

the arms race against Russia, under the guise of Plowshare to avoid breaking Cold War treaties for test bans?

Testing for Plowshare Projects was conducted exclusively in the West, mostly in Nevada. Projects for the United States were largely planned for Alaska and the American West. Of particular interest to Wyoming were the projects designed to use nuclear detonation for energy mining. It was well known that natural gas lay in large pools below the earth's surface, often locked in hard rock. Traditional attempts to mine this gas with hydraulic fracturing failed. The Plowshare scientists, therefore, looked to this geographic challenge for another nuclear project.

Four sites in the West (one in New Mexico, two in Colorado, and one in Sublette County, Wyoming) were chosen to test nuclear devices for natural gas mining. It was hoped that the new energy source would fracture the rocks and enable the gas to be successfully obtained. Three of the sites were tested, but the one in Wyoming was stopped.

Why didn't the Wyoming test take place? This project, dubbed the *Wagon Wheel*, didn't occur because the project ultimately wasn't funded. A deeper look at the story, though, credits the incredible coming together of the Sublette County communities to stop it. [This story is the focus of this presentation.](#)

The story of the Wagon Wheel Information Committee is truly an amazing one. In a very remote place even by western standards, citizens came together to stop a national project with perhaps international repercussions. The local citizens weren't the first to protest the nation's nuclear testing and energy use, but they were amongst the earliest and loudest. In addition to a great story, it is a great lesson in history about citizen participation in local, state, federal, and perhaps international events.

Here's the rest of the story. In the late 1990s, the area slated for the nuclear detonation was successfully and safely mined for natural gas with a "fracking" technique developed for this particular area. This ultimately was one of the most successful natural gas fields developed in the United States. It brought on a huge natural gas boom that financially benefitted Sublette County, as well as for the State of Wyoming. This development would not have been possible if the gas had been radiated, and therefore, unsafe to mine.

## EXPLORATION OF OIL IN BRAZIL DURING THE TWENTIETH CENTURY

\*Drielli Peyerl<sup>1</sup>, Silvia Fernanda de Mendonça Figueirôa<sup>2</sup>,  
and Brian Frehner<sup>3</sup>

\*Speaker

<sup>1</sup>. *Postdoctoral candidate (Fapesp Fellow). Departamento de Política Científica e Tecnológica, Instituto de Geociências, University of Campinas, Campinas, SP, Brazil, and History Department, Oklahoma State University, 101 S. Murray Hall, Oklahoma State University, Stillwater, Oklahoma 74078-3054;*  
*driellipeyerl@gmail.com.*

<sup>2</sup>. *Professor. Departamento de Ensino e Práticas Culturais, Faculdade de Educação, University of Campinas. Campinas, SP, Brazil;*  
*silviamf@unicamp.br.*

<sup>3</sup> *Associate Professor. History Department, 101 S. Murray Hall, Oklahoma State University, Stillwater, Oklahoma 74078-3054;*  
*brian.frehner@okstate.edu*

The aim of this work is to discuss some important points related to the trajectory of oil exploration in Brazil. In the early twentieth century, the development of research and exploration methods for oil in Brazil was characterized by the presence of international and national private initiatives, such as *Standard Oil*, *Companhia Petróleos do Brasil*, and governmental efforts, such as *Comissão Geográfica e Geológica de São Paulo* and *Serviço Geológico e Mineralógico do Brasil*, which contributed to research and future prospecting in the country. In the first decades, many of the surveys carried out were related to the demand for coal. In 1917, the deep drilling came to be directly related to oil and the companies responsible for carry out these works were the *Empresa Paulista de Petróleo* and the *Serviço Geológico e Mineralógico do Brasil*. In 1938, the National Petroleum Council (*Conselho Nacional do Petróleo – CNP*) was created in order to find oil and to control activities related to its production in Brazilian territory. In the following year, the first petroleum fields were found at the region of Lobato, Bahia State, changing the policy for oil in Brazil. This discovery resulted in a surge for the industry and for its related activities. On October 3<sup>rd</sup>, 1953, the *Brazilian Company of Oil S. A. (Petrobras)* was created; a mixed joint-stock corporation responsible for the State monopoly of oil. The company gradually absorbed the activities and also the problems of the former National Council of Oil (founded in 1938), which were mainly the lack of a specialized work force, the partial lack of geological knowledge about the subsoil, the absence of exploratory expertise, and the consequent need of foreign professionals. For the reasons mentioned, in

