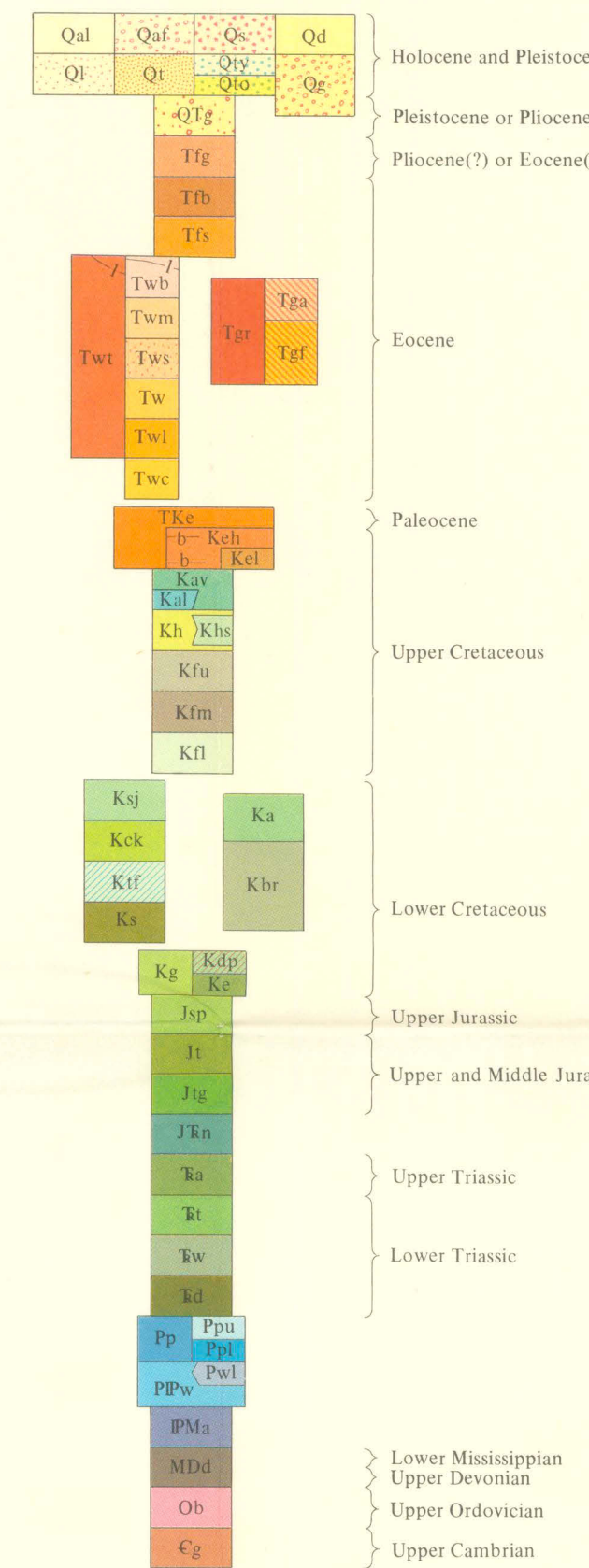


CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- STREAM DEPOSITS (HOLOCENE AND PLEISTOCENE) – Gravel, sand, silt, and clay, poorly sorted, unconsolidated
Channel and flood-plain deposits along streams
- ALLUVIUM AND COLLUVIUM IN TRIBUTARY VALLEYS AND ALLUVIAL FANS
- LANDSLIDE DEPOSITS (HOLOCENE AND PLEISTOCENE) – Large hummocky masses of downfold rock, principally Wasatch Formation; includes slump blocks and rockslides
- TALUS AND RUBBLY SLOPE DEPOSITS (HOLOCENE AND PLEISTOCENE) – Rock debris, angular, unconsolidated
- LOESS (HOLOCENE AND PLEISTOCENE) – Silt and fine sand, poorly consolidated
- TERRACE DEPOSITS (HOLOCENE AND PLEISTOCENE) – Gravel, sand, and silt beneath terraces along larger streams
Younger terrace deposits – Topographically lower than Qto
Older terrace deposits – Topographically higher than Qto
- GRAVEL (HOLOCENE AND PLEISTOCENE) – Gravel, rubble, sand, and silt on dissected terraces and pediments; lag concentrates from Tertiary conglomerates and debris transported from Mesozoic units. May be partly older than Quaternary
- HIGH TERRACE DEPOSITS (PLEISTOCENE OR PLEISTOCENE) – Gravel, sand, and clay on straths 250 to 350 feet above Hams Fork
- FOSSILS FORMATION – Light-colored tuffaceous sandstone and siltstone, locally conglomeratic
- Gooseberry Member (Pliocene? or Eocene?) – Indurated conglomerate; pebbles and cobbles of quartzite, limestone, and volcanic rocks in a white silty limestone matrix
- Building Hollow Member (Eocene) – Green and gray to white tuff, moderately tuffaceous sandstone, siltstone, and claystone. Fossil fish quarries are near top of this unit
- Sillem Member (Eocene) – Gray and pale-pinkish-gray siltstone, sandstone, and mudstone; partly tuffaceous; conglomerate interbeds contain cobbles of black conglomeratic quartzite
- GREEN RIVER FORMATION (EOCENE)
- Angelo Member – Bluish-white-weathering calcareous shale, siltstone, and siliceous limestone, laminated tan limestone, and brown algal limestone
- Fossil Butte Member – Buff laminated limestone and marlstone, brown oil-shale, and gray siltstone and claystone. Fossil fish quarries are near top of this unit
- WASATCH FORMATION (EOCENE)
- Tump Member – Diamictic; boulders and blocks in a red mudstone matrix; unsorted; grades into and intergrades with other members of the Wasatch Formation
- 1 – Limestone bed
- Bulpen Member – Red, gray, and green mudstone, tan to brown and gray sandstone, and brown laminated limestone like that in the Green River Formation
- 1 – Limestone bed
- Mudstone tongue – Red and green mudstone, brown sandstone, and thin beds of limestone
- Sandstone tongue – Brown-weathering gray crossbedded sandstone and subordinate amounts of mudstone; tongues into the Fossil Butte Member of the Green River Formation
