2010; Petroleum Economist, 2010, p. 37).

Natural gas production by Pearl Petroleum Co. Ltd. from the Chemchamel and the Khor Mor fields, which are located in the Kurdistan region of Iraq, averaged more than 2 million cubic meters per year. The project began in 2007 as a joint venture of Dana Gas PJSC (40%) and Crescent Petroleum (50%), both of the United Arab Emirates, and MOL Hungarian Oil and Gas Co. p.l.c. (MOL) and OMV Aktiengesellschaft of Austria (OMV) (5% interest each). The project supplied two gas-fired power stations at Chemchamel and Erbil and would transport surplus gas to Europe through the Nabucco gas pipeline, construction of which was scheduled to begin in 2010. Dana Gas began liquefied petroleum gas (LPG) production through an LPG train at the Khor Mor gas processing plant. LPG production was supplied to powerplants at Chemchamel and Erbil.

In October, Dana Gas announced that it had delayed its production target of 300 million cubic feet per day (3.1 billion cubic meters per year) of gas from its project in Iraq's Kurdistan region to 2012. The current (2010) production rate was 200 million cubic feet per day (more than 2 billion cubic meters per year) (AMEinfo.com, 2010; Dana Gas PJSC, 2010).

Petroleum.—In October, Iraq's Ministry of Oil increased the country's proved crude oil reserves by 24% to 143.1 Gbbl from the 2001 estimates of 115 Gbbl. This increase came primarily from revised estimates at 12 oilfields and included a 71% increase in the proved reserves of the southern oilfields of Basrah, a 20%

increase in the northern oilfields of Kirkuk, and a 9% increase in the central fields in East Baghdad (Rigzone.com, 2010a).

The development and operation works of Iraq's largest oilfield, the Rumaila, were carried out by a joint venture of BP p.l.c. of the United Kingdom (66.67%) and China National Petroleum Corp. (CNPC) (33.33%). The work included drilling 70 wells in 2010. A consortium of Exxon Mobil Corp. of the United States (80%) and Shell (20%) was developing and operating the West Qurna I oilfield. The development work on the oilfield included drilling 35 new wells. ExxonMobil Iraq Ltd. contracted Halliburton Co. of the United States to use three drilling rigs to provide oil-drilling services to 15 wells. Crude oil production at the West Qurna I oilfield reached 285,000 bbl/d by the first quarter of 2011, which exceeded the target of 250,000 bbl/d. The developers and operators of the West Qurna II oilfield was a consortium that included Lukoil Oil Co. of Russia (85%) and Statoil ASA of Norway (15%). The consortium planned to invest \$300 million in 2010 and \$4.5 billion in the next 5 years to produce 120,000 bbl/d by yearend 2012. The operation and development of the Zubiar oilfield was being conducted by a consortium of Eni S.p.A. of Italy (44%), Occidental Petroleum Corp. of the United States (31%), and Kogas (25%). Halliburton won a contract to provide services and testing to 20 wells. A consortium of Shell (60%) and Petronas Carigali International Sdn Bhd (Petronas) of Malaysia (40%) won the contract to develop and operate the Majnoon oilfield. Production at the Majnoon oilfield increased to 70,000 bbl/d from 45,000 bbl/d. Halliburton, Iraq Drilling Co., and Nabors Drilling (subsidiary of Nabors Industries Ltd. of Canada) were subcontracted to develop the Majnoon oilfield. A consortium of CNPC (50%), Petronas (25%), and Total S.A. of France (25%) was developing and operating the Halfaya oilfield. Sociedade Nacional de Petróleos de Angola (Sonangol) was rehabilitating the Qayarah and the Najmah oilfields with Nineveh Oil Co. A consortium of Petronas (60%) and Japex Ltd. of Japan (40%) was formed to develop and operate the Gharaff oilfield for North Oil. OAO Gazprom of Russia (40%), Petronas (30%), Kogas (20%), and TPAO (10%) established a consortium to develop the Badra field for state-owned Midland Oil Co. (Howard, 2010, p. 21–22; U.S. Energy Information Administration, 2010).

