Paul Huddlestun

 ca. 1980

 Written up – 2/19/14

 **LAURENS COUNTY (DUBLIN) CORE, GGS-3523, TT**

 **LAURENS COUNTY, GEORGIA**

**Dudley 7½’ Quadrangle**

**In rest area 87 along east-bound lane of I-16,**

**2.6 miles southeast of Dudley, Laurens County**

 **Latitude N 32° 30.491’**  **Elev. 285 feet**

 **Longitude W 83° 02.768’**

Lithostratigraphic

unit and bed number Description Thickness Depth \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(feet) (feet)

**SOIL – 2 feet**

Bed 1 Sand: fine to medium and well sorted; no 2.0 0.0

 other lithic components noted; structureless;

 unconsolidated and loose but competent;

 grades downward into:

**RESIDUUM - 5.5 feet**

Bed 2 Residuum: sand: fine to medium and well 5.5 2.0

 sorted; argillaceous; massive and structureless;

 unconsolidated and competent (100% core

 recovery); deeply weathered; grades downward

 into:

**MIOCENE**

**ALTAMAHA FORMATION? – 42.5 feet**

**No diagnostic Altamaha features**

Bed 3 Sand: fine and medium grained and well 6.0 7.5

 sorted; very argillaceous and somewhat

 limonitic; some horizontal color banding

 suggestive of stratification; unconsolidated

 but tough and competent; deeply weathered:

 mottled deep brown/red with some gray and

 dusky yellow orange coloration; grades

 downward by decrease in clay content and

 noticeable stratification:

Bed 4 Sand: medium to fine grained and mostly 3.5 13.5

 well sorted; argillaceous with interstitial clay;

 unconsolidated and competent; weathered;

 grades downward by continuing decrease in

 clay content and loss of stratification into:

Bed 5 Sand: medium to fine sand and mostly well 3.0 17.0

 sorted; slightly argillaceous with somewhat

 more clay in the lower 1 foot; massive and

 structureless; unconsolidated, coherent and

 competent; grades downward by increasing

 sand-size into:

Bed 6 Sand: coarse grained and moderately well 2.0 20.0

 sorted; slightly argillaceous near the top of the

 Bed; massive and structureless; unconsolidated

 and competent; overlies:

CORE GAP 3.5 22.0

Bed 7 Clayey fine sand/finely sand clay: no other 0.5 25.5

 lithic components noted; structureless; sticky

 and plastic but of unknown competence; gray

 in color; overlies core gap:

NO CORE 11.0 26.0

CORE GAP 2.5 37.0

Bed 8 Sandy clay/clayey sand: (may be the same bed 0.5 39.5

 as Bed 7); structureless; unknown competence;

 gray in color: grades downward into:

Bed 9 Sand: coarse grained and poorly sorted; clayey, 2.0 40.0

 with a coarse gravel stringer at the top of the

 Bed and abruptly fining downward into clayey

 sand; some MnO2 (wad) at the base of the

 recovered core; stratified but appears

 structureless below the gravel stringer;

 unconsolidated and of unknown competence;

 weathered and orange in color; overlies core

 gap:

CORE GAP 8.0 42.0

**OLIGOCENE? RESIDUUM - 11 feet**

Bed 10 Clay residuum: with clasts or chunks of 9.5 50.0

 chert of various sizes. some mica noted but

 no quartz sand; the clay matrix appears to

 have been layered but is now contorted,

 perhaps due to drilling; otherwise massive

 bedded; the clay is unconsolidated and

 tough but moderately poor competence,

 probably due to the chert clasts during

 core drilling (~36% core recovery); overlies

 core gap:

CORE GAP 1.5 59.5

**UPPER EOCENE, UPPER JACKSONIAN**

**OCMULGEE FORMATION – 40.5 feet**

Bed 11 Sand: fine to very fine and well sorted, clayey 10.5 61.0

 and slightly micaceous; appears to be massive

 and structureless; unconsolidated and poorly

 competent (~17% core recovery); somewhat

 weathered and leached; overlies:

