Middle 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	Grouse Mountain Basalt	Volcanics
		Troublesome Formation	Troublesome Aquifer
Paleogene	Transition	Rabit Ears Volcanics	Volcanics
		White River Formation	White River Aquifer
	Laramide	Middle Park Formation: Middle Park Formation	Middle Park Aquifer
		Middle Park Formation: Windy Gap Volcanic Member	Volcanics
Cretaceous	Interior Seaway	Pierre Shale	Pierre confining unit
		Niobrara Formation	
		Benton Group	
		Dakota Sandstone	Dakota Aquifer
Jurassic	Mesozoic Sandstones	Morrison Formation	Morrison Aquifer
Triassic		No strata	
Permian			
Pennsylvanian	Ancestral Rocky Mountains		
Mississippian	Stable		
Devonian			
Silurian			
Ordovician			
Cambrian			
Precambrian	Precambrian	Crystalline rocks of igneous and metamorphic origin in mountainous region	Crystalline bedrock

Table 12a-06-02. Middle Park stratigraphic chart.

Middle 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	Grouse Mountain Basalt			Basalt flow caprock	Volcanics	
		Troublesome Formation		0-1,000	Tuffaceous siltstone, fine-grained sandstone, glass shards, weathered ash, and conglomerate	Troublesome Aquifer	Unconfined aquifer where tuffaceous siltstone is absent, confined where siltstone is present
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 Aquifer	Limited aquifer
	Laramide	Middle Park Formation	Middle Park Formation	2,500-5,000	Sandstone, conglomerate and shale	Middle Park Aquifer	
			Windy Gap Volcanic Member	0-700	Gray volcanic breccia, conglomearte and andesitic flows	Volcanics	
Cretaceous	Interior Seaway	Pierre Shale		200-5,000	Dark-gray to brown shale, sandstone 1,500 feet above base	Pierre confining unit	Sandstone and limestone beds might yield limited water
		Niobrara Formation		400-500	Calcareous shale and limestone		
		Benton Group		0->300	Calcareous shale and limestone		
		Dakota Sandstone		140-400	Lower sandstone, local basal conglomerate, middle shale, and upper sandstone	Dakota Aquifer	
Jurassic	Mesozoic Sandstones	Morrison Formation		25-400	Variegated clay shale and mudstone, sandstone at base and top	Morrison Aquifer	Limited aquifer
Triassic		No strata					
Permian							
Pennsylvanian	Ancestral Rocky Mountains						
Mississippian	Stable						
Devonian							
Silurian							
Ordovician							
Cambrian							
Precambrian	Precambrian	Crystalline rocks of igneous and metamorphic origin in mountainous region				Crystalline bedrock	

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

Sources: Tweto (1957); Voegeli (1965); Izett (1966); Glover and others (1998); Kellogg and others (2008); Cole and Braddock (2009); Cole and others (2010); Raynolds and Hagadorn (2017)