THE MINERAL INDUSTRY OF

KUWAIT

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The production and refining of crude oil provided the bulk of Government revenues, which totaled $9.28 billion in the fiscal year commencing July 1, 1993, to June 30, 1994. Nearly 90% of these revenues were attributable to the oil sector. The oil industry accounted for about 60% of the gross domestic product (GDP). GDP for 1994 was estimated by the National Bank of Kuwait at $25.3 billion compared with $22.4 billion in the previous year.

Government Policies and Programs

Kuwait's many investments, which included the participation in foreign petroleum exploration, the acquisition of foreign petroleum refining and distribution networks, and the participation in overseas petrochemical facilities, have aided Kuwait in developing an economy with globally dispersed assets. In January 1993, the National Assembly passed a bill authorizing that body to examine investments of all companies in which the Kuwaiti Government holds 25% or more equity. Kuwaiti investments in Spain that resulted in an estimated loss of $4 billion received particular scrutiny.

The full restoration of crude oil production and exports was recognized by the Government as the key element in financing reconstruction that was estimated at about $22 billion over the first 5 years after liberation from Iraqi occupation. The Kuwaiti Government, at least for the immediate future, abandoned its ambitions for an economy that included a nonoil industrial and manufacturing sector.

Under a privatization plan, the Kuwaiti Government, which employed most of the work force, considered selling state enterprises during the next 5 years. The plan included shedding a total of $2.68 billion in equity distributed among 62 companies and privatizing services that were being subsidized or provided free by the Government. These included electric power production, transportation, and communications.

Postwar national security concerns were eased by military cooperation pacts entered into with France, Russia, the United Kingdom, and the United States. A swift international response to the Iraqi military massing on Kuwait's northern border in October 1994
confirmed the alliance.

Environmental Issues

The environmental damages resulting from the Iraqi occupation had not yet been fully realized. There was no precedent upon which to draw to make an assessment, and it was expected to be several more years before the full extent of the damage could be understood. An estimated 30 million (Mbbl) of crude oil was spilled onto the ground, forming oil lakes in Kuwait; only 20 Mbbl was considered recoverable. All of the recoverable amount was gathered by vacuum trucks and transported to treatment facilities in Kuwait's refineries or to special tanks for sale as weathered crude.

Production

The restoration of mineral production was focused on petroleum extraction and processing. These sectors of the mineral industry were recognized as the most expeditious means of replenishing depleted cash reserves.

The Organization of Petroleum Exporting Countries (OPEC) assigned a quota of 1.6 million barrels per day (Mbbl/d) for most of 1993. It was increased by 400,000 barrels per day (bbl/d) at OPEC's September meeting, raising the quota to 2 Mbbl/d in the fourth quarter of 1993, and continued at this level throughout 1994 and 1995. Kuwait's crude oil production for 1994 averaged slightly more than 2 Mbbl/d, including nearly 200,000 bbl/d from the Divided Zone shared with Saudi Arabia. *(See table 1.)* Crude oil production capacity, however, including the Divided Zone was 2.5 Mbbl/d.

Trade

Total exports for 1994, mostly hydrocarbon-related, were reported at $11.9 billion compared with $10.5 billion in 1993. Total imports, principally vehicles and other consumer goods, were valued at $6.7 billion, about 4% less than those of the previous year.

The United States imported 113 Mbbl of crude and unfinished oil and more than 1 Mbbl of products comprising jet fuel and liquefied petroleum gases from Kuwait in 1994. Kuwait supplied approximately 3.5% of the U.S. petroleum imports in 1994.

Structure of the Mineral Industry

The Government of Kuwait imposed few restrictions on trade or financial flows and placed considerable emphasis on the private sector to develop the economy. The petroleum and natural gas extraction and processing industries, however, were under Government control. Total control of the Kuwait Oil Co. (KOC) and the Kuwait National Petroleum Co. (KNPC) was in effect since 1975.

In 1980, the Government established a state umbrella company for hydrocarbon operations known as the Kuwait Petroleum Corp. (KPC). This organization controlled all the state hydrocarbon companies and managed Government shareholdings in various oil ventures, including those operations in the Kuwait-Saudi Arabia Divided Zone and the acquired interests in foreign operations.

Despite the liquidation of several billion dollars in stocks and bonds since the invasion, Kuwait retained substantial worldwide investments, including an extensive refining and distribution network in Western Europe as well as several downstream investments in Eastern Europe, India, and Southeast Asia. Kuwait also had interests in oil exploration and production activities in many nations, including the Yacheng Gasfield in southern China. *(See table 2.)*

Commodity Review

Metals

Arabian Light Metals Co. restored its extrusion capacity to 5,000 metric tons per year (mt/a). The company used billet imported from Bahrain, Dubai, and Egypt. Demand for aluminum products grew rapidly in the light of postinvasion reconstruction.