Bed 12 Clay: scattered films of MnO2, no other lithic 10.25 71.5

 components noted; massive and structureless;

 unconsolidated and very poorly competent

 (~12% core recovery); greenish gray in color but

 somewhat leached; overlies core gap:

CORE GAP 9.25 81.75

Bed 13 Limestone: granular and calcarenitic with 6.0 91.0

 scattered bryozoan fragments; argillaceous;

 massive and structureless; moderately

 consolidated and competent; grades

 downward into:

Bed 14 Clayey limestone/calcareous clay: no other 1.0 97.0

 lithic components noted; “peculiar

 interlayering, some layers rotated during

 coring, have the appearance of ‘fish scales’”;

 unconsolidated but apparently competent;

 overlies:

Bed 15 Sand: fine grained and well sorted; calcareous 3.5 98.0

 and argillaceous with scattered clay clasts;

 some probable “pyrite” grains, the same

 “pyrite” occurs along clay clast/matrix

 boundaries or contacts (could be Mn02);

 massive and structureless; unconsolidated

 and moderately coherent and competent

 (~43% core recovery) abruptly overlies:

**UPPER EOCENE, LOWER JACKSONIAN**

**BARNWELL GROUP – 146 feet**

**DRY BRANCH FORMATION**

**Twiggs Clay Member – 134.5 feet**

Bed 16 Limestone: finely sandy and slightly 2.0 101.5

 argillaceous with a thin layer of clay at

 ~103 feet; thin clay bed in a massive and

 structureless limestone; mostly consolidated

 and competent; grades downward into:

Bed 17 Sand: fine grained, well sorted and 1.5 103.5

 argillaceous; bioturbated; unconsolidated but

 competent; grades downward by loss of sand

 content into:

Bed 18 Clay: some silt and very fine sand along 6.5 105.0

 bedding planes and partings, slightly

 calcareous; very thinly laminated, like paper

 shale; unconsolidated but tough, resistant

 and competent; grades downward by

 increase in sand and loss of calcite contents,

 and by introduction of bioturbation into:

Bed 19 Sand and clay: no other lithic components 4.0 111.5

 noted; bioturbated, appears originally to have

 been prominently layered; unconsolidated and

 coherent and competent; abruptly overlies:

Bed 20 Limestone: argillaceous and moldic with 10.0 115.5

 common to abundant mollusk molds; slightly

 and finely sandy in the upper few inches of

 the Bed and in the lower half of the Bed, no

 quartz sand noted between the two

 occurrences; consolidated and moderately

 competent (~45% core recovery); grades

 downward into:

Bed 21 Sand: fine grained and well sorted; very 3.5 125.5

 calcareous with shell fragments concentrated

 in the middle of the Bed, moderately

 argillaceous; partially structureless with very

 rude layering; unconsolidated but competent;

 grades downward into:

Bed 22 Clay: similar to Bed 18 - some minor silt and 16.0 129.0

 very fine sand along bedding planes and

 partings, slightly calcareous throughout; fish

 scales noted along partings in the basal few

 inches of the Bed; very thinly laminated, like

 paper shale; unconsolidated but tough,

 resistant and competent; grades broadly

 downward by increase in quart sand and

 calcite and abrupt diminishing and loss of

 clay contents into:

Bed 23 Sandstone: fine grained and well sorted; very 2.0 145.0

 calcareous, fossiliferous and argillaceous;

 massive and structureless; moderately to

 lightly cemented and moderately competent;

 grades broadly downward into:

Bed 24 Sand: fine grained and well sorted; 3.0 147.0

 argillaceous and calcareous; massive and

 structureless; unconsolidated and moderately

 coherent and competent; grades downward by

 increase in calcite content into:

