

Vidal Valley Groundwater Basin

- Groundwater Basin Number: 7-42
- County: Riverside, San Bernardino
- Surface Area: 138,000 acres (216 square miles)

Basin Boundaries and Hydrology

This basin underlies Vidal Valley in southeastern San Bernardino County and northeastern Riverside County. The basin is bounded by the nonwater-bearing rocks of the West Riverside and Riverside Mountains on the south, of the Turtle Mountains on the west, of the Turtle and Whipple Mountains on the north, and by a diffuse drainage divide on the east (DWR 1963; Bishop 1963). The surface is drained southeastward by Vidal Wash to the Colorado River.

Hydrogeologic Information

Water Bearing Formations

Groundwater in the basin is found in younger and older alluvium. The older alluvium is of Pleistocene age and consists of fine to coarse sand interbedded with gravel, silt, and clay. The older alluvium yields water freely to wells and is the most important aquifer in the basin (DWR 1963). The younger alluvium is of Holocene age and consists of poorly sorted gravel, sand, silt, and clay. The younger alluvium is generally a thin veneer above the water table (DWR 1963). Lithologic logs for wells drilled in the basin indicate that water-bearing sediments typically extend at least 600 to 700 feet in depth (DWR 1963).

Restrictive Structures

A south-trending fault may cut the basin near the Turtle Mountains (Bishop 1963); however, is unknown whether or not this fault is a barrier to groundwater movement.

Recharge Areas

The primary source of recharge to the basin is runoff from the surrounding mountain ranges that percolates through unconsolidated deposits at the edges of the valley floor (DWR 1963). Groundwater likely leaves this basin as underflow into Calzona Valley Groundwater Basin to the east.

Groundwater Level Trends

Groundwater moves southeastward, generally converging beneath Vidal Wash, toward the Colorado River (Moyle 1974; DWR 1979).

Groundwater Storage

Groundwater Storage Capacity. The total storage capacity is estimated at 1,600,000 (DWR 1975).

Groundwater in Storage. Unknown.

Groundwater Budget (Type C)

Natural recharge is estimated at about 350 af/yr (DWR 1975).

Groundwater Quality

Characterization. In the northeastern part of the basin near Vidal Junction, water from one well has sodium chloride-bicarbonate-sulfate character and a TDS content of 458 mg/L (DWR 1954). In the southeastern part of the basin, water from one well has sodium chloride character, a TDS content of 1,178 mg/L, and a fluoride content of 16.0 mg/L (DWR 1954). TDS content in the basin ranges from 397 to 2,864 mg/L (MWD 2001). Water from one public supply well has a TDS content of 571 mg/L.

Impairments. Fluoride, chloride, sulfate, and TDS concentrations are high (DWR 1975). Groundwater near the town of Vidal has fluoride concentrations greater than 9 mg/L, making it unsuitable for domestic use (DWR 1979). Groundwater in the basin has high sodium content, making it generally marginal for irrigation (DWR 1979).

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	1	0
Radiological	0	0
Nitrates	1	0
Pesticides	0	0
VOCs and SVOCs	0	0
Inorganics – Secondary	1	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 Characteristics

	Well yields (gal/min)	
Municipal/Irrigation	Range: to 1,800 gal/min	Average: 675 gal/min (DWR 1975)
	Total depths (ft)	
Domestic	Range:	Average:
Municipal/Irrigation	Range:	Average:

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

- Bishop, C. C. 1963. *Geologic Map of California, Needles Sheet*. Single Map Sheet, Scale 1:250,000.
- California Department of Water Resources (DWR). 1954. *Ground Water Occurrence and Quality, Colorado River Basin Region*. Water Quality Investigations Report No. 4.
- _____. 1963. *Data on Water Wells and Springs in the Rice and Vidal Valley Areas, San Bernardino and Riverside Counties, California*. Bulletin No. 91-8. 35 p.
- _____. 1975. *California's Ground Water*. Bulletin 118. 135 p.
- _____. 1979. *Sources of Powerplant Cooling Water in the Desert Area of Southern California- Reconnaissance Study*. Bulletin 91-24. 55 p.
- Metropolitan Water District of Southern California (MWD). 2001. *Final Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)*. Volumes 1-4.
<http://www.mwd.dst.ca.us/mwdh2o/pages/news/cadiznet/index.htm> (July 2002)
- Moyle, W. R. Jr. 1974. *Geohydrologic Map of Southern California*. Dept. of the Interior, U.S. Geological Survey Water-Resources Investigations 48-73. 1 sheet.

Errata

Changes made to the basin description will be noted here.