Industrial Minerals

Cement—Before the occupation of Kuwait, the Saudi-Kuwaiti Cement Co. took the lead in coordinating efforts with other cement companies to improve marketing operations and promote exports. However, plant and infrastructure damage caused by retreating Iraqi troops, combined with the Nation's own heavy reconstruction demands, ended any export plans for the near future.

Fertilizers—The Petrochemical Industries Co. (PIC) operated the Shuayba Fertilizer Complex, which had the capacity to produce almost 1 million metric tons per year (Mmt/a) of ammonia and 800,000 mt/a of urea. This complex, particularly the urea plant, was severely damaged by Iraq, but reportedly was fully restored by 1994.

Mineral Fuels

Natural Gas—The Nation was dependent on natural gas associated with crude oil production for domestic power stations and petrochemical plants. Associated natural gas was flared at gathering centers where condensate recovery units were not yet restored to service, compelling electric powerplants to supplement fuel oil for natural gas as the source of power.

Fully restored, the gas system has the capacity to process associated gas from as much as 3 Mbbl/d of oil production, stripping liquids for export, and using dry gas for Kuwait's domestic needs.

Before the Iraqi invasion, Kuwait's domestic supply of associated natural gas from the Raudhatain and Sabiriya Fields near the northern Iraqi border was processed in northern Kuwait, and a mixed liquids stream was delivered by pipeline to the fractionator at Shuayba. Natural gas from the Minagish, Umm Gudair, and South Umm Gudair Fields, near the western border with Saudi Arabia, flowed as wet gas to the processing plant at Shuayba. Natural gas from the Burgan and Maqwa-Ahmadi Fields was processed at two field recovery plants. The recovered liquids were then delivered by pipeline to Shuayba for fractionation.

Petroleum.—Production.—Field reconstruction had brought Kuwait's production, including output from its share in the Divided Zone, to more than 2 Mbbl/d in 1994. The bulk of production was derived from the Burgan complex, which included the Maqwa and Ahmadi Fields.

Two successful experiments in horizontal drilling caused a significant increase in capacity. One horizontal well drilled in the Mauddud formation of the Maqwa Field showed initial production of about 5,000 barrels per day (bbl/d), compared with just 500 bbl/d from the only producing vertical hole in the same formation.

The country's sustainable crude oil production capacity was estimated at about 2.5 Mbbl/d, including 200,000 bbl/d in the Divided Zone. The Government announced its objective of increasing sustainable crude oil production capacity to 3 Mbbl/d between 2003-05. Much of the expansion in capacity was expected to result from the development of the light crude oil reservoirs in the deep Marat, Naja, and Sarjelu formations. The capacity expansion program included provision for the installation of enhanced recovery systems.

Kuwait Foreign Petroleum Exploration Co. (Kufpec) experienced a net profit of $6.7 million in 1994 on sales of crude oil and gas worth $77.9 million. The company has interests in Australia, the Congo, Egypt, Indonesia, Tunisia and Yemen. The company experienced losses of $57.6 million in 1993, largely due to development spending.

Refining—Overall damage during the Gulf War to the Mina al Ahmadi refinery was relatively light, while the Mina Abdullah and Shuaiba refineries were extensively damaged. The petroleum refinery reconstruction program continued into 1994. The most severely war-damaged refinery, Shuaiba, was restored to 150,000 bbl/d capacity by January 1994. The Mina Abdullah refinery attained 245,000 bbl/d capacity by mid-1994. The Mina al-Ahmadi refinery attained an effective capacity of 290,000 bbl/d in early 1994; by midyear, completion and commissioning of the 100,000 bbl/d distillation unit brought capacity to 400,000 bbl/d. By July 1994, refinery repairs were completed and throughput attained preinvasion levels.

A methyl-tertiary-butyl-ether/alkylation/fluid catalytic cracker project (MAFP) was planned for the Mina al-Ahmadi refinery. This would include the installation of a 1,300 bbl/d methyl-tertiary-butyl-ether unit, which would use gases recovered from the refining process and a 4,700-bbl/d alkylation unit to produce polymer-grade polypropylene. The fluid catalytic cracker was to be revamped, raising capacity to 40,000 bbl/d. All projects, including an acid gas removal plant at Mina al-Ahmadi, were due for completion in 1997.