1954, *Petrobras* hired the North-American geologist Walter Karl Link (1902 – 1982) to organize the Department of Exploration of the company. Walter Link, between 1954 and 1960, created one of the best exploration programs of the world by that time. He invested in Geophysics, Micropaleontology and in the specialization of the Brazilian work force. Walter Link and his team believed that the possibilities for finding oil in commercial quantities would not increase, even if using the latest drilling techniques and the geological and geophysical knowledge available in those years. Thus, the investments by *Petrobras* should be directed to other areas – such as the Continental Platform and/or in other countries – where the possibilities of finding oil would be more promising. Only in 1968, advances in technological research, mainly geological, launched *Petrobras* to offshore exploration, with the discovery of the first well in the Guaricema Field, Sergipe State, and the first drilling in the Campos Basin, in the Guaricema Field, Rio de Janeiro State. In August 1997, the *Petrobras*' monopoly was broken and the company “opened its doors” to foreign capital. A new exploratory and development phase began.

### 1862 TO 1952: NINETY YEARS OF OIL AND GAS REGULATION (OR NOT) IN COLORADO

*Nancy K. Prince*

*2614 Summit Drive, Colorado Springs, Colorado 80909  
Nkp2160@gmail.com*

In 2016 several state agencies in Colorado regulate various aspects of the oil and gas industry. One is the Colorado Oil and Gas Conservation Commission. This agency is responsible for overseeing most exploration and production activity and can directly trace its origins to the State Oil Inspector Act of 1899.

Trappers and Native Americans had long visited the oil seeps in the foothills of southern Colorado for medicine and other uses. In 1858 the Gold Rush brought miners and others who spread out in the region's foothills and mountains. With food and other supplies over a thousand miles away “back in the States”, entrepreneurs quickly began to develop local resources such as the oil seeps.

In Fremont county one of these seeps was developed into a shallow well in 1862; the first commercial well in Colorado. The Florence field was discovered in the same area 20 years later. The second and third discoveries in Colorado were in Boulder and Rio Blanco counties in 1902. Initially the oil was refined into kerosene and lubricants with the lighter fractions typically discarded. In the early 1900s, the advent of mass-produced automobiles made it possible to collect and sell all components.

The first state law to regulate discharge of waste from refineries was passed in 1889. The bill was proposed by the representative from Fremont County, which had the only refineries in the state. Prior to that law, recurring efforts were made to regulate the composition and safety of illuminating oil. The initial bill was proposed in the first state legislature in 1876 and repeated in successive legislative sessions. A compromise bill to establish the office of State Oil Inspector was finally passed in 1899.

The role of the Oil Inspector was officially expanded in 1915 to include responsibility for some upstream activity in addition to maintaining the oil inspection role. In 1927 the Colorado Gas Conservation Commission was established to regulate drilling. Three Commissioners were appointed from industry. The Oil Inspector was an ex-officio member of the Commission, with the responsibility for managing staff resources for both the upstream and downstream regulatory programs. By 1951 it was clear that the 1927 rules did not have enough “teeth” to manage the growing industry, so an expanded Colorado Oil and Gas Conservation Commission was formed. This Commission initially included 5 members from the exploration and production industry, with a Director hired to manage staff.

All of this change played out on the stage of politics and personalities. The 20 years of legislative wrangling over oil inspection regulation occurred at the same time that oil syndicates like Continental and Standard were jockeying for Colorado production and market. The first politically-appointed, non-technical oil inspectors such as Frank J. Medina Jr. and Claude Street were replaced by civil service engineer James Duce during the wild and wooly Denver Progressive era. Duce worked hand in hand with the state and federal bureaus of mines and geologic surveys to advance the science of oil and gas exploration and production in the state.

One Commissioner, Warwick M. Downing was active in the Denver political scene, having led Mayor Speer's Mountain Parks imitative. Downing, a respected oil and gas attorney, was an early member of Interstate Oil and Gas Compact Commission that emphasized conservation of oil and gas resources and protection of correlative rights across the country in the 1930s. He was instrumental in recommending and drafting the 1951 legislation that expanded the agency and remained a member of the reconstituted Colorado Oil and Gas Conservation Commission.