

Table 2.--Description of Permian rocks cropping out in western Oklahoma.
(Geologic names as used on the U.S. Geological Survey Geologic map of Oklahoma, 1954)

Subdivision	Approximate thickness (feet)	Description		Salt water
		General lithology	Salt	
Quartermaster formation	Southwestern Oklahoma (Beckham and Washita Counties), 350.	Upper 190 feet is composed chiefly of reddish-brown, fine-grained and medium-grained sandstone, and some coarse-grained sandstone and discontinuous beds of siltstone. Lower part consists of brownish-red shale and thin beds of siltstone.	None known.	None known.
Cloud Chief formation	Southwestern Oklahoma (Beckham and Washita Counties), 430.	Red, very fine-grained, gypsiferous sandstone and thin interbedded, silty shale, and thin, irregular beds of gypsum, anhydrite, and dolomite near the top and bottom.	None known.	May contain salt water in some localities.
Whitehorse group	Northwestern Oklahoma (Harper County), 200. Southwestern Oklahoma (Beckham County), 390.	Northwestern Oklahoma: red sandstone, siltstone, and shale, and thin irregular beds of gypsum and dolomite. Southwestern Oklahoma: dominately pink and red, shaly, silty fine-grained sandstone, and a few irregular thin beds of gypsum and dolomite.	None known.	Contains salt water locally.
Dog Creek shale	Northwestern Oklahoma (Woodward County), 100. Southwestern Oklahoma (Beckham County), 80.	Dominately red, brown, and green silty, blocky shale and thin dolomite. Locally shale is dolomitic and sandy.	Contains small amount of salt in parts of southwestern Oklahoma and in the Panhandle.	Probably contains salt water locally, especially where deeply buried.
Blaine gypsum	Northwestern Oklahoma (Woodward County), 90. Southwestern Oklahoma (Beckham County), 140.	Massive, white beds of gypsum interbedded with red and gray gypsiferous shale. Dolomite beds underlie the gypsum beds locally. In some localities gypsum makes up 70 percent of the total thickness.	Blaine County and parts of northwestern Oklahoma.	Contains salt water in several areas. Salt springs issue from the formation in southwestern Beckham County and southern Jackson County.
Flowerpot shale	Northwestern Oklahoma (Woodward County), 200. Southwestern Oklahoma (Beckham County), 160.	Red, brown, and maroon, silty, blocky, gypsiferous shale characterized by intersecting veins of satin spar and selenite crystals.	Salt occurs in many places in northwestern and southwestern Oklahoma including the Panhandle. Salt is within 70 feet of the surface locally in Woods County; within 100 feet in southern Woods County, and within 200 feet in northern Harmon County.	Salt water is widespread. Salt springs issue from the formation in several localities in northwestern and southwestern Oklahoma.
Hennessey shale	Central-northern Oklahoma, 300-600. Central-western Oklahoma (Canadian County), 850.	Yellowish-gray, buff, and red blocky shale and a few thin, fine-grained, calcareous sandstones. Includes the Cedar Hills sandstone ^{member} in northern Oklahoma which is composed of red, fine-grained sandstone.	Probably contains a small amount of salt locally in northwestern Oklahoma.	Probably contains salt water in parts of northwestern Oklahoma.
Garber sandstone	Central-northern Oklahoma (Grant County?) and southwestern Oklahoma (Caddo County), 600.	Predominately reddish-brown shale, and red to brown and light-gray siltstone, and very fine to fine-grained sandstone.	Contains a small amount of salt in central-western Oklahoma where it is deeply buried.	Contains salt water in many places.
Wellington formation	Northwestern Oklahoma (Alfalfa County), 1,100.	Northwestern Oklahoma: light-gray anhydrite with gray shale in the lower part. The rocks become more shaly southward. Contains thick beds of halite in the subsurface.	Massive beds of salt occur in much of northwestern Oklahoma.	Salt water is found locally, and may be widespread.
Wichita formation (southwestern Oklahoma)	Not determined but may exceed 1,500 feet locally.	Equivalent to the Garber sandstone and Wellington formation. Near the Wichita Mountains it includes the Post Oak conglomerate member and other beds. Generally red-brown shale, siltstone, sandstone, impure limestone, and anhydrite.	The well logs studied showed stringers of salt locally.	Contains salt water in many places.