- Main body – Red, maroon, yellow, and gray variegated mudstone; fine- to coarse-grained brown, yellow, and gray sandstone; lenses and beds of conglomerate containing pebbles and boulders of quartzite, chert, and limestone
- Lower member – Gray, brown, and red mudstone; carbonaceous gray claystone; brown- and yellow-weathering gray sandstone; red conglomerate; brown indurated limestone; and psilolite limestone. Unconformable in places with overlying main body; mapped with the main body in a few places
- Basal conglomerate member – Pebbles, cobbles, and boulders chiefly of Nugget Sandstone in a sandstone matrix derived from the Nugget. Fractured and re-emended in places. May include strata of Paleocene age
- EVANSTON FORMATION:
- Main body in eastern part of mapped area and Evanston Formation undivided in the western part (Paleocene and Upper Cretaceous) – Gray siltstone and sparse red mudstone, carbonaceous claystone, lignite, and sparse coal beds; light-gray quartzitic siltstone, gray carbonaceous sandstone, and dark-brown concretionary ironstone
- Hams Fork Conglomerate Member (Upper Cretaceous) – Boulder-conglomerate beds containing pebbles, cobbles, and boulders of well-rounded quartzite, chert, and limestone; gray to brown crossbedded sandstone; and gray mudstone
- b – Mapped trace of boulder-conglomerate bed

- Kel Lower member (Upper Cretaceous) – Gray to dark-gray mudstone, siltstone, and gray carbonaceous sandstone; only in northeastern part of Kemmerer quadrangle
- Kav ADAMVILLE FORMATION (UPPER CRETACEOUS) – Yellow to brown-weathering gray sandstone, siltstone, and carbonaceous clay. Thin beds of conglomerate in upper part. Numerous workable coal beds in middle and lower parts
- Kal Lazear Sandstone Member – Light-gray to white sandstone and grit; basal part of formation
- Kh HILLIARD SHALE (UPPER CRETACEOUS) – Dark-gray to tan marine claystone, siltstone, and sandy shale; thin beds of light-gray sandstone, grit and bentonite
- Khs Shurtliff Sandstone Member – Near middle of formation; divides bulk of formation (described above) into two parts. Sandstone ledges in upper and lower parts, shale in middle; abundant large oyster shells. Member not recognized south of railroad; thickens northward
- Kfu FRONTIER FORMATION (UPPER CRETACEOUS):
- Upper unit – Hogbacks of tan sandstone; lignitic shale and Kemmerer (No. 1) coal bed. Abundant oyster shells
- Kfm Middle unit – Prominent hogbacks of white to light-gray sandstone in upper half (Oyster Ridge Sandstone Member); tan sandstone, dark shale, and Willow Creek (No. 5) coal bed in lower half
- Kfl Lower unit – Beds of white and brown sandstone, thinner and less resistant than those above; tan siltstone and dark-gray shale; a few thin beds of lignite and of pink, gray, and white porcelaine (sluffed volcanic ash)
