MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

OFFICE OF GEOLOGY

OPEN-FILE REPORT 216

GEOLOGIC MAP

of the

YOKENA QUADRANGLE

Warren and Claiborne Counties, Mississippi, Madison Parish, Louisiana

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2007

DESCRIPTION OF MAP UNITS

HOLOCENE

ALLUVIUM

Qal — Flood plain sands, silts, gravels, and clays.

ALLUVIAL FANS

Qaf — Alternating silts, sands, and gravels. Coarsest at the apex of the fan, fining laterally (radially) from the apex of the fan. May interfinger with neighboring fans and river alluvium.

QUATERNARY — PLEISTOCENE

LOESS

Silt, buff to tan, pale yellow, red, or gray, sandy to clayey, quartzose to feldspathic. 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 is an eolian deposit derived from glacial outwash. 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 grade into the sands and gravels of the Pre-loess terrace deposits. Loess can be locally sparingly fossiliferous, commonly containing tests or steinkerns of pulmonate gastropods and less commonly containing fossils of Pleistocene vertebrates.

PRE- LOESS TERRACE DEPOSITS

Qt — Sand, yellow, orange, purple, red, pink, fine- to coarse-grained, predominantly quartzose, cross-bedded to massive; graveliferous, pea to large-cobble size clasts (boulder clasts also common in basal gravels), clasts of sandstone up to boulder size not uncommon. Gravels are predominantly chert with lesser amounts of vein quartz, metaquartzite, agate, sandstone, rare rhyolite and arkose 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 overlie the Catahoula Formation unconformably.

TERTIARY — MIOCENE

CATAHOULA FORMATION

Tca — Clay, green, gray, brown, weathers white to brown exhibiting a "popcorn" appearance, silty to sandy, lignite common in basal clays. Sand, gray, pale-yellow to white, fine- to coarse-grained, cross-bedded to massive, often indurated to sandstones at the surface, sands are predominantly quartzose with lesser amounts of chert, metaquartzite, mica, and heavy minerals, slightly glauconitic in places, silicified wood and fossil palm common.

R - 3 — Drill-hole locality and identification number

GEOLOGIC MAP

YOKENA QUADRANGLE

Warren and Claiborne Counties, Mississippi, Madison Parish, Louisiana

N W E S

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

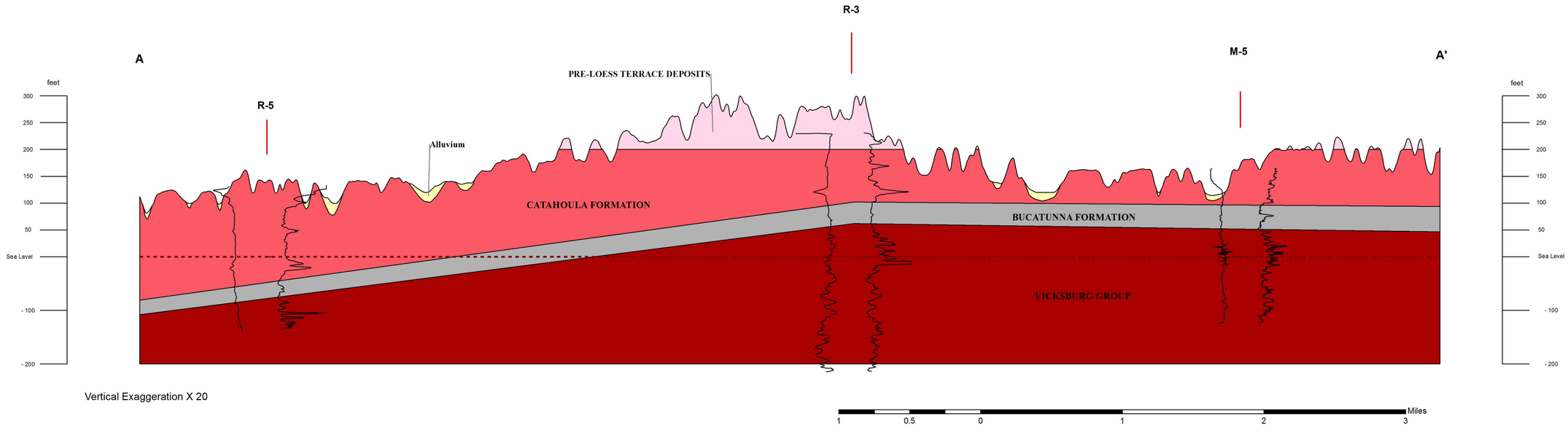
Geology field checked in 2007 using the 1963, photoinspected 1973, U.S. Geological Survey 7.5-minute topographic quadrangle, 1927 North American datum, contour interval 20 feet. Universal Transverse Mercator projection. 1983 North American datum. GRS80 spheroid. 1000-meter Universal Transverse Mercator grid ticks, zone 15; 1983 datum shown in red.

January 2007, magnetic north declination in quadrangle center is 0°46' east of true north. Declination, National Oceanic and Atmospheric Administration (NOAA).

Geographic Information System by Daniel W. Morse. MDEQ does not warrant the accuracy or completeness of the source data. Geologic maps are only a guide to current understanding and do not eliminate the need for detailed investigations of specific sites for specific purposes.

This map was produced by the Mississippi Office of Geology in cooperation with the United States Geological Survey, National Geologic Mapping Program, under STATEMAP grant #06HQAG0022.

Structural Cross-Section of the Yokena 7.5 Minute Geologic Quadrangle



Vertical Exaggeration X 20