GENERALIZED GEOLOGIC MAP AND SECTION OF PART OF THE ROSWELL BASIN, NEW MEXICO

SCALE 1:500 000

EXPLANATION

Alburnum
Gravel, sand, and oil averaged about 100 feet thick in Pecos River lowland, but is relatively thin in upland area. Yields large quantities of water to wells in lowland area. Poorly permeable to infiltrating surface water because of calcite in E horizon of soil. Artificial recharge potential good through recharge wells

Boson deposits, dune sand, and other surficial deposits

Alburnum and calcite
This gravel, sand, clays, and calcite in upland area. May include some redeposited material from Ogallala Formation. Not water bearing in area. Artificial recharge potential negligible

Extrusive and intrusive rocks
Extensive rocks, intrusive rocks; Ti. Artificial recharge potential negligible

Conglomerate, sandstone, shale, and shale
Yield small quantities of water to wells. Recharge to these rocks does not reach the Roswell Artesian water

Artesia Formation
Includes rocks equivalent to Bent, Yates, Seven Rivers, Ogallala, and Grayburg Formations. Gravel and sand interbedded with sandstone, shale, and thin beds of dolomite. Supplies water to domestic, stock, and irrigation wells. Artificial recharge potential negligible. Not permeable to infiltration, but por perchlorinate by several feet of alluvium

Queen Formation
Dolomite interbedded with siltstone, sandstone, and gypseous. Yields small quantities of water to small wells in upland area. Not water bearing in outcrop area. Artificial recharge potential negligible. In areas of recharge, a large part, moves from the Roswell basin

Grayburg Formation
Thickly interbedded dolomite interbedded with siltstone and fine-grained sandstone. Principal aquifer for irrigation wells south of Artesia. Artificial recharge potential good in outcrop area. However, water entering the upper aquifer moves eastward from the Roswell basin

San Andres Limestone
Thickly interbedded limestone and dolomite interbedded with minor sandstone and shaly beds in lower part. Yields large quantities of water to irrigation wells in principal aquifer in the Roswell-Artesian area. Artificial recharge potential poor in the western part where water table is low. Water-quality data indicate that, in general, the water table is higher in the eastern part, where water table is higher than the erosional relief. This area not considered in study

Preliminary report on water resources of New Mexico

Placer deposits, placer deposits, placer deposits, placer deposits

Preliminary report on water resources of New Mexico

Youso Formation
Arable and gypseous interbedded with sandstone, siltstone, and thin beds of dolomite. Wells that penetrate the Youso formation usually yield small quantities of water. Artificial recharge potential good in outcrop area. Artificial recharge potential in the Youso formations through the San Andres Formation

Contact
Depletion of mountainous or valley line
Fault
Depletion where approximate
Structural zone
A zone in which joints, faults, or folds are more closely spaced or parallel trend
Pisometric surface
Quoted where position is doubtful

United States Department of the Interior
Geological Survey

Base by Army Map Service, 1968.

Geology modified by W. J. M. from Oakes and Bachman (1958)

INTERIOR—GEOLICAL SURVEY, WASHINGTON, D.C., 1964—WO 941472