Ojai Valley Groundwater Basin

- Groundwater Basin Number: 4-2
- County: Ventura
- Surface Area: 6,830 acres (10.7 square miles)

Basin Boundaries and Hydrology

The Ojai Valley Groundwater Basin is bounded on the west and east by nonwater-bearing Tertiary age rocks, on the south by the Santa Ana fault and the Sulphur Mountain Range, and on the north by Black Mountain and the Topatopa Mountains. The basin is drained by Thacker and San Antonio Creeks to the Ventura River. Average annual precipitation ranges from 20 to 24 inches.

Hydrogeologic Information

Water Bearing Formations

Groundwater is found in alluvium and to some extent in fractures and interstices of the underlying older Tertiary sedimentary rocks (CSWRB 1953). Groundwater in the basin is mostly unconfined, but locally confined conditions are found. The estimated average specific yield of the basin is 5.5 percent (CSWRB 1953).

Alluvial Deposits. Groundwater is found in alluvium of Holocene and Pleistocene age, which consists of sand, gravel, and clay. The alluvium is composed of about 50 to 100 feet of sediments similar to those occurring in the underlying Pleistocene alluvium though usually less weathered (CSWRB 1953). These alluvial deposits are the most productive units in the basin, with well yields that range from 100 to 600 gpm (CSWRB 1953).

Tertiary Sediments. The weathered sediments of Tertiary age are usually consolidated or cemented and typically yield minor amounts of poor quality water (CSWRB 1953; VCPWA 2002). Well yields are typically 2 to 5 gpm, reaching a maximum of about 50 gpm (CSWRB 1953).

Recharge Areas

Recharge to the basin is from infiltration of precipitation on the valley floor, and percolation of surface waters through alluvial channels, and water diverted into the Ojai spreading grounds (CSWRB 1953). Some additional recharge is provided by excess irrigation flow and a minor amount of subsurface flow (CSWRB 1953). This basin is quickly recharged during wet periods, and conversely is rapidly depleted during periods of drought (CSWRB 1953).

Groundwater Level Trends

In the western part of the basin, groundwater levels generally rose about 10 feet from 1973 to 2000, with hydrographs showing seasonal variations of 10 to 15 feet. In the central part of the basin, seasonal variation increases and some wells experienced flowing conditions. In the eastern part of the basin, seasonal variation is pronounced, with one hydrograph showing a seasonal rise of 90 feet and a typical seasonal variation at that well of about 40 feet.

Hydrographs do not indicate a long-term decline for this basin during 1973 through 2000.

Groundwater Storage

Groundwater Storage Capacity. The total storage capacity has been estimated to be 70,000 af (CSWRB 1953), 84,000 af (VCPWA 2002), and 85,000 af (DWR 1975).

Groundwater in Storage. The groundwater in storage was estimated to be 75 to 80 percent full in 1999 (Panaro 2000), or about 63,000 to 67,200 af.

Groundwater Budget (Type A)

Estimated groundwater storage depletion during the seven-year drought period from 1944 to 1951 amounted to about 28,000 af (CSWRB 1953). Total consumptive use of water on overlying lands, including precipitation, was estimated to have been about 71,000 af (CSWRB 1953). Consumptive use of applied water from 1944 to 1951 was estimated to have been about 28,200 af (SWRB 1953). Underflow into the basin is estimated to range from 800 to 2,500 af/yr (Panaro 2000). Recharge from percolation of excess irrigation is estimated to be 2,350 af/yr (Panaro 2000).

Groundwater Quality

Characterization. Groundwater in the basin is mainly calcium bicarbonate-sulfate in character (DWR 1959). Analyses of water from 19 wells sampled in 1952 show average TDS content of 640 mg/L with a range from 450 to 1,140 mg/L (DWR 1959). The average TDS content for analyses in 2000 was 665 mg/L, ranging from 568 to 790 mg/L (SCWC 2001). Analyses of water from 6 public supply wells show TDS content ranging from 568 to 790 mg/L with an average of about 703 mg/L.

Impairments. Comparison of samples collected from 9 wells in 1933 with samples collected in 1952 show that the average TDS content level increased about 150 mg/L (DWR 1959). The increase in average TDS content from 1952 (DWR 1959) and 2000 (SCWC 2001) suggests that this trend may be continuing, though at a lower rate. High nitrate and sulfate concentrations have been reported in the basin (Panaro 2000). Twenty-one wells sampled in the basin in 1994 to 1995 indicate medium to high nitrate concentrations for many parts of the basin (VCPWA 1996).

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	8	0
Radiological	8	1
Nitrates	8	1
Pesticides	8	0
VOCs and SVOCs	6	0
Inorganics – Secondary	8	8

[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: 100 – 600 gal/min (CSWRB 1953)	Average: 383 gal/min (VCWA 2002)
	Total depths (ft)	
Domestic	Range:	Average:
Municipal/Irrigation	Range:	Average:

Active Monitoring Data

Agency	**Parameter**	**Number of wells /measurement frequency**
Ventura County Department of Water Resources	Groundwater levels	24
Department of Health Services and cooperators	Title 22 water quality	22

Basin Management

Groundwater management:

Water agencies

Public	Ventura County Public Works Agency, Ojai Basin Groundwater Management Agency, Casitas Municipal Water District
Private	Southern California Water Company

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Additional References

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Errata

Changes made to the basin description will be noted here.