Bed 25 Sand/limestone: the quartz sand is fine 3.0 150.0

 grained and well sorted; very calcareous,

 somewhat fossiliferous and a trace of

 phosphate; massive and structureless; poorly

 consolidated and moderately coherent; very

 pale in shade; grades downward by

 diminishing of calcite content into:

Bed 26 Sand: fine grained and well sorted; very 3.5 153.0

 calcareous with higher calcite content in the

 upper part of the Bed, argillaceous with

 higher clay content and a trace of mica in

 the lower part; massive bedded and mostly

 structureless; unconsolidated and moderately

 coherent and competent; grades downward by

 increase in clay content into:

Bed 27 Clay: very calcareous, and variably and finely 1.5 156.5

 sandy; massive and structureless;

 unconsolidated and moderately competent

 (~62% core recovery); very pale in shade;

 grades downward into:

Bed 28 Sand and clay: quartz sand is fine grained 2.0 158.0

 and well sorted; clay occurrence is both

 interstitial but mostly in thin, undulatory

 layers; calcareous; prominently stratified;

 unconsolidated and moderately competent

 (~62% core recovery); grades downward by

 increase in clay and decrease in sand

 contents:

Bed 29 Clay: with thin layers, laminae and dustings 5.0 160.0

 of fine sand to silt along clay partings;

 calcareous; undulatory or wavy bedded;

 unconsolidated and moderately competent

 (~55% core recovery); grades downward by

 increase in sand content into:

Bed 30 Clay: similar to the overlying bed but the 2.0 165.0

 interlayered sand content is greater;

 calcareous as above; prominently stratified

 although the stratification planes are more

 level and less undulatory; unconsolidated

 and moderately competent (~55% core

 recovery); grades downward into:

Bed 31 Clay: slightly and finely sandy and silty with 43.0 167.0

 scattered quartz distributed along bedding

 planes and partings, slight lenticular

 concentrations of sand; calcareous with a

 trace of glauconite in the basal 1 foot; thinly

 stratified to laminated, layering ranges from

 slightly and unevenly undulatory to

 horizontal and flat; unconsolidated but tough

 and mostly competent (~93% core recovery);

 grades abruptly downward into:

**Tivola Limestone transitional into Twiggs Clay;**

***not* Tivola Limestone – 26 feet**

Bed 32 Limestone: argillaceous and glauconitic, a 5.5 210.0

 thin, glauconitic clay layer at ~210.5 feet;

 fossiliferous with common *Lepidocyclina* and

 scattered *Pecten* cf. *spillmani*; nil sand;

 stratified and undulatory bedded; mostly

 consolidated and competent (100% core

 recovery); grades downward into:

Bed 33 Limestone: marly and very argillaceous, 2.0 215.5

 glauconitic and fossiliferous; stratified and

 undulatory bedded; mostly partially

 consolidated and competent; grades

 downward into:

Bed 34 Clayey, calcareous, calcarenitic sediment/ 3.5 217.5

 calcarenitic, calcareous clay: very glauconitic

 and clayey, frequent to common *Lepidocyclina*,

 rare to frequent bryozoans some pectenids and

 mollusk and solitary coral molds; *Lepidocyclina*

 and bryozoans are the most conspicuous fossil

 elements; mostly massive and structureless;

 slightly consolidated, tough and competent;

 grades downward into:

Bed 35 “Limestone”: similar to the overlying bed but 15.0 221.0

 more calcareous and consolidated; very

 argillaceous to clayey and variably glauconitic,

 fossiliferous as above but with the addition of

 *Operculinoides* and apparent *Discocyclina*

 noted in the lower part; thinly to thickly

 stratified, individual layers are mostly massive

 and structureless; variably consolidated to

 unconsolidated, tough and competent (100%

 core recovery); grades broadly downward into:

**UPPER EOCENE, LOWER JACKSONIAN**

**BARNWELL GROUP**

**CLINCHFIELD FORMATION – 11.5 feet**

Bed 36 Sand: fine grained and well sorted; 7.0 236.0

 calcareous and slightly argillaceous and

 slightly fossiliferous; massive and

 structureless; unconsolidated and

 mostly competent (~71% core recovery);

 grades abruptly downward into:

