# Russell Valley Groundwater Basin

- Groundwater Basin Number: 4-20
- County: Los Angeles, Ventura
- Surface Area: 3,100 acres (4.9 square miles)

## Basin Boundaries and Hydrology

The Russell Valley Groundwater Basin is a relatively small alluvial basin bounded by semi-permeable rocks of the Santa Monica Mountains (CSWRB 1953; DWR 1959). The basin is bordered on the west by the Thousand Oaks Groundwater Basin. Triunfo Creek drains the valley into Malibu Creek. Average annual precipitation ranges from 18 to 20 inches.

## Hydrogeologic Information

### *Water Bearing Formations*

The principal water-bearing formation is Holocene age alluvium, although some groundwater is extracted from underlying volcanic rocks and older Tertiary sedimentary rocks (DWR 1959). Holocene age alluvium consists of unconsolidated, poorly bedded, poorly sorted to sorted sand, gravel, silt, and clay with some cobbles and boulders that averages about 35 to 55 feet thick; groundwater is unconfined (VCPWA 2002).

### *Restrictive Structures*

No information is available.

### *Recharge Areas*

Recharge is dominantly from percolation of rainfall (VCPWA 2002).

### *Groundwater Level Trends*

One well in the eastern part of the basin fluctuated about 4 feet during 1956 through 1964 then rose about 15 feet during 1965 through 1969 (Panaro 2002).

### *Groundwater Storage*

**Groundwater Storage Capacity.** The total storage capacity is estimated at 10,570 af (Panaro 2000; VCPWA 2002).

**Groundwater in Storage.** Unknown.

### *Groundwater Budget (Type A)*

Recharge from underflow is estimated to be 300 to 500 af/yr and about 50 to 150 af/yr more from irrigation return (VCPWA 2002). Extraction is estimated to be about 600 af/yr (VCPWA 2002).

### *Groundwater Quality*

**Characterization.** The chemical character of groundwater is generally sodium bicarbonate or calcium bicarbonate water (VCPWA 1996), but also may be sodium bicarbonate or calcium-magnesium sulfate (DWR 1959). The TDS content in the Russell Valley Groundwater Basin usually ranges from 800 to 1,200 mg/l (VCPWA 1996), but was also reported to range from

400 to 2,800 mg/L (DWR 1959). Sulfate averages 300 mg/L in most wells due to the volcanic basalt that constitutes the basement rock (VCPWA 1996).

**Impairments.** TDS and sulfate both exceed their MCL for some wells in the basin.

## Well Production characteristics

| | | |
|---|---|---|
| | **Well yields (gal/min)** | |
| Municipal/Irrigation | Range: | Average: 25 gal/min (VCPWA 1996) |
| | **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 | |

## Basin Management

Groundwater management:

Water agencies

| | |
|---|---|
| Public | Calleguas Municipal Water District, Ventura County Public Works Agency |
| Private | |

## References Cited

California Department of Water Resources (DWR). 1959. *Water Quality and Water Quality Problems, Ventura County.* Bulletin 75. Two Volumes. 195 p.

California State Water Resources Board (CSWRB). 1953. *Ventura County Investigation.* Bulletin 12. Two Volumes.

Panaro, D. 2000. Fox Canyon Groundwater Management Agency: Written Communication to R.R. Davis (DWR), March 21, 2000.

_____ 2002. Fox Canyon Groundwater Management Agency: Written Communication to T.M. Ross (DWR), July 2, 2002.

Ventura County Public Works Agency (VCPWA). 1996. *Ventura County Groundwater Quality Assessment Report.* 57 p.

_____. 2002. "Ventura County Groundwater Basins." http://www.ventura.org/vcpwa/wre/wrd/pages/BASINS.htm

## Additional References

California Department of Public Works, Division of Water Resources (CDPW). 1933. *Ventura County Investigation.* Bulletin 46.

California Department of Water Resources (DWR). 1975. *California's Ground Water*. Bulletin 118. 135 p.

California State Water Resources Board (CSWRB). 1953. *Ventura County Investigation.* Bulletin 12. Two Volumes.

## Errata

Changes made to the basin description will be noted here.