



- EXPLANATION**
- ALLUVIUM
  - COLLUVIUM AND WEATHERED CRYSTALLINE ROCKS— Generally covered by a thin layer of alluvium
  - CRYSTALLINE ROCKS— Generally covered by a thin layer of alluvium and colluvium near stream channels
  - CONTACT
  - BOUNDARY OF GROUND-WATER BASIN
  - 6F7 ● OPERATIONAL WELL AND NUMBER—Includes domestic and agricultural wells
  - 11P1 ○ ABANDONED WELL AND NUMBER
  - 30J4 ○ U.S. GEOLOGICAL SURVEY OBSERVATION WELL AND NUMBER
  - 12Q2 ● SPRING AND NUMBER
  - ▲ U.S. GEOLOGICAL SURVEY STREAM-GAGING STATION AND NUMBER— Solid symbol is active and open symbol is destroyed

**WELL-NUMBERING SYSTEM**

Wells are numbered according to their location in the rectangular system for subdivision of public land. For example, in well number 10S/3W-11L3, that part of the number preceding the slash indicates the township (T. 10 S.); the number and letter following the slash indicate the range (R. 3 W.); the number following the hyphen indicates the section (sec. 11); the letter following the section number (L) indicates the 40-acre subdivision of the section; and the final digit (3) is a serial number for wells in each 40-acre subdivision. Township and range are given along the margins of the maps so that wells are identified using only the section, 40-acre subdivision, and serial number for wells in the subdivision. All wells in this report are numbered from the San Bernardino base line and meridian.

D	C	B	A
E	F	G	H
M	L	K	J
N	P	Q	R

**WELL LOCATIONS**

The purpose of this report is to provide information on ground-water conditions in the Bonsall area of the San Luis Rey River valley, San Diego County, Calif. This report consists of five maps and was prepared by the U.S. Geological Survey as part of a larger cooperative study with the Rainbow Municipal Water District.

The Bonsall area (State hydrologic unit number 2-3.A2, California Department of Water Resources, 1964) contains part of the San Luis Rey River valley alluvial aquifer (basin 9-7, California Department of Water Resources, 1975). The study area extends from the stream gage at Monserate Narrows in the east to the destroyed stream gage at the narrows near Bonsall in the west. The total area extent of alluvial deposits is 4,300 acres. An additional 1,200 acres of colluvium and weathered crystalline rocks are exposed on slopes surrounding the alluvial deposits. The total drainage area between the stream gage at Monserate Narrows and the destroyed gage at the narrows near Bonsall is approximately 140 mi<sup>2</sup>.

In November 1983, 84 wells and 1 spring were inventoried by U.S. Geological Survey personnel. Of these wells, 37 were operational and 47 were abandoned. Ten additional wells were drilled by the U.S. Geological Survey for this study.

**REFERENCES**

California Department of Water Resources, 1964, Map of location of hydrologic boundaries, San Diego drainage province.

1975, California's ground water: Bulletin 118, 135 p.

Base from San Diego County Department of Public Works, Mapping Section, 1:24,000



Geology modified from Moyle, W.R., Jr., 1971, Water wells in the San Luis Rey River valley area, San Diego County, California: California Department of Water Resources Bulletin 91-18, 347 p.

For additional information write to:  
District Chief  
U. S. Geological Survey  
Federal Building, Room W-2235  
2800 Cottage Way  
Sacramento, CA 95825

Copies of this map may be purchased from:  
Open-File Services Section  
Western Distribution Branch  
U. S. Geological Survey  
Box 25425, Federal Center  
Denver, CO 80225  
(Telephone: (303) 236-7476)

**WELL LOCATIONS**

**MAPS OF THE BONSAALL AREA OF THE SAN LUIS REY RIVER VALLEY, SAN DIEGO COUNTY, CALIFORNIA**

**SHOWING GEOLOGY, HYDROLOGY, AND GROUND-WATER QUALITY**

BY  
JOHN A. IZBICKI  
1985



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