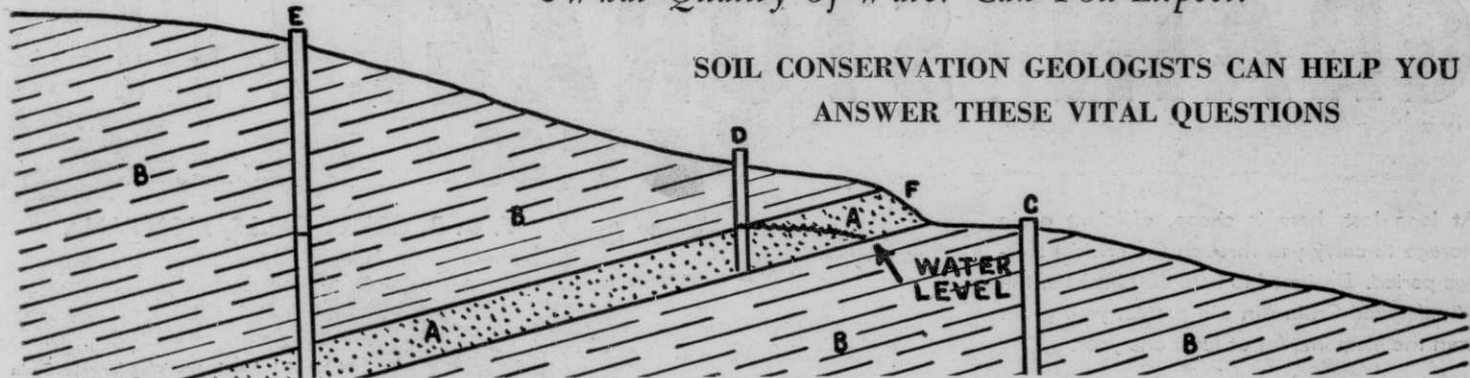


Farmer-Stockman

WELL?

- Can a Successful Well Be Located on Your Place?
- How Deep Would You Have to Drill for One?
- What Quality of Water Can You Expect?



SOIL CONSERVATION GEOLOGISTS CAN HELP YOU
ANSWER THESE VITAL QUESTIONS

This illustration shows one of several conditions that may be present when drilling for water. A. Thick bed of water-bearing sandstone (aquifer). B. Non-water-bearing shale. C. Well in this position would miss aquifer altogether and would be dry unless deeper aquifer would be drilled into. D. Well in this

location would penetrate thin portion of shale and would obtain water from sandstone at shallow depth. E. Well here would have to be considerably deeper than at D to penetrate same aquifer. Water would rise to about same elevation as in well at D. F. Surface outcrop of sandstone.

By DANIEL L. SIMMONS

Geologist, Soil Conservation Service

MUCH of the value of a farm or ranch is in its water supply. For that reason, the presence and distribution of dependable water supplies is one of the first things prospective buyers of agricultural land want to know about.

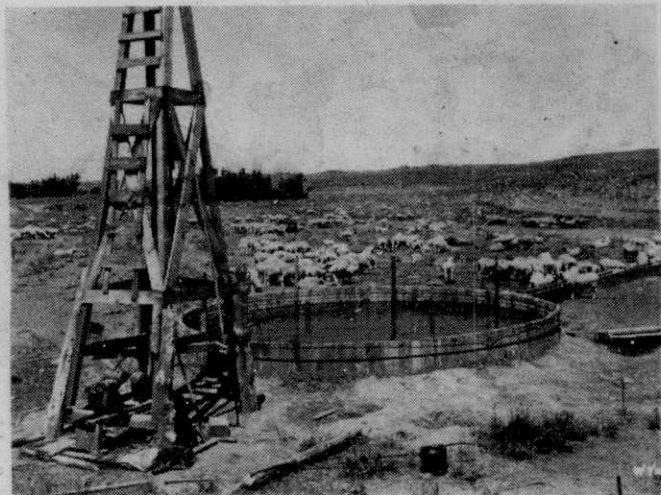
In areas such as Montana, where surface water supplies are restricted and usually far between, groundwater must be drawn on to permit proper utilization of our agricultural resources, particularly our vast grazing areas.

Wells must be drilled and springs developed in order to supply livestock with water. This requirement caused the Soil Conservation Service to furnish geologists, who have special training in the development and usage of groundwater supplies, to several of the western states. Their job is to help co-operators with Soil Conservation Districts—and, in Montana, to state grazing districts that have asked for SCS aid—answer the questions: "Where can I put down a well with the least risk of having a dry hole? How deep will I probably have to drill? What quality of water will I encounter?"

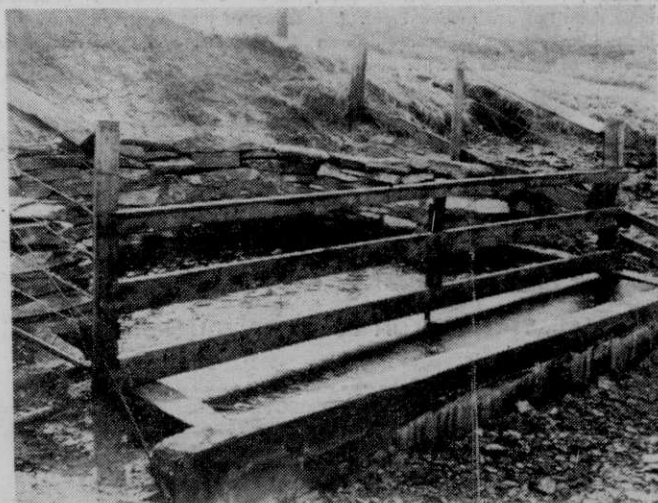
Ground Water Geology

Groundwater geology is the determination of where and at what depth the water-bearing and non-water-bearing beds exist, and the quality of the water. The purpose of the Soil Conservation Service geologists is to give the information about groundwater as it pertains to this particular location. They help the district co-operators interpret available information, and supplement this information with geologic investigations.

Information about groundwater in Montana is rather limited at present, since little, if any, investigative work has been done in the greater part of the state. The U. S. Geologic Survey has completed some groundwater studies and is making more. Otherwise, most geologic work that has been done is concerned primarily with development of oil or mineral resources. Basic information obtained in the oil and mineral surveys is similar to what is needed in groundwater studies, however, and can be interpreted (Please turn to page 32.)



This well is powered with a gasoline engine, which pumps the water into the large capacity wood-stave tanks. Float valves regulate the water level in the troughs from which the sheep drink. (SCS photos)



This is a development where the ground water level is apparently the same as the water level in the drinking place. The drinking place has been built up to the water level, so that there seldom is any overflow, and the bank is held by a rock wall.

This is first section of your Aug. 1 issue. Watch for
Annual Beef Production Section
soon to follow.

COVERS MONTANA AND NORTHERN WYOMING

HISTORICAL SOCIETY
OF MONTANA
HELENA