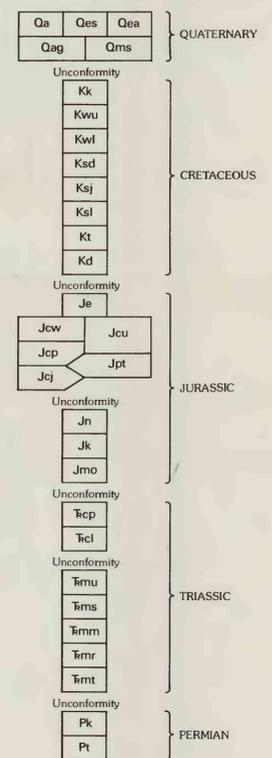


- EXPLANATION OF IDENTIFIED RESOURCES AND MINERAL RESOURCE POTENTIAL**
- Identified subeconomic resource of coal in the Dakota Formation
 - Geologic terrane having high mineral resource potential for sand and gravel, at certainty level C
 - Geologic terrane having moderate mineral resource potential for coal in the Dakota and Straight Cliffs Formations, at certainty level C
 - Geologic terrane having moderate mineral resource potential for coal in the Dakota Formation only, at certainty level C
 - Geologic terrane having moderate energy resource potential for oil and gas, at certainty level C—Applies to all parts of both study areas
 - Geologic terrane having low resource potential, at certainty level C, for geothermal resources and for all metals and nonmetals, except as noted below—Applies specifically to arsenic, gold, copper, manganese, molybdenum, and uranium in the Cockscomb area, does not apply to uranium and gold in the Wahweap area
 - Geologic terrane having low mineral resource potential for uranium and gold, at certainty level B

- Moenkopi Formation (Triassic)—Mostly red mudstone and sandstone:**
- Tmu Upper red member
 - Tms Shabkaib Member
 - Tmm Middle red member
 - Tmr Lower red member
 - Tmt Timpowep Member
 - Pk Kaibab Limestone (Permian)
 - Pt Torowep Formation (Permian)
- Geological Symbols:**
- Contact
 - - - Fault—Dashed where inferred, dotted where covered; bar and ball on downthrown side
 - ↗ Anticline—Showing direction of plunge
 - ↘ Syncline—Showing direction of plunge
 - Shaft
 - Adit
 - x Mine or prospect pit
 - ◇ Oil and gas test hole—Abandoned
 - ⊕ Sample site showing anomalous elements—Values considered anomalous are Ag <0.5 to 7; Ba, 1,500 to 2,000; La, 150 to >2,000; Pb, 700; Sr, 300; Th, <200 and 200
 - Area having clustered anomalous samples—Most stream-sediment samples contain 1,500–2,000 ppm Ba and as much as 300 ppm Sr; heavy-mineral concentrates all contain >10,000 ppm Ba, and some have >10,000 ppm Sr

CORRELATION OF MAP UNITS



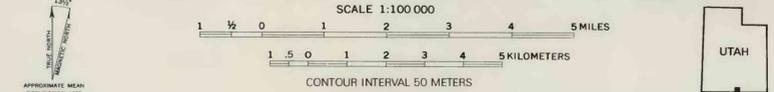
LEVEL OF RESOURCE POTENTIAL	LEVEL OF CERTAINTY			
	A	B	C	D
U/A		H/B	H/C	H/D
POTENTIAL	UNKNOWN	MODERATE	MODERATE	MODERATE
		L/B	L/C	L/D
		LOW	LOW	NO
		POTENTIAL	POTENTIAL	POTENTIAL
				N/D
				NO
				POTENTIAL

- LEVELS OF RESOURCE POTENTIAL**
- H** High mineral resource potential
 - M** Moderate mineral resource potential
 - L** Low mineral resource potential
 - U** Unknown mineral resource potential
 - N** No known mineral resource potential
- LEVELS OF CERTAINTY**
- A** Available data not adequate
 - B** Data indicate geologic environment and suggest level of resource potential
 - C** Data indicate geologic environment, give good indication of level of resource potential, but do not establish activity of resource-forming processes
 - D** Data clearly define geologic environment and level of resource potential and indicate activity of resource-forming processes in all or part of the area
- Diagram showing relationships between levels of mineral resource potential and levels of certainty. Shading shows levels that apply to these study areas

LIST OF MAP UNITS

- Qa Stream sediment (Quaternary)—Unconsolidated alluvium, mostly sand and silt
- Qes Eolian sand (Quaternary)
- Qea Mixed eolian sand and alluvial sand (Quaternary)
- Qag Alluvial gravel (Quaternary)—Includes deposits in streams and on terraces and pediments
- Qms Mass wasting deposits (Quaternary)—Includes colluvium, landslide deposits, and talus
- Kk Kaiparowits Formation (Cretaceous)—Mostly fine and silty sandstone with sparse interbeds of mudstone and rare limestone beds
- Wahweap Formation (Cretaceous)—Mudstone with fine to silty sandstone grading to cliff-forming sandstones:
 - Kwu Upper member
 - Kwl Lower member
- Straight Cliffs Formation (Cretaceous)—Cliff-forming sandstone and mudstone with interlayered carbonaceous shale and coal:
 - Ksd Drip Tank Member
 - Ksj John Henry Member—Contains principal coal-bearing units
 - Ksl Lower member
 - Kt Tropic Shale (Cretaceous)—Soft gray shales with rare thin bentonite beds
 - Kd Dakota Formation (Cretaceous)—Thin-bedded sandstone with lignite to subbituminous coal
- Je Entrada Sandstone (Jurassic)
 - Carmel Formation (Jurassic)—Cliff-forming sandstone, red marine sandstone, limestone, and gypsum beds:
 - Jcw Wiggler Wash Member
 - Jcu Upper member
 - Jcp Paria River Member
 - Jcj Judd Hollow Tongue
 - Jpt Thousand Pockets Tongue of Page Sandstone (Jurassic)
 - Jn Navajo Sandstone (Jurassic)—Massive, cliff-forming sandstone
 - Jk Kayenta Formation (Jurassic)
 - Jmo Moenave Formation (Jurassic)
 - Chinle Formation (Triassic):
 - Tcp Petrified Forest Member—Variegated clay-rich rocks
 - Tcl Shinarump Member—Lenticular sandstone and conglomerate

Base from U.S. Geological Survey Kanab, 1980, and Smoky Mountain, 1985.



Geology modified from Doelling and Davis (1989); Structures from Sargent and Hansen (1982)

GEOLOGY, IDENTIFIED RESOURCES, MINERAL RESOURCE POTENTIAL, DRILL HOLES, AND SELECTED SAMPLE SITES, COCKSCOMB AND WAHWEAP WILDERNESS STUDY AREAS AND VICINITY, KANE COUNTY, UTAH