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**RELEVANCE OF TRACE METALS IN PETROLEUM
AND PETROLEUM PRODUCTS**

THESIS

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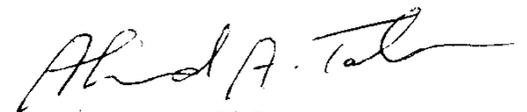
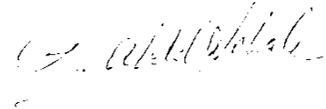


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DEDICATION
TO THE MEMORY OF
MY FATHER

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History of Oil Development in Kuwait

In December 1934, the Kuwait Oil Company (KOC) was granted an oil concession over the entire area of the State of Kuwait, and that company's first formal report on the surface geology and oil prospects of this country was made in 1935 by P.T. Cox (Anglo-Iranian) and R. O. Rhodes (Gulf). As a result, the first drilling for oil in this area took place at Bahra, on the north shore of Kuwait Bay, where a well was drilled in 1936-37 and abandoned at a depth of 7,750 feet after finding indication of oil in a Middle Cretaceous limestone. During the time this well was being drilled, a seismic survey was completed south of Kuwait Bay and the second test was drilled on a geophysical feature near the old bitumen seepage at Burgan. This test, Burgan No. 1, found oil in a Middle Cretaceous sandstone horizon on Feb. 23, 1938 at a depth of 3,672 feet.

From 1938 to 1942 eight more wells were drilled in Burgan and these clearly established that a major oil field had been discovered. Between 1942 and 1945 both the search and drilling

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for oil were suspended, mainly due to lack of personnel and equipment. With the end of the 2nd World War, however, both geological-geophysical and drilling operations were resumed and greatly intensified.

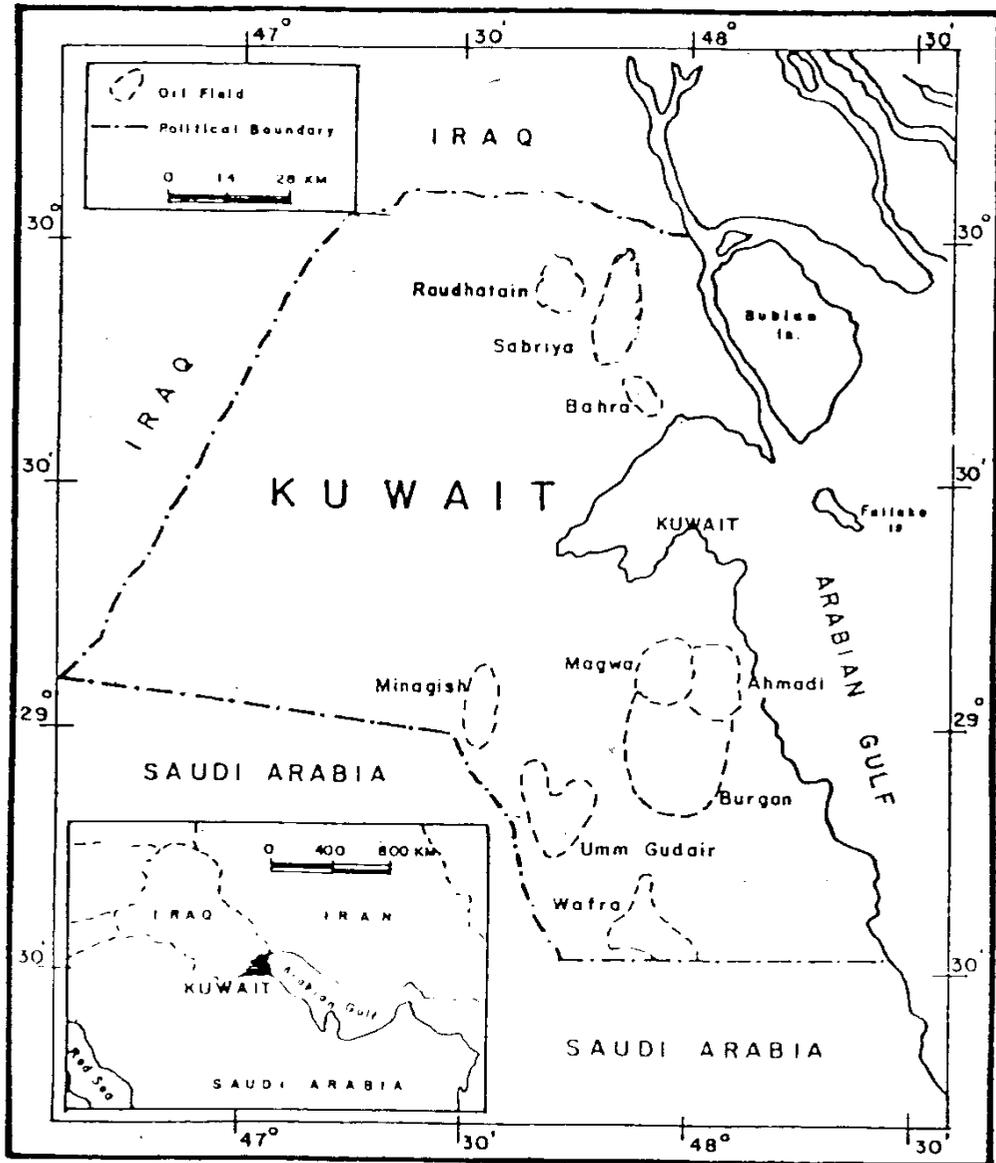
The first oil was shipped from Kuwait on June 30, 1946 and shipments have continued in ever-increasing quantities to this date.

In 1950, a deep test was drilled on the crest of the Burgan structure and was carried at a depth of 13,853 feet into probable Triassic sediments. In Oct. 1951 a well located at Magwa, some 7 miles north of the northernmost part of the Burgan field was discovered.

Late in 1952 a well was drilled at Ahmadi, some $4\frac{1}{2}$ miles northeast of the Burgan flank wells.

Since 1955, Kuwait Oil Company drilled in an area at Raudhatain in northern Kuwait, where oil was found in abundant quantities in sands at 7,700 feet. Increased activities in the following years led to the discovery of Bahra (1956), Sabriya (1957), Minagish (1959) and Umm Gudair (1962). By 1970,

there were nearly 700 producible wells and production exceeded 1090 million barrels during that year. By 1980, oil production showed a total drop of 33.4%.



LOCATION OF OIL FIELDS IN KUWAIT