Petrochemicals—The Nation's principal petrochemical complex was in Shuayba and was operated by PIC, a wholly owned subsidiary of KPC. Initially commissioned in l966, the complex was steadily expanded to include a fertilizer complex and salt and chlorine plants. Union Carbide Corp. of the United States entered into a joint-venture agreement with PIC in mid-1993 to construct and operate a 650,000-mt/a-capacity ethane cracker to produce ethylene, 450,000 mt/a of polyethylene, and 350,000 mt/a of ethylene glycol. Plant construction was expected to commence in late 1995 and was scheduled to be completed by 1998. The United States' Flour Daniel Co. was confirmed as project manager for the planned $2 billion expansion program at the Shuayba petrochemical complex.

Reserves

Kuwait's proven reserves of crude oil as of January 1, 1994, were officially estimated at 96.5 billion bbl, including 2.5 billion bbl representing Kuwait's share of the Divided Zone reserves. Kuwait enjoys a reserve-production ratio of 132 years. The bulk of crude oil reserves is contained in the Greater Burgan Field, containing about 65 billion bbl.

Natural gas reserves were estimated at 1,480 billion cubic meters. The reserves are entirely based on associated natural gas since intensive exploration programs during the past decade uncovered no nonassociated gas reservoirs.

Infrastructure

Not only were the mineral production and processing facilities damaged or destroyed during the Iraqi occupation, but also most of the supporting infrastructure. The United Nation's (UN) War Reparations Commission estimated the Iraqi occupation and ensuing war resulted in total losses of $170 billion for Kuwait. Priority had been given to the restoration of infrastructure supporting the revenue-producing petroleum industry. The pipeline network and storage facilities supporting petroleum production, processing, and transportation were fully restored.

The total amount of cargo handled by Kuwait's ports increased 28% in 1994 to 7.96 million metric tons (Mmt) from 6.2 Mmt in 1993.

Outlook

Near the close of 1994, Iraq officially accepted UN Resolution 8133 recognizing Kuwait's sovereignty and its territorial integrity.

The Government of Kuwait has filed claims amounting to nearly $95 billion with the UN Compensation Commission in Geneva for damages from Iraq's invasion in 1990. These claims only cover damage to oil reservoirs and loss of crude oil after Iraqi forces set Kuwait's oilfields ablaze.

The UN Security Council Resolution 687 provided for receipt of a portion of Iraq's oil revenues in compensation for the human and material losses suffered. Although compensation payments remained to be seen, restoration priority was given to the wealth-creating sectors of the economy—petroleum production and downstream processing. Swift action to cut spending was highlighted after consultations with the International Monetary Fund and World Bank, which advocated wholesale privatization, economic liberalization, and a reduction in the welfare state. Further growth was dependent upon the price of oil and the progress in privatizing and liberalizing the economy. If world oil demand remained strong and Government programs for privatization continued to be successful, the Kuwaiti budget deficit was expected to be dissolved in this decade.

The Government began to reduce some of the barriers to foreign investment, which isolated Kuwait from the worldwide flow of capital. Investment confidence has grown, not only as the result of strong defense treaties but also because the national elections produced a National Assembly that enjoys the confidence of the Kuwaiti people.

Kuwait was planning to reduce public spending by 20% to compensate for falling oil prices and an increasing budget deficit. The plan was to increase non-oil revenues through fees on public services and by privatizing state-owned enterprises. Reducing subsidies on domestic utilities, gasoline, and telephone services was under consideration. In November, Kuwait Petroleum Corp. announced that it planned to sell the oil and natural gas exploration and production assets owned by its Santa Fe International Corp. in the Gulf of Mexico.

Oil prices continued to be soft, but Kuwait had a wealth of long-term schemes for making the most out its most valuable asset. These range from expanding oil production capacity to downstream development in petrochemicals and refining. Adding value is the Government's prime objective, and projects were close to implementation across the industry. The allotment of OPEC quotas were of particular importance. The OPEC meeting in Bali in November 1994 concluded with a 1-year rollover of production ceilings, but Kuwait expected to push for a higher quota for 1996. A plan to install gathering centers 27 and 28 in the Western oilfields could increase production potential to 500,000 bbl/d from 110,000 bbl/d.

The growing budget deficit was limiting potential investment in public sector projects. The Iraqi military buildup on the border in early October added new urgency to the budget deficit debate. In November, the cabinet approved a 25% cut in domestic project funding to cover the costs of the allied military response. Major construction projects likely to get underway were expected to be the Western oilfields gathering centers, the Mina al-Ahmadi MAFP scheme, and the Shuayba polypropylene plant.

