



## Site Description

### Smoke Creek Desert

(updated 2010)

#### Geologic setting:

The mountainous boundary of Smoke Creek Desert includes the Granite Range (NE), Buffalo Hills (N), an unnamed group of highlands (W), the Terraced Hills (S), and the Fox Range (E) (Glancy and Rush, 1968, p. 7). Glancy and Rush (1968) discuss the geology of Smoke Creek Desert.

#### Geothermal features:

##### **Bonham Ranch** ([Map](#))

A series of thermal springs and wells occur over 13 km in the southwestern Smoke Creek Desert. Some springs and wells emerge from possible fault scarps down-dropped to the east. The highest measured temperatures (up to 49°C) are found at Bonham Ranch, in the central portion of this 13-km trend. Extensive deposits of gypsum and other salts dominate the soils in this area. West of Bonham Ranch, large tufa columns occupy a possible ramp structure (en echelon step over) in the main exposed range-front fault (Coolbaugh notes, April 2005).

The highest temperature at Bonham Ranch is a 49°C spring (measured in April 2005). Round Hole Spring is a 10- to 12-m-diameter pool, which Waring (1965) reported to be warm. Waring also reported Rotten Egg Spring as 33.3°C, and Buckbrush Spring as 25.5°C.

More\_\_\_\_\_

A cold playa seep 8 km SE of Bonham Ranch (16.5°C) has a 20 x 5m upwelling zone covered with sawgrass. The water ran clear in 20 minutes, and smelled of H<sub>2</sub>S. The site is located in the extreme southeastern edge of Smoke Creek Desert, just outside the playa margin. Location coordinates are 40.27553 N, 119.71224 W (NAD83). Sample chemistry has not been returned.

##### **Dry Valley**

Dry Valley has two flowing springs, one of which, Pipe Spring, was sampled in July 2007. The source of Willow Spring could not be identified, though temperatures were no warmer than 15°C.



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This reconnaissance sampling was recommended by Mark Coolbaugh based on NBMG Map 151 (Geothermal Potential Map, 2005). Pipe Spring (18.4°C) originates in a cavern, then flows 60m through a submerged pipe. There is suspected faulting in Pipe Springs canyon based on discontinuous basaltic flow layers trending N/S. Geothermometer values are low, at 41.7°C (Na-Ca-K-Mg) and 50.1°C (chalcedony). Location coordinates for Pipe Spring are 40.33589 N, 119.91467 W (NAD83).

### **Parker Reservoir**

Waring (1965) reported Buffalo Spring to be warm. This spring is probably near Buffalo Salt Works (now defunct; see Papke, 1976), though the only nearby spring is dry. No temperature could be measured by UNR staff in June 2008.

In 1994, UNR staff measured a 17.5°C flowing well just south of Buffalo Spring (Sec. 7). In June 2008, staff sampled a 13.1°C well 3 km east, because of its proximity to tufa outcrops. More \_\_\_high GT for NWIS wells in area\_

### **Wall Spring**

Wall Spring, 1 km north of Parker Ranch, is a 24°C pool of 6m diameter. At Parker Ranch, 29.4°C artesian wells supply 12 ponds for a bass and bluegill operation (S. Voyles, Reno Gazette Journal Aug. 24, 2004).

Leasing information:

Bibliography: