

Rose Valley Groundwater Basin

- Groundwater Basin Number: 6-56
- County: Inyo
- Surface Area: 42,500 acres (66.4 square miles)

Basin Boundaries and Hydrology

Rose Valley Groundwater Basin underlies a north-trending valley in southwest Inyo County. Surface elevation of the valley floor ranges from 3,140 feet above mean sea level at Little Lake to about 4,200 feet along its western margin. The basin is bounded by nonwater-bearing consolidated rocks of the Sierra Nevada on the west, the Coso Range on the east, and Volcano Peak on the south. Merging alluvial fans descending from the Sierra Nevada on the west and the Coso Range on the east form the northern boundary of the basin. Peaks of the Sierra Nevada rise to elevations of more than 9,000 feet, while those in the Coso Range exceed 6,000 feet (Jennings 1958; Jennings and others 1962; DWR 1964).

Average annual rainfall ranges from 6 to 12 inches. Runoff from the surrounding mountains flows towards the center of the valley and then south into Little Lake. North of Red Hill, a swell across the valley floor blocks surface drainage causing it to pond and evaporate in several small playas (DWR 1964).

Hydrogeologic Information

Water Bearing Formations

Quaternary alluvium forms the principal water-bearing unit within the basin. This includes unconsolidated younger alluvial deposits and underlying unconsolidated to poorly consolidated older alluvial deposits. Maximum thickness of the alluvium is at least 176 feet (DWR 1964).

Recharge and Discharge Areas

Replenishment to the basin is derived chiefly from the percolation of runoff and infiltration of precipitation that falls to the valley floor. Seepage loss from Lower Haiwee Reservoir may provide additional inflow to the basin. Alluvial fan deposits at the base of the Sierra Nevada serve as the principal areas for the percolation of runoff. Groundwater in the younger and underlying older alluvium moves in a southerly direction toward Little Lake where it discharges as spring flow. Quaternary basalt flows, which bound the lake on the south, likely prevent or significantly impede underflow to Indian Wells Valley (DWR 1964).

Groundwater Level Trends

Groundwater levels in the basin range from flowing conditions to about 20 feet below the surface near Little Lake, to about 190 feet below the surface at the north end of the valley. In the north-central portion of the basin at Coso Junction, the depth to water has fluctuated between about 140 to 165 feet during 1960 through 1975. In general, the water table gradient from north to south is about ten feet per mile (DWR 1964).

Groundwater Storage

Groundwater Storage Capacity. Total storage capacity is estimated to be about 820,000 af (DWR 1975).

Groundwater in Storage. Unknown.

Groundwater Budget (C)

Ground Water budget information is not available.

Groundwater Quality

Characterization. In the north and central parts of the basin, groundwater has calcium-magnesium bicarbonate character. In the southern part of the basin near Little Lake, groundwater has sodium bicarbonate character.

Impairments. Groundwater in the north and central portions of the basin is suitable for all uses and TDS content averages about 350 mg/L. Groundwater from springs and wells in the vicinity of Little Lake is impaired by elevated levels of boron and by high TDS content, which ranges from 700 to 1,300 mg/L. This water is rated as inferior for irrigation and marginal for domestic use (DWR 1964).

Water Quality in Public Supply Wells

Constituent Group¹	Number of wells sampled²	Number of wells with a concentration above an MCL³
Inorganics – Primary	0	0
Radiological	1	0
Nitrates	0	0
Pesticides	0	0
VOCs and SVOCs	0	0
Inorganics – Secondary	0	0

¹ A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).

² Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.

³ Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Production characteristics

Well yields (gal/min)	
Municipal/Irrigation	Range: to 2,700 (DWR 1975)
Total depths (ft)	
Domestic	
Municipal/Irrigation	

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
	Groundwater levels	
	Miscellaneous water quality	
Department of Health Services and cooperators	Title 22 water quality	1

Basin Management

Groundwater management:

Water agencies

Public

Private

References Cited

- California Department of Water Resources (DWR). 1964. *Ground Water Occurrence and Quality Lahontan Region*. Bulletin No. 106-1. 439 p.
- _____. 1975. *California's Ground Water*. Bulletin No. 118. 135 p.
- Jennings, C.W. ed. 1958. *Geologic Map of California: Death Valley Sheet*. Olaf P. Jenkins Edition California Department of Conservation, Division of Mines and Geology. Scale 1: 250,000.
- Jennings C. W., John L. Burnett, and Bennie W. Troxel. 1962. *Geologic Map of California: Trona Sheet*. Olaf P. Jenkins Edition. California Department of Conservation, Division of Mines and Geology. Scale 1: 250,000.

Errata

Substantive changes made to the basin description will be noted here.