Panoche Valley Groundwater Basin

- Groundwater Basin Number: 5-23
- County: San Benito
- Surface Area: 33,100 acres (52 square miles)

Basin Boundaries and Hydrology

Panoche Valley is an elongate northwest-southeast trending basin in the Coast Range Mountains of eastern San Benito County. The elevation ranges from 1,000 to 1,300 feet. The basin is comprised of shallow alluvium, Quaternary nonmarine terrace deposits and Plio-Pleistocene nonmarine sediments. The basin is bounded to the northwest by the Franciscan Formation, to the northeast and southeast by Upper Cretaceous marine sedimentary rocks and to the southwest by Lower Miocene marine rocks (Jennings and Strand 1959). Panoche Creek, Griswold Creek, and their tributaries drain the valley eastward to the San Joaquin Valley. Average precipitation values range from nine inches for the majority of the valley to 13 inches at the western margin.

Hydrogeologic Information

Water Bearing Formations

No specific published information on the water bearing deposits was found. Review of San Joaquin District well completion report files produced drillers logs for nine wells in the basin. These wells ranged in depth from 171 feet to 1,500 feet. They generally penetrate alluvial materials including gravels, sands, silts and clays. Additional descriptive units include shale, clay and rocks, and hard sand. From this information it seems likely that the water bearing units may include the alluvium, Quaternary nonmarine terrace deposits and Plio-Pleistocene nonmarine sediments.

Groundwater Level Trends

Water level measurements for 48 wells were found in the San Joaquin District water level data files. These measurements range in time from 1967 to 2000. Depth to water ranges from 30 to over 300 feet, with most of the measurements being in the 30 to 80 foot range. There is a general trend of rising water levels from the 1970's to 2000. Water levels have risen as much as 130 feet and typically over 40 feet throughout the basin. Field reconnaissance in August 2001determined that irrigated agriculture is limited to one vineyard of less than 20 acres and one walnut orchard of less than 20 acres. A discussion with Don Hennigan (2001), a 76-year-old life long resident of Panoche Valley, determined that in the 1940's extensive areas of alfalfa were in production and in the 50's and 60's cotton was extensively grown in the basin. It appears that groundwater levels are recovering from a past period of groundwater pumping.

Groundwater Storage

No information on groundwater storage was found. Well logs and water level information indicate that significant volumes of water have existed at one time in the basin, however, development of wells and agriculture may have outpaced the ability of the basin to replenish itself and led to the discontinuation of widespread use of the groundwater resource.

Groundwater Budget (Type C)

There is not enough information to provide an estimate of this basin's budget.

Groundwater Quality

No published characterization of the groundwater quality in the basin was found in the literature. Review of San Joaquin District water quality data files revealed water quality data for 26 wells in the basin ranging in time from 1954 to 1988. The groundwater is generally of a Na-SO_4 type. The average TDS is 1,300mg/L with a range of 394 to 3,530mg/L. The average EC is 1,540µmhos/cm with a range of 630 to 4,090µmhos/cm.

Well Characteristics

	Well yields (gal/min)	
Municipal/Irrigation	Range: –	Average:
	Total depths (ft)	
Domestic	Range: -	Average:
Municipal/Irrigation	Range: -	Average:

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR	Groundwater levels	48 3 years
DWR	Miscellaneous water quality	26 Varied but discontinued
Department of Health Services and cooperators	Title 22 water quality	0

Basin Management

Groundwater management:

Water agencies

Public	None
Private	None

References Cited

California Department of Water Resources (DWR), San Joaquin District. Water level data files.

_____. Water Quality Records.

_____. Well completion report files.

Hennigan, Dan. 2001. Personal communication, Panoche Valley resident on 8/9/01.

Jennings, Charles W. and Rudolph G. (compilers). 1959. Santa Cruz Sheet of *Geologic Map of California.* California Division of Mines and Geology (CDMG). Scale 1:250,000.

Additional References

California Department of Water Resources (DWR), 1957. Bulletin No. 60, Interim Report to the California State Legislature on the Salinity Control Barrier Investigation.

Errata

Changes made to the basin description will be noted here.