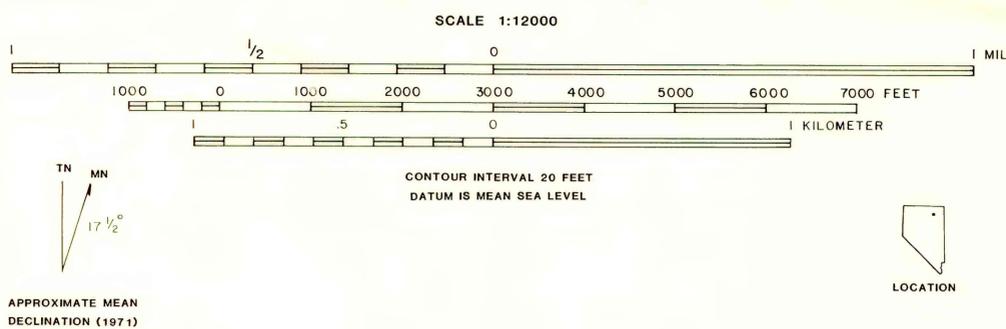
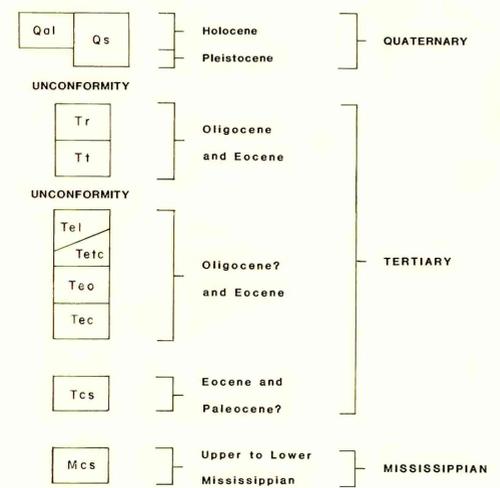


Base modified from US Geological Survey 1:24000 Coal Mine Basin, Coal Mine Canyon SE, The Buttes, 1971; and The Narrows, 1972.

R. 56 E.



CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- Qal** ALLUVIUM (HOLOCENE) -- Silt, sand, and gravel along streams
- Qs** UNDIFFERENTIATED SURFICIAL DEPOSITS (HOLOCENE AND PLEISTOCENE)-- Colluvium and undifferentiated sedimentary and tuffaceous rocks. Thickness several feet to about 20 ft
- Tr** RHYODACITIC IGIMBRITE (OLIGOCENE AND EOCENE)--Light-greenish-gray hornblende biotite rhyodacite; fine to medium grained; devitrified matrix. Forms prominent flat-iron outcrops; locally welded; basal portion of unit weathered to grayish-green; locally weathers into spheroidal knobs up to 10 ft in diameter. Radiometric age date 39.8 ± 0.28 my based on weighted average (Table 1) of a tri-mineral separate from same unit located T. 37 N., R. 56 E., section 11: NE1/4SE1/4SW1/4NE1/4. Thickness about 80 ft
- Tt** TUFF (OLIGOCENE AND EOCENE)--Olive-gray to white unconsolidated tuff; fine-to medium-grained biotite, feldspar and quartz phenocrysts; minor petrified wood fragments and blocks in soil. Thickness about 80 ft
- Elko FORMATION (OLIGOCENE? AND EOCENE)--**Correlative with the Elko Formation of Solomon and others (1979):
 - Limestone and tuffaceous siltstone and claystone member--** Very pale orange to pale-yellowish orange limestone with small planispiral and turbiform gastropods, and ostracodes; zones of fossils have been replaced by calcite. In the upper part of the unit interbedded tuffaceous siltstone weathers white, with a porous chalk-like texture; minor beds of siltstone contain light-greenish-gray indistinct wavy laminae; most beds are not laminated. In the lower part of the unit sandstone is composed of poorly sorted rounded chert grains. Minor grayish-orange conglomerate with subangular to subrounded dark chert clasts to 1 in. in diameter occurs at base of unit. Thickness about 500 ft

