**Explanation**

- Grand Gulf Site
- Hal — Holocene alluvium
- Hmm1 — Mississippi River meander belts: Area of channel deposition related to lateral migration of past and present river
- Hf — Holocene alluvial fan
- Hb — Holocene backswamp areas of overbank deposition not directly affected by meandering channels
- Ht — Holocene terrace surface (~ 120' elevation)
- $Pt_3$ — Pleistocene terrace surface (~140' elevation)
- $Pt_2$ — Pleistocene terrace surface (~160' elevation)
- $Pt_1$ — Pleistocene terrace surface (~180' elevation)
- Pu — Upland Complex: Fluvial deposits from both glacial and non-glacial sources. Stippled pattern indicates surficial loess deposits.

N

0 1 2 miles

0 1 2 3 kilometers

Scale

Notes:
Geology in Mississippi Alluvial Valley modified from:
Saucier, R.T., and Snead, J.I., 1989, Quaternary Geology of the Lower Mississippi Valley, Louisiana Geological Survey, Published by the Geological Society of America, Inc.

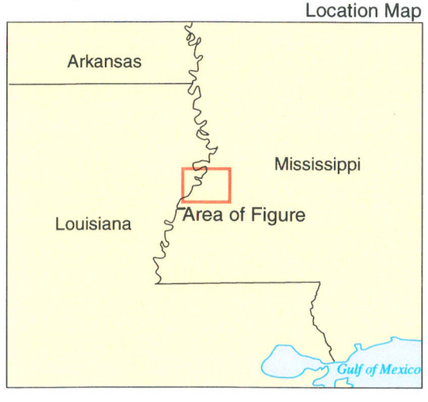
Geology in Loess Hills Province from topographic interpretation of USGS 7.5 minute quadrangles (St. Joseph, Widdows Creek, Willows, Port Gibson, and Grand Gulf)

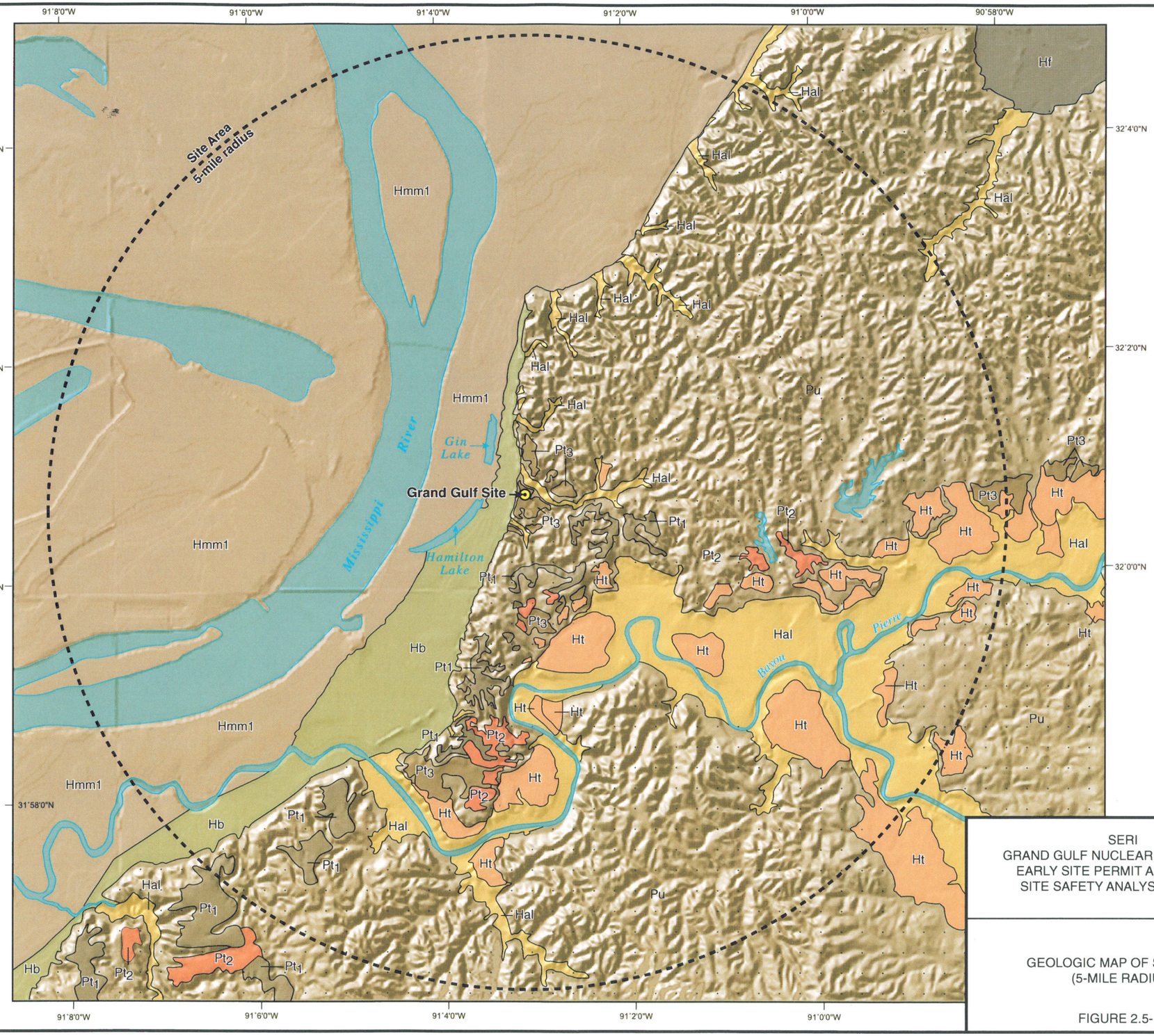
Pleistocene terraces differentiated in Site Area and Site Location from unit Ptu shown on Figure 2.5-9a, Site Vicinity map.

