

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Engineering Geology of Surficial Materials in the
Huntington 30' x 60' Quadrangle, Emery, Carbon,
Grand, and Uintah Counties, Utah


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Open-File Report 85-355

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.


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LIST OF MAP UNITS

Ef	ENGINEERED FILL
Al	ALLUVIAL DEPOSITS
Af	ALLUVIAL FAN DEPOSITS
Col	COLLUVIUM
Rs	RESIDUUM FROM SHALE
Pd	PEDIMENT DEPOSITS
	COAL MINING AREAS
Bx	BEDROCK

DESCRIPTION OF MAP UNITS

- Ef ENGINEERED FILL--Gravel, sand, silt, and clay. Includes compacted fill for buldings, railroads, and highway right-of-ways, and reservoir embankments. Generally 1.5-6 m thick
- A1 ALLUVIAL DEPOSITS--Light- to dark-grayish brown sand, silt, and clay with local interbedded gravel in lower part of the unit. Occurs chiefly along the Price River and its tributaries, and other streams tributary to the Green River. Used for pastures and hayfields. Commonly less than 1.5 m thick in streams and wash beds; as much as 15 m thick along the Price River from the northern quadrangle boundary southward to Woodside and at Green River in the Gunnison Valley
- Af ALLUVIAL-FAN DEPOSITS--Brown to light-brown, poorly sorted sand, silt, and gravel in Horse Canyon fan. Pebbles, cobbles, and small boulders more abundant within 1 km of the canyon mouth and in the central part of the fan than elsewhere. Generally well drained, more permeable than nearby areas underlain by shale, or by residuum derived from shale. A possible source of aggregate and road metal. Commonly 9-15 m thick in central part, thinning to a few meters at the edges and merging imperceptibly with other surficial units at the distal end
- Co1 COLLUVIUM--Gray, dark-gray, brown to light-brown sandy silt and clay. Developed on moderate to gentle slopes; generally transitional downslope to present-day stream deposits. Easily eroded by flash floods and rill wash on slopes greater than 5°. As much as 5 m thick on Buckhorn Flat
- Rs RESIDUUM FROM SHALE--Gray to grayish-brown silty clay, derived from underlying Mancos shale. Contains sodium salts and gypsum which inhibit plant growth. The silty clays undergo hydration and dehydration with changes in humidity and moisture content and the particles of sediment swell and contract which contributes to the weathering process. The mixed-layer clay in the residuum allows only slight penetration of water below the surface and forces much of the precipitation to run off. During heavy rains, the residuum surfaces are impassable to vehicles due to formation of mud on the surface, although the material may be dry a few centimeters below. The surfaces generally dry out within a few hours after a drenching rainstorm
- As an engineering unit, the residuum is considered troublesome because of the moderate to high shrink-swell potential, moderate to high susceptibility to erosion on slopes, low permeability, and high salinity and pH
- Commonly a thin veneer overlying shale. Generally not more than 2 m thick

- Pd PEDIMENT DEPOSITS--Subrounded to subangular crudely bedded pebbles, cobbles, and boulders in a sandy, silty matrix that comprise pediment surfaces cut on Mancos Shale. Some older, nearly planar remnants stand as isolated buttes and mesas as much as 90 m above surrounding lowlands, or as high-level, sloping plains as much as 10 km long and 5 km wide. They are generally well-drained, gently sloping surfaces with few adverse engineering characteristics. The surfaces trend toward ancestral drainage systems from sources in the Book Cliffs and Wasatch Plateau. A possible source of concrete aggregate and road metal. Thickness 2-3 m and as much as 15 m thick near the mountain front
-  COAL MINING AREA--Areas of land surface underlain by known active, inactive and abandoned coal mines. Surface and subsurface effects of underground mining may occur during mining activity, or may not occur until many years after a mine has ceased operations. Some effects of underground coal mining include surface cracking and buckling, differential subsidence, disruption of surface and subsurface waterflow patterns and regimes, venting of noxious gases and uncontrolled underground fires
- Bx BEDROCK--Mudstone, sandstone, coal, and limestone forming cliffs, plateaus, cuestas, and bluffs. More resistant to erosion than the shale units. Although not shown everywhere on the map, the larger valleys of the Book Cliffs and the upland areas are floored by alluvial sand and silt as much as 15 m thick. Gravel remnants as much as 15 m thick occur along the lower slopes of the large canyons and tributaries. Above 2,200 m, thick colluvial material composed of clay, silt, and sand covers the north facing slopes. These alluvial/colluvial units are particularly troublesome, especially where mining operations are present, and where the masses of colluvium and alluvium are made unstable by excavations for roads and other manmade structures