THE MINERAL INDUSTRY OF

REPUBLIC OF YEMEN

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Yemen's mineral industry was dominated by crude oil production and natural gas liquids recovered from associated natural gas. While natural gas reserves were significant, few installations were currently in place to recover and utilize natural gas. Plans call for a liquefied natural gas (LNG) plant with a projected annual capacity of 5 million metric tons (Mt). Feedstock for the plant was to be nonassociated gas from the Marib-Al Jawf area. LNG exports were scheduled to commence in the year 2000. Other mineral output included dimension stone, gypsum, salt, and the manufacture of cement. It is probable that, in the near future, mineral output will include commercial gold production.

The Republic of Yemen formulated mining legislation guaranteeing the rights of private property in the mining of most mineral commodities. The royalty rate due to the Government in any mining operation is 5% on precious metals and 3% on other minerals. The precious stone and hydrocarbon industries remained the exclusive domain of the Government. In an effort to accelerate exploration and development, the Government entered into multiple-exploration and production-sharing agreements with private companies offering both expertise and capital.

Crude oil production averaged about 354,000 barrels per day (bbl/d) in 1996. More than one-half of the production was derived from the Masila Fields. Production from the Shabwa region never exceeded 5,000 bbl/d and was discontinued in 1994. *(See table 1.)*

Crude oil production from the Jannah Bloc (Halewah) commenced in the third quarter of 1996 at 5,000 bbl/d rising to 15,000 bbl/d before yearend. Petroleum accounted for more than four-fifths of the Republic of Yemen's total export earnings. Revenues were appreciably augmented when the Masila Fields came on-stream in mid-1993, eventually raising annual exports by approximately 60 million barrels (Mbbl). Total petroleum exports in 1996 were approximately 100 Mbbl. Most of these exports were destined for Asian markets; however, the United States imported more than 1 Mbbl of crude and unfinished oils in 1996. The Yemeni Government liberalized import regulations for a number of commodities related to the construction and agricultural industries. These included cement, iron and steel manufactures, and fertilizers. Individual import licenses have the following ceilings: 15,000 metric tons for cement, $600,000 for iron products, and $350,000 for fertilizers.

Menora Resources of Canada announced that the Wadi Medden gold deposit consists of nine main gold-bearing zones hosting a resource of 590,000 t at an average grade of 14.7 grams of gold per metric ton. The company plans to undertake a US$1.2 million drilling program to improve the verticle definition of the deposit. The program includes 4,800 meters (m) of surface drilling in 16 holes and 1,230 m of underground drilling in 17 holes (Mining Journal, 1996).

The Yemen Corp. for the Production and Marketing of Cement awarded a design and construction supervision contract for the Al Buh cement works near Mafrag. The 500,000-metric-ton-per-year capacity cement plant was financed by Japan's Overseas Economic Cooperation Fund at $145 million. Completion of this project was expected to raise Yemen's total annual cement production capacity to 1.25 Mt.

Associated natural gas production was separated and stripped of natural gas liquids. The remaining gas was reinjected at the rate of 18 million cubic meters per day. Plans progressed on schedule for the development of the Marib-Al Jawf nonassociated natural gas reservoir including a 380 kilometer pipeline, processing plant, and export terminal construction in Balhaf on the Gulf of Aden. A consortium was established with Total SA of France as project leader having 36% equity; Yemen General Gas Corp., 26%; Hunt Oil Co. of the United States, 14.6%; Exxon Corp. of the United States, 14.1%; and the Republic of Korea's Yukong Ltd., 9.3%. The consortium plans call for the production of 5 million metric tons per year of LNG over a 25-year period. The first phase is due to begin in September 1997, at an estimated cost of $2,600 million.

Yemen's crude oil production was derived from Canadian Occidental Petroleum's Masila Fields producing 40.4° API gravity crude oil and Yemen Exploration and Production Co. operations producing 30.5° API gravity crude oil in the Marib-Al Jawf region. Hunt Oil reportedly began production from the Halewah Field at the close of 1996. Initial production was anticipated at 10,000 bbl/d (Arab Oil and Gas Directory, 1997).

The Marib topping plant continued processing 10,000 bbl/d. The Aden Refinery processed about 100,000 bbl/d. About 40% of the refinery throughput was contract crude oil from Iran, Malaysia, and Oman. The Aden refinery was scheduled to undergo a modernization program, including the installation of a new control system, and the upgrading of the two crude distillation units and the reforming unit. After completion, capacity was expected to be between 150,000 to 170,000 bbl/d.

The combined estimated proven crude oil reserves of the Republic of Yemen were reported at 4 billion barrels concentrated in five areas: Marib-Al Jawf, East Shabwa, Masila, Jannah, and Iyad. Natural gas reserves were reported at 565 billion cubic meters, of which 200 billion cubic meters were proven reserves in the Marib-Al Jawf region (West,1996).

Yemen received commitments for assistance from various institutions totaling $500 million in 1996 to support the balance of payments and a reform program which includes measures aimed at liberalizing trade, privatizing state-owned enterprises, and improving investment conditions for the private sector. Furthermore, liberalized mining and petroleum exploration laws and foreign investment regulations have attracted not only foreign oil companies with development financing but metallic mineral exploration groups as well. With continued poilical stability, the prospect of further commercial finds was expected to be a realistic one.

References Cited

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Major Sources of Information

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Sanaa, Republic of Yemen

The Ministry of Economy, Supply, and Trade
Sanaa, Republic of Yemen

TABLE 1
REPUBLIC OF YEMEN: PRODUCTION OF MINERAL COMMODITIES 1/

Commodity		1992	1993	1994	1995	1996 e/
Cement	thousand metric tons	800 2/	800	500	1,000	1,000
Gypsum e/	metric tons	80,000	90,000	80,000 e/	80,000 e/	80,000
Natural gas:						
Gross e/	million cubic meters	80,000	90,000	100,000	100,000	100,000
Liquids	thousand 42-gallon barrels	40	2,600	2,600 e/	2,600 e/	2,600
Petroleum:						
Crude	do.	62,000	87,600	122,275	127,750	129,200
Refinery products:						
Gasoline	do.	9,600	10,000	8,000 e/	10,000 e/	10,000
Kerosene	do.	4,900	4,500	2,500 e/	3,500 e/	3,500
Distillate fuel oil	do.	13,700	13,000	10,500 e/	11,500 e/	11,500
Residual fuel oil e/	do.	15,500 2/	15,500	12,000	15,000	15,000
Other e/	do.	2,500	2,000	1,000 e/	2,000 e/	2,000
Total e/	do.	46,200 2/	45,000	34,000	42,000	42,000
Salt	metric tons	107,000	110,000	110,000	110,000	110,000
Stone: Dimension e/	cubic meters	410,000	410,000	410,000	410,000	410,000

e/ Estimated.

1/ Table includes data available through July 15, 1997.

2/ Reported figure.