The Government of Kuwait was considering inviting international oil companies to participate in the oil production sector, providing Kuwait with the benefits of foreign capital and exploration risk assumption.

[1]Text prepared Aug. 1995.

[2]Where appropriate, values have been converted from Kuwaiti Dinars to U.S. dollars at the rate of KD0.2989=US$1.00

Major Sources of Information

Kuwait Petroleum Corporation (KPC)
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13126, Kuwait
Telephone: (965) 245-5455 and (965) 245-2686

Kuwait Oil Company
P.O. Box 9758-Ahmadi
61008, Kuwait
Telephone: (965) 398-9111

Kuwait National Petroleum Company
P.O. Box 70-Safat
13001, Kuwait
Telephone: (965) 242-0121

Petrochemicals Industries Company
P.O. Box 1084-Safat
13011, Kuwait
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TABLE 1
KUWAIT: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity		1990	1991	1992	1993	1994 4/
Chlorine		19,000	--	--	25,000	25,000
Cement	thousand tons	900	300	500	500	500
Clay products, nonrefractory: Sand lime bricks	cubic meters	300,000	100,000	100,000	100,000	100,000
Lime: Hydrated and quicklime		50,000	5,000	5,000	35,000	35,000
Natural gas: 3/						
Gross	million cubic meters	7,070	6,000	3,600	18,000	18,000
Dry	do.	5,200	500	2,040	12,000	12,000
Natural gas liquids	thousand 42-gallon barrels	30,500	--	--	40,000	40,000
Nitrogen: N content of ammonia		292,000	--	140,000	317,000	317,000
Petroleum:						
Crude 3/	thousand 42-gallon barrels	428,000	68,300	380,000	683,000	742,000
Refinery products: e/						
Gasoline, motor	do.	16,500	76,670	9,400	15,000	18,000
Jet fuel	do.	4,000	NA	NA	NA	NA
Kerosene	do.	20,300	9,300	12,000	15,000	17,000
Distillate fuel oil	do.	55,400	6,500	20,500	30,000	35,000
Residual fuel oil	do.	72,000	13,300	61,700	65,000	68,000
Other	do.	30,000	1,850	29,900	35,000	35,000
Total	do.	208,000	107,620	133,500	160,000	173,000
Salt		30,000	--	NA	30,000	30,000
Sodium and potassium compounds:						
Caustic soda		2,000	--	NA	16,000	16,000
Sulfur:						
Elemental, petroleum byproduct		350,000	30,000	50,000	175,000	175,000
Sulfuric acid		4,000	--	NA	5,000	5,000
Urea		292,000	--	140,000	300,000	300,000

e/ Estimated. NA Not available.
1/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant digits; may not add to totals shown.
2/ Table includes data available through Aug. 1, 1995.
3/ Includes Kuwait's share of production in the Kuwait-Saudi Arabia Divided Zone.

TABLE 2

KUWAIT: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of facilities	Annual capacity
Nitrogen:				
Ammonia		Petrochemical Industries Co. (Government, 100%)	Shuaybah	1,000
Urea		do.	do.	800
Petroleum, crude	million barrels	Kuwait Oil Co. (Government, 100%)	Burgan	400
Do.		do.	Maqwa	25
Do.		do.	Raudhatain	80
Do.		do.	Sabriya	30
Do.		do.	Ahmadi	20
Do.		do.	Minagish	50
Do.		do.	Umm Gudair	50
Do.		do.	Bahra	15
Do.		Wafra Oil Co. (Saudi Arabian Texaco, 50%; Kuwait Oil Co., 50%)	Wafra	35
Do.		do.	South Fuwaris	2
Do.		do.	South Umm Gudair	10
Do.		Arabian Oil Co. (Japanese Petroleum Trading Co., 80%; Saudi Arabia, 10%; Kuwait, 10%)	Khafji	100
Do.		do.	Hout	10
Petroleum, products	million barrels	Kuwait National Petroleum Co. (Government, 100%)	Mina Al-Ahmadi	400
Do.		do.	Shuaybah	150
Do.		do.	Mina Abdulah	245
Petrochemicals:				
Ethylene		Equate Petrochemical Complex (Petrochemical Industries Co., 45%; Union Carbide Corp.,45%; Bubiyan,10%)	Shuaybah	650 1/
Polyethylene		do.	do.	450 1/
Ethylene glycol		do.	do.	350 1/

1/ In operation by 1998.