Production from the first phase of the Al-Ahdab oilfield, which was being developed by CNPC (75%) and North Oil Co. (25%), was expected to begin in June 2011. The production capacity of the field, which has an estimated 1 Gbbl of oil reserves, would be 25,000 bbl/d in the first 3 years and 115,000 bbl/d after 6 years as the field becomes fully developed (Iraq Business News, 2011; Watkins, 2011).

About 40 companies were working on crude oil and natural gas exploration and production in the Kurdistan region of Iraq based on production-sharing contracts, which included an initial 5-year exploration period followed by a 20-year development period. Genel Enerji A.S. of Turkey held seven licenses, KNOC held five licenses, and Marathon Petroleum Corp. of the United States, MOL, Petroleum Products International Exploration and Production Inc. (PETOIL) of Turkey, and OMV held four licenses each. DNO International ASA (DNO) of Norway and ShaMaran Petroleum Corp. of

Canada held three licenses each. Crescent Petroleum, Dana Gas, Doğan Enerji of Turkey, Komet Group of Moldova, Oil Search Ltd. of Papua New Guinea, Pet Prime International Oil Co. Ltd. of the United Kingdom, Reliance Industries Ltd. of India, China Petroleum & Chemical Corporation (Sinopec), and Talisman Energy Inc. of Canada held two licenses each. One license each was held by Groundstar Resources Ltd., Heritage Oil plc, Longford Energy Inc., Vast Exploration Inc., and Western Zagros Resources Ltd. (all of Canada); Daesung Corp., Le Meilleur Co. Ltd., Majuko Corp., Samchully Co., SK Energy Co. Ltd., and UI Energy Corp. (all of the Republic of Korea); First Reserve Corp., Niko Resources Ltd., Norbest Ltd., Perenco Oil and Gas, and Sterling Energy plc (all of the United Kingdom); and Hillwood Oil & Gas Group LLC, Hunt Oil Co., Impulse Energy Corp., and Texas Keystone Inc. (all of the United States) (Howard, 2010, p. 15).

DNO, which was the operator for three licenses in Kurdistan, continued with its exploration and drilling of areas covered by the Tawke production-sharing contract (PSC) and the Dohuk PSC in the KRG in northern Iraq in 2010. DNO resumed crude oil production from the Tawke field in February 2011 after it was suspended in September because of media reports on improper accounting of proceeds of Treasury shares sold by DNO. Production from the Tawke oilfield reached 70,000 bbl/d, and the company increased its estimates of hydrocarbon reserves of the Tawke field to 500 million barrels (Mbbbl) from 306 Mbbbl. KNOC moved forward with exploration work at the Hawler, the Qush Tapa, the Sangaw South, and the Sangaw North fields, and the Bazian Block in the Kurdistan region of Iraq (DNO International ASA, 2011).

In 2010, Iraq's oil refining capacity increased by 12.2% to 856,000 bbl/d from 763,000 bbl/d in 2009. The output of petroleum products increased by 12.4% to 513,200 bbl/d in 2010 from 456,600 bbl/d in 2009. The Government planned to increase the country's refining capacity to 1.5 Mbbbl/d by 2017, including building four new refineries at Kerbala, Kirkuk, Missan, and Nassiriyah (BP p.l.c., 2011, p. 16).

Outlook

Iraq's mineral industry is likely to expand significantly in the next 5 years to supply mineral commodities needed for the rehabilitation of the country's infrastructure and reconstruction projects. The enrollment of international oil companies in the development of the Iraq's vast hydrocarbon resources is expected to increase the country's crude oil and natural gas production. The Government, which depends heavily on crude oil revenue to cover public expenditures and to finance reconstruction projects, planned to evaluate 395 undrilled prospects to produce 15 oilfield discoveries. The Government has set a goal to increase crude oil production to 3.0 Mbbbl/d by yearend 2011 from about 2.5 Mbbbl/d produced in 2010. KRG expected to increase its crude oil production to 400,000 bbl/d by yearend 2011 from the yearend 2010 production of 80,000 bbl/d. The production volumes of cement, phosphate rock, phosphate and nitrogen fertilizers, steel, and sulfur are expected to increase to satisfy domestic demand for these mineral commodities (Howard, 2010).

