

Big River Valley Groundwater Basin

- Groundwater Basin Number: 1-45
- County: Mendocino
- Surface Area: 1,690 acres (approx. 2.5 square miles)

Basin Boundaries and Hydrology

Big River Valley is an elongate, generally west-trending coastal drainage basin situated within the Coast Ranges of west central Mendocino County and located directly south and east of the Town of Mendocino. Big River Valley Groundwater Basin ranges in length from approximately 8 to 11 miles and varies in width from about 0.1 to 0.7 miles. The Big River Valley Groundwater Basin is defined by the areal extent of Quaternary Alluvium, which is bounded on all sides by bedrock of the Franciscan Formation. This Groundwater Basin transects the Fort Bragg Terrace Area Groundwater Basin south and east of Mendocino.

Big River Valley is drained to the south and west by the Little North Fork of Big River Valley and west by Big River Lagoon/Laguna Creek before entering the Pacific Ocean at Mendocino Bay. Precipitation in this basin ranges from about 39 to 45 inches annually.

Hydrogeologic Information

Water-Bearing Formations

Significant water-bearing formations that occur in Big River Valley include only Quaternary Alluvium. Bedrock of the Franciscan Complex surrounds and underlies the area but due to its consolidated nature, it is essentially non-water bearing except for areas with significant fracture porosity. Information on water-bearing formations and groundwater occurrence was taken from DWR (1958).

Alluvium and River Channel Deposits. These deposits are Holocene in age and consist largely of unconsolidated silts, gravels, clays, and sands. These deposits are exposed in the active river channel and floodplain of Big River Valley. Limited data suggests the alluvium in the smaller valleys in Mendocino County averages 10 to 15 feet thick, but may be 100 feet or more in places within the coastal drainages (DWR 1982, 1985). The maximum thickness of these deposits is unknown. No published well yield data was identified for wells in this area; however, wells drilled in the small alluvial valleys in Mendocino County have proven unproductive because of low permeability. Groundwater in the alluvial deposits is typically unconfined but may be semi-confined locally. No published specific yield data for alluvium in this area are available.

Groundwater Level Trends

No groundwater level data available.

Groundwater Storage

Groundwater Storage Capacity. No data available.

Groundwater in Storage. No data available.

Groundwater Budget (Type C)

No data available.

Groundwater Quality

Characterization. No groundwater quality data available.

Impairments. No data available; however, since this basin is in connection with the Pacific Ocean, seawater intrusion may be reasonably expected to be a potential problem.

Well Characteristics

Well yields (gal/min)		
Municipal/Irrigation	No data is available.	
Total depths (ft)		
Domestic	Range: 22 - 340	Average: 115 (Based on 104 well completion reports)
Municipal/Irrigation	Range: 43 - 180	Average: 109 (Based on 9 well completion reports)

Active Monitoring Data

Agency	Parameter	Number of wells / measurement frequency
DWR (incl. Cooperators)	Groundwater levels	None
DWR (incl. Cooperators)	Mineral, nutrient, & minor element.	None
Department of Health Services	Coliform, nitrates, mineral, organic chemicals, and radiological.	None

Basin Management

Groundwater management:	No groundwater management plans were identified.
Water agencies	
Public	Mendocino County Water Agency.
Private	

Selected Bibliography

- California Department of Water Resources (DWR) 1958. Recommended Water Well Construction and Sealing Standards, Mendocino County. Bulletin No. 62 – November.
- California Department of Water Resources (DWR) 1982. Mendocino County Coastal Ground Water Study. Northern District. June.
- California Department of Water Resources (DWR) 1985. Town of Mendocino Ground Water Study. Northern District. June.

Errata

Changes made to the basin description will be noted here.