Paul Huddlestun

Logged, 3/10/93

Redrawn: 5/31/09

Clay analyses by John Hetrick

**COLQUITT 10 (CLARK FARM) GGS-3544 AND**

**COLQUITT 7 GGS-3213, SAME CORE SITE**

**COLQUITT COUNTY, GEORGIA**

**Immediately south of the southern rim of the Gulf Trough;**

**Roughly 2 miles southeast of Moultrie at jct. Tallokas Road and**

**Old Berlin Road, to 0.5 miles southeast to jct. Tallokas Road and**

**Old Berlin Road, to 0.3 miles southeast to jct. Old Berlin Road**

**and Culbertson Road, to 0.3 miles northeast of Culbertson Road**

**to Clark Farm, and 0.2 miles northwest of Culbertson Road**

**at Clark Farm**

**Berlin West 7½’ Quadrangle**

**Latitude N 31° 06.403' Elev.** ~**270 Feet**

**Longitude W 83° 44.235'**

Lithostratigraphic unit and Description Thickness Bed

bed number (feet) (feet)

**SOIL**

Bed 1 Sand, medium grained and moderately well 1.5 0.0 sorted; argillaceous; structureless;

unconsolidated but competent; dark yellowish

brown (10 YR 4/2) in color; grades downward

into:

**UPPER MIOCENE? PROBABLY TORTONIAN**

**HAWTHORNE GROUP TRANS. ALTAMAHA FORMATION – 70.5 feet**

Bed 2 Sand: medium to fine grained and moderately 6.5 1.5

sorted; argillaceous with clay content

increasing downward, some plinthite nodules;

massive and structureless; unconsolidated but

tough and competent (100% core recovery);

deeply weathered, moderate reddish orange

(10R 6/6); grades downward by increase in

clay content into:

Bed 3 Sand: medium to fine with some fine and 9.0 8.0

coarse grained sand particles, moderately to

moderately poorly sorted, sand-size and

sorting does not appear to change down-

section; very argillaceous with clay content

increasing downward (100% kaolin at 17

feet), a trace of scattered dark minerals,

Massive bedded but the sand distribution is

irregular, occurs in slight concentrations but

the irregularities are not clearly due to

bioturbation;

Unconsolidated, coherent and competent;

Mainly light colors, mottled pastels that are

close to yellowish gray (5Y 8/1, 5Y 8/2 and

5Y 7/2), other colors include grayish pink

(5R 8/2) to grayish orange pink (10R 8/2),

some moderate red (5R 5/4), some grayish

yellow (5Y 8/4) in the upper part, paler

colors, less reds below 17 feet; lower contact

appears abrupt with plinthite at top of

underlying bed:

Bed 4 Sand: mostly as above but more argillaceous 5.0 17.0 and clayey; quartz sand is mostly fine grained,

well sorted and with irregular distribution; a

trace of fine pelletal phosphate appears at 17

feet, a trace to rare dark minerals and a trace

of plinthite; mainly a clayey sand at the base

of the Bed; massive bedded; unconsolidated

but competent; weathered but with paler

colors, less reds and more yellows; appears

to abruptly overlie:

Bed 5 Very sandy clay - clayey sand: similar to the 10.0 22.0

overlying bed but is even more argillaceous,

the only clay mineral present is kaolin, quartz

sand is mainly fine and well sorted but some

fine to coarse, moderately poorly sorted sand

present in scattered occurrences, a trace of

quartz granules noted; a trace of dark

minerals, still a trace of plinthite (cavings?);

Variably massive bedded to very rudely layered,

sand distribution is irregular with micro- and

macro-lenses of sand, thinly stratified near top

of bed, very rudely and thinly layered at the

base of the Bed; more clayey intervals display

irregular fracture;

Unconsolidated and moderately competent

(~40% core recovery);

Deeply weathered, color mottles and streaks;

mostly yellowish gray (5Y 8/1) with some pale

red (5R 6/2) and grayish orange (10YR 7/4)

to dark yellowish orange (10YR 6/6);

Grades downward into:

Bed 6 Sand: the recovered sand is fine to coarse, 9.5 32.0

granully and poorly sorted; probably very little

clay, core looks soupy and barely coherent

when recovered; massive and structureless;

basal 1 foot consists of finely sandy, thinly

stratified clay; unconsolidated and moderately

competent (~40% core recovery); colors are the

same as in overlying beds, basal clay is dark

yellowish orange (10YR 6/6); very abruptly

overlies:

Bed 7 Silty fine sand to clay: the upper few inches 20.5 41.5

consisting of waxy clay with fine to very fine,

very well sorted sand interlayered with the clay

appearing below the upper few inches; fine

sand content appears to increase downward

in the recovered core; clayey throughout and

finely micaceous, some dark minerals;

Most of recovered core is disrupted and

appears to have been soft, gummy and gooey

when first recovered but looks originally to

have been thinly layered; rudely and thinly

stratified at the top of the Bed, structureless

in lower part;

Unconsolidated but very poorly coherent and

competent (~10% core recovery);

The color of the uppermost clay layer is closest

to pale red purple (5RP 6/2), patches or minor

interlayering with light bluish gray (5B 7/1) to

very light bluish gray (5B 8/1) and yellowish

gray (5Y 8/1), in the lower part of the bed the

colors are mainly very pale red purple

(5RP 7/2), very light brownish gray (5YR 7/1)

and grayish orange (10YR 7/4);

Because Bed 7 appears to grade broadly

downward into Bed 8, it is assumed that the

core loss occurred sporadically within the 41.5

feet to 62 feet core run:

Bed 8 Sand: fine to very fine grained, well sorted and 4.0 62.0

argillaceous; the core is disrupted but it

appears the bed was crudely layered with no

apparent, discrete clay layers; unconsolidated

and mostly competent (~75 % core recovery);

mostly dark yellowish orange (10YR 6/6), the

color grades downward into grayish orange

(10YR 7/4) to dark yellowish orange

(10YR 6/6); grades downward subtly but

abruptly into:

Bed 9 Sandy clay/clayey sand: appears to consist 6.0 66.0

of more clay than sand (67.2% kaolin, 16.9%

illite, 15.9% smectite at 69 feet), common,

minute, tabular clay clasts and irregularly

rounded, moderate sized clay clasts are also

present in the upper part of the Bed; sand

component is fine to very fine grained and

well to very well sorted; rare dark minerals and

what appears to be degraded feldspar grains

noted;

Appears to have been very prominently

layered, laminated, or thinly lenticular but

disrupted due to coring; unconsolidated,

Dense, coherent and mostly competent

(~85% core recovery);

Mostly grayish orange (10YR 7/4), clay

fragments in the upper part of the Bed are

yellowish gray (5Y 7/2), the colors in the

lower part of Bed consist of varying hues of

pale to moderate reddish browns (10R) with

some grayish orange (10YR 7/4), the base of

the Bed is mostly yellowish gray (5Y 8/1)

with some streaks of brownish red (10R);

grades downward into:

Bed 10 Clay: finely sandy with some thin argillaceous 1.5 72.0

sand layers, dark minerals common, some

mica, a possible trace of degraded feldspar;

sand component is fine to very fine grained and

well sorted; prominently bedded although the

core is disrupted; before desiccation clay,

appears to have been gooey and lumpy;

unconsolidated and competent; strongly

pigmented, pale red purple (5RP 6/2) to pale

red (5R 6/2), some moderate red (5R 5/4)

and light bluish gray (5B 7/1); very abruptly

overlies and with the appearance of a diastem

or disconformity:

**Because there appears to be minute pellets of phosphate in one bed in the upper part of the above section and because the formation is unusually fine grained, the stratigraphic interval above is more compatible with intermediate Altamaha Formation and Hawthorne Group lithologies. Hawthorne Group deposits are marine in origin whereas the Altamaha is fluvial in origin and, normally, the lithologies clearly reflect the differences in environment. I note that the post Meigs section in the Colquitt 9a, 9 miles to the northwest of the Colquitt 10 core site, is likewise not clearly Altamaha in lithology in that it is unusually fine grained. The lithology of the above beds are not assignable to a known formation but may correlate to the Upper Miocene, Ebenezer Formation.**

**MIDDLE MIOCENE, SERRAVALLIAN**

**MEIGS FORMATION - 13 feet**

Bed 11 Sand: fine grained and well sorted; argillaceous, 2.5 73.5

somewhat micaceous with common dark

minerals, micaceous; small white, chalky

spots that have the appearance of degraded

feldspar or chert; the core is very disrupted but

it looks as though it had been stratified; in

places, the sand appears more finely and thinly

interlensed with clay; unconsolidated, poorly

coherent but competent; less weathered than

overlying beds, pinkish gray (5YR 8/1) in color;

grades abruptly downward into:

Bed 12 Clay and sand: sand and clay are thinly 1.5 76.0

interbedded, interlaminated or interlensed,

clay is the predominant component (59.7%

kaolin, 11.6% illite, 28.6 smectite

at 76 feet), the quartz sand is fine to very fine

grained and well to very well sorted; somewhat

micaceous with common dark minerals, small

white, chalky spots that have the appearance of

degraded feldspar or chert; prominently and

thinly layered to laminated, layering varies from

sharp to crude; unconsolidated, better coherence

and less disruption than overlying beds and

competent; pinkish gray (5YR 8/1) to yellowish

gray (5Y 8/1) to very light orange (10YR 9/2);

grades broadly downward by increase in sand

and less distinct stratification into:

Bed 13 Sand and clay: the quartz sand is fine to very 9.0 77.5

fine grained and well sorted, more sandy and

micaceous in the upper part of the Bed, more

argillaceous (27.7% kaolinite, 16.1% illite, 56.2

smectite at 80 feet) in the middle part of the

Bed with white clasts of cristobolitic claystone

and a thin (1 foot) layer of sand at base of Bed

with reworked clasts of the underlying

formation; a little coarser in the basal few feet;

frequent dark minerals;

Appears massive and structureless but is

variably and vaguely stratified in most

intervals, some bedding disruption due to

coring; unconsolidated and competent, brittle

when desiccated;

Unweathered below 79.5 feet, sandy portion

is yellowish gray (5Y 8/1) to light greenish

gray (5GY 8/1), clay is yellowish gray (5Y 8/1

to 5Y 7/2), basal few feet of sand is yellowish

gray (5Y 7/2) with white (N 9) clasts;

disconformably? overlies:

**LOWER MIOCENE, BURDIGALIAN**

**HAWTHORNE GROUP**

**MARKS HEAD FORMATION – 46.5 feet**

Bed 14 Sand: fine grained and well sorted, sand grains 17.5 86.5

appear frosted (with silica?), probably slightly

siliceous throughout with scattered chert

concretions, white chalky “silica” in the upper

couple feet of the Bed, a thin layer of glassy

“chert” quartzite at ~96 feet; very slightly

argillaceous with some minor concentrations

in some thin intervals (100.0 smectite at 90

feet; 100.0 smectite at 94 feet; 87.9% smectite

and 12.1% sepiolite at 98 feet); common dark

minerals, scattered small irregular shaped

"grains" that are not dark minerals or

carbonaceous material but may be wad

(MnO2) or pyrite;

Mostly massive and structureless but there are

some signs of possibly very vague stratification;

the upper 2 to 3 feet of the bed appears

disrupted prior to deposition of the overlying

bed;

Desiccated sediment is somewhat cemented,

friable and moderately competent (~66% core

recovery);

Color closest to yellowish gray (5Y 8/1) to light

yellowish gray (5Y 9/1), some irregular, small

and minor patches of dark yellowish orange

(10YR 6/6) to grayish orange (10YR 7/4), the

“glassy” sandstone at ~96 feet is light olive

gray (5Y 6/1);

Grades abruptly downward into:

Bed 15 Sand: fine grained and well sorted; very 1.0 104.0

siliceous with chert nodules (has the

appearance of sandy, siliceous, algal mat); no

other lithic components noted; crudely

stratified; partially consolidated and

indurated, competent (100% core recovery);

grades abruptly downward into:

Bed 16 Clay and sand; 2 thin layers of clay with a thin 1.5 105.0

layer of sand sandwiched between; the clay

layers are thinly layered and waxy with some

black material that appears to be wad (MnO2) 15.0 106.5

or black, microcrystalline pyrite stain along

partings; the sand is fine grained, well sorted

and structureless; unconsolidated and

competent; the color range of the clay is

roughly around yellowish gray to pale

yellowish gray (5Y 8/2 to 5Y 9/2); grades

abruptly downward into:

Bed 17 Sand: fine grained and well sorted; clayey with

both interstitial clay and scattered thin clay

layers (17.9% smectite, 38.1% palygorskite,

44.0% sepiolite, at 107 feet; 100.0% smectite

at ~117.0 feet); very but irregularly siliceous,

some relatively pure chert; chert cemented

sandstone (cristobolitic?) at the top of the Bed,

very tough, siliceous (but not chert) sediment

at the base of the Bed;

Mostly massive and structureless with the

appearance of a clay sand with a jumble of

irregular siliceous intraclasts; the lower 2 feet

of the recovered core appears either

bioturbated or intraclastic and massive

bedded;

Mostly unconsolidated and poorly competent

(~32% core recovery);

Color of Bed 17 ranges from close to yellowish

gray (5Y 7/2 - 5Y 8/1)) to pale yellowish

gray (5Y 8/2);

The base of Bed is a thin layer of chert,

appears to abruptly grade downward into:

Bed 18 Sand: fine to very fine grained and well sorted; 11.5 121.5

argillaceous, varying amounts of clay with

more clay in the upper 2 feet of the Bed, (the

clay mineral component consists of 12.6%

illite and 87.4% smectite at 128 feet; 5.5%

illite, 89.8% smectite and 4.7% sepiolite, at

~131 feet); appears to be variably siliceous,

variable quantities of dark minerals, siliceous

at the base of the Bed;

Partly structureless but with some vague to

clear but rude stratification, some apparent

cross bedding in the upper part of the Bed;

Very tough, somewhat consolidated and

mostly competent (~87% core recovery);

The colors of Bed 18 range from yellowish

gray (5Y 7/2 and 5Y 8/1) to pale yellowish

gray (5Y 9/1) to pale olive gray (5Y 6/1);

disconformably overlies:

**LOWER MIOCENE, AQUITANIAN**

**CHATTAHOOCHEE FORMATION – 42 feet**

Bed 19 Dolostone: irregularly and finely sandy with 4.0 133.0

what appears to be some sort of scattered

stony algae clasts, clay probably present as a

trace component but none noted; massive and

structureless; mostly recrystallized, mildly

indurated and moderately competent (~40%

core recovery); light olive gray (5Y 6/1) to light

yellowish gray (10Y 9/1) in color; overlies core

gap:

CORE GAP 5.0 137.0

Bed 20 Clay: the clay mineral suite consists of 24.6% 1.0 142.0

illite, 48.5 % smectite and 26.9% palygorskite

at 142.5 feet, dolomitic and finely sandy (more

of a dolomitic “marl”); massive and

structureless; unconsolidated and competent

(100% core recovery); grades abruptly

downward into:

Bed 21 Dolostone: irregular patches of argillaceous 24.0 143.0

fine sand and thin, rude layers or

concentrations of dolomitic fine sand; rare

and scattered molds of bivalves (the greatest

concentration is at about ~155 feet), common

algal-like structures but not like the rhodoliths

from the Bridgeboro Limestone; some irregular

patches are argillaceous, the clay mineral suite

consists of 14.0% illite, 70.2% smectite and

15.8% palygorskite at 155 feet; 29.3% illite,

60.0% smectite and 10.7% palygorskite at ~163

feet; scattered MnO2 dendrites; sand and clay

content increases below about 158 feet;

Mostly massive but the sediment is not well

mixed, possibly due to bioturbation or

differential sediment compaction, the Bed is

crudely and more stratified in the lower part,

with some thin layers of dolomitic fine sand

and some very irregular bedding structures;

Partially to mostly recrystallized, mildly

indurated and moderately competent (roughly

62% core recovery);

Mostly yellowish gray (5Y 8/1) in color;

Grades very broadly downward into:

Bed 22 Sand: fine to very fine grained and well sorted; 8.0 167.0

dolomitic, argillaceous (100.0% smectite

at 173 feet); thin, 6 inch thick, hard, dolostone

layers at ~168 feet and at ~170 feet, clay

intraclasts in basal 2.5 feet; the quartz sand is

thin to medium bedded and well stratified;

somewhat consolidated, friable and moderately

competent (~50% core recovery); basal

disconformity is very clear but not sharp, the

underlying Suwannee Limestone was

apparently degraded and the formation’s

contact is marked by a thin clayey layer;

**LOWER OLIGOCENE, VICKSBURGIAN**

**SUWANNEE LIMESTONE – 65 feet+**

**The composite thickness of the Suwannee**

**Limestone between the cores Colquitt 10 and**

**Colquitt 7 is 136 feet.**

Bed 23 Limestone: granular, pelletal-microfossiliferous 46.0 175.0

(foraminifera, ostracods, etc.), only a few

intervals of moldic macrofossils, mostly non-

macrofossiliferous; some chert; no quartz sand

or clay minerals noted; largely massive and

structureless; variably recrystallized: soft and

porous to dense, crystalline and nonporous

(probably more soft limestone than hard

limestone) variably competent (average core

recovery is ~37%); very pale orange

(10YR 8/2); overlies core gap:

CORE GAP 19.0 221.0

Bottom of the core at 240 feet.