Ages of terraces estimated based on relative topographic position.

There are no reported earthquakes within 90 miles of the site. Additionally there are no faults in the Site Area.

Location Map

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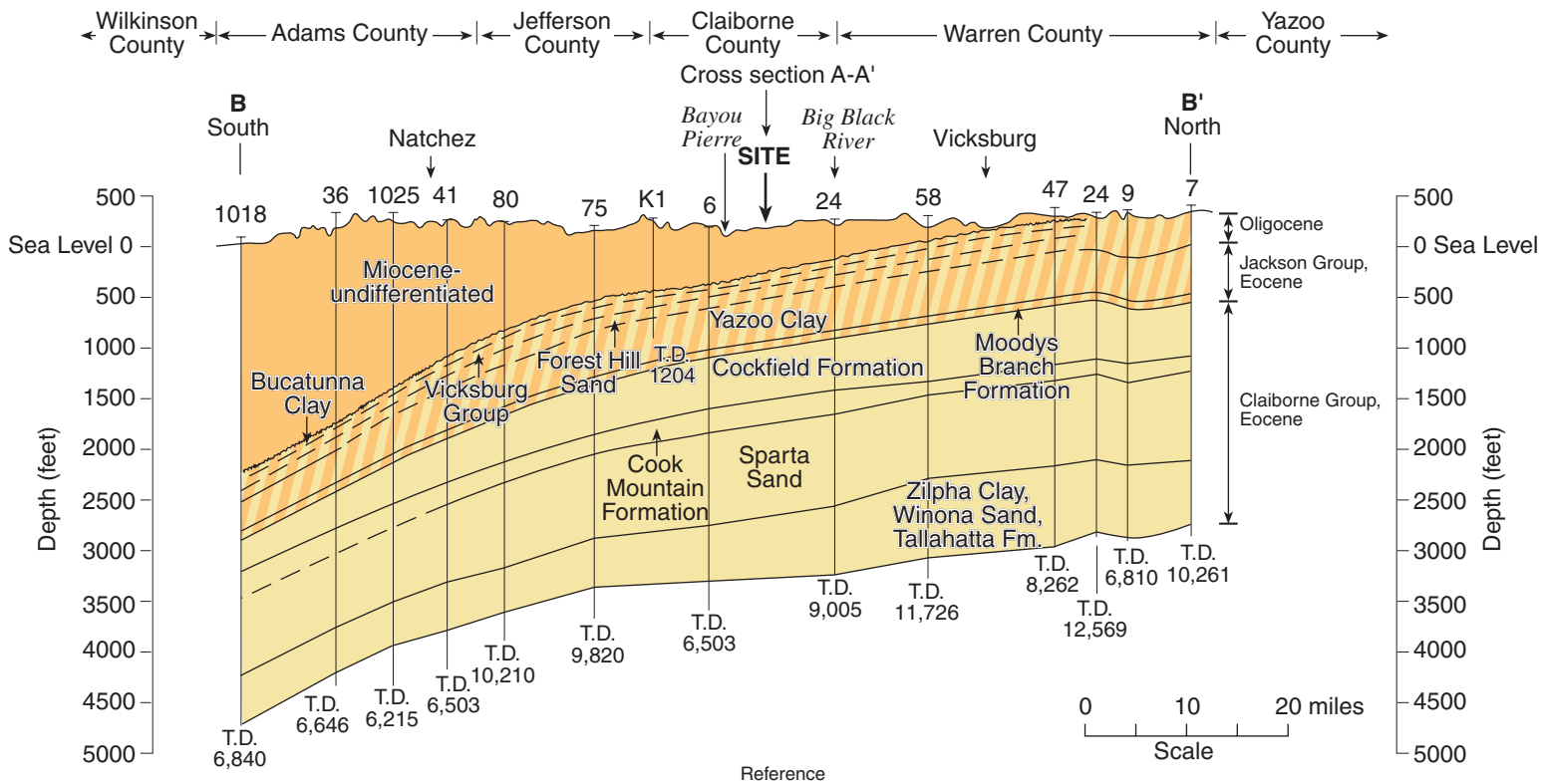
GEOLOGIC MAP OF SITE AREA
(5-MILE RADIUS)

FIGURE 2.5-10 REV. 0




Reference
Callahan, J.A., Skelton, J., Everett, D.R., Harvey, E.J., water Resources of Adams, Claiborne, Jefferson, and Warren Counties, Mississippi, Water Resources Bulletin, 63-1, 1963.

From Figure 2.5-35 of Ref 16.

**Key to Electric Logs**

1018 Serio-Punches Oil Co., No. 1 Booze-Fort
36 Callon and Tischener, No. 1 Gousett
1025 Duncan-Taylor and Schumacher, No. 1-A Stanton
41 S.C. and J.S. Callon, No. 1 Abbott
80 Ohio Oil Co., No. 1 Hardtimes Plantation
75 Union Oil Co., of California, No. 1 Wagner
K1 Alcorn College, test hole
6 Serio, Justiss-Mears and Clements, No. 1 Wilson
24 Danciger Oil and Refining Co., No 1 Taylor
58 Union Producing Co., No. 1 Harlin
47 Magnolia Petroleum Co., No. 1 Field Estate
24 California Co., No.1S-1 Anderson-Tully
9 Roy Lee, Trustee, No. 1 Anderson-Tully
7 D.T. Dougherty, No. 1 Hintson

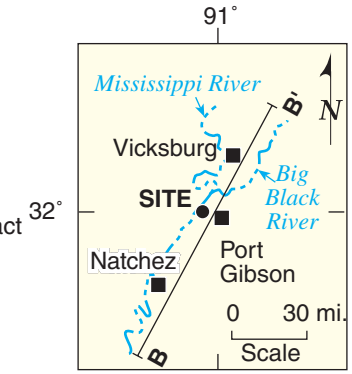
**Explanation**

*Symbols*

36 Previous boring
Geologic contact
Unconformity
Inferred geologic contact

*Geology*

M Miocene
0/E Oligocene/Eocene
E Eocene




**Location Map**

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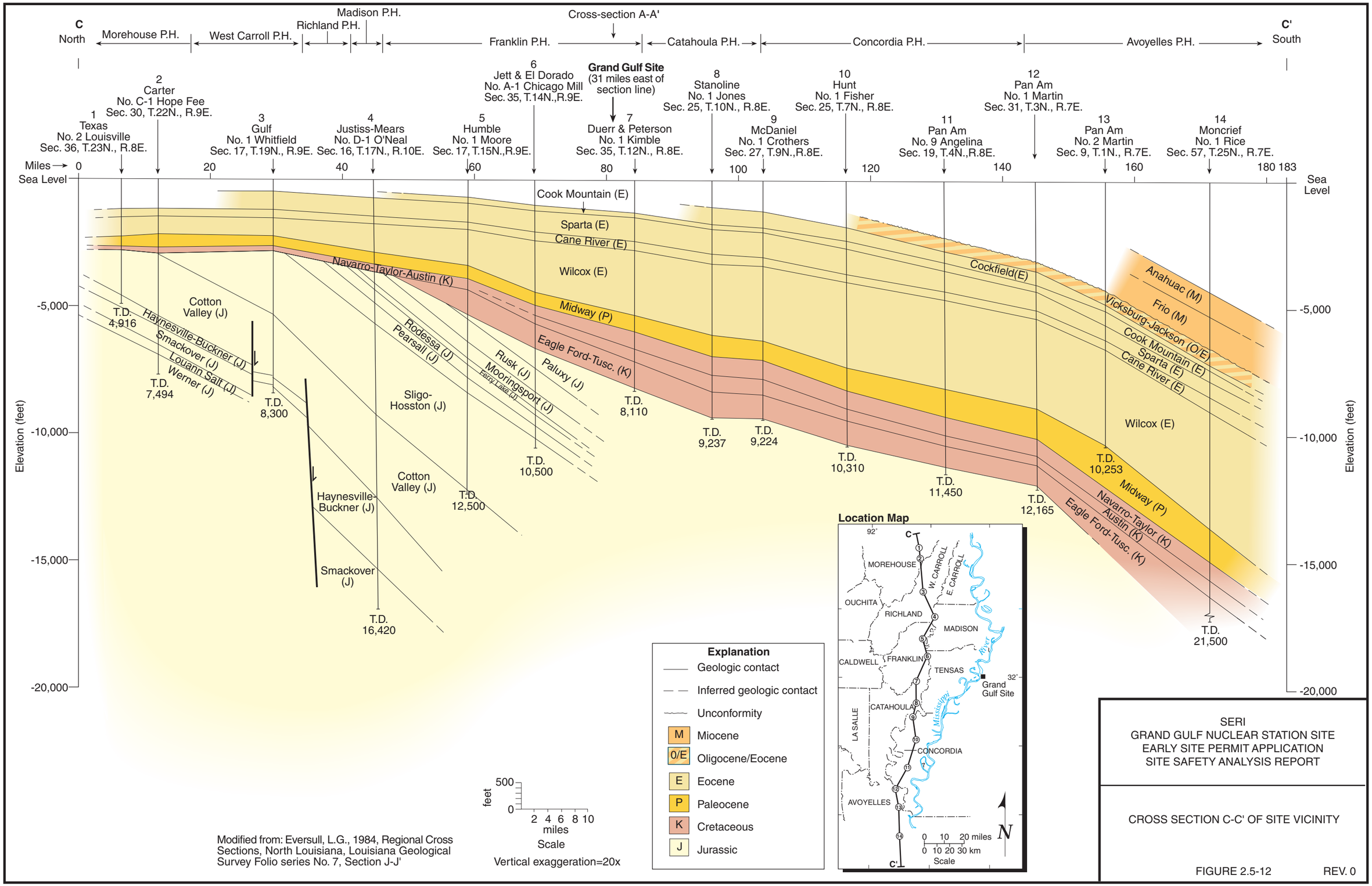
CROSS SECTION B-B' OF SITE VICINITY