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TABLE 1
IRAQ: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity	2006	2007	2008	2009	2010	
INDUSTRIAL MINERALS						
Bauxite	metric tons	NA	NA	4,928	250	--
Bentonite ²	do.	NA	570	1,605	3,959	6,127
Cement, hydraulic: ^c		3,500	4,500	6,453	6,500 ^r	6,500
Clay		NA	1,019	1,777	2,283	2,283
Gravel		NA	7,823	9,708	9,708 ^r	10,000
Gypsum		NA	1,285 ^r	1,279 ^r	272 ^r	583
Ironstone		NA	40	3	3	3
Kaolin	metric tons	NA	3,545	1,524	1,981 ^r	20,060
Limestone		NA	642	275	2,005 ^r	986
Nitrogen:						
N content of ammonia		10	10	10	30	126
N content of urea ^c		NA	NA	NA	NA	100
Salt ^e		50	153	109	113	102
Sand, feldspathic	metric tons	NA	543	--	--	--
Sand and gravel	do.	NA	32	26	1,126	10,139
Silica sand	do.	NA	165	19,921	17,514 ^r	232
Sulfur		30	30	30	20	20
MINERAL FUELS AND RELATED MATERIALS						
Gas, natural:						
Gross	million cubic meters	11,900	13,596	14,781	16,577	16,885
Dry	do.	1,450	1,460	1,880	1,149	1,303
Natural gas plant liquids	thousand 42-gallon barrels	11,000	11,000	11,000	11,000	11,000
Petroleum:						
Crude, including lease condensate	do.	729,635	782,560	886,220 ^r	891,330 ^r	897,900
Refinery products:						
Liquefied petroleum gas	do.	20,550	6,315	11,060	18,177	14,177
Gasoline	do.	14,856	17,703	21,864 ^r	21,937	26,207
Kerosene and jet fuel	do.	12,264	9,855	17,119	17,447	18,800
Distillate fuels	do.	28,105	18,871	30,551	31,208	37,300
Residual fuels	do.	87,089	58,400	76,468 ^r	76,979 ^r	89,973
Other	do.	13,836	64,356 ^r	8,358 ^r	914 ^r	863
Total	do.	176,700	175,500 ^r	165,420 ^r	166,660 ^r	187,320

^cEstimated; 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 August 30, 2011.

²Reported in cubic meters and converted to metric tons.