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TOTAL DEPTH -240.0

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Paul Huddlestun

Logged ca. 1977

Written up – 10/10/11

**U.S. GYPSUM 76-7, GGS-3213,**

**Same core site as Colquitt 10 (W-3544**

**Berlin West 7½’ Quadrangle**

**Latitude N 31° 06.403’ Elev. 270 Feet**

**Longitude W 83° 44.235’**

Lithostratigraphic

unit and bed number Description Thickness Depth

(feet) (feet)

NO CORE 195.0 0.0

**LOWER OLIGOCENE, VICKSBURGIAN**

**SUWANNEE LIMESTONE – 116 feet+**

Bed 23 Limestone: irregularly hard and soft 14.0 195.0

limestone with the same basic granular/

miliolid texture, irregularly scattered

mollusk molds and the calcareous tube,

*Kuphus incrassatus* at ~200 feet; neither

massive nor layered but irregularly

distributed hard/soft places that appear

to be layers; the soft limestone is porous,

not well indurated and cream in color,

the hard limestone is nonporous and dense

and gray in color; mostly competent (~93%

core recovery); grades downward into:

Bed 24 Limestone: granular foraminiferal/miliolid 12.0 209.0

texture, scattered concentrations of vague

molds of mollusks and inclusions or

intraclasts of softer limestone; mostly

massive and structureless, mostly hard and

recrystallized but there are a few softer layers

within the Bed; mostly competent (~92 %

core recovery); grades downward into:

Bed 25 Limestone: granular foraminiferal/miliolid 3.0 221.0 texture, a few mollusk molds; massive and

structureless; poorly consolidated, almost

soft and moderately competent (~67% core

recovery); abruptly overlies;

Bed 26 Limestone: ghosts of miliolids scattered 2.0 224.0

throughout; massive and structureless; very

hard, dense and competent (100% core

recovery); grades downward into:

Bed 27 Limestone: equigranular, pelletal/ 75.0 226.0

foraminiferal/miliolid limestone; sporadically

macrofossiliferous with rare and scattered

*Lepidocyclina*, a few and scattered mollusk

molds, scattered calcitic shell fragments and

mollusk molds, locally abundant stony algae,

some solitary corals, small calcareous tubes

(probably vermetids); mostly massive and

structureless except for some small

concentrations of various macrofossils;

variably consolidated and moderately

competent (~42% average core recovery);

A mold of the gastropod *Ampullina*? at

~263 feet;

*Dictyoconus* present from ~295 feet to

~299 feet;

Appears to grade downward into:

Bed 28 Limestone: chalky and fine textured; massive 1.0 301.0

and structureless; poorly consolidated, poor

recovery in the core run that renders the

precise depth of Bed 6 uncertain; overlies

core gap:

CORE GAP 9.0 302.0

**LOWER OLIGOCENE, VICKSBURGIAN**

**BRIDGEBORO LIMESTONE – 77.5 feet±**

**Glendon-equivalent**

Bed 29 Limestone: no lithology recovered – only 6 0.5 311.0

inches worth of stony algal balls;

very poor recovery is typical for coring

through the Bridgeboro Limestone; the hard

rhodoliths act as a ball mill in grinding

down the softer inter-rhodolith limestone

lithology:

NO RECOVERY 77.0 311.5

**UPPER EOCENE, UPPER JACKSONIAN**

**OCALA GROUP – 472.5 feet**

**CRYSTAL RIVER LIMESTONE – 437.5 feet**

Bed 8 Limestone: a lot of nondescript, granular, 114.5 388.5

calcitic, biofragments/matrix, calcitic

granules range in size from sand-size to

nondescript lumps ~1 cm across;

*Lepidocyclina* coquina to *Lepidocyclina*-rich

limestone; most *Lepidocyclina* are small - a

few mm across and appear to be dominantly

megalosphaeric forms, *Asterocyclina* is

consistently found below ~405 feet;

scattered molds of mollusks and scattered

calcitic shell fragments, rare oysters and a

trace of *Amusium*, some stony algal or algal

structures, scattered bryozoans, some

pectenids, vermetids and very rare solitary

corals; appears massive bedded except for

the tendency for larger foraminifera and flat

shell fragments to align horizontally; the

limestone generally is porous with porosity

ranging from low porosity where moderately

recrystallized to high porosity in the

*Lepidocyclina* coquina; consolidated and

lightly cemented; moderately and variably

competent (~50% average core recovery);

grades downward into:

