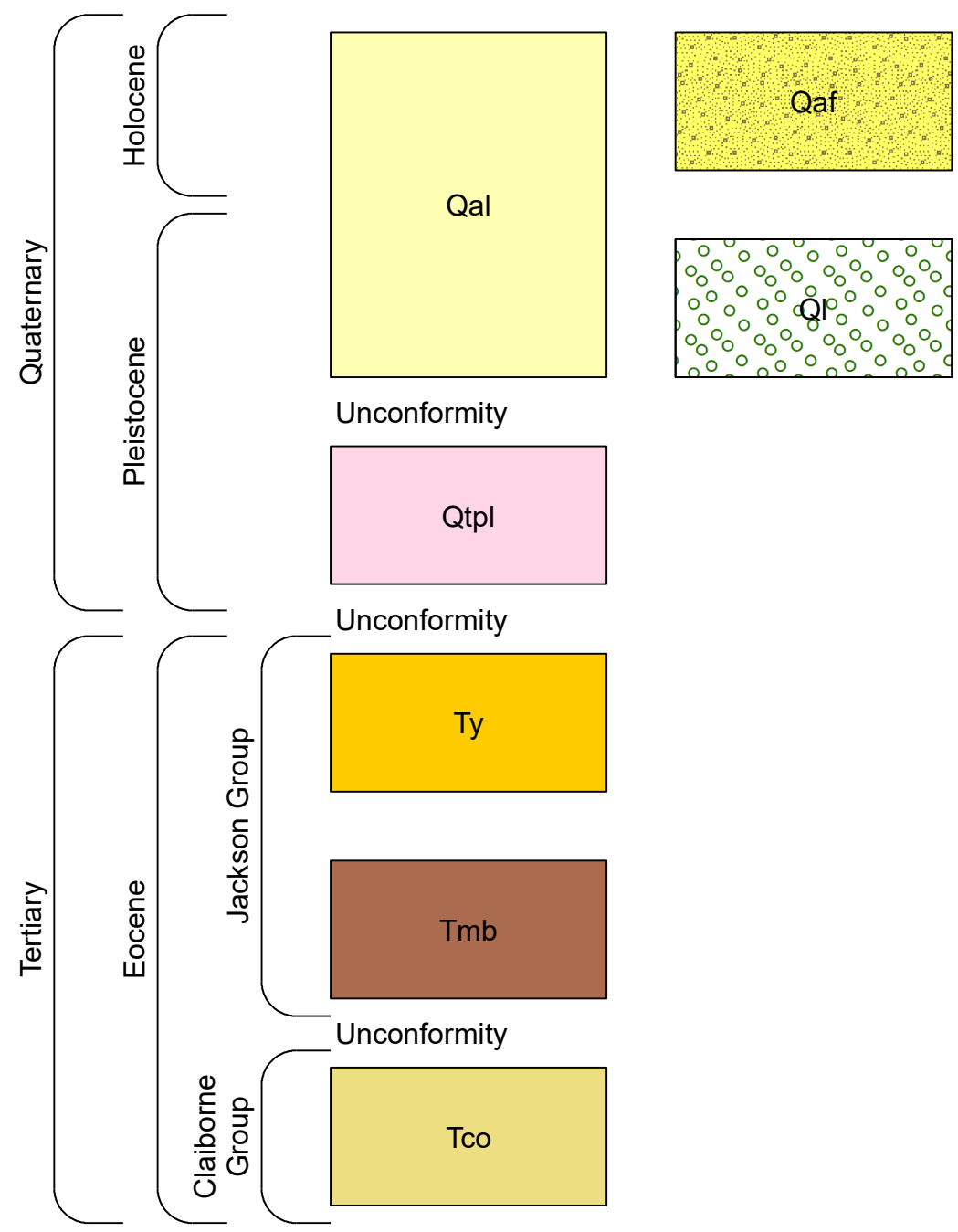


Correlation of Map Units



- V-0058 Drill-hole locality and identification number
- Surface mines
- Contact
- Line of Section
- Tinsley Dome



Bare Earth LIDAR Hillshade for the Tinsley 7.5 Minute Quadrangle.
1:70,000
1 inch = 5,833 feet
1 0.5 0 1 Miles

Descriptions of Map Units

Alluvium

Flood plain sands, silts, gravels, and clays.

Qal



Alluvium derived from the Pre-loess Terrace Deposits and Loess filled valley in Section 14 Township 10N Range 3W.

Alluvial Fans

Alternating silts, sands, and gravels. Coarsest at the apex of the fan, fining laterally (radially) from the apex of the fan.

Qaf



Jonathan Leard standing on the Yazoo Clay in front of an unconformable contact with a vertical Loess bluff in Section 12 Township 10N Range 3W.

Loess

Silt, buff to tan, pale yellow, red, or gray, sandy to clayey, quartzose to feldspathic. Loess is an eolian deposit derived from glacial outwash. Loess is typically calcareous with dolomite and calcite; however, the upper portion of the loess is highly weathered, leached / noncalcareous, very clayey, and has been referred to as "brown loam." Loess deposits unconformably blanket the pre-loess topography with substantial local variations in thickness. In places, weathered loess contains secondary deposits of small calcareous concretions (caliche, loess dolls). The basal few feet of loess grades into the sands and gravels of the Pre-loess terrace deposits. Loess can be locally and sparingly fossiliferous, commonly containing tests or steinkerns of pulmonate gastropods and less commonly containing fossils of Pleistocene vertebrates such as mastodon, tapir, and ground sloths.

Ql



Sioux Quartzite cobble from Pre-loess Terrace Deposits in Section 14 Township 10N Range 3W.

Pre-loess Terrace Deposits

Sand, yellow, orange, purple, red, pink, fine- to coarse-grained, predominantly quartzose, cross-bedded to massive; graveliferous, pea to large cobble size clasts, clasts of sandstone up to boulder size not uncommon. Gravels are predominantly chert with lesser amounts of vein quartz, metaquartzite, agate, sandstone, and rare rhyolite clasts; clay, pink to white, generally occurring as discontinuous lenses and as rip-up clasts (clasts may be boulder size). Conglomeratic ironstone ledges are common in the graveliferous sands at the base of the deposits, which overlies the Cockfield Formation unconformably. Head-of-hollow, terrace-derived valley fill deposits are common at lower elevations and are isolated to valley walls. These small deposits are of such limited extent as not to warrant representation on this map.

Qpl



William Pettis with an ice-raffed chert boulder from Pre-loess Terrace Deposits in Section 7 Township 10N Range 2W.

Yazoo Formation (Yazoo Clay)

Clay, calcareous, montmorillonitic, and blue-green color unweathered, marine shell hash common along partings; weathers tan to yellowish-brown with caliche common. Locally fossiliferous: containing beds of the oyster *Pycnodonte trigonalis* and vertebrate remains of the archaeocete whales *Zygorhiza kochii* and *Basilosaurus cetoides*. Selenite locally along joints where clay is framboidally pyritiferous.

Ty



Mammut americanum (American Mastodon) partial lower jaw and molar from the alluvium of Thompson Creek, specimen courtesy of William Pettis.

Moody's Branch Formation

Sandy fossiliferous marl containing an abundance of marine invertebrates typically, *Glycymeris* and *Venericardia* shells. Conformably grades into the overlying Yazoo Formation. Outcrops along the active stream channel of Perry Creek along the border of the north half of Section 13 and 14 and Thompson Creek in the Southeastern 1/4 of Section 12 Township 10 North 3 West due to the influence of Tinsley Dome.

Tmb



James Starnes chiseling a pedestal of Yazoo Clay containing the partial skeleton of an archaeocete whale, *Zygorhiza kochii* in Section 14 Township 10N Range 3W.

Cockfield Formation

Clay, brown, reddish-brown to grey in color; silty to fine-sandy; strongly carbonaceous to lignitic, slightly micaceous, pyritic. Carbonized and silicified plant fossils common. Underlies the Moody's Branch Formation unconformably. Outcrops along the active stream channel of Perry Creek just north of the border of the center of Section 13 and 14 Township 10 North 3 West near the apex of the influence of Tinsley Dome.

Tco



Ice-raffed specimen of the Carboniferous Age fossil *Lepidodendron* in sandstone from the Pre-loess Terrace Deposits, collected near Tinsley by Jeff McCraw.



Exposure of the unconformable contact between the Moody's Branch and Cockfield formations, along Perry Creek in Section 13 Township 10N Range 3W.

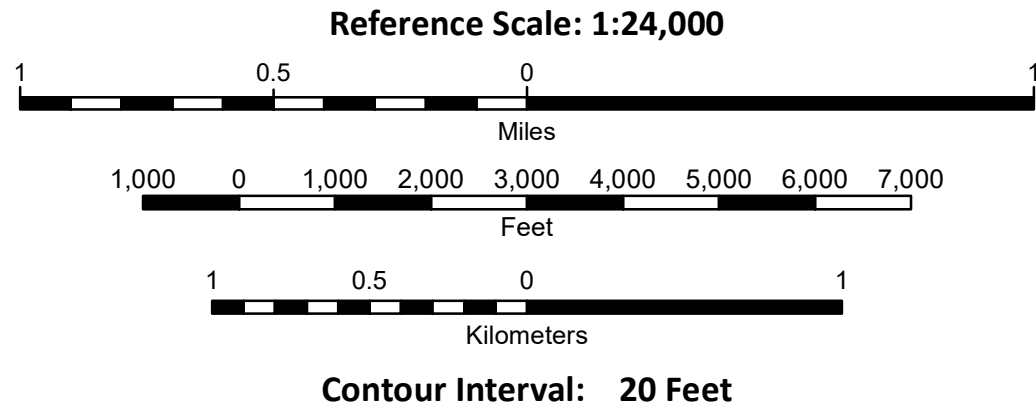


Moody's Branch matrix clast containing mollusk shells of the genus *Glycymeris* and *Venericardia* found as float in Perry Creek in Section 14 Township 10N Range 3W.



Jonathan Leard pointing out the conformable contact between the Moody's Branch Formation and Yazoo Formation in Section 12 Township 10N Range 3W.

Base Map produced by the Mississippi Geological Survey
Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere; Datum: WGS 1984; Units: Meter
Declination: January 01, 2021, magnetic north declination in quadrangle center is 1°4' West of true north, changing by 0°16' West per year.
User: Mississippi Department of Environmental Quality (MDEQ), U.S. Army Corps of Engineers (USACE), United States Geological Survey (USGS), National Resources Conservation Service(NRCS), Federal Emergency Management Agency(FEMA), National Oceanic and Atmospheric Administration(NOAA), National Park Service (NPS), and Tennessee Valley Authority (TVA). Project span 2005-2017.
Hydrography: Lidar derived; National Hydrography Dataset (NHD) 2020
Contours: Lidar derived
Roads: Mississippi Department of Transportation (MDOT) 2018
PSS Boundaries: Mississippi Automated Resource Information System (MARIS) 2020
Building Footprints: Microsoft 2019
Surface Mines: MDEQ Office of Geology, Mining and Reclamation Division
Basefiles: MDEQ Office of Geology - Environmental Geology Division



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Geologic maps are only a guide to current understanding and do not eliminate the need for detailed investigations of specific sites for specific purposes. The views and conclusions contained in this Open-File Report are those of the geologists and should not be interpreted as representing the official policies, either expressed or implied, of the State of Mississippi or of the United States Government.

GEOLOGIC MAP of the TINSLEY QUADRANGLE

Yazoo County, Mississippi

2021

Geology by

James E. Starnes, RPG

and Jonathan N. Leard, GIT