TABLE 2
IRAQ: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity	
Cement:				
Portland	Southern Cement Co. (Government, 100%)	Al Jinoob plant, Samawa; Al Najaf Al Ashraf plant, Kufa; Al Sadaa plant, near Sadat Al Hindia; Kufa I plant, Kufa; Muthena plant, near Muthena; As Samawa plant, Samawa; and Um Qasr plant, Um Qasr	7,500,000	
Do.	Iraqi Cement Co. (Government, 100%)	Al Qaim plant, Al Qaim; Al Tamim plant, Kirkuk; Fallujah plant, Fallujah; and Kubaisa plant, Kubaisa	5,200,000	
Do.	Northern Cement Co. (Government, 100%)	Badoosh I, II, and III plants, Mosul; Hammam Al Alil I and II plants, Mosul; and Sinjar plant, Mosul	3,740,000	
Do.	Lafarge S.A., 70%, and Faruk Group Holding, 30%	Bazian plant at Sarchinar, near Hayasi	2,700,000	
Do.	Lafarge S.A., 60%, and Faruk Group Holding, 40%	Tasluja plant, near Suleimaniyah	2,300,000	
Do.	Al-Rowad (Lafarge S.A., 51%, and Merchant Bridge and Co. 49%)	Karbala plant, Karbala	2,000,000	
White	Iraqi Cement Co. (Government, 100%)	Fallujah white cement plant, Fallujah	300,000	
Fertilizers				
	State Company for Fertilizers South Region-Basrah (Government, 100%)	Ammonia plant at Abu Al-khasib	660,000	
Do.	do.	Urea plant at Abu Al-khasib	1,060,000	
Do.	State Company for Fertilizers Northern Area (Government, 100%)	Urea plant at Bayji	500,000	
Do.	State Enterprise for Phosphate (Government, 100%)	Phosphatic fertilizer plant at Al-Qaim	600,000	
Petroleum:				
Crude	thousand 42-gallon barrels per day	BP p.l.c., 66.67%, and China National Petroleum Corp. (CNPC), 33.33%	Rumaila	2,850
Do.	do.	Exxon Mobil Corp., 80%, and Royal Dutch Shell plc, 20%	West Qurna 1	2,325
Do.	do.	Lukoil Oil Co., 85%, and Statoil ASA, 15%	West Qurna 2	1,800
Do.	do.	Royal Dutch Shell plc, 60%, and Petronas Carigali International Sdn Bhd, 40%	Majnoon	1,800
Do.	do.	Eni S.p.A., 44%; Occidental Petroleum Corp., 31%; Korean Gas Corp. (Kogas), 25%	Zubair	1,125
Do.	do.	North Oil Co. (Government, 100%)	Kirkuk	1,000
Do.	do.	CNOOC Ltd., 85%, and Türkiye Petrolleri Anonim Ortaklığı (TPAO), 15%	Missan	450
Do.	do.	China National Petroleum Corp. (CNPC), 50%; Petronas Carigali International Sdn Bhd, 25%; South Oil Co.; Total S.A., 25%	Halfaya	535
Do.	do.	Sociedade Nacional de Petróleos de Angola (Sonangol), 100%	Qiayarah	120
Do.	do.	OAQ Gazprom, 40%; Korean Gas Corp. (Kogas) 20%; Türkiye Petrolleri Anonim Ortaklığı (TPAO), 10%	Badra	170
Do.	do.	Sociedade Nacional de Petróleos de Angola (Sonangol), 100%	Najmah	110
Do.	do.	China National Petroleum Corp. (CNPC), 75%, and North Oil Co., 25%	Al-Ahdab	90
Do.	do.	DNO International ASA, 55%; Genel Enerji A.S. 25%; Kurdistan National Oil Co. 20%	Tawke	45
Do.	do.	Taq Taq Operating Co. Ltd. (Genel Enerji A.S. 44%; Addax Petroleum Corp., 36%; Kurdistan National Oil Co., 20%)	Taq Taq	35
Refinery products				
	42-gallon barrels per day	Midland Refineries Co. (Government, 100%)	Daura refinery at Daura	142,300
Do.	do.	Kar Oil & Gas Co. (private)	Erbil	40,000
Do.	do.	North Refineries Co. (Government, 100%)	Baiji (Salahudin)	135,800
Do.	do.	do.	Baiji (North)	170,000
Do.	do.	do.	Kirkuk	30,000

See footnotes at end of table.

TABLE 2—Continued
 IRAQ: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum—Continued:				
Refinery products— Continued	42-gallon barrels per day	North Refineries Co. (Government, 100%)	Haditha	16,000
Do.	do.	do.	Khanagin/Alwand	12,000
Do.	do.	do.	Qaiyarah-Mosul	4,000
Do.	do.	South Refineries Co. (Government, 100%)	Basra	142,300
Do.	do.	do.	Najaf	30,000
Do.	do.	do.	Nassiriyah-Samawah	30,000
Do.	do.	do.	Muftiah	4,500
Phosphate rock		General Company for Phosphate (Government, 100%)	Akashat	1,300,000
Phosphoric acid		do.	do.	400,000
Sulfur		Mishraq Sulphur State Enterprise (Government, 100%)	Qaiyarah	820,000
Sulfuric acid		State Company for Fertilizers (Government, 100%)	Phosphatic fertilizer plant at Al-Qaim	1,500,000
Do., do.	Ditto.			