South San Francisco Groundwater Basin

- Groundwater Basin Number: 2-37
- County: San Francisco
- Surface Area: 2170 acres (3.4 square miles)

Basin Boundaries and Hydrology

The South San Francisco Groundwater Basin, within the city of San Francisco, is in the San Francisco Bay Hydrologic Region. It is separated from the Islais Valley Groundwater Basin to the north and west and the Visitacion Valley Groundwater Basin to the south by bedrock topographic highs. The San Francisco Bay forms the basin boundary along its entire eastern extent. Annual precipitation within the basin is in the range of 20 inches to 24 inches (USDA, 1999).

Hydrogeologic Information

Water Bearing Formations

Geologically the basin can be broadly classified as unconsolidated sediment and bedrock (USGS, 1993). The primary water-bearing strata are unconsolidated sediments, including dune sand, the Colma Formation, bay mud and clay, and artificial fill (USGS, 1993). The Colma Formation consists of fine-grained sand, silty sand and discontinuous beds of clay up to five feet thick (USGS, 1993). The artificial fill is largely composed of dune sand with lesser amounts of silt and clay, and some manmade debris (Schlocker, 1974). It reaches a maximum total thickness of about 60 feet (USGS, 1993). The unconsolidated material in aggregate has a maximum thickness of 200 feet indicating a relatively low storage capacity for groundwater and minimal protection from potential surface contamination (USGS, 1993). Bedrock of the Franciscan Complex underlies the water-bearing formations (Schlocker, 1974.)

Groundwater Recharge

Sources of recharge include infiltration of rainfall, landscape irrigation, and leakage from water and sewer pipes. Average groundwater recharge in the South San Francisco Groundwater Basin for the water years 1987-1988 was estimated to be 696 acre-feet/year (USGS, 1993).

Groundwater Level Trends

Generally groundwater levels have remained relatively stable within the South San Francisco Groundwater Basin (USGS, 1993).

Groundwater Storage

Groundwater Storage Capacity.
No estimate of groundwater storage capacity was found.

Groundwater in Storage.
No estimate of groundwater in storage was found.

Groundwater Budget

A hydrologic routing model was developed by the USGS to estimate groundwater recharge on the San Francisco peninsula. The model was based

on land use zones in the region. A detailed discussion of the groundwater budget can be found in the report by Phillips et.al. (1993).

Groundwater Quality

Characterization.
Most of the groundwater is a mixed cation bicarbonate type. Generally the dissolved constituents in the local groundwater are within guidelines recommended by the U.S. Environmental Protection Agency (1986).

Impairments.
Water from many wells in the basin can be considered to be hard. Elevated nitrate levels is the most common water quality problem with wells in the San Francisco peninsula and high chloride concentrations were observed in some wells (USGS, 1993).

Well Characteristics

	Well yields (gal/min)	
Municipal/Irrigation	Range: na	Average: na
Total depths (ft)		
Domestic	Range: na	Average: na
Municipal/Irrigation	Range: 100 - 124	Average:

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
	Groundwater levels	None found
	Miscellaneous water quality	None found
Department of Health Services and cooperators	Title 22 water quality	None found

Basin Management

Groundwater management:

Water agencies

Public	San Francisco Water Department
Private	

References Cited

Phillips, Steven P., Scott N. Hamlin, Eugene B. Yates. Geohydrology, Water Quality, and Estimation of Ground-Water Recharge in San Francisco, California 1987-92. US Geological Survey Water- Resources Investigations Report 93-4019, 1993.

Schlocker, Julius. Geology of the San Francisco North Quadrangle, California. US Geological Survey Professional Paper 782, 1974

USDA. United States Average Annual Precipitation, 1961-1990: Map Layer, 1999.

Additional References

South Bay Groundwater Committee Report. Results of the April 2000 Westside Basin Twenty-Four Hour Well-Water Level Response Test, 2001.

Errata

Changes made to the basin description will be noted here.