

Cuddeback Valley Groundwater Basin

- Groundwater Basin Number: 6-50
- County: San Bernardino
- Surface Area: 94,900 acres (148 square miles)

Basin Boundaries and Hydrology

The Cuddeback Valley Groundwater Basin underlies a roughly east-trending valley in western San Bernardino County. Surface elevations range from about 2,550 feet at Cuddeback (dry) Lake to 2,800 feet above mean sea level in the northeast portion of the valley. The basin is bounded by nonwater-bearing rocks of the Lava Mountains on the north, the Rand Mountains on the west, Fremont Peak and the Gravel Hills on the south and southeast, and a series of granitic hills on the east. Red Mountain rises to an elevation of 5,270 feet on the west (USGS 1962; DWR 1964).

Annual rainfall is about 5 inches. Runoff from the surrounding uplands drains towards Cuddeback Lake in the central part of the valley (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. The maximum thickness of alluvium is at least 300 feet (DWR 1964).

Recharge and Discharge Areas

Recharge to the basin is derived primarily from the percolation of storm runoff from the surrounding watershed through alluvial fan deposits near Red Mountain and Fremont Peak. Additional sources of recharge may include subsurface inflow and the infiltration of rain that falls to the valley floor. Groundwater moves in the direction of Cuddeback Lake and may flow into Harper Valley Groundwater Basin through an alluvial-filled gap between Fremont Peak and the Gravel Hills (DWR 1964).

Groundwater Level Trends

During 1917 through about 1970, groundwater levels near Cuddeback Lake ranged between 60 and 90 feet below the surface, whereas, groundwater levels in the eastern and western parts of the basin ranged between 150 and 230 feet below the surface. At Blackwater Well in the northeast, groundwater was found 20 to 30 feet below the surface (USGS 1956; DWR 1964).

Groundwater Storage

Groundwater Storage Capacity. The total storage capacity is estimated to be about 1,380,000 af (DWR 1975).

Groundwater in Storage. Unknown.

Groundwater Budget (C)

Groundwater budget information is not available.

Groundwater Quality

Characterization. Groundwater typically has a sodium chloride-bicarbonate or sodium chloride character (USGS 1956; DWR 1964).

Impairments. In general, the quality of groundwater is ranked marginal to inferior for most beneficial uses because of elevated concentrations of chloride and TDS. Chloride concentrations range from 60 to more than 2,560 mg/L with the highest concentrations occurring northwest of Cuddeback Lake. TDS content is variable and ranges from about 375 to 4,730 mg/L (USGS 1956; DWR 1964).

Well Production characteristics

Well yields (gal/min)		
Municipal/Irrigation	Range: 300 – 500	Average: 300 (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	

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. *et al.* 1962. *Geologic Map of California: Trona Sheet*. Olaf P. Jenkins Edition. California Department of Conservation, Division of Mines and Geology. Scale 1: 250,000.
- U.S. Geological Survey. 1956. Data on Water Wells in Cuddeback, Superior, and Harper Valleys, San Bernardino County, California. Open-file report. 73 p.

Errata

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