

## Felton Area Groundwater Basin

- Groundwater Basin Number: 3-50
- County: Santa Cruz
- Surface Area: 1156 acres (2 square miles)

### Basin Boundaries and Hydrology

The Felton Area Groundwater Basin is mapped as the alluvium along the San Lorenzo River, Zayante Creek, Newell Creek, and Love Creek in the Santa Cruz Mountains in central Santa Cruz County. It includes portions of the communities of Felton, Mount Harmon, Olympia, Brackney and Ben Lomond. The basin boundary is the contact of the Quaternary alluvium with the surrounding Miocene marine sedimentary units (Jennings 1961). Elevation ranges from about 250 feet to 400 feet. The basin boundary confidence is considered low due to variations in thickness of the alluvium and the fact that most of the wells in the area (the basin and surrounding area) produce water from the underlying sedimentary rocks. Average precipitation values range from 43 to 45 inches.

### Hydrogeologic Information

#### ***Water Bearing Formations***

Based on a review of water well drillers reports on file in the San Joaquin District, the primary water bearing formations in the basin are the underlying sedimentary units. The Santa Margarita Sandstone and the Lompico Sandstone are reported to be the primary producing aquifers for wells used by SLVWD (Ellis 1993). In a report on the Scotts Valley area, the specific yield of the Lompico Sandstone was estimated at six percent and the Santa Margarita Sandstone at 12 percent (Todd Engineers 1996). No published information was found on the alluvial deposits above the sedimentary units.

#### ***Restrictive Structures***

For wells developing water from the sedimentary units, the structural attitude of the water producing formations will very likely affect the production of water. The general area is also known to be crossed by faults which may affect groundwater occurrence and movement.

#### ***Recharge Areas***

Groundwater recharge occurs from percolation of precipitation, seepage from streams, and subsurface flow from adjacent areas and formations. Groundwater movement is indicated to generally reflect the surface drainage (Ellis 1992).

#### ***Groundwater Level Trends***

Hydrographs for six wells provided by SLVWD (2000) show water levels from 1981 to 2000 to be relatively constant but with a slight water level rise during the wet period of 1995 to 2000.

#### ***Groundwater Storage***

No information on groundwater storage in the basin was found.

### **Groundwater Budget (Type C)**

Information, specific to the basin, is insufficient due to the extent of the water bearing formations that provide groundwater outside of the basin area. Pumping records from SLVWD indicate that, on average, their agency pumped approximately 900 af per year from 1994 to 2000 (SLVWD 2000).

### **Groundwater Quality**

**Characterization.** The primary ions in the groundwater in and around the basin are calcium and bicarbonate (Muir 1981). The range of TDS in six wells used by SLVWD was reported at 69 to 400mg/L (SLVWD 2000).

**Impairments.** Iron and manganese are reported at objectionable levels on a seasonal basis in several wells used by SLVWD (Ellis 1992 and SLVWD 2000).

### **Well Production Characteristics**

| <b>Well yields (gal/min)</b> |                           |                           |
|------------------------------|---------------------------|---------------------------|
| Municipal/Irrigation         | Range: less than 50 – 825 | Average: 244 (six wells)  |
| <b>Total depths (ft)</b>     |                           |                           |
| Domestic                     | Range: varies greatly     | Average:                  |
| Municipal/Irrigation         | Range: 130 - 325          | Average: 245 (nine wells) |

### **Active Monitoring Data**

| <b>Agency</b>                                 | <b>Parameter</b>            | <b>Number of wells /measurement frequency</b> |
|---|-----------------------------|---|
| San Lorenzo Valley Water District             | Groundwater levels          | 6 Monthly                                     |
| San Lorenzo Valley Water District             | Miscellaneous water quality | Varies  |
| Department of Health Services and cooperators | Title 22 water quality      | 2   |

### **Basin Management**

|                         |  |
|-------------------------|--|
| Groundwater management: | None   |
| Water agencies          |  |
| Public                  | San Lorenzo Valley Water District                                |
| Private                 | American Waters, (formerly Citizens Utilities Co. of California) |

## References Cited

- California Department of Water Resources, San Joaquin District. Well completion report files.
- Ellis, William C. 1992. *Review and Assessment of Older District Wells with Appended Well Data*. Consultants Report to SLVWD. September 1992.
- \_\_\_\_\_. 1993. *Update Review of District Wells and 1992-93 Winter Recharge Indications*. Consultants Report to SLVWD. June 15, 1993.
- Jennings, C.W. and Burnett, J.L. (compilers). 1960. San Francisco Sheet of *Geologic Map of California*. California Division of Mines and Geology (CDMG). Scale 1:250,000.
- Muir, K.S. 1981. Assessment of the Santa Margarita Sandstone as a Source of Drinking Water for the Scotts Valley Area, Santa Cruz, County, California. Menlo Park: U.S. Geological Survey Water Resources Investigations 81-6. 22p.
- San Lorenzo Valley Water District (SLVWD). 2000. Unpublished water quality, water level, and pumping data supplied by district.
- Todd Engineers. 1996. Scotts Valley Groundwater Management Plan (AB 3030), 1995-1996 Annual Report. Scotts Valley Water District. 43p.

## Errata

Changes made to the basin description will be noted here.