- Tetc** Tuffaceous claystone member--Claystone, siltstone, minor paper-thin oil shale and tuff. Very pale-orange claystone and siltstone weathers into platy to flaggy layers. Some beds contain minute broken plant fragments or molds of fingernail clams. Other minor beds emit a faint to fetid petroliferous odor when broken or when dilute HCl is applied to a fresh surface. Most claystone and siltstone beds are calcareous; may be locally cherty. Moderate-brown oil shale weathers paper-thin in beds up to 8 in. thick and locally contains ostracode shells; claystone and siltstone are interbedded. Minor very light-gray to white silicified beds up to 5 ft thick occur near top of member. Thickness about 400 ft
- Teo** Oil-shale member--Paper-thin oil shale, claystone, siltstone, minor limestone and minor calcite. Moderate-brown oil shale with minute indistinct wavy laminae that locally weather paper-thin into beds up to 3 ft thick. Oil shale locally contains ostracodes, fish bones and minute plant fragments. Pale-yellowish-brown interbedded claystone and siltstone locally contain wavy, minute, indistinct subparallel laminae and several beds emit a faint petroliferous odor when dilute HCl is applied to a fresh surface. Minor interbedded limestone, grayish-orange-pink, weathers platy to flaggy and contains ostracodes and minute plant fragments. Pale-greenish-yellow calcite in beds up to 6 in thick are distinctive of this member as exposed in trench COS-1. Thickness about 100 ft
- Tec** Claystone member--Claystone, siltstone, oil shale, lignite, and minor limestone, sandstone, and conglomerate. The upper portion of this unit is composed of weathered, very pale-orange interbedded claystone and siltstone; beds locally contain ostracodes and minute plant fragments. Claystone in lower half of unit is generally dark-brown and weathers to light-gray; interbedded with minor beds of lignite. Dark-yellowish-brown oil shale contains minute indistinct wavy laminae, weathers paper-thin; locally interbedded with claystone and siltstone. Minor beds of oil shale contain minute wavy laminae with abundant whole leaves and plant fragments parallel to bedding. Many oil shale beds are intercalated with white tuffaceous material and weather flaggy to 6 in. thick. Moderate-brown lignite weathers pale-brown and contains carbonized plant fragments; some beds contain thin charcoal beds less than 1/4 in. thick. Grayish-orange limestone weathers to very light-gray; locally contains ostracodes, fish bones; several beds emit a strong petroliferous odor from freshly broken surfaces. At the base of the unit, conglomerate weathers medium-light-gray and consists of light to dark-gray chert-pebbles to 2 in. in diameter. Minor medium-gray sandstone weathers to very light-gray and is composed of coarse-grained subrounded dark chert clasts. Thickness about 230 ft
- Tcs** CONGLOMERATE AND SANDSTONE (EOCENE AND PALEOCENE?)--Very light-gray to medium-gray conglomerate composed of chert and quartzite clasts that range from pebbles to boulders in size. The conglomerate is locally interbedded with sandstone composed of chert and quartz grains. This unit is generally characterized by poor sorting with minor localized graded bedding, and a lack of fossils. Reddish to yellowish-brown variegated soils are associated with this unit. This unit is correlative with the conglomerate and sandstone unit in the Pinon Range described by Smith and Ketner (1976), and the conglomerate and sandstone unit in the Elko area described by Solomon and others (1979). Thickness about 280 ft
- Mcs** CHAINMAN FORMATION (UPPER AND LOWER MISSISSIPPIAN):
 - Sandstone and conglomerate unit--**Very light-gray to light-gray sandstone composed of fine-to coarse-grained quartz and chert grains; sorting in sandstone ranges from poorly sorted to locally well-sorted; fine parallel laminations are commonly visible on weathered surfaces. Conglomerate lenses are composed of poorly sorted chert and quartz grains. Weathered rock is dusky red to dark red. Exposures are generally poor with best exposures along ridges. Bedding trends are indicated by subparallel vegetation patterns that grow along weathered, less resistant interbeds of siltstone and shale. Ketner (1975) informally named this unit the lower member of the Chainman Formation and estimated the thickness to be at least 5,000 ft

REFERENCES

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EXPLANATION OF MAP SYMBOLS

- CONTACT--Dashed where approximately located; dotted where concealed
- FAULT--Bar on downthrown side; dashed where approximately located; dotted where concealed
- FAULT--Inferred from lineament on aerial photographs
- 70 / 25 STRIKE AND DIP OF BEDDING
- 80 / 30 STRIKE AND DIP OF BEDDING--Uncertain
- TRENCH COS-1
- x PROSPECT
- DUMP
- BORROW PIT

Factors for converting U.S. customary units to SI metric units

To convert from	To	Multiply by
Foot (ft)	Meter (m)	0.3048

This report has not been edited for conformity with US Geological Survey editorial standards or stratigraphic nomenclature.

GEOLOGY OF COAL MINE CANYON, ADOBE RANGE, ELKO COUNTY, NEVADA

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1983