Bed 9 Limestone: similar to above but dolomitic 5.0 503.0

with the dolomite content increasing whereas

the fossil content diminishes downward;

broadly transitional with the underlying

bed; grades downward into:

Bed 10 Dolostone: hard, dense and recrystallized, 12.0 508.0

most fossil traces gone in the upper part of

the Bed but some fossil traces evident below

~525 feet; definite rude, horizontal banding

or stratification; recrystallized, indurated

and competent; grades downward into:

Bed 11 Limestone: variably chalky – some intervals 9.0 520.0

appear to be more finely equigranular,

sucrosic; variably *Lepidocyclina*-rich, in

some intervals the *Lepidocyclina* are

severely corroded, few *Lepidocyclina* in the

more sucrosic intervals; massive and

structureless; definitely more recrystallized

and altered than Bed 9, recrystallized and

competent, core fractures irregularly;

grades downward into:

Bed 12 Limestone: as above but variably dolomitic; 11.5 529.0

some fossil molds still apparent; massive

and structureless; recrystallized and

competent; grades downward into:

Bed 13 Limestone: slightly and variably dolomitic: 6.5 540.5 mostly limestone; sucrosic; fossiliferous but

*Lepidocyclina* is degraded; massive and

structureless except for a thin layer of

dolostone at 544 feet; recrystallized and

competent; grades downward into:

Bed 14 Limestone: dolomitic, variable lithology - 19.5 547.0

mostly relatively pure limestone interlayered

variously with some relatively pure dolostone,

dolomitic limestone and calcareous dolostone,

all sucrosic; fossiliferous, *Lepidocyclina* is

variably corroded; recrystallized and

competent; grades downward into:

Bed 15 Dolostone: fossiliferous but most fossil traces 9.0 566.5 gone; massive and structureless; hard, dense,

recrystallized and competent; grades

downward into:

Bed 16 Dolostone: variably selenitic (top of selenite), 16.5 575.5

selenite occurs interstitially and is a matrix,

dolomite is sucrosic; fossiliferous with

common to abundant *Lepidocyclina* in

advanced stages of degradation; massive

and structureless; recrystallized and

variably dense, scattered porosity but

selenitic intervals are nonporous,

competent; gray to tan in color; grades

downward into:

Bed 17 Limestone: selenitic, slightly dolomitic and 3.0 592.0

fossiliferous with degraded *Lepidocyclina*;

massive and structureless, recrystallized,

and competent; grades downward into:

Bed 18 Dolostone: variably selenitic, sucrosic, 11.0 595.0

fossiliferous with molds of *Lepidocyclina*

still apparent; massive and structureless,

recrystallized and competent; tan in color;

grades downward into:

Bed 19 Limestone: probably slightly dolomitic, 11.0 606.0

selenite scattered throughout; chalky and

slightly sucrosic, common to abundant

*Lepidocyclina* in poor states of preservation;

massive and structureless, recrystallized,

competent; grades downward into:

Bed 20 Limestone: dolomitic, selenitic (selenite in 2.0 617.0

optical continuity throughout core);

fossiliferous with severely degraded

*Lepidocyclina*; massive and structureless;

recrystallized competent; grades downward

into:

Bed 21 Limestone: slightly dolomitic, selenitic, 4.0 619.0

fossiliferous with severely degraded

*Lepidocyclina*; massive and structureless;

recrystallized, coherent and competent;

grades downward into:

Bed 22 Dolostone: calcareous, selenitic (selenite in 2.0 623.0

optical continuity), fossiliferous with

degraded *Lepidocyclina*; massive and

structureless; recrystallized and competent;

grades downward into:

Bed 23 Dolostone: selenitic, sucrosic fossiliferous 4.0 625.0

with some *Lepidocyclina* molds preserved;

massive and structureless; recrystallized,

coherent and competent; tan in color;

grades downward into:

Bed 24 Limestone: very dolomitic, selenitic, fossil 2.0 629.0

*Lepidocyclina* still visible; massive and

structureless; recrystallized and competent;

grades downward into:

Bed 25 Dolostone: very selenitic with selenite in 7.0 631.0

optical continuity, few *Lepidocyclina* are

apparent - mostly obliterated; massive and

structureless; recrystallized and competent;

grades downward into:

Bed 26 Limestone: dolomitic, selenitic and more 3.0 638.0

fossiliferous with *Lepidocyclina*; all else

as above; recrystallized and competent;

grades downward into:

Bed 27 Limestone, as above but slightly dolomitic 3.0 641.0

and less selenitic, and fossiliferous with

poorly preserved *Lepidocyclina*; all else as

above; mostly recrystallized and competent;

grades downward into:

Bed 28 Limestone: sucrosic and chalky, very slightly 20.5 644.0

dolomitic, irregularly scattered and minor

selenite but consistently scattered selenite

below ~657 feet; very fossiliferous with

abundant *Lepidocyclina*; massive and

structureless; slightly recrystallized and

competent; white in color; grades downward

into:

Bed 29 Calcareous dolostone/dolomitic limestone 4.0 664.5

(strong HCl reaction but looks like dolostone):

slightly selenitic in the lower part, sucrosic,

calcitic fossils chalky and corroded; massive

and structureless; recrystallized and

competent; tan in color; grades broadly

downward into:

Bed 30 Dolostone: selenitic with selenite in optical 2.0 668.5

continuity, fossiliferous but *Lepidocyclina* is

very degraded; massive and structureless;

recrystallized and competent; gray to tan in

color; grades downward into:

Bed 31 Limestone: chalky, selenitic and a trace of 4.0 670.5

dolomite; *Lepidocyclina* are common but not

conspicuous; massive and structureless;

recrystallized and competent; white in color;

grades downward into:

Bed 32 Dolostone: selenitic and fossiliferous with 4.0 675.0

degraded *Lepidocyclina*; massive and

structureless; recrystallized and competent;

white in color; grades downward into:

Bed 33 Limestone: selenitic, very slightly dolomitic 11.0 679.0

and fossiliferous with abundant, degraded

*Lepidocyclina*; massive and structureless;

recrystallized and competent; grades

downward into:

Bed 34 Dolostone, selenitic, calcareous, sparsely 3.0 690.0

fossiliferous with degraded *Lepidocyclina*;

massive and structureless; recrystallized

competent; grades downward into:

Bed 35 Dolostone: selenitic with selenite in optical 2.0 693.0

continuity, fossiliferous with severely

degraded *Lepidocyclina*; massive and

structureless; recrystallized, dense and

competent; tan to gray in color; grades

abruptly downward into:

Bed 36 Limestone: dolomitic, sucrosic and 3.5 695.0

fossiliferous; massive and structureless;

recrystallized and competent; cream

colored; grades downward into:

Bed 37 Dolostone: calcareous, sucrosic and 2.5 698.5

fossiliferous; massive and structureless;

recrystallized, indurated and competent;

gray to tan in color; very gradually merges

downward into:

Bed 38 Limestone: very fossiliferous with excellent 104.0 701.0

fossil preservation, bioclastic/pelletal/

granular matrix, no apparent dolomite or

selenite; abundant *Lepidocyclina* and

bryozoans, *Asterocyclina* (some large and

multi-rayed) in varying frequencies are

consistently present down the section,

rare *Nummulites* and *Operculinoides,*

scattered but conspicuous stony algae

and scattered, locally common *Amusium*

*ocalanum*; massive and structureless; well

consolidated and competent but porous;

Frequent to common *Amusium ocalanum*

at ~716 feet;

Stony algae less conspicuous below

~720 feet;

A little more chalky below about ~742

feet;

*Asterocyclina* frequency diminishes

below ~775 feet;

Common *Operculinoides* around 779 feet;

Lithology becoming less coarsely bioclastic

and becoming granular, sucrosic and chalky

below about 804 feet, grades broadly

downward into:

Bed 39 Limestone: moderately granular, sucrosic and 21.0 805.0

chalky, variably but only moderately

bioclastic and rubbly in the middle part, but

still sucrosic and chalky; fossiliferous with

common *Lepidocyclina* throughout; massive

and structureless; moderately recrystallized,

indurated and competent; grades broadly

downward into:

**UPPER EOCENE, LOWER JACKSONIAN**

**OCALA GROUP**

**WILLISTON LIMESTONE – 35 feet**

Bed 40 Limestone: (top of nodular gypsum at 8.5 826.0

~831 feet) grades steadily downward from

overlying bed – mostly intermediate in

lithology from Bed 39 into Bed 41: even

grained, and sucrosic; fossiliferous with

chalky, small and large *Lepidocyclina*

scattered throughout; dolomitic, selenitic

and with milky, nodular gypsum in the

lower part of the Bed, – nondolomitic

and nongypsiferous in the upper part;

massive and structureless; partially

recrystallized, indurated and competent; grades downward into:

Bed 41 Dolostone: selenitic and fossiliferous 5.5 834.5

massive and structureless; recrystallized

and competent; grades downward into:

Bed 42 Dolomitic selenite/selenitic dolostone: selenite 9.0 840.0 in optical continuity, nodular gypsum at the

base of the Bed, fossiliferous, *Lepidocyclina*

conspicuous throughout that appears to have

been replaced by selenite; massive and

structureless; recrystallized, indurated

and competent; tan in color;

*Lepidocyclina* is chalky from ~847 feet to

848 feet;

About 9 inches of gray, milky, gypsum at 848

feet with *Lepidocyclina* still visible within the

gypsum;

Abruptly overlies:

Bed 43 Limestone: dolomitic (active HCl reaction 12.0 849.0

but appears dolomitic), sucrosic with

consistently present milky, nodular gypsum;

fossiliferous with chalky, poorly preserved

larger foraminifera, common *Lepidocyclina*

and scattered and rare to frequent

*Nummulites*, common *Operculinoides* and

*Heterostegina* in the lower part; massive

and structureless; partially recrystallized,

indurated and competent; tan in color;

First consistent occurrence of *Nummulites*

at 850 feet;

First consistent occurrence of nodular

gypsum at ~851 feet;

*Operculinoides* becoming rare, *Heterostegina*

and *Nummulites* more common and

conspicuous in lower 1.5 feet;

Abruptly but apparently gradationally

overlies:

**MIDDLE EOCENE; CLAIBORNIAN**

**UNNAMED CLAIBORNIAN LIMESTONE – 47 feet+**

Bed 44 Limestone: dense, chalky, nonfossiliferous 0.5 861.0

and thinly layered; indurated and competent;

grades downward into:

Bed 45 Limestone: fine textured, somewhat sucrosic 46.5 861.5

and somewhat chalky, selenite and gypsum

nodules are present throughout but more

common in the upper part; dolomite not

apparent;

Variably fossiliferous and conspicuously

fossiliferous at some intervals – more

conspicuously fossiliferous in the more

massive and structureless intervals and,

conversely, less fossiliferous in the layered

intervals; fossiliferous intervals are

dominated by *Lepidocyclina*, *Nummulites*,

*Operculinoides*, *Heterostegina* and, lower

in the section, *Discocyclina*, except for

*Discocyclina* the fossil content does not

vary much throughout (*Lepidocyclina* is

less conspicuous than in overlying beds),

the more fossiliferous intervals are more

sucrosic, bioclastic and tan in color, the

less fossiliferous, layered intervals are

more chalky and micritic; other

macrofossils such as the mollusks are

conspicuously absent in this Bed;

Variably massive and structureless and

layered to thinly layered; some intervals

appear to be massive and structureless but

the core in those intervals separates along

horizontal partings; the more layered

intervals are finer textured whereas the

more massive intervals are coarser, more

finely bioclastic;

Partially recrystallized, indurated and

Competent (100% core recovery); mostly

buff to tan in color;

Thinly layered from ~863 feet to 865

feet;

More massive and structureless from ~866

feet to 873.5 feet; coarser textured, more

bioclastic with conspicuous *Lepidocyclina*

from ~865 feet to ~868.5 feet;

Gypsum nodules present from ~870.5 feet

to ~872 feet;

Thinly layered from ~873.5 feet to ~875.5

feet with *Discocyclina* and rare to frequent

*Operculinoides* and *Heterostegina*;

Massive and structureless from ~875.5 feet

to roughly 881 feet with common

*Lepidocyclina* at 876.5 feet and what

appears to be a chert nodule at 879 feet;

Consistently thin layering below roughly

881 feet to total depth of the core with

scattered occurrences of nodular gypsum;

Large *Lepidocyclina* noted at ~882 feet;

Rare to frequent *Discocyclina* present from

~886 feet to ~890 feet with a few

*Heterostegina,* poorly fossiliferous;

Overlies core gap:

CORE GAP 6.5 901.5

Bottom of the core at 908 feet.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TOTAL DEPTH – 908 FEET