

Subsurface outflow. --Subsurface, or ground-water, outflow occurs from the southeastern part of Spring Valley principally through the carbonate rocks of the Snake Range to Hamlin Valley. (See discussions of occurrence, movement, and recharge.) Based on an average water-level gradient in the alluvium east of well 8/68-14a1 of about 20 feet per mile (fig. 5), an approximate flow width of 4 miles, and an assumed coefficient of transmissibility of the alluvium of 50,000 gpd per foot, the estimated outflow is roughly 4,000 acre-feet per year. This quantity agrees reasonably well with the estimated recharge of 3,500 acre-feet per year for the area south of the ground-water divide in Spring Valley (pl. 1 and fig. 5).

Eastward movement of ground water from other parts of Spring Valley has not been identified, although carbonate rocks, which are moderately permeable, occur throughout most of the Snake Range.

Discharge from wells. --A few wells are pumped in Spring Valley but only a small amount of the available ground water is utilized. Though stock and domestic wells are numerous, their combined discharge is small, probably not exceeding 200 acre-feet per year. About 10 irrigation wells are used in the valley; their use is limited to years when streamflow is insufficient to satisfy the needs for irrigation. In 1963 and 1964 the wells generally were not used because of adequate snowmelt feeding the creeks. At the time the field work for this report was being done, in July and August 1964, only one irrigation well (13/67-31a1) was being pumped to irrigate about 130 acres of grain. The pumpage estimate for the season was 300 acre-feet. The irrigation of this acreage is entirely dependent on the well because no surface-water supply is available. In 1963, well 12/67-12d3 at the Kirkeby Ranch reportedly pumped about 180 acre-feet of water. The two irrigation wells on the Robison Ranch (T. 18 N., R. 66 E.) have not been used since 1962. No pumpage data are available for irrigation wells in the valley prior to 1962.

Flowing wells discharge an estimated 700 acre-feet of ground water per year. Some of this discharge is used for domestic and stock-watering purposes; however, most of it supports meadow grass and rabbitbrush or percolates back to the water table. The discharge of these wells, like that of the springs, is included in the estimated average annual discharge by the phreatophytes and bare soil.

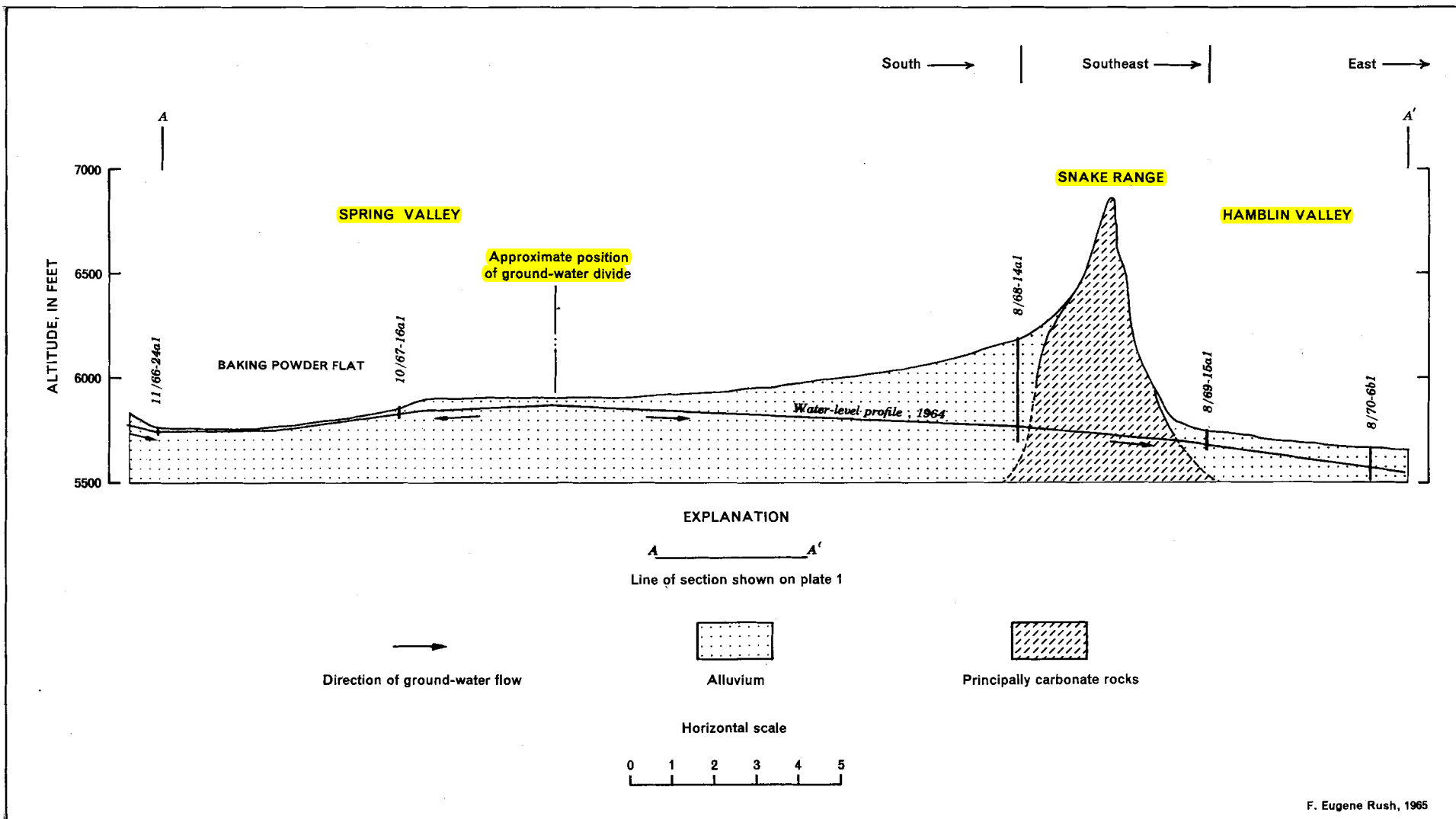


Figure 5.— Cross section of southeastern Spring Valley showing the general topography, water table, and direction of ground-water flow