

Morongo Valley Groundwater Basin

- Groundwater Basin Number: 7-20
- County: San Bernardino
- Surface Area: 7,240 acres (11.3 square miles)

Basin Boundaries and Hydrology

This basin underlies Morongo Valley in the Little San Bernardino Mountains of southern San Bernardino County. The basin is bounded by crystalline rocks of the San Bernardino Mountains on the north and the Little San Bernardino Mountains on the south (DPW 1954; Rogers, 1967). Morongo Valley is drained by Big Morongo and Little Morongo Creeks, and average annual rainfall ranges from 8 to 13 inches.

Hydrogeologic Information

Water Bearing Formations

The principal water-bearing unit in this basin is Quaternary age alluvium which is formed of sand, gravel, silt, and clay (DPW 1954). These alluvial deposits reach at least 140 feet thick (DPW 1954) and may reach 220 feet thick (DWR 1975).

Restrictive Structures

This basin is an alluvium-filled fault-bounded valley. The Pinto Mountain fault follows the northern boundary and the Morongo Valley fault follows the southern boundary of the basin (Rogers 1967). These faults may form the boundaries of the basin in the subsurface. It is unknown whether the Pinto Mountain fault disrupts groundwater flow in the basin, but the Morongo Valley fault is a barrier and produces rising water and a marshy environment along the courses of the Big and Little Morongo Creeks as they exit the valley to the south (DPW 1954). A surface and groundwater divide is found between the drainages of the Big and Little Morongo Creeks, with depths to water greater on the eastern side of the divide (DPW 1954).

Recharge Areas

Recharge is accomplished chiefly by percolation of flow in Big Morongo and Little Morongo Creeks and Smith Canyon through alluvial fans on the northern edge of the basin (DPW 1954).

Groundwater Level Trends

Groundwater flow is generally southward through the basin. Groundwater rises along the southern part of the basin and is discharged into Big and Little Morongo Creeks (DPW 1954).

Groundwater Storage

Groundwater Storage Capacity. Total storage capacity is estimated to be about 100,000 af (DWR 1975).

Groundwater in Storage. Unknown.

Groundwater Budget (Type C)

Information for a complete groundwater budget is not available. The extraction of groundwater prior to 1954 was estimated to be about 230 af/yr (DPW 1954). Natural recharge is estimated at about 800 af/yr (DWR 1975).

Groundwater Quality

Characterization. Groundwater in the northeastern part of the basin ranges from Calcium-sodium bicarbonate to sodium sulfate-bicarbonate in character (DPW 1954). Groundwater in the southwestern part of the basin ranges from calcium-magnesium-sodium bicarbonate-sulfate to sodium sulfate in character (DPW 1954). Groundwater is rated suitable for domestic, municipal, and agricultural purposes (DPW 1954). Analyses of water from four wells sampled in 1952 show an average TDS content of 592 mg/L. Water from 3 public supply wells has an average TDS content of 480 mg/L and ranges from 469 to 496 mg/L.

Impairments.

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	5	5
Nitrates	4	0
Pesticides	4	0
VOCs and SVOCs	4	0
Inorganics – Secondary	4	2

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 600 gal/min	Average: 90 gal/min (DWR 1975)
	Total depths (ft)	
Domestic	Range:	Average:
Municipal/Irrigation	Range:	Average:

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
Department of Health Services and cooperators	Groundwater levels	5
	Miscellaneous water quality	
	Title 22 water quality	

Basin Management

Groundwater management:

Water agencies

Public

Private

Morongo Band of Mission Indians, Morongo
Water Consortium

References Cited

- California Department of Water Resources (DWR). 1975. *California's Ground Water*. Bulletin 118.
- California Department of Public Works (DPW). 1954. *Ground Water Occurrence and Quality, Colorado River Basin Region*. Water Quality Investigations Report No. 4. 59 p.
- Rogers, Thomas H. 1967. *Geologic Map of California; San Bernardino Sheet*. Olaf P. Jenkins Edition. California Division of Mines and Geology. Scale 1:250:000.

Additional References

- Bader, J. S. and W. R. Moyle. 1958. Data on water wells and springs in Morongo Valley and Vicinity, San Benardino and Riverside Counties, California. US Geological Survey Open File Report. 31 p.
- Bueermann, R.A. 1958. Morongo Valley Sanitary Survey. California Department of Public Health and Sanitary Engineering.
- Buwalda, J. P. 1930. Geology in the Vicinity of Morongo Valley. Los Angeles. Metropolitan Water District of Southern California.
- Trayler, C. R., Koczot, K. M. 1996. Regional water table (1994) and water-level changes in the Morongo Basin, San Bernardino County, California. US Geological Survey Water Resources Investigations 95-4209.
- Reed, L. D. 1971. A geophysical investigation of ground-water supply, Morongo Indian Reservation, Riverside County, California. University of California, Riverside. M. S. Thesis.

Errata

Changes made to the basin description will be noted here.