- Ksj SAGE JUNCTION FORMATION (LOWER CRETACEOUS) – Light-gray and tan sandy siltstone and shale; tan sandstone and quartzite, fossiliferous; thin beds of grit and red beds in upper part; numerous thin beds of white, gray, green, and pink porcelaine; few beds of brown to gray fossiliferous limestone. Several coal beds in lower part
- Kck COKKIVILLE FORMATION (LOWER CRETACEOUS) – Light-gray and tan fossiliferous sandstone, sandy siltstone, and porcelaine; light- to dark-gray shale; highly fossiliferous tan limestone; calcareous concretions. A few coal beds in upper part
- Ktf THOMAS FORK FORMATION (LOWER CRETACEOUS) – Red and variegated mudstone and sandstone in part shades; brown to gray calcareous nodules
- Kv SMITHS FORMATION (LOWER CRETACEOUS) – Tan quartzitic sandstone predominant in upper part and ferruginous black shale in lower part, but both interbedded throughout the formation
- Ka ASPEN SHALE (LOWER CRETACEOUS) – Light- to dark-gray siltstone and claystone, quartzitic sandstone, and porcelaine. Lower part forms prominent silver-gray hogbacks
- Kbr BEAR RIVER FORMATION (LOWER CRETACEOUS) – Black fissile claystone, resistant fine-grained tan to olive-brown sandstone, and highly fossiliferous limestone. Some layers bentonitic to porcelaine; others heavily iron stained
- Kdp GANNETT GROUP (LOWER CRETACEOUS)
- Upper part – Red sandy mudstone containing discontinuous beds of aphanitic gray or reddish- to purplish-gray limestone (Draney or Peterson Limestone equivalents)
- Ep Ephant Conglomerate – Brick-red sandy mudstone, coarse- to fine-grained red to tan crossbedded sandstone, and massive red conglomerate containing gray to black chert pebbles
- Jsp STUMP SANDSTONE AND PREUSS RED BEDS (UPPER JURASSIC) – Discontinuous thin greenish-gray sandstone and limestone (Stump Sandstone) at top. Dull-reddish- to purplish-gray sandy siltstone and silty claystone; thin beds of red, gray, and tan sandstone (Preuss Red Beds)
- Jt TWIN CREEK LIMESTONE (UPPER AND MIDDLE JURASSIC):
- Upper six members – Thin-bedded sandy argillaceous limestone and calcareous siltstone that weather light gray and yellowish gray and form conspicuous bare slopes, and layers of massive oolitic limestone. A few beds of red calcareous siltstone in lower part, a conspicuous one 40 feet thick about 500 feet above base
- Jtg Gypsum Spring Member – Red calcareous mudstone and light-gray limestone breccia
- Tkn NUGGET SANDSTONE (JURASSIC? AND TRIASSIC?) – Buff to pinkish-tan quartzite and slightly calcareous sandstone; locally crossbedded; massive, fine to medium grained. Forms prominent ridges
- Ta ANKAREH RED BEDS (UPPER TRIASSIC) – Red sandy calcareous mudstone and red, purple, and tan fine-grained quartzite, sandstone, and siltstone. Discontinuous bed of dense red to greenish-gray limestone near middle
