

HORACE D. THOMAS.
STATE GEOLOGIST

THE GEOLOGICAL SURVEY OF WYOMING
UNIVERSITY OF WYOMING
LARAMIE

November 30, 1954

Left Wilson

Mr. Clark F. Barb
Professor, Petroleum Engineering
Colorado School of Mines
Golden, Colorado

Dear Professor Barb:

Enclosed herewith are two copies of a brief report on the possibilities for underground storage of petroleum in Wyoming.

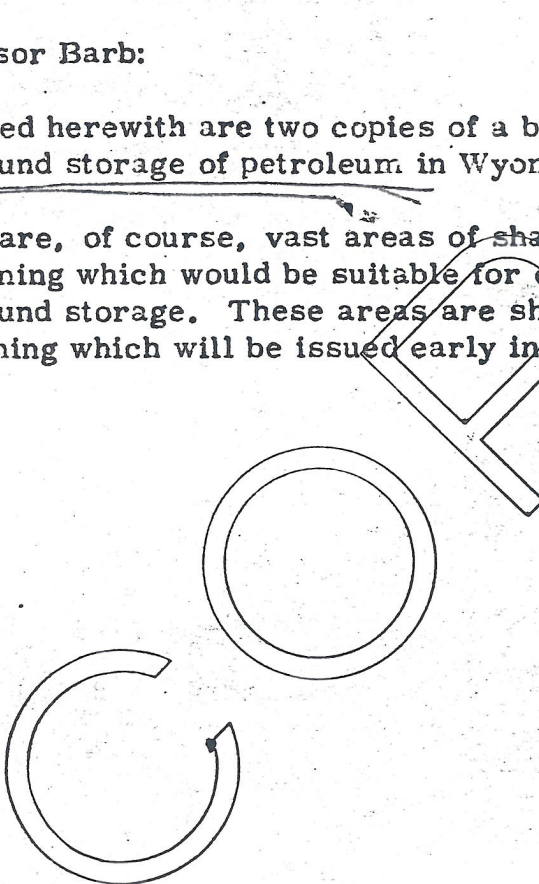
There are, of course, vast areas of shale or other compact impervious rock in Wyoming which would be suitable for excavations made expressly for underground storage. These areas are shown on the new geological map of Wyoming which will be issued early in 1955.

Sincerely yours,

Horace D. Thomas
State Geologist

HDT:kml

Enclosures



UNDERGROUND STORAGE OF PETROLEUM IN WYOMING

Report prepared for Research and Coordinating Committee

Interstate Oil Compact Commission

The only potential for the underground storage of petroleum and its products in Wyoming appears to lie in abandoned coal mines. There has been little metal mining in the State and known abandoned metal mines were all of small size and have been inoperative for nearly 50 years. There are no caverns or other natural subterranean openings in Wyoming which appear suitable for the storage of petroleum.

Within the past few years a number of the State's most important coal mines have been shut down. These mines, in four main areas, are adjacent to rail transportation and are in good condition. The individual areas are treated below.

Hanna area. - Hanna is located on the Union Pacific Railroad, in Carbon County, southeastern Wyoming. The potential storage space available lies principally in the Union Pacific Coal Company No. 4A mine which was closed down during 1954. Five other mines operated by the same company were abandoned earlier. The total volume of the underground workings could be calculated from the maps of the Union Pacific Coal Company.

Rock Springs area. - The Rock Springs area is located on the Union Pacific Railroad, in Sweetwater County, southwestern Wyoming. This has been the most important coal mining center in Wyoming, but in 1954

most of the producing mines were closed down. According to Mr. J. A. Smith, of the Union Pacific Coal Company, the total volume of underground space is enormous. There is considerable water accumulation in the lower workings of most mines. If it is feasible to store petroleum above the water, the water level and petroleum level could be maintained at any desired height. There are two abandoned mines, one near Black Buttes and one near Point of Rocks, in which there is considerable storage area and it is quite possible that these mines are dry throughout. Maps of all the workings in this area are available for the computation of the total possible storage volume.

Kemmerer area. - Kemmerer is located on the Oregon Short Line route of the Union Pacific Railway, in Lincoln County, westernmost Wyoming. Mr. Glenn E. Sorensen, President, Kemmerer Coal Company, has supplied the following information. His company engineers estimate that there is sufficient volume to store 52 million barrels of oil in the 10 abandoned mines in the area. The mines are now standing full of water and to utilize them for petroleum storage would necessitate dewatering and the establishment of a continuous water pumping program. Ingress to abandoned workings would have to be through bore holes, as mine entrances are all caved.

Sheridan area. - The Sheridan area is located on the Burlington Lines, in Sheridan County, north-central Wyoming. One of Wyoming's largest underground coal mines, the Monarch mine of the Sheridan-Wyoming Coal Company, was abandoned and sealed in September, 1953. This mine

operated on a very thick seam and comprises extensive underground workings which would offer a large volume of potential storage space.

Miscellaneous areas. - There are abandoned coal mines of fair size in other parts of Wyoming. Mines at Hudson, located on the Chicago and Northwestern Railway near Lander, Fremont County, central Wyoming, have been abandoned in fairly recent years and comprise a fair amount of underground workings. There are also abandoned underground mines at Gebo, adjacent to the Burlington Lines, about 10 miles north of Thermopolis, in the southern part of the Big Horn Basin. Starting in 1868, seven mines were opened in the Carbon area, about ten miles southwest of Hanna. These were abandoned in 1902 when the route of the Union Pacific Railroad was changed, and the mines now lie from 2 to 5 miles from the main line.

Respectfully submitted,

Horace D. Thomas
State Chairman



Forace D. Thomas