Silver Lake Valley Groundwater Basin

- Groundwater Basin Number: 6-34
- County: San Bernardino
- Surface Area: 35,300 acres (55.2 square miles)

Basin Boundaries and Hydrology

The Silver Lake Valley Groundwater Basin underlies a north trending valley in north central San Bernardino County. Elevation of the valley floor above mean sea level ranges from about 900 feet at Silver (dry) Lake to about 1,200 at the south end of the basin. The basin is bounded by nonwater-bearing rocks of the Soda Mountains on the southwest and west, the Hollow Hills on the northeast, and a series of low hills on the east. Low-lying alluvial drainage divides define the northern and southern boundaries. Maximum elevation in the adjacent Soda Mountains is about 2,500 feet (DWR 1964). Average annual precipitation ranges from about 4 to 6 inches. Runoff from the surrounding highlands drains towards Silver Lake in the north central part of the valley. During periods of high flow, the lower Mojave River can extend northward into Silver Lake Valley after overflowing Soda Lake (Jennings and others 1962; DWR 1964).

Hydrogeologic Information

Water Bearing Formations

Quaternary alluvium forms the major water-bearing material within the basin. Included in this unit are unconsolidated younger alluvial deposits and underlying unconsolidated to semi-consolidated, older alluvial deposits. Maximum thickness of the alluvium is at least 180 feet (DWR 1964).

Recharge and Discharge Areas

Recharge to the basin is derived from the percolation of runoff through alluvial fan deposits along the base of the Soda Mountains and from the infiltration of precipitation that falls to the valley floor. Additional recharge comes from subsurface inflow from Soda Lake Valley Groundwater Basin to the south. Groundwater in the younger and underlying older alluvium moves in a northerly direction towards Silver Lake. Groundwater likely moves north from Silver Lake beneath the northern drainage divide into Riggs Valley Groundwater Basin (DWR 1964).

Groundwater Level Trends

Over the period of record that intermittently spans 1953 through 1984, groundwater levels remained largely unchanged within the basin, typically changing less than 1 foot. At Silver Lake depth to water in one well was between 55 and 56 feet during 1954 through 1966. In the northern part of the basin, depth to water ranged from about 136 to 142 feet during 1954 through 1965. In the central part of the basin, depth to water was about 36 feet during 1945 and 1961. In the southern part of the basin, north of Baker, depth to water in one well was about 75 feet during 1954 through 1984 (DWR 1964, 1967).

Groundwater Storage

Groundwater Storage Capacity. Total storage capacity is estimated at about 380,000 af (DWR 1975).

Groundwater in Storage. Unknown.

Groundwater Budget (C)

Groundwater budget information is not available.

Groundwater Quality

Characterization. The character of the groundwater is largely of two types; sodium chloride or sodium bicarbonate-chloride (DWR 1964).

Impairments. Groundwater in this basin is rated marginal to inferior for both domestic and irrigation uses because of elevated concentrations of fluoride, boron, and TDS. Fluoride content in wells ranged from 0.8 to 4.0 mg/L, with an average content of 2.3 mg/L. Boron content ranged from 0.9 to 1.8 mg/L, with an average of 1.3 mg/L. TDS content ranges from 1,100 to 1,810 mg/L with an average concentration of about 1,310 mg/L (DWR 1964, 1967; Bader 1969).

Well Production Characteristics

	Well yields (gal/min)
Municipal/Irrigation	
	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

Bader, J.S. 1969. *Ground-Water Data as of 1967 South Lahontan Subregion California.* U.S. Geological Survey Open-File Report. 25 p.

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Jennings, C. W. , J. L. Burnett, B. 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.

U.S. Geological Survey. 1955. *Data on Water Wells in Coyote, Cronise, Soda, and Silver Lake Valleys, San Bernardino County, California.* Open-file report. 16 p.

Errata

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