Bed 37 Limestone: finely and irregularly sandy and 4.5 243.0

 variably fossiliferous with a line of intraclasts

 at the base of the Bed; massive and

 structureless except for the irregular

 distribution of fossil molds and quartz sand;

 consolidated and competent (~100% core

 recovery); disconformably overlies:

**MIDDLE EOCENE, CLAIBORNIAN**

**CLAIBORNE GROUP**

**LISBON FORMATION**

**Blue Bluff Member - 65 feet**

Bed 38 Silty, finely sandy clay/clayey, fine sand: 6.5 247.5

 somewhat calcareous with one thin sandy,

 argillaceous limestone layer with some shell

 impressions; finely micaceous with lignitic

 flecks; thinly interlayered to laminated, very

 nicely color banded with darker clay and

 lighter sand; unconsolidated but tough and

 mostly competent (~77% core recovery);

 grades abruptly downward into:

Bed 39 Limestone: very argillaceous with irregular 7.0 254.0

 distribution of fine sand, some lignitic clasts

 and pyrite noted (“dirty looking mess”);

 massive bedded but some irregular

 distribution of lithic components and some

 lithic variation down-section; consolidated,

 tough, hard and competent (~100% core

 recovery); grades downward into:

Bed 40 Clay: very finely sandy to silty, very 30.0 261.0

 micaceous and common lignitic flecks

 scattered throughout, common dark

 minerals of which some may be very fine

 pyrite crystals or dustings; a trace of

 pelletal phosphate or glauconite noted;

 calcareous throughout with some scattered,

 thin, argillaceous limestone layers, nil to

 few scattered small, chalky mollusk shells

 and shell fragments; scattered burrows;

 slightly bioturbated, partial rupturing of

 bedding planes, very wispy, churned,

 laminated appearance; unconsolidated but

 very firm, tough and competent; striking

 light/dark color patterns due to interlayering

 of darker shades of clay and lighter shades

 of sand color, disrupted layering and

 bioturbation; resembles “migmatite: in

 places;

 A fine grained, argillaceous limestone layer

 present at ~264 feet;

 Wisps of small, chalky mollusk shells below

 ~266 feet;

 The bivalve *Atrina* noted at ~269 feet;

 Fossil shells are less chalky and more

 aragonitic below ~272 feet;

 Has the appearance of “migmatite” below

 ~275 feet;

 No more fossil shells below ~282 feet;

 Bioturbation diminishes, layering is less

 disrupted and more even bedded below

 ~285 feet;

 Very thin limestone stringers at ~290 feet;

 Grades broadly downward by loss of

 bioturbation and increase in clay content

 into:

Bed 41 Clay: with very fine sand and silt along clay 16.5 291.0

 interlayers and partings, quartz sand

 content gradually decreases down-section;

 nil mica in the upper part, finely micaceous

 in the lower part of the Bed; calcareous

 throughout but non-macrofossiliferous; very

 thinly layered to laminated but layering is

 less conspicuous than in the overlying bed;

 unconsolidated but firm, tough and

 competent; grades downward into:

Bed 42 Clay: calcareous and fossiliferous, micaceous 1.0 307.5

 and pelletal phosphatic or glauconitic (can’t

 tell which); massive bedded; unconsolidated

 but competent; grades downward into:

Bed 43 Clay: appears granular in texture due to the 1.0 308.5

 abundance of pelletal phosphate; calcareous

 with scattered shells and shell fragments;

 finely micaceous; massive bedded;

 unconsolidated, firm and competent (~100%

 core recovery); grades downward into:

Bed 44 Limestone: argillaceous to clayey, glauconitic 3.0 309.5

 with scattered shells, rubbly with frequent

 intraclasts of clay with thin, glauconitized

 films or coatings on the surface of the

 intraclasts (basal rubble); massive bedded;

 consolidated and competent; disconformably

 overlies:

