Pittsburg Plain Groundwater Basin

- Groundwater Basin Number: 2-4
- County: Contra Costa
- Surface Area: 11,600 acres (18 square miles)

Basin Boundaries and Hydrology

The Pittsburg Plain Groundwater Basin is located in northern Contra Costa County along the south shore of Suisun Bay. The basin is about 40 miles northeast of San Francisco. It is bounded by Suisun Bay on the north, on the east by the Tracy basin, and on the west by the Clayton basin. The southern boundary extends inland from the Suisun Bay 1 to 3 miles. The cities of Pittsburg, West Pittsburg and Shore Acres are included with in the Pittsburg Plain Basin. Both the Sacramento and San Joaquin Rivers drain into the Suisun Bay along the northeast edge of the basin. The Pittsburg Plain groundwater basin lies within the two major drainage basins of Kirker Creek and Willow Creek. These basins discharge into Suisun Bay.

The topography of the area consists of mild sloping alluvial plains ranging in elevation from sea level to 100 feet. Average annual precipitation in the basin ranges from 15 to 18 inches, increasing from east to west.

Hydrogeologic Information

Water Bearing Formations

The water bearing units in the basin are Pleistocene to Recent age alluvium deposits. The water bearing materials consist of highly lenticular beds of gray and brown sand, sand and gravel, and blue and yellow clay. The maximum thickness of these deposits is 400 feet. Aquifers in the basin area are hydrologically connected to the Sacramento River (DWR 1975). There are limited data regarding the occurrence and movement of ground water in the basin.

Pleistocene Deposits. Pleistocene deposits can be found throughout the basin. The deposits consist of consolidated and unconsolidated sediments. These sediments are characterized by expansive clays (CCCPD 1975).

Alluvium. Modern alluvial sediments are located along the Suisun Bay shoreline of the basin. These sediments are characterized by soft, water-saturated muds, peat and loose sands (CCCPD 1975).

Groundwater Level Trends

Hydrographs created from DWR well data in the Pittsburg Plain Groundwater Basin indicate that groundwater levels have remained fairly stable over the period of record with the exception of static water level drops and subsequent recovery associated with the 1976 – 1977 and 1987 – 1992 drought periods. While groundwater elevations in the 7 wells examined are not indicative of elevations in all wells within the basin it is suggestive of relative changes in groundwater levels within the basin.

Groundwater Storage

Groundwater Storage Capacity. No published groundwater storage capacity data for the basin was found.

Groundwater in Storage. No published groundwater in storage data for the basin was found.

Groundwater Budget (Type C)

Due to lack of groundwater budget data, inflows, including natural, applied, and artificial recharge and outflows including urban and agricultural extraction have not been included.

Groundwater Quality

Characterization. Water quality information for the Pittsburg Plain Groundwater Basin is limited. DWR historic groundwater total dissolved solids values range from 450 mg/l to 5737 mg/l. The average total dissolved solids for 5 DWR wells is 1821 mg/l.

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	3	0
Radiological	4	1
Nitrates	3	1
Pesticides	6	0
VOCs and SVOCs	6	0
Inorganics – Secondary	3	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 Production characteristics

	Well yields (gal/min)	
Municipal/Irrigation		
	Total depths (ft)	
Domestic	Range: 75 - 315	Average: 192 (based on 7 wells)
Municipal/Irrigation	Range: 207 – 1,235	Average: 490 (based on 5 wells)

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR	Groundwater levels	1 well semi annual
DWR	Miscellaneous water quality	3 wells biennially
Department of Health Services and cooperators	Title 22 water quality	3 wells

Basin Management

Groundwater management:	None identified
Water agencies	
Public	City of Pittsburg WSA, Contra Costa Water District, East County Water Association, East County Irrigation District
Private	

References Cited

California Department of Water Resources, Bulletin No. 118-80, Ground Water Basins in California, January 1980.

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California Department of Water Resources, Bulletin No. 63-5, Sea-Water Intrusion in California, October 1975.

California Department of Water Resources, Bulletin No. 77-58, Ground Water Conditions in Central and Northern California 1957-58, October 1959.

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Errata

Changes made to the basin description will be noted here.