

Making Good the Loss of Persian Oil

CAN other oil producing countries in the Middle East make good the loss of Persian oil for Britain? *The Statist* thinks they can. Among such countries are Saudi Arabia, Iraq, Kuwait and Qatar. And the development of Burghan field by *Kuwait Oil Company* (jointly and equally owned by *Anglo-Iranian* and *Gulf Oil*) since the war, it goes on to say, has been one of the most spectacular accomplishments in the annals of industry. Indeed, the history of oil business has few examples of more rapid development of a major field. The first shipment of Kuwait oil was made in June, 1946, in which year total output was 797,350 long tons. Production figures in tons of the succeeding four years tell their own story: 1947, 2,185,309; 1948, 6,291,577; 1949, 12,183,669 and 1950, 17,018,666. From January to July this year Burghan field yielded 13,657,689 tons, while the estimated production for the whole of 1951 is at least 24 million tons—an increase of 7 million tons over 1950.

The small independent Arab principality of Kuwait, with an area of 6,000 square miles and an estimated population of 200,000, situated on the north-west side of the Persian Gulf, is bounded north by Iraq, south and west by Saudi Arabia and east by the Gulf itself. Asphalt and other surface indications had long pointed to the petroleum possibilities of Burghan. A concession was granted in 1924 but it lapsed. The present 75-year concession over the entire Sheikdom was signed on December 23, 1934. The first well drilled to a depth of 9,750 feet in the Basrah area north of Kuwait Bay was dry. It was followed in 1938 by the discovery well testing of the Burghan, 28 miles south of the bay and 14 miles inland. Estimates of this big oilfield's reserves range from 9,000 million barrels upwards, and Burghan is reckoned the largest single petroleum reservoir in the world. Area proved to contain oil exceeds 25,000 acres.

Eight wells were drilled between 1938 and 1942 when operations were suspended because *vi* war. Work was resumed in 1945 and all the wells which were cement plugged as a war precaution were cleaned out and made ready for production. In the relatively short period between June, 1946, and December, 1950,

when procurement of materials and equipment of all sorts presented enormous difficulties, the total number of producing wells was brought up to 100, and the field has yielded over 38 million tons of crude oil. Only the quality of crude oil is not quite so good as that in other Arabian foreland fields.

The Burghan held is divided for production purposes into areas or units of approximately 16 square miles and wells are drilled on a 600-acre pattern, giving a distance of just over a mile between each well. Thus between 16 and 20 wells are allocated to each producing unit, the capacity of each area being about 100,000 barrels a day. Oil flows from individual wells through flow-lines to centrally situated gathering centres, or gas and oil separating stations. After separation the oil is pumped to the main tank farm situated 15 to 20 miles from the field. It is built on a rise of some 400 feet above sea level, thus enabling crude oil to flow by gravity to the seaport of Mina al Ahmadi, where it is finally loaded into tankers.

The gathering centres separate the oil and gas in the most efficient manner so as to obtain a stable crude oil rich in lighter hydrocarbons. The capacity of each centre has been stepped up to 120,000 barrels a day. An installation of this type, including pumps and tanks, is very costly, exceeding £500,000. The initial pressure of crude oil as produced is let down in six stages from 425 lb. to 10 lb. per square inch, and the oil pumped by centrifugal transfer pumps to storage tanks substantially at atmospheric pressure.

The rates of flow of individual wells can be altered or the flow completely shut oil if and when required. Oil from main storage tanks at the gathering centres is pumped along two 20-inch lines to the main tank farm. Floating barrels storage has been erected with individual tanks having a capacity of 168,000 barrels. Five 24-inch lines convey oil to the port and five tankers can be loaded direct from Ahmadi. One additional tank of 168,000 has been erected at the port from which oil can be pumped to the sixth loading berth. It is an emergency tank to receive oil in the event of accident to any one of the tanks at Ahmadi

or to one or other of gravity lines. The last link in the oil handling system is the oil loading jetty, probably the largest of its kind in the world. The approach is a mile long with a 24-foot-wide roadway and a 35-foot-wide pathway. More than 900,000 barrels of crude oil can be loaded over this pier in a 24-hour period. It provides berth for six oil tankers which can be loaded simultaneously through the five gravity lines from Ahmadi and by pumping from the oil tank at Mina al Ahmadi. Super-tankers have been loaded at the port at rates of up to 4,000 tons an hour. More and more tankers are calling to carry Kuwait oil to the European refineries - French, British, Belgian, Dutch, Italian and West German. Last July 181 tankers were loaded, the highest monthly total so far.

Along with its field development work *Kuwait Oil Company* has embarked on a major programme of construction of related facilities. A 25,000 barrels daily skimming plant serving the local market and bunkering needs was completed in 1949. Other developments include facilities for a complete modern city in the Kuwait desert. On a ridge six miles from the Persian Gulf the company has built a city for the employees and their families. This includes housing, a 200-bed hospital, schools, laundry, bakery, electric power plant, refrigeration plant, centralised air conditioning and recreational facilities. One major problem—that of adequate fresh water supplies—has been solved by the installation of six three-step distillation units by Westinghouse providing 720,000 gallons of fresh water daily.

A considerable part of the Gulf Oil's share of production from Kuwait is purchased by the *Shell* group under a long-term contract concluded in June, 1947. This is to satisfy its marketing requirements east of Suez. A Mediterranean outlet for Kuwait oil will be provided when the projected *Middle East Pipelines, Ltd.*, line, in which Anglo-Iranian has majority interest, is completed. The Sheikh of Kuwait wants terms not inferior to those obtained by Saudi Arabia. The spectacular progress registered by Kuwait oil is due to careful long-term planning. There is little doubt that Kuwait and Saudi Arabia will have to fill much of the void resulting from cessation of Persian operations, says *The Statist*, and adds that both are ready to play their part.