FIGURE 2.5-11 REV. 0


C
North
C'
South
Morehouse P.H.
West Carroll P.H.
Richland P.H.
Madison P.H.
Franklin P.H.
Cross-section A-A'
Catahoula P.H.
Concordia P.H.
Avoyelles P.H.
1 Texas No. 2 Louisville Sec. 36, T.23N., R.8E.
2 Carter No. C-1 Hope Fee Sec. 30, T.22N., R.9E.
3 Gulf No. 1 Whitfield Sec. 17, T.19N., R.9E.
4 Justiss-Mears No. D-1 O'Neal Sec. 16, T.17N., R.10E.
5 Humble No. 1 Moore Sec. 17, T.15N.,R.9E.
6 Jett & El Dorado No. A-1 Chicago Mill Sec. 35, T.14N.,R.9E.
Grand Gulf Site (31 miles east of section line)
7 Duerr & Peterson No. 1 Kimble Sec. 35, T.12N., R.8E.
8 Stanoline No. 1 Jones Sec. 25, T.10N., R.8E.
9 McDaniel No. 1 Crothers Sec. 27, T.9N.,R.8E.
10 Hunt No. 1 Fisher Sec. 25, T.7N., R.8E.
11 Pan Am No. 9 Angelina Sec. 19, T.4N.,R.8E.
12 Pan Am No. 1 Martin Sec. 31, T.3N., R.7E.
13 Pan Am No. 2 Martin Sec. 9, T.1N., R.7E.
14 Moncrief No. 1 Rice Sec. 57, T.25N., R.7E.
Miles → 0 20 40 60 80 100 120 140 160 180 183
Sea Level
Elevation (feet)
-5,000
-10,000
-15,000
-20,000
Cook Mountain (E)
Sparta (E)
Cane River (E)
Wilcox (E)
Navarro-Taylor-Austin (K)
Midway (P)
Eagle Ford-Tusc. (K)
Cotton Valley (J)
Haynesville-Buckner (J)
Smackover (J)
Louann Salt (J)
Werner (J)
Rodessa (J)
Pearsall (J)
Rusk (J)
Mooringsport (J)
Lake (J)
Paluxy (J)
Sligo-Hosston (J)
