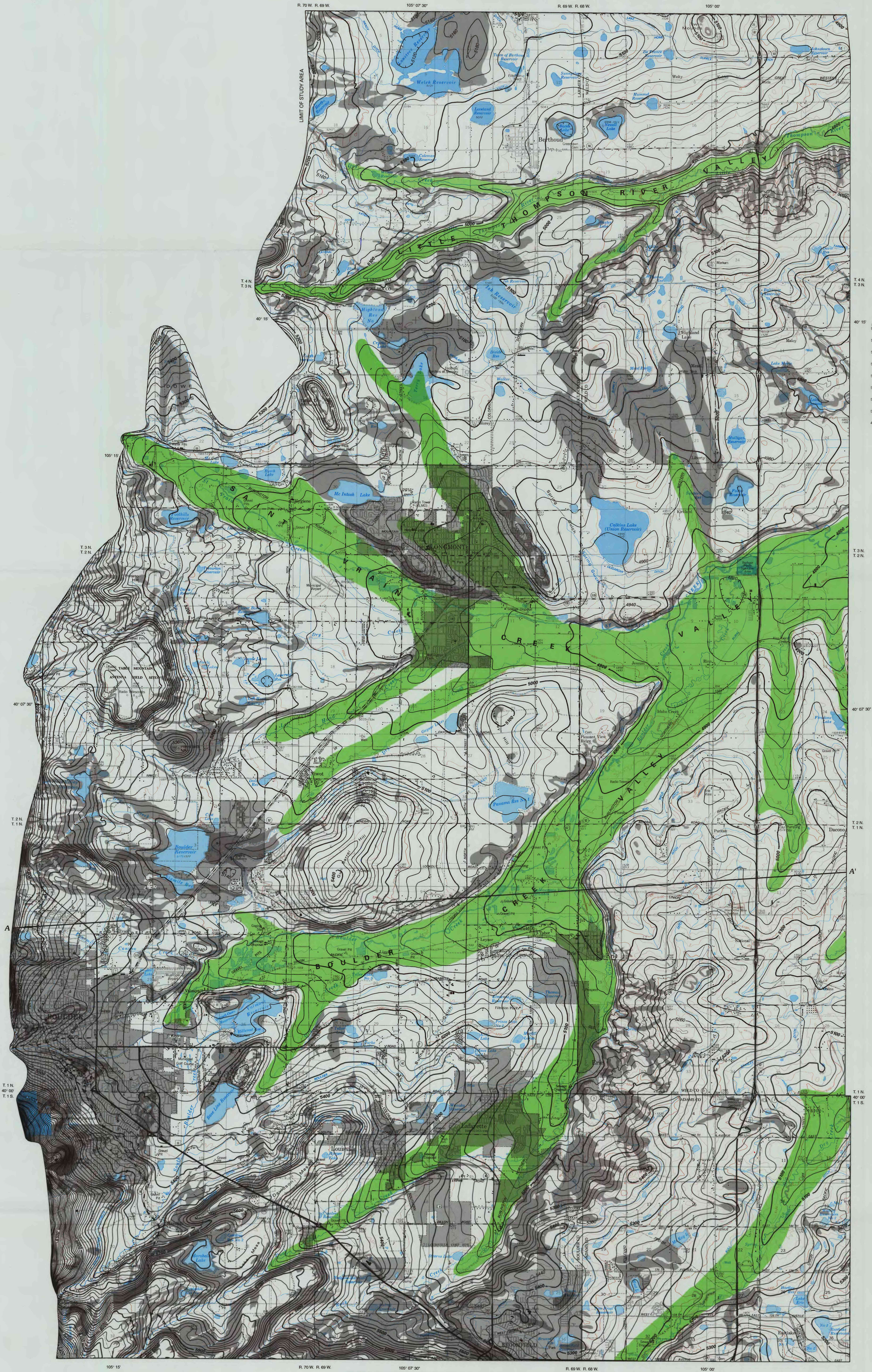




EXPLANATION

- Bedrock outcrop
- Approximate alignment of principal valleys in bedrock surface
- Bedrock-surface contour—Shows approximate altitude of bedrock surface. Contour interval 20 feet. Thickness indicates depression features. Datum is sea level
- Line of geologic section

Altitude and Configuration of the Bedrock Surface

The map of the altitude of the bedrock surface (fig. 4) was computed by the geographic information system as the difference between the maps of the altitude of the land surface and the thickness of the unconsolidated sediments. Land-surface altitude was defined by digital coverages (digital representations of a map), which were smoothed to produce a generalized land-surface coverage that has a resolution commensurate with the thickness coverage. The geographic information system was used to subtract the thickness coverage (fig. 3) from the smoothed land-surface coverage and to plot the resulting map of the altitude of the bedrock surface (fig. 4). Figure 4 is a smoothed surface and does not show small-scale features present in the bedrock surface. Thus, in areas where the unconsolidated sediments are thin, the altitude of a smoothed bedrock contour might be slightly above or below the altitude of a corresponding unsmoothed land-surface contour shown on the base map. These small discrepancies are beyond the intended resolution of figure 4.

The altitude and configuration of the bedrock surface are similar to that of the land surface because the unconsolidated sediments are relatively thin throughout the study area. The geologic section (fig. 5) shows the similarity of the land and bedrock surfaces along a line extending from north of Boulder to south of Dacono (fig. 4). The thick sediments along the South Platte River valley (Robson and others, 2000) thin westward up the valleys of the numerous small tributaries in the Boulder-Longmont study area.

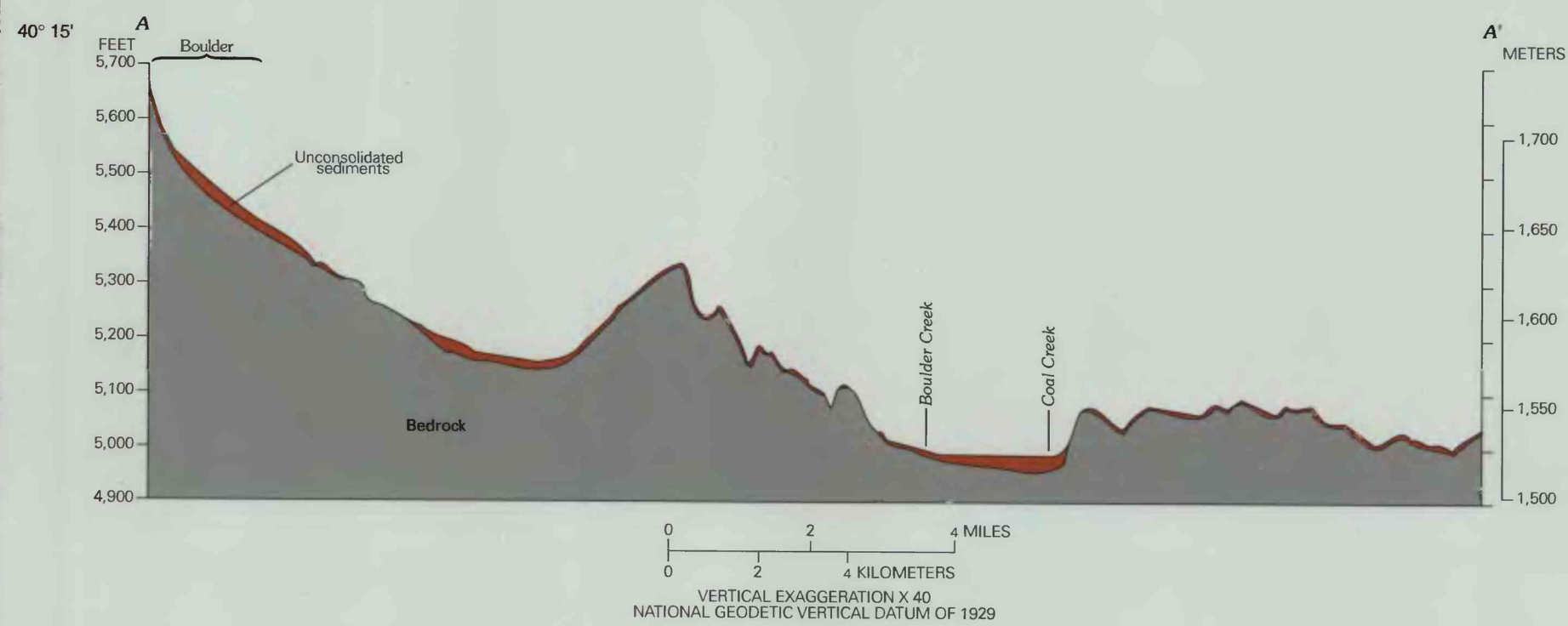
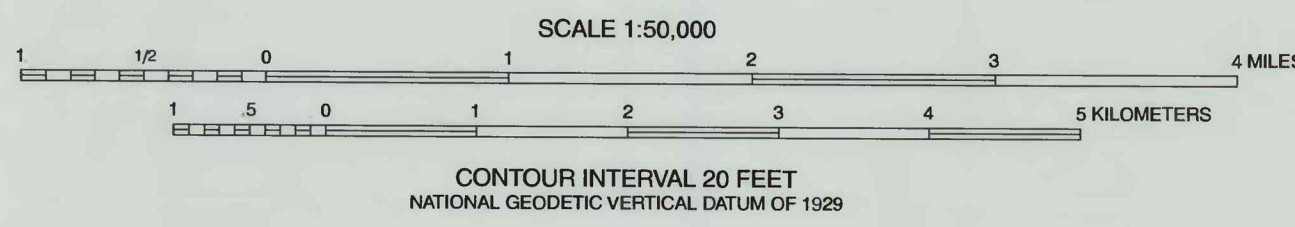


FIGURE 5—Geologic section.

FIGURE 4—Altitude and configuration of the bedrock surface.



GEOHYDROLOGY OF THE SHALLOW AQUIFERS IN THE BOULDER-LONGMONT AREA, COLORADO

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2000