Upper Santa Ana Valley Groundwater Basin, Riverside-Arlington Subbasin

- Groundwater Basin Number: 8-2.03
- County: San Bernardino, Riverside
- Surface Area: 58,600 acres (92 square miles)

Basin Boundaries and Hydrology

The Riverside-Arlington Subbasin underlies part of the Santa Ana River Valley in northwest Riverside County and southwest San Bernardino County. This subbasin is bound by impermeable rocks of Box Springs Mountains on the southeast, Arlington Mountain on the south, La Sierra Heights and Mount Rubidoux on the northwest, and the Jurupa Mountains on the north. The northeast boundary is formed by the Rialto-Colton fault, and a portion of the northern boundary is a groundwater divide beneath the city of Bloomington. The Santa Ana River flows over the northern portion of the subbasin. Annual average precipitation is about 10 to 14 inches.

Hydrogeologic Information

Water Bearing Formations

Groundwater in the subbasin is found chiefly in alluvial deposits. Quaternary age alluvial deposits in the subbasin consist of sand, gravel, silt, and clay deposited by the Santa Ana River and its tributaries. Near the City of Riverside, the upper 50 feet of deposits are principally clay; however, deposits near the City of Arlington have considerable sand and little clay. At the northern end of the subbasin, coarser gravels with cobbles 4 to 6 inches in diameter are common. Based on data from wells, a minimum specific yield of 15 percent was assigned to unweathered gravels at the extreme northern end of the subbasin. The specific yield increases sharply to 18 percent near the Santa Ana River, then increases gradually to a maximum of 20 percent near the City of Arlington (DPW 1934).

Restrictive Structures

The Rialto-Colton fault to the northeast separates the Riverside-Arlington Subbasin from Rialto-Colton Subbasin. The fault is a barrier to groundwater flow along of its length, especially in its northern reaches (Wildermuth 2000).

A groundwater divide in the alluvium separates the Riverside portion from the Arlington portion of the subbasin (DPW 1934).

Recharge Areas

The Riverside-Arlington Subbasin is replenished by infiltration from Santa Ana River flow, underflow past the Rialto-Colton fault, intermittent underflow from the Chino Subbasin, return irrigation flow, and deep percolation of precipitation (DPW 1934; Wildermuth 2000).

Groundwater Level Trends

Groundwater moves northwest near Arlington, then flows southwest to Arlington Gap, through which it flows into the Temescal Subbasin (DPW

1934). In the northeastern part of the subbasin, groundwater levels near the Santa Ana River fluctuated about 20 feet during 1985 through 2001 and declined about 10 feet during 1995 through 2000. In the central part of the subbasin near Riverside, groundwater levels were fairly steady during 1965 through 1985, fluctuating about 4 feet.

Groundwater Budget (Type A)

Municipal water pumping from the Riverside portion of the subbasin was about 10,100 af during the 2000-2001 fiscal year (Riverside Public Utilities Department 2002).

Groundwater Storage

Groundwater Storage Capacity. The total storage capacity is estimated to be 243,000 af (DPW 1934). The Riverside portion of the subbasin is estimated to have a storage capacity of about 207,000 af and the Arlington portion, a storage capacity of 36,000 af (DPW 1934).
Groundwater in Storage. No information is available.

Groundwater Quality

Characterization. Water within the Riverside-Arlington Subbasin is dominately calcium-sodium bicarbonate. Water sampled from 46 public supply wells has an average TDS content of 463 mg/L with a range of 210 to 889 mg/L. TDS content ranges from 320 to 756 mg/L (Wildermuth 2000).
Impairments. No information is available.

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	48	2
Radiological	48	11
Nitrates	51	21
Pesticides	50	19
VOCs and SVOCs	50	8
Inorganics – Secondary	38	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:	Range:
	Total depths (ft)	
Domestic	Range:	
Municipal/Irrigation	Range:	

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
USGS	Groundwater levels	11
USGS	Miscellaneous water quality	3
Department of Health Services and cooperators	Title 22 water quality	43

Basin Management

Groundwater management:	City of Riverside manages a portion of the basin under an AB3030 plan.
Water agencies	
Public	Riverside Public Utilities Department
Private	

References Cited

California Department of Public Works, Division of Water Resources (DPW). 1934. *South Coastal Basin Investigation: Geology and Ground Water Storage Capacity of Valley Fill.* Bulletin No. 45. 279 p.

Riverside Public Utilities Department. 2002. *City of Riverside Water Utility Report.* http://www.ci.riverside.ca.us/utilities/water-.PDF. 2 July 2002.

Wildermuth Environmental, Inc. (Wildermuth). 2000. *TIN/TDS Study - Phase 2A of the Santa Ana Watershed; Final Technical Memorandum*. San Clemente, California, July 2000.

Additional References

California Department of Public Works, Division of Water Resources (DPW). 1933. *South Coastal Basin Investigation: Quality of Irrigation Waters.* Bulletin No. 40. 95 p.

_____. 1933. *South Coastal Basin Investigation: Detailed Analyses Showing Quality of Irrigation Waters.* Bulletin No. 40-A. 131 p.

Errata

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