Smackover (J)
Cockfield(E)
Anahuac (M)
Frio (M)
Vicksburg-Jackson (O/E)
T.D. 4,916
T.D. 7,494
T.D. 8,300
T.D. 12,500
T.D. 16,420
T.D. 10,500
T.D. 8,110
T.D. 9,237
T.D. 9,224
T.D. 10,310
T.D. 11,450
T.D. 12,165
T.D. 10,253
T.D. 21,500
Location Map
92°
32°
MOREHOUSE
W. CARROLL
E. CARROLL
OUCHITA
RICHLAND
MADISON
CALDWELL
FRANKLIN
TENSAS
Grand Gulf Site
CATAHOULA
LA SALLE
CONCORDIA
AVOYELLES
Mississippi River
0 10 20 miles
0 10 20 30 km
Scale
N
Explanation
Geologic contact
Inferred geologic contact
Unconformity
M Miocene
0/E Oligocene/Eocene
E Eocene
P Paleocene
K Cretaceous
J Jurassic
feet
500
0
2 4 6 8 10
miles
Scale
Vertical exaggeration=20x
Modified from: Eversull, L.G., 1984, Regional Cross Sections, North Louisiana, Louisiana Geological Survey Folio series No. 7, Section J-J'
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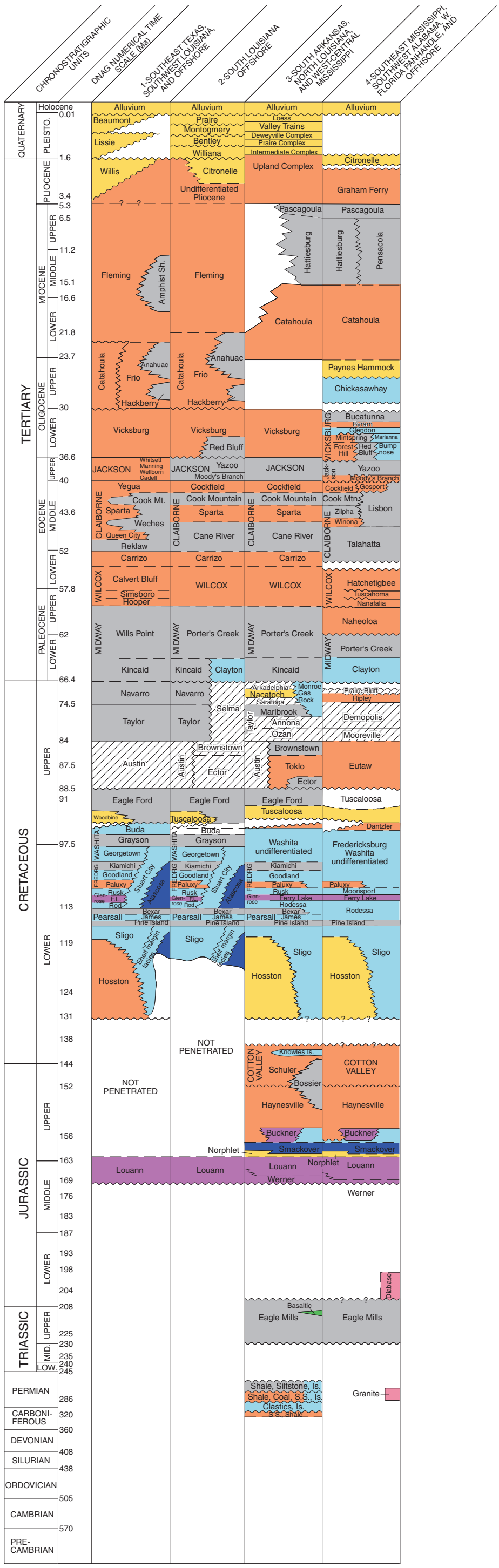
CROSS SECTION C-C' OF SITE VICINITY
FIGURE 2.5-12
REV. 0




**Explanation**

*Dominant lithology*

- Predominantly sandstone
- Shale, mudstone, siltstone
- Interbedded sandstone, siltstone, and shale
- Platform and platform-margin carbonates (grain carbonates and reefs)
- Chalk
- Evaporites
- Basinal carbonates, calcic shale, and shale
- Volcanic rocks
- Intrusive-igneous rocks
- Haitus

