

Philadelphia, New York City, Cleveland, and other cities; as well as the four oil pipelines directing oil to the Atlantic harbors for exporting from country. In 1914, the USA had 14 thousand kilometers of pipelines, while Russia had only 1278 km.

The first Russian oil pipeline of 9-km length, 3-inch (7.62 cm) diameter and 80 thousands-poods (approx. 11,600 barrels) delivery capacity was built in Baku in 1878, in the fields of *Nobel Brothers Co.* in Balakhany (Balakhany-Black city). The pipeline was designed by the talented engineers Alexander Bari and Vladimir Shukhov. The latter put forward a number of principles, which are still being applied in pipelining today.

In 1879, A. Bari (who opened his company *Bari, Sytenko & Co.*) and V. Shukhov received an order from the oil producer G. Lianozov to construct a similar oil pipeline of 11.5-versts (Old Russian measure of distance equal to 3500 feet or 1.07 km; 12.3 km). A second oil pipeline in Balakhany-Black city was built in 1879, which was of a better quality taking into account the experience of previous work. Following the implementation of Lianozov's pipeline, *Bari, Sytenko & Co.* also received offers to build additional pipelines from other Baku industrialists – e.g. Mirzoyev, Kokorev and Benkendorf. In 1884, the Baku oilfields had five pipelines (three pipelines Balakhany-Black city, as well as the Balakhany-Surakhany plant and Surakhany plant Zikh spit) with total delivery capacity of more than 200 thousand poods of oil per day (approx. 29,000 barrels). The design and construction of the first pipelines in Baku was of great importance and went beyond the scope of their practical use, i.e. these projects already contained the basis of the first scientific theory of design and construction of pipelines invented by V. G. Shukhov. An American engineer Herbert Twaddle was the first who attempted to construct the Caspian-Black Sea pipeline in 1877-1878.

The October revolution in 1917 made its own corrections to the development of the Baku oil business. To the credit of Bolsheviks, it is worth to noting that against the forecasts of western specialists, they, in addition to restoration of destroyed oilfields, also made the fundamental changes to the production technology (application of subsurface pumps and conventional pumping units). Baku-Batum pipeline started again operating in May of 1921 and once again the Baku oil flowed into Europe: oil was the only commodity for obtaining hard currency for young Soviet state. Much later the electrification of pumping wells led to sharp increase of oil production and in 1941 oil production in Baku constituted 23.5 million tons (71.4% of all oil production in the USSR). But little of this oil would have reached its market without the oil pipelines, thus they are an important part of the Baku oil history.

## SOLOMON'S TEMPLE MUSJID-I-SULEIMAN & THE QUEST FOR OIL IN THE MIDEAST

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In 1901 an Englishman, William Knox D'Arcy, was awarded a concession to explore for oil in an area that covered three-fourths of Persia, today's Iran. D'Arcy had become wealthy from investments in a gold mine at Mount Morgan, Queensland, Australia, and from a friend had heard about the potential of oil in Persia. He hired a middle-aged engineer, George Bernard Reynolds, to run the operation. Drilling in southwestern Persia was challenging. Summertime temperatures reached 125F degrees, hostile tribes were a constant threat, guards to protect the workers and equipment were inadequate, and drilling with cable-tool rigs 150-miles from the coast posed logistical and mechanical difficulties. After three years and two non-commercial wells, D'Arcy was out of funds, heavily in debt, and seeking investors. He approached the Rothschilds and Rockefeller companies, but when the British Admiralty learned of his entreaties to foreigners, the Admiralty encouraged an agreement between D'Arcy and Burmah Oil Company, a successful English public company. Burmah Oil set out to drill four wells, but after four years and expenditures of hundreds of thousands pounds sterling, they, too, were ready to quit the project. But before a letter from the home office arrived in Persia instructing Reynolds to halt operations and wrap up the project, on May 26, 1908 the No. 1 Musjid-i-Suleiman came in flowing 297 bopd, the first commercial discovery of oil in the Mideast.

Following the discovery and limited additional drilling, Burmah Oil formed a new public company, the *Anglo-Persian Oil Company* (APOC), and raised two million pounds sterling in one day. Funds were used to re-pay Burmah Oil and D'Arcy for their costs, to purchase the remaining interest in the concession, to further develop the property, and to build a pipeline and a refinery. Three years later, APOC was nearly out of funds, the high-sulfur crude proved difficult to refine, and the company faced problems marketing its products.

