

Novato Valley Basin

- Groundwater Basin Number: 2-30
- County: Marin
- Surface Area: 20,500 acres (32 square miles)

Basin Boundaries and Hydrology

The Novato Valley basin occupies a structural depression in the Coast Ranges immediately west of San Pablo Bay and north of San Raphael. San Antonio Creek bounds the Novato Valley basin to the north and the Mendocino Range forms the western and southern boundary. Streams discharging to San Pablo Bay drain the basin and are tidally influenced in the lower reaches. Annual Precipitation in the basin ranges from less than 28 inches adjacent to the bay to more than 40 inches in the upland areas in the Mendocino Range.

Hydrogeologic Information

Water Bearing Formations

Water occurs principally in alluvial deposits of Pleistocene to Holocene age that unconformably overlie non-water bearing rocks of the Franciscan assemblage (Cardwell 1958). The alluvial deposits are composed of unconsolidated clay, silt, and sand with discontinuous lenses of gravel. The Pleistocene alluvium is exposed only in a small area on the northern side of Novato Valley (Cardwell 1958). The total thickness of the alluvial deposits ranges from 60 feet near the city of Novato to more than 200 feet near San Pablo Bay (DWR 1975). Generally semi-confined conditions prevail in the water bearing formations (Cardwell 1958). Wells in sand and gravel layers 25 feet to 50 feet deep yield an average of 50 gallons per minute (DWR 1975).

Recharge Areas

Natural recharge occurs principally as infiltration from streambeds that exit the upland areas within the drainage basin and from direct percolation of precipitation that falls on the basin floor.

Groundwater Level Trends

No published information was found that would indicate groundwater level trends for the Novato Valley groundwater basin.

Groundwater Storage

Groundwater Storage Capacity. No published information was found addressing the groundwater storage capacity of the Novato Valley groundwater basin.

Groundwater in Storage. No published report was found addressing the quantity of groundwater in storage.

Groundwater Budget (Type C).

Not enough data exists presently to provide either an estimate of the Novato Valley basin's groundwater budget or the groundwater extraction from the basin.

Groundwater Quality

Characterization. Groundwater is typically of the calcium bicarbonate type. Groundwater in the tidal areas of the alluvium is of the sodium chloride type and the total mineral content is greater than in areas more distal to the bay (Cardwell 1958; DWR 1975).

Impairments. Tidal fluctuations in the vicinity of San Pablo Bay can cause intrusion of brackish water into the groundwater reservoir degrading water quality (Cardwell 1958).

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	2	0
Radiological	1	0
Nitrates	2	0
Pesticides	1	0
VOCs and SVOCs	1	0
Inorganics – Secondary	2	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 Production characteristics

Well yields (gal/min)		
Municipal/Irrigation		Average: 50 (DWR 1975)
Total depths (ft)		
Domestic	Range: 55 - 443	Average: 243 (Based on 7 Wells)
Municipal/Irrigation		

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
	Groundwater levels	
DWR	Miscellaneous water quality	2 Wells
Department of Health Services and cooperators	Title 22 water quality	1 Well

Basin Management

Groundwater management:

Water agencies

Public

North Marin MWD, Marin MWD,
Marin County FC & WCD

Private

References Cited

Cardwell,G.T. Geology and Groundwater in the Santa Rosa and Petaluma Valley Areas,
Sonoma County California. US geological Survey Water-Supply Paper 1427. 1958.

California Department of Water Resources. Sea-Water Intrusion in California Inventory of
Coastal Ground Water Basins. Bulletin 63-5 October 1975.

Errata

Changes made to the basin description will be noted here.