*Contacts*

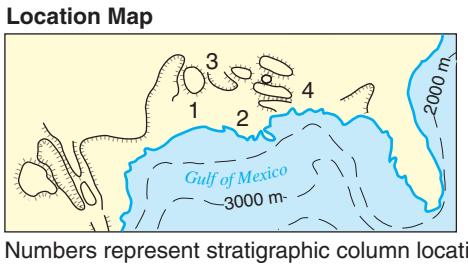
- Conformable
- Unconformable
- Uncertain
- Precise age unknown

FREDRG Fredricksburg
F.L. Ferrylake
R.O.D. Rodessa
ls Limestone
ss Sandstone
sh Shale

Note: Columns showing several laterally-grading units represent, whenever possbile, transition from basin margin on the left to basin center on the right.

From Salvador and Muñeton, 1991

**Location Map**




Numbers represent stratigraphic column location

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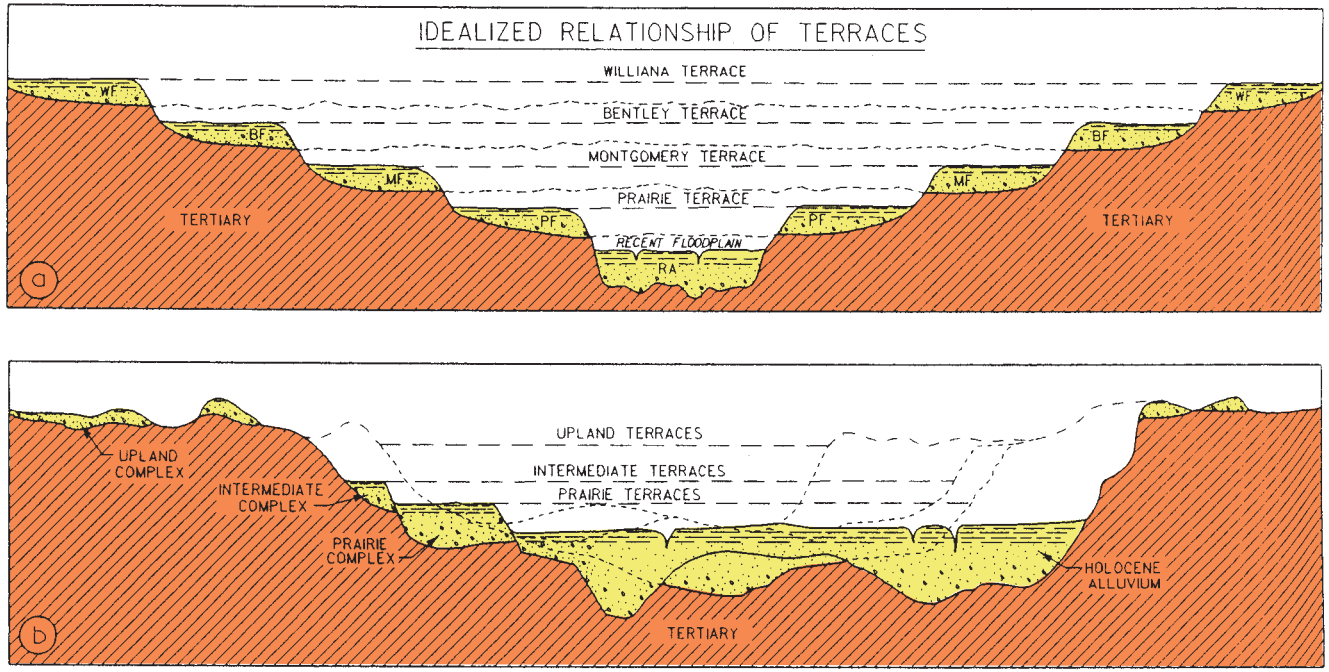
STRATIGRAPHIC COLUMN FOR THE GULF COAST BASIN

FIGURE 2.5-13 REV. 0




Idealized cross section of the southern Mississippi Alluvial Valley comparing: (a) relationships of terraces from Fisk (1944); and (b) relationships of terraces from Autin et al. (1991).

From Autin et al., 1991 and Saucier, 1994.

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COMPARISON OF TERRACE MODELS
ALONG THE MISSISSIPPI ALLUVIAL VALLEY

FIGURE 2.5-14 REV. 0