By 1905 Germany's naval build-up challenged Britain's hundred-year old supremacy at sea. First Sea Lord Admiral John Arbuthnot Fisher early-on recognized that Britain would eventually fight a war with Germany, and had converted much of the British fleet from coal to fuel oil because ships which ran on fuel oil were faster and did not require coaling stations around the world. However Britain had no secure source of fuel oil. The Admiralty considered reaching an agreement with Lord Cowdray, whose Mexican company El Aguila had discovered vast quantities of oil in the Golden Lane near

Tampico. But Mexico was in the American sphere of influence, and Persia was in the British sphere, and was especially important to buffer and protect India, Britain's jewel in the crown. German intrigues and investments, including the Berlin-to-Bagdad railway, already represented a threat to Great Britain's supremacy in the Persian Gulf.

Charles Greenway, managing director of APOC, recommended that the Admiralty subsidize APOC in some manner to secure a dependable source of fuel oil for the navy. In 1911, thirty-six year old Winston Churchill was appointed First Lord of the Admiralty. A few days after his appointment, Churchill consulted with Admiral Fisher, who had retired the previous year. Admiral Fisher convinced Churchill of the German threat to the Empire, and of the strategic requirement to secure the British Navy a source of fuel oil. With Fisher's prompting, Churchill carried the bill for the British Government to purchase a fifty-one percent interest in APOC, which was passed by Parliament two weeks before World War I began. Following the war, APOC's name was changed to *British Petroleum*.

Solomon's Temple is a historic novel that tells the true story of the dramatic birth of the Middle East oil industry. All the characters were real people, and all the events actually happened.

**TEMPEST AT TEAPOT DOME, WYOMING:  
THE GREATEST POLITICAL SCANDAL IN THE  
HISTORY OF THE AMERICAN OIL INDUSTRY**

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Warren G. Harding's presidential administration was probably the most corrupt in American history, and the oil industry was right in the middle of the fun. The scandal surrounding Teapot Dome in the 1920s was the most infamous presidential malfeasance of the 20th Century until Watergate.

A Presidential Order in 1915 created the first Naval Petroleum Reserves, including Teapot Dome Oilfield in Wyoming. The advantages of petroleum over coal for naval fuel had proved irresistible, and the crude reserves were meant to provide a secure wartime supply.

Harding chose New Mexico Senator Albert B. Fall for his Cabinet. Fall was a successful rancher and lawyer, but one whose enthusiasm for the private exploitation of the nation's strategic resources led a contemporary to say, "It would have been possible to pick a worse man for Secretary of Interior, but not altogether easy."

Fall wrangled the Reserves away from the Navy Department, and then leased the field in 1922 to independent oil titan Harry Sinclair in a noncompetitive deal that guaranteed a favorable market: Uncle Sam. Senate hearings followed, Fall resigned less than a year later, and Harding died suddenly a few months afterwards.

Investigators determined that Fall had received about \$400,000 (over \$5 million in today's dollars) in "loans" from Sinclair. He was convicted and imprisoned in 1931 for felonies committed in office, the first Cabinet officer ever to suffer such ignominy. Sinclair was jailed for contempt, the leases were invalidated by the Supreme Court, and Teapot was returned to the Navy.

Until this year, Teapot Dome has been administered by the U.S. Department of Energy (DOE), as the last Naval Petroleum Reserve. It is an asymmetrical, Laramide anticline on the southwestern flank of the Powder River Basin. Teapot includes basement-seated north-south faults on its western boundary and deep, east-west faults throughout the field. Its key producing zones are Cretaceous sandstones and shales, and the Pennsylvanian Tensleep Formation.

Teapot still produces about 240 BOPD and 18,000 BWPD from about 350 wells. There is undeveloped potential for primary and enhanced oil recovery, as well as infill and horizontal drilling targets.

Meagher Energy Advisors was retained in 2014 by DOE to solicit offers for Teapot Dome, and it was sold to Stranded Oil Resources in February 2015. Transfer of title to a new, private operator after 100 years as a Naval Petroleum Reserve represents another exciting chapter in the history of America's most notorious oil field.

**CARBON BLACK**

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Carbon black, also known as lampblack, channel, furnace or acetylene carbon is an allotrope of elemental carbon that is produced by burning natural gas, acetylene or certain forms of petroleum in an insufficient supply of oxygen. Crude forms of carbon black were anciently used by crushing charcoal and mixing the dust with water to be used as ink. Lampblack, made by burning vegetable oil or animal fat, was first deliberately made in North America in the 1740s. In 1864, John Wright, a Philadelphia, Pennsylvania ink maker, devised