- Tt THAYNES LIMESTONE (LOWER TRIASSIC) – Gray sandy and silty limestone and greenish-gray calcareous siltstone. Some calcareous and silty claystone. A few beds of red calcareous mudstone, a persistent one near middle of formation. Upper part contains more limestone and weathers pale yellowish gray; lower part weathers dark brown and has numerous manganese stains
- Tw WOODSIDE RED BEDS (LOWER TRIASSIC) – Nonresistant red siltstone and claystone; a few thin beds of red sandstone and gray limestone
- Td DINWOODY FORMATION (LOWER TRIASSIC) – Thin layers of dull-greenish-gray calcareous siltstone, claystone, and argillaceous sandy limestone; weathers tan or gray
- Pp PHOSPHORIA FORMATION AND EQUIVALENT STRATA (PERMIAN)
- Ppu Upper part – Dark-gray siltstone, thin-bedded black chert and limestone, and a few thin beds of phosphatic rock in upper part; resistant ledges of gray cherty dolomitic limestone and some bedded chert in middle and lower parts
- Ppl Lower part – Nonresistant dark phosphatic siltstone, gray dolomite, and dark cherty siltstone; several beds of phosphate rock and vanadiferous carbonaceous siltstone
- Ppw WELLS FORMATION (PERMIAN AND PENNSYLVANIAN) – Pale-buff to light-gray fine-grained quartzite and sandstone with units of dolomite and limestone
- Pwl Gray limestone (Permian) – Discontinuous; at top of formation. Probably equivalent to Grandeur Member of Park City Formation
- Pma AMSDEN FORMATION (PENNSYLVANIAN AND MISSISSIPPIAN) – Red, gray, and black cherty limestone and limestone breccia; interbeds of red to yellow quartzite and sandstone and red, yellow, and green siltstone and claystone
- Md DARBY FORMATION (LOWER MISSISSIPPIAN AND UPPER DEVONIAN) – Dark-gray, buff- to dark-brown-weathering massive to medium-bedded ferrid dolomite; interbeds of black, yellow, and red sandy calcareous siltstone in upper unit of gray dolomite
- Ob BIGHORN DOLOMITE (UPPER ORDOVICIAN) – Dense massive light- to dark-gray dolomite
- Cg GALLATIN LIMESTONE (UPPER CAMBRIAN) – Yellow- and tan-mottled gray limestone; thin bedded to massive, partly dolomitic

- CONTACT – Dashed where approximately located; dotted where concealed
- HIGH-ANGLE FAULT – Dashed where approximately located; dotted where concealed. U, upthrown side; D, downthrown side
- FAULT SCARP – Showing dip. Dashed where approximately located. Hashures on downthrown side
- TRANSVERSE FAULT – Dashed where approximately located. Arrows show relative horizontal movement
- THRUST FAULT – Dashed where approximately located; dotted where concealed. T on upper plate
- FOLDS – Showing crestline or troughline. Dashed where approximately located; dotted where concealed
- Anticline
- Overturned anticline
- Syncline
- Overturned syncline
- STRIKE AND DIP OF BEDS
- Horizontal
- Inclined
- Vertical
- Overturned
- COAL OR PHOSPHATE MINE, ABANDONED
- PHOSPHATE TRENCH
- PROSPECT PIT
- DRY HOLE – Drilled for oil or gas
- COAL STRIP MINE

GEOLOGIC MAP OF THE SAGE AND KEMMERER 15-MINUTE QUADRANGLES, LINCOLN COUNTY, WYOMING