

Simi Valley Groundwater Basin

- Groundwater Basin Number: 4-9
- County: Ventura
- Surface Area: 12,100 acres (19.0 square miles)

Basin Boundaries and Hydrology

This groundwater basin underlies Simi Valley in southeastern Ventura County. The basin is bounded on the north and northeast by the Santa Susana Mountains and the Simi fault and on the south and southwest by the Simi Hills. Ground surface elevation of the valley ranges from 700 to 1,100 feet above sea level (CSWRB 1956). Surface runoff discharges into the Arroyo Simi and flows west to join Arroyo Los Posas. Average annual precipitation ranges from 16 to 20 inches.

Hydrogeologic Information

Water Bearing Formations

The primary water-bearing unit in this basin is alluvium. Groundwater is generally unconfined but as grain size decreases towards the western end of the basin, clay lenses in the alluvium cause localized confinement. The average specific yield for the Simi Valley Groundwater Basin is 8.6 percent (CSWRB 1956), the average well yield for the basin is 394 gpm, and the depth to water producing zones is typically 5 to 25 feet (Panaro 2000a).

Pleistocene to Holocene Alluvium. The alluvium consists of gravels, sands, and clays with a maximum thickness of 730 feet (DWR 1959). The alluvium becomes shallow and constricted at the point where Arroyo Simi exits the western part of the valley (CSWRB 1956).

Restrictive Structures

The northern boundary of the basin is defined by the Simi fault, which may act as a barrier to subsurface inflow from the north.

Recharge Areas

Percolation of direct precipitation, inflow of minor streams, minor subsurface inflow from surrounding semi-permeable formations, and irrigation return provide recharge to the basin (Panaro 2000a).

Groundwater Level Trends

Groundwater generally moves westward through the basin following the course of Arroyo Simi (DWR 1959). During periods of overdraft, the slope of the groundwater surface can reverse in the western part of the basin and groundwater may flow in an easterly direction. Hydrographs of wells in the Simi Valley Groundwater Basin show that water levels have typically remained the same or risen since 1980.

Groundwater Storage

Groundwater Storage Capacity. The storage capacity for this basin is estimated at about 180,000 af (CSWRB 1956; DWR 1975; Panaro 2000a).

This estimate is consistent with an area of about 12,100 acres, an average thickness of about 175 feet, and an average specific yield of about 8.6 percent.

Groundwater in Storage. The basin was estimated at 95 percent full in 1999, with about 172,000 af in storage (Panaro 2000a; 2000b).

Groundwater Budget (Type A)

Limited data are available from Ventura County for water budget information. Recharge includes underflow of about 3,900 af/year and irrigation return of 800 to 1,500 af/year (Panaro 2000a). Pumping is estimated to be less than 5,500 af/year (Panaro 2000a).

Groundwater Quality

Characterization. Groundwater produced from Quaternary alluvium ranges from calcium sulfate to calcium-sodium sulfate (DWR 1959).

Impairments. There are some problems with VOCs in shallower portions of the basin. Analysis of water from one public supply well shows a TDS concentration of 1,580 mg/L.

Water Quality in Public Supply Wells

Constituent Group ¹	Number of wells sampled ²	Number of wells with a concentration above an MCL ³
Inorganics – Primary	4	0
Radiological	4	3
Nitrates	4	1
Pesticides	4	0
VOCs and SVOCs	1	0
Inorganics – Secondary	4	3

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 Characteristics

Well yields (gal/min)		
Municipal/Irrigation	Range:	Average: 394 gal/min (Panaro 2000b)
Total depths (ft)		
Domestic	Range:	Average:
Municipal/Irrigation	Range:	Average:

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
City of Simi	Groundwater levels	13/weekly (Dubrick 2001)
Department of Health Services and cooperators	Title 22 water quality	1

Basin Management

Groundwater management:	Currently there is no formal management of the basin (Panaro 2000b). The main source of water for the District is through Calleguas Municipal Water District.
Water agencies	
Public	Ventura County Water District No. 8
Private	Southern California Water Company

References Cited

- California Department of Water Resources (DWR). 1959. *Water Quality and Water Quality Problems, Ventura County*. Bulletin 75. 195 p.
- _____. 1975. *California's ground water*. Bulletin 118. 135 p.
- California State Water Resources Board (CSWRB). 1956. *Ventura County Investigation*. Bulletin 12. Two Volumes.
- Dubrick, C. City of Simi: Oral Communication with M. Stuhlman (DWR), October 2001.
- Panaro, D. 2000a. Fox Canyon Groundwater Management Agency: Written Communication to R.R. Davis (DWR), March 2000.
- _____. 2000b. Fox Canyon Groundwater Management Agency: Written Communication to B.C. Moniz (DWR), December 2000.

Additional References

- California Department of Public Works (CDPW). 1933. *Ventura County Investigation*. Division of Water Resources. Bulletin 46. 244 p.
- Jennings, C.W., and Strand, R.G. 1969. *Geologic Map of California: Los Angeles Sheet*, Olaf P. Jenkins Edition: California Division of Mines and Geology, scale 1:250,000, 1 sheet.
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Errata

Changes made to the basin description will be noted here.