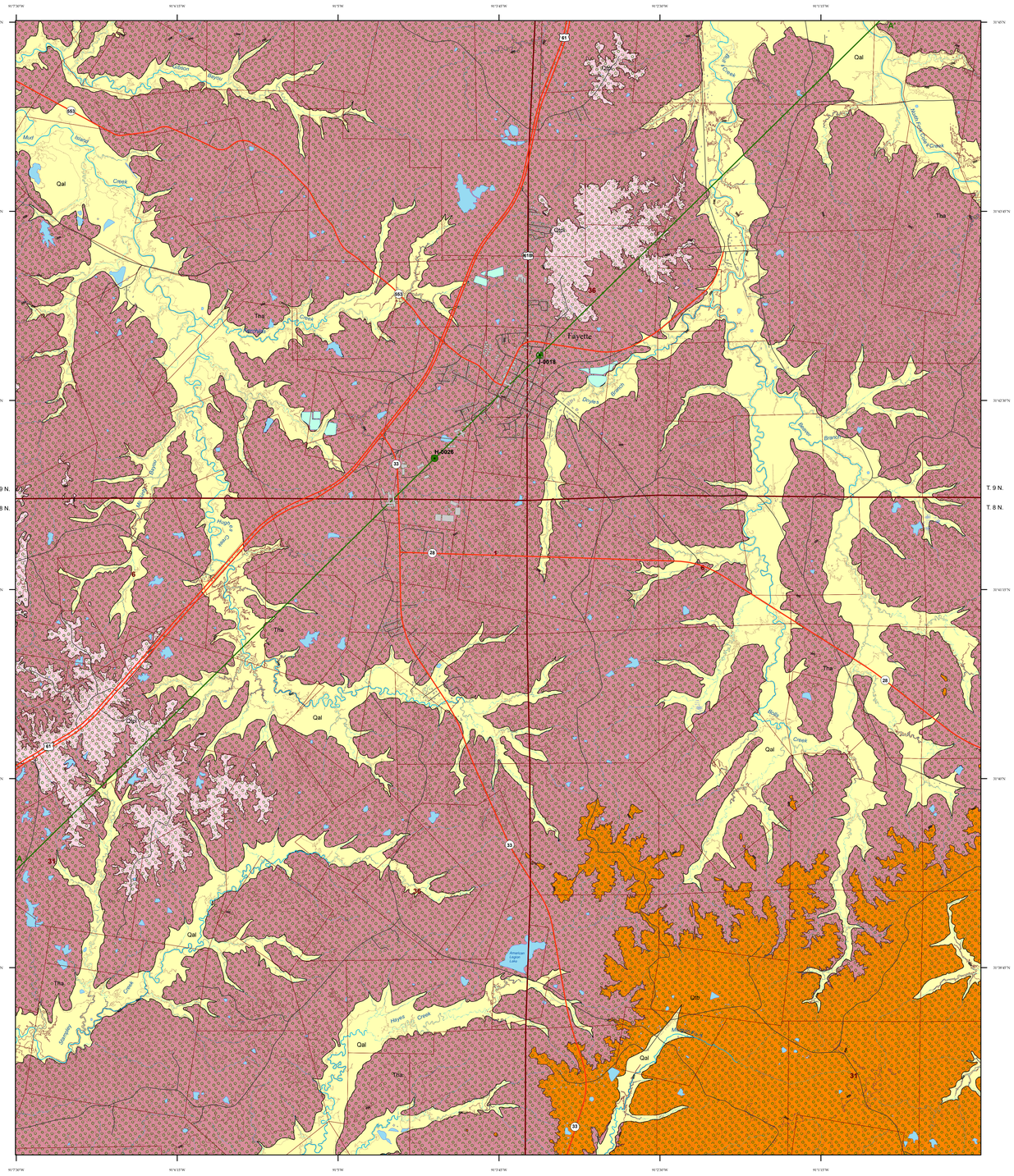
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF GEOLOGY SURFACE MAPPING DIVISION
MISSISSIPPI GEOLOGICAL SURVEY

Prepared in cooperation with
THE UNITED STATES GEOLOGICAL SURVEY
NATIONAL GEOLOGIC MAPPING PROGRAM

GEOLOGIC MAP OF THE 7.5-MINUTE FAYETTE QUADRANGLE
OPEN-FILE REPORT 297



R. 1 E. R. 2 E.

Reference Scale: 1:24,000

1 0.5 0 1 Miles
1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet
1 0.5 0 1 Kilometers

