North Park			
Geologic Period	**Phase**	**Stratigraphic Unit**	**Hydrogeologic Unit**
Quaternary	Modern	Alluvium and outwash deposits	Alluvial Aquifer
	Glaciation	Glacial deposits	Glacial deposits
		Older stream and outwash terrace deposits	Local perched aquifer
Neogene	Extension	North Park Formation	North Park Aquifer
Paleogene	Transition	Rabit Ears Volcanics	Volcanics
		White River Formation	White River confining unit
	Laramide	Coalmont Formation	Coalmont Aquifer
Cretaceous	Interior Seaway	Pierre Shale	Pierre Confining unit
		Niobrara Formation	
		Benton Group	
		Dakota Sandstone	Dakota Aquifer
Jurassic	Mesozoic Sandstones	Morrison Formation	Morrison confining unit
		Sundance Formation	Entrada-Sundance Aquifer
Triassic		Chugwater Formation	Chugwater Aquifer
Permian		No strata	
Pennsylvanian	Ancestral Rocky Mountains		
Mississippian	Paleozoic Carbonates		
Devonian			
Silurian			
Ordovician			
Cambrian			
Precambrian	Precambrian	Crystalline rocks of igneous and metamorphic origin in mountainous region	Crystalline bedrock

Table 12a-06-01. North Park stratigraphic chart.

North Park

Geologic Period	Phase	Stratigraphic Unit	Unit Thickness (ft)	Physical Characteristics	Hydrogeologic Unit	Hydrologic Characteristics
Quaternary	Modern	Alluvium and outwash deposits		Well to poorly-sorted, uncemented sands, silts and gravels along modern streams and as valley-fill	Alluvial Aquifer	
	Glaciation	Glacial deposits		Unstratified sand, gravel, and silt within, and at the mouths of, mountain valleys	Glacial deposits	
		Older stream and outwash terrace deposits		Well to poorly-sorted, uncemented sands, silts and gravels on bedrock-cored terraces above modern streams	Local perched aquifer	
Neogene	Extension	North Park Formation	0-1,800	Poorly consolidated tuffaceous sandstone, conglomerate, and siltstone with claystone and volcanic ash; volcanic flows and tuff breccia	North Park Aquifer	Breccia, sandstone, conglomerate, and ash yield water to springs, but few wells completed in these rocks
Paleogene	Transition	Rabit Ears Volcanics	0 - 1,500	Interbeded tuff, tuff breccia and volcanic breccia interlayered with flows of intermediate composition	Volcanics	
		White River Formation		Continental lakebed deposit	White River confining unit	
	Laramide	Coalmont Formation	6,500	Conglomerate, sandstone, siltstone, and shale with some coal; poorly to moderately consolidated; predominately shale in central part of basin	Coalmont Aquifer	Large yields of potable water can be expected from poorly consolidated coarse-grained sandstone and conglomerate; will have limited well yield where shale predominates; water quality degrades with depth of aquifer
Cretaceous	Interior Seaway	Pierre Shale	3,000-4,500	Dark green and black shale	Pierre Confining unit	
		Niobrara Formation	400-900	Dark calcareous shale with thin bedded limestone		
		Benton Group	500-650	Shale, sandy shale, sandstone and thin limestone		
		Dakota Sandstone	150->300	Sandstone, conglomerate and interbedded shale	Dakota Aquifer	
Jurassic	Mesozoic Sandstones	Morrison Formation	400-500	Shale and marlstone, thin limestone and some sandstone	Morrison confining unit	
		Sundance Formation	100-150	Sandstone with some siltstone and limestone	Entrada-Sundance Aquifer	
Triassic		Chugwater Formation	600-800	Silty shale and sandstone	Chugwater Aquifer	Sandstone may be aquifer where fractured
Permian	Ancestral Rocky Mountains	No strata				
Pennsylvanian						
Mississippian	Paleozoic Carbonates					
Devonian						
Silurian						
Ordovician						
Cambrian						
Precambrian	Precambrian	Crystalline rocks of igneous and metamorphic origin in mountainous region			Crystalline bedrock	

Table 12a-06-02. North Park stratigraphic chart, detailed. Colorado Geological Survey ON-010 Colorado Groundwater Atlas.

Sources: Shaw (1957); Tweto (1957); Voegeli (1965); Kinney and Hail (1970); Madole (1991); Robson and Graham (1996); Glover and others (1998); Apodaca and Bails (1999); Streufert and others (1999); Cole and others (2010); Raynolds and Hagadorn (2018)