

Hot Springs and Geothermal Areas

This section of the report describes the State's major hot springs and geothermal areas. It consists of summaries of the geology and history of the better known geothermal localities, and is not intended to be a complete listing of data on all thermal springs and wells—Appendix 1 contains the detailed information on water quality, location, spring and well names, etc. The springs, spring clusters, and geothermal areas are organized by county, and in a general way, by the maximum reported temperature within an individual county.

CARSON CITY

Carson (Swift's, Shaw's) Hot Springs [1]

Hot springs on the north edge of the town of Carson City, have temperatures as high as 120°F. These springs, now referred to as Carson Hot Springs, were formerly called Swift's or Shaw's Hot Springs. The water is used in a swimming pool that is open to the public. Water supplied to the pool is pumped, probably from a shallow well near the pumphouse to the north of the pool area.

Nevada State Prison spring [2]

A hot spring is reported from the area of the Nevada State Prison (Waring, 1965). The old State Prison building was used for some of the early meetings of the Nevada Legislature in the early 1860's, and the legislators often used a large bathhouse there, probably Curry's Warm Springs Hotel (letter of Andrew Marsh to the *Sacramento Union*, Sept. 30, 1861, published in Nevada Highways and Parks, Spring, 1974). The Warm Springs Hotel was in operation adjacent to the prison in 1867 (Gillis, 1868).

Pinyon Hills [3]

There are a number of warm water wells in the Pinyon Hills subdivision about 2 miles southeast of the Nevada State Prison. The temperatures are generally 90° to 114°F, and the water is generally of poor quality (Glancy and Katzer, 1975; Center for Water Resources Research, University of Nevada, Reno, unpublished data).



Geothermal swimming pool at Carson Hot Springs, Carson City.

CHURCHILL COUNTY

Brady's (Springer's, Fernley) Hot Springs [10]

The hot springs along U. S. Highway 1—80 about 20 miles northeast of Fernley have been referred to as Hot Springs, or Brady's, Springer's or Fernley Hot Springs, and are the Emigrant Springs of the Forty-Mile Desert. Some early travelers called it the Spring of False Hope. Coming across the desert, the oxen of the wagon trains could smell the moisture before reaching the springs. However, when they rushed forward to drink, they found the water scalding. The emigrants collected water in casks to cool, but pushed on to the Truckee River, as there was no forage at the springs (Work Projects Administration, 1940).

In the 1880's Russell (1885) reported that hot boiling water issued from a number of orifices, and when these became obstructed, the steam escaped with a hissing and roaring sound. During this same period there was an unsuccessful attempt to separate boric acid from the waters. In later years the hot water was used in a bathhouse and swimming pool which were located at a service station along U. S. Highway 40. The concrete pool, built in 1929, is all that remains today. The pool was apparently supplied by hot water directly from the springs. The hot springs do not flow at the surface today.

Brady's Hot Springs are located in NE/4 NE/4 SW/4 S12,T22N,R26E. Thermal ground water is found within an area of 6 to 8 square miles centered on this location (fig. 4). The elongate thermal area is parallel to the "Thermal Fault" mapped by Ancil and others (1960). Areas of hydrothermal alteration are aligned along this fault, and its trace has also been outlined by areas of observed snowmelt, indicating warm ground (Olmsted and others, 1975, fig. 37). This fault has had recent movement, as it cuts spring sinter and the alluvial fan deposits in the spring area and to the north. The fault is normal and dips steeply to the west, with the downthrown side to the west; the amount of displacement is unknown (Olmsted and others, 1975). All successful steam wells were cored in the hanging wall of the Brady Thermal Fault (Ancil and others, 1960).

The rocks exposed in the vicinity of Brady's consist of Tertiary basalt and andesite, Tertiary sedimentary rocks, Pleistocene lake sediments, and Quaternary alluvial deposits and siliceous sinter (figs. 5, 6). None of the wells drilled at Brady's (up to 7,275 ft. deep) penetrated the pre-Tertiary rocks, although they are exposed in the northern Hot Springs Mountains and were found in steam wells near Desert Peak (see the following section).

Bailey and Phoenix (1944, p. 51) report the presence of cinnabar and sulfur in S6(?),T22N,R27E about one-quarter mile southeast of U. S. Highway 40 and one-half mile east of the hot springs. The best showings of cinnabar are reported from around an active hot-spring vent. The occurrence is in hydrothermally altered tuff. Soil gas in the vicinity of the main Thermal Fault and around active steam vents at Brady's is anomalous in mercury (John Robbins, Scintrex Limited, written communication, 1973).

The spring sinter at Brady's is predominantly opal, and is quite extensive. It is concentrated along the main Thermal Fault and a small subsidiary fault to the east (Oesterling and Ancil, 1962).

The ground water in Fireball Valley (Hot Springs Flat) to the north probably moves as underflow to Brady's Hot