**LITHOLOGICALLY TRANSITIONAL BETWEEN STILL BRANCH SAND AND HUBER FORMATION (NOT OCONEE GROUP) – 107.5 feet**

Bed 45 Clay: no other lithic components noted; 4.0± 312.5

 massive and structureless; unconsolidated

 and waxy, moderately coherent (~47% core

 recovery); pale greenish gray to light gray;

 thickness and basal contact depth is

 uncertain due to poor recovery in the

 interval; appears to grade downward into:

Bed 46 Sand: fine grained and well sorted; probably 2.0± 316.5±

 a trace of interstial clay; very thinly layered;

 unconsolidated and moderately coherent and

 competent (~47% core recovery); greenish

 colored; thickness and basal contact depth is

 uncertain due to poor recovery in the

 interval, appears to grade abruptly downward

 into:

Bed 47 Clay: silty; very finely laminated with silt 1.0 318.5±

 occurring along clay partings; unconsolidated

 but competent; gray in color; thickness is

 probably accurate, basal contact depth is

 uncertain due to poor recovery in the cored

 interval; abruptly grades downward into:

CORE GAP 11.5 319.5±

Bed 48 Sand: medium grained and well sorted; no 2.0± 331.0± other lithic components noted; massive and

 structureless; unconsolidated, mostly

 incoherent and poorly competent; thickness

 and basal contact depth is uncertain due to

 poor recovery in the cored interval, overlies

 core gap:

CORE GAP 8.0 333.0±

NO CORE 20.0 341.0

Bed 49 Sand: clayey and micaceous; massive 3.0± 361.0±

 bedded to faintly bioturbated; unconsolidated

 and moderately coherent and competent

 (~50% core recovery); dark gray to black in

 color; overlies core gap (thickness and depth

 of contact depth is uncertain due to poor

 recovery in the interval):

Bed 50 Sand: medium to medium/fine and well 2.0± 364.0±

 sorted, a layer of very coarse and granully

 sand in the middle of the Bed; mostly

 massive and structureless except for the

 layer of coarse sand; unconsolidated and

 poorly coherent and poorly competent

 (<20% core recovery, thickness uncertain);

 moderate gray in color; overlies:

CORE GAP 11.0 366.0±

Bed 51 Sand: clayey, carbonaceous and lignitic; 4.0± 377.0±

 massive and structureless; unconsolidated

 and poorly coherent (<20% core recovery,

 thickness uncertain); overlies:

Bed 52 Sand: variably medium-grained to medium/ 19.0± 381.0±

 carbonaceous clay coarse grained to very

 coarse and granully, mostly well sorted

 quartz sand; probably a trace of interstitial

 clay and with scattered thin layers to

 laminae of dark gray, some scattered

 carbonaceous or lignitic flecks, slightly

 micaceous in the lower part; the sand is

 massive and structureless with scattered

 thin layers to laminae of clay;

 unconsolidated and moderately coherent

 and competent (~42% core recovery);

 thickness and basal contact depth is

 uncertain due to poor recovery in the

 interval:

**Bashi-equivalent? – ~20 feet**

**(“E1” according to USGS palynology)**

Same stratigraphic bed as above stratigraphic unit

Bed 53 Sand: medium to coarse grained and not 2.0± 400.0±

 well sorted; very micaceous, carbonaceous

 and lignitic; slightly, but not obviously,

 argillaceous, rudely stratified; unconsolidated

 and poorly coherent and poorly competent

 (~14% core recovery); thickness and basal

 contact depth is uncertain due to poor

 recovery in the core intervals; overlies core

 gap:

CORE GAP 7.0 402.0±

Bed 54 Sand: fine/medium to medium grained and 5.0± 409.0±

 Well sorted; micaceous with lignitic flecks on

 bedding surfaces, probably minor interstitial

 clay with one thin carbonaceous clay layer

 in the lower part of the Bed; thinly and

 rudely stratified; unconsolidated and

 moderately coherent and competent (~42%

 core recovery); thickness and basal

 contact depth is uncertain due to poor

 recovery in the core intervals; overlies core

 gap:

CORE GAP 6.0 414.0±

**UPPER PALEOCENE, SABINIAN**

**BAKER HILL FORMATION? – ~51.5 feet**

**Nanafalia-equivalent (“P2” according to USGS palynology)**

 Clay: disrupted; “sticky clay at bottom of 7.0± 421.0±

 409-421 foot core run”, gooey, gray clay with

 some lignitic material: very poor recovery

 (“messed up clay, reworked?” but moderate

 core recovery); thickness and basal

 contact depth is uncertain due to poor

 recovery in the cored intervals; overlies:

Bed 56 Kaolin: hard kaolin, very pyritic; massive and 17.0± 428.0±

 structureless but marbled gray and cream in

 color; unconsolidated and moderately

 competent (~54% core recovery); thickness

 and basal contact depth is uncertain due to

 poor recovery in the core intervals; grades

 downward into:

Bed 57 Kaolin: “good, hard Huber-type kaolin”, 6.0± 445.0±

 no other lithic components noted; mostly

 massive and structureless but appears to

 be vaguely stratified in the lower 1 foot;

 unconsolidated but tough, hard and

 moderately competent (~50% core recovery);

 thickness and basal contact depth is

 uncertain due to poor recovery in the core

 intervals; grades downward into:

Bed 58 Kaolin: “still Huber-type of hard kaolin”, no 2.5± 451.0±

 other lithic components noted; recovered core

 is massive and structureless; unconsolidated

 and poorly competent, “getting gooey and

 plastic” in the lower part of the recovered core

 (~25% core recovery); thickness and basal

 contact depth is uncertain due to poor

 recovery in the core intervals; overlies core

 gap:

CORE GAP 7.5 453.5±

NO CORE “sand cuttings” 10.5 461.0±

**LOWER PALEOCENE, MIDWAYAN, DANIAN**

**TRANSITIONAL MARSHALLVILLE/CLAYTON FORMATION – 91 feet**

**(Danian or “P1” according to USGS palynology)**

Bed 59 Sand: fine grained and well sorted; clayey, no 2.0± 471.5±

 other lithic components noted; recovered core

 is massive and structureless; unconsolidated,

 plastic, poorly coherent and competent (~22%

 recovery); thickness and basal contact depth

 is uncertain due to poor recovery in the cored

 intervals; overlies core gap:

CORE GAP 7.5 473.5±

CORE GAP “4 inches of carbonaceous sand cuttings” 11.3± 481.0±

Bed 60 Sand: medium/fine grained and mostly well 3.0± 492.3±

 sorted; argillaceous with increasing clay

 content downward and somewhat

 carbonaceous in the lower part of the

 recovered core; massive and structureless

 unconsolidated and moderate to poorly

 coherent and competent; (~35% core

 recovery); gray in color; thickness and

 basal contact depth is uncertain due to

 poor recovery in the cored intervals;

 overlies core gap:

CORE GAP 5.7 495.3±

Bed 61 Sand: fine grained and well sorted; somewhat 3.0± 501.0

 argillaceous with a layer of carbonaceous

 sandy clay in the lower part of the recovered

 core, scattered carbonaceous/lignitic material

 throughout; mostly massive and structureless;

 unconsolidated and poorly coherent and

 competent (~30% core recovery; thickness

 and basal contact depth is uncertain due to

 poor recovery in the cored intervals; overlies

 core gap:

CORE GAP 7.0 504.0±

Bed 62 Sand: fine/medium grained and well sorted; 10.0± 511.0±

 calcareous with irregularly scattered fossil

 shells and shell fragments; argillaceous and

 irregularly glauconitic; massive and

 structureless except for irregular distribution

 of subordinate lithic components;

 unconsolidated and moderately coherent

 and