

R 72 W R 71 W

EXPLANATION

- NO STREAM PRESENT
- STREAMS
- Drainageway--0.0 TO 3.8 mi
 - Short ephemeral stream--3.9 TO 11.4 mi
 - Intermediate ephemeral stream--11.5 TO 19.0 mi
 - Long ephemeral to short perennial stream--
Greater than 19 mi
- RESERVOIRS
- Impoundment--Less than 2 hectares

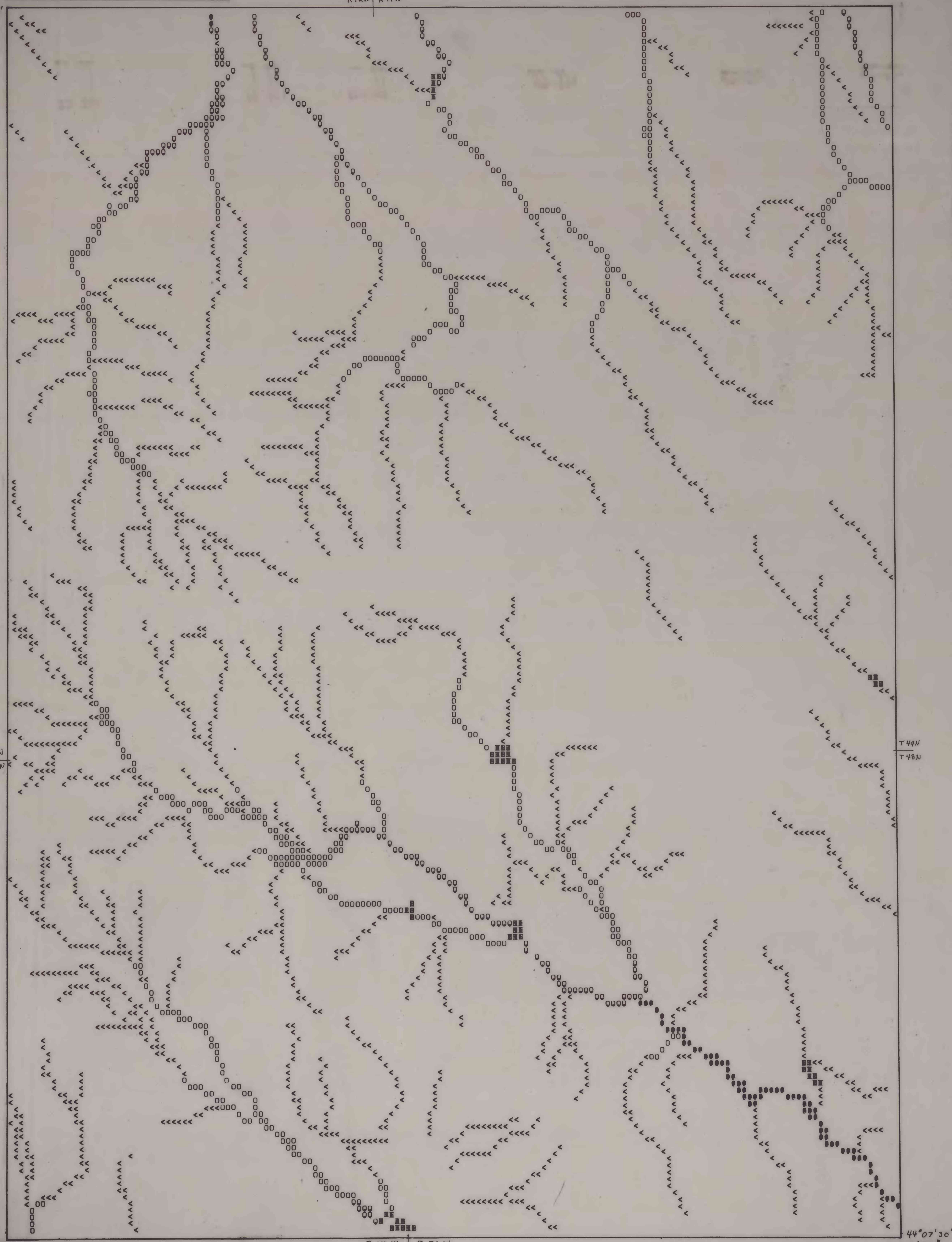
Surface-water quantity.--The lengths of natural stream channels and reservoirs were classified and used as simple indexes of estimated long-term potential availability of surface water in a land parcel. Stream lengths were measured cumulatively downstream on the topographic map. Lengths were divided into classes that approximate the lengths of natural branches of the stream network. All streams are ephemeral, meaning that they flow only in direct response to precipitation or melting snow and are not fed by springs. Numerous small man-made reservoirs and the stream channels themselves trap and temporarily store runoff water from spring and summer rainfall; it is assumed that a small reservoir could be constructed across a stream channel within each parcel crossed by the channel. Although the rainfall and runoff are highly variable in this region (Craig and Rankl, 1978), they are important sources of water to livestock and wildlife. Many small reservoirs are needed to provide reliable water supplies (National Resource Committee, 1936, p. 353). Most of the discontinuous lines shown on this map are stream channels that end at closed depressions. Shallow ephemeral ponds commonly form in the depressions during periods of highest rainfall, (April, May, and June).

In planning for future uses of the land, it is useful to know that the likelihood of trapping stream runoff and the amount of runoff increase with length of stream channel upstream; large watersheds are more likely than small watersheds to intercept rainfall from scattered storms (Latham, 1976, p. 21). Channel length and watershed area are positively correlated and the likelihood of streamflow increases with increase in watershed area. Because length is easier to measure on the map than area, channel length was used as the index of the potential for surface-water quantity.

Although the areal distribution of rainfall in this semiarid region varies from year to year, it is reasonable to assume for planning purposes that it approaches a uniform distribution over the quadrangle over the long term of 50 years. Hydrologists often treat areal rainfall as a random phenomenon (Bras and Rodriguez-Iturbe, 1975, p. 1185) that trends toward uniformity with increasing time.

MAPS SHOWING NATURAL RESOURCES
AND EXISTING LAND USE OF THE
GAP QUADRANGLE, CAMPBELL
COUNTY, WYOMING

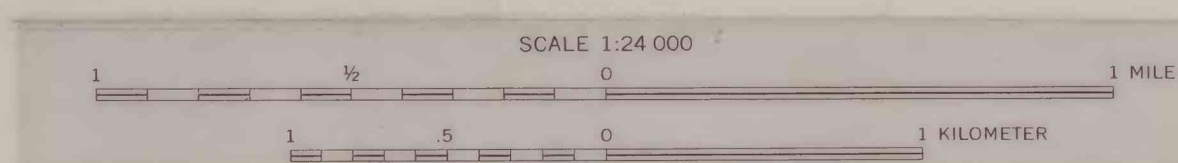
By
David W. Moore
1979



105°30'

R 72 W R 71 W

44°07'30"
105°22'30'



MAP B.-- Surface water quantity