



Site Description

Carico Lake Valley

(updated 2012)

Geologic setting: Carico Lake Valley lies southeast of Crescent Valley and the Cortez Gold Mine (Carlin Trend). The Carico Lake Fault extends NE-SW through the valley. The Tertiary-era Caetano Caldera, a ~90km wide E-W trending magmatic body, extruded rhyolite ash-flow tuff throughout northern Carico Lake Valley, the Shoshone Range, and Crescent Valley. Carlin-type gold deposits formed during such volcanism (John et al., 2008). Caetano Tuff is also visible at Rocky Pass, the narrow neck between Carico Lake Valley and Crescent Valley which hosts the Chillis Hot Spring system. No significant mining took place in Carico Lake Valley, apart from turquoise found in the Ordovician Valmy Formation.

Geothermal features:

Chillis Hot Springs: Everett and Rush (1966) report that Chillis Hot Springs is comprised of one 38.9°C hot spring. A second orifice was identified on NBMG Map 141, but fieldwork in July 2008 showed no evidence of fluid flow, salt deposition, or other spring indicators at the site. Field samplers found Chillis Hot Spring buried beneath dense reed die-off in a ponded area. Outflow water was measured at 27.2°C. The source is presumably hotter, but would have needed clipping shears to access.

A 22.2°C spring has been reported 1 km west at the Carico Lake Ranch House (Penfield et al., 2012). The ranch gate was locked at the 6pm time of arrival, and no chemistry could be measured.

Carico Lake Warm Springs: Apart from Chillis Hot Springs, Carico Lake Valley has limited geothermal expression at the surface. In July 2008, UNR samplers measured one warm spring (20.2°C) and six cold along the eastern margin of dry Carico Lake (T26N R45E 15 NE). The springs surface along the interface of Quaternary lakebed sediments and Tertiary tuffaceous mounds (Tingley and Smith, 1982). The estimated reservoir temperature of the warm spring is 55.9°C (Ca-Na-K; Fournier, 1979) and 43.8°C (chalcedony; Fournier 1977). According to Garside (1973), anomalous radioactivity has been measured in lakebed sediments.

No gradient drilling has been reported for the area, based on the Southern Methodist University heat flow dataset (Blackwell and Richards, 2009, <https://smu.edu/geothermal/georesou/nevada.htm>).



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Leasing information:

N/A

Bibliography:

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