Contour Interval: 20 Feet

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: June 01 2020, magnetic north declination in quadrangle center is 0°32' West of true north, changing by 0°6' west per year.
Lidar: Mississippi Department of Environmental Quality (MDEQ), U.S. Army Corps of Engineers (USACE), United States Geological Survey (USGS), Natural 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
PLSS Boundaries: Mississippi Automated Resource Information System (MARIS) 2020
Building Footprints: Microsoft 2019
Surface Mines: MDEQ Office of Geology - Mining and Reclamation Division
Boreholes: MDEQ Office of Geology - Environmental Geology Division

GEOLOGIC MAP of the FAYETTE QUADRANGLE
Jefferson County, Mississippi

2020

Geology by

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This geologic map was funded in part by the U.S. Geological Survey, National Cooperative Geologic Mapping Program, under STATEMAP award number G19AC00234.

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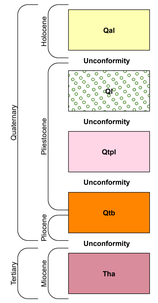
MDEQ-GEOLOGY Drillers: Archie Mckenzie and Trey Magee
MDEQ-GEOLOGY Geophysical Logging: Andrew Newcomb and Paul Parrish

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.

Adjoining 7.5' Quadrangles

Rodney	Lorman	Red Lick
Church Hill	Fayette	Gin Branch
Cranfield	Rosie	Kirby

Correlation of Map Units



H-0026 Drill-hole locality and identification number

Unconformable Contact

A — A' Line of Section

Bare Earth Hillshade derived from NRCS/MDEQ/3DEP 2016 2017 : South West Mississippi project

1:60,000
1 inch = 5,000 feet

0 0.5 1 2 Miles

Descriptions of Map Units

ALLUVIUM
Qal

Sand, medium- to brownish-white, very fine- to very coarse-grained, subrounded to rounded, predominately quartzose, silty, clayey; commonly contains organic matter; heavily loess derived with occurrences of gravels eroded from terrace deposits.

LOESS

Silty, buff to tan, pale yellow, red, gray-green where in anoxic conditions; 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, clayey, and has been referred to as “brown loam.” Loess deposits unconformably blanket the Pre-loess topography with substantial local variation in thickness. In places, weathered loess contains secondary deposits of small calcareous concretions of caliche locally referred to as loess dolls. Loess can be locally and sparingly fossiliferous, commonly containing tests of steinkerns of pulmonate gastropods and less commonly containing fossils of Pleistocene Vertebrates.

PRE- LOESS TERRACE DEPOSITS
Qtpl

Ancestral Mississippi River terrace deposit. Sand, yellow, orange, purple, red, pink, fine- to coarse-grained, predominantly quartzose, cross-bedded to massive; graveliferous, pea to large cobble sized clasts; clasts of sandstone up to boulder size not uncommon. Gravels are predominately 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 up to boulder size. Conglomeratic ironstone ledges are common in the graveliferous sands at the base of the deposits, which overlies the Hattiesburg Formation unconformably. The heavily eroded terrace is perched approximately 300 feet above MSL in elevation.

BROOKHAVEN TERRACE
Qtb

Ancestral Tennessee-Ohio River System terrace deposit. Sand, yellow, orange, purple red, pink, fine- to coarse-grained, predominantly quartzose, cross--bedded to massive; graveliferous, pea to cobble size (no more than 3 inches) predominately chert with lesser amounts of vein quartz, metaquartzite, agate, and sandstone; clay pink to white, generally occurring as discontinuous lenses in the upper portions and as rip-up clasts in basal portions. Conglomeratic ironstone ledges are common in the graveliferous sands at the base of the formation, which overlies the Hattiesburg Formation unconformably. At approximately 500 feet MSL, the formation fines to a brown to reddish-brown silt loam that often contains a hardpan which consists of a mineralized horizon of iron-manganese buckshot nodules.

HATTIESBURG FORMATION
Tha

Clay, green, gray, brown, weathers white to brown, silty to sandy, locally lignitic; sand, gray, pale yellow to white, fine-to coarse-grained, cross-bedded to massive with rare thinly bedded pea gravels (gravels consist of black chert and milky quartz, are highly polished, sub-angular to well rounded), often indurated to sandstones and siltstones at surface, predominantly quartzose with lesser amounts of chert, metaquartzite, mica, and heavy minerals, slightly glauconitic in places, silicified and coalified wood common. The base of the Hattiesburg Formation is designated at the base of a sand unit of regional extent that occurs at the approximate horizon of the base of the Fleming Formation in Louisiana and the middle-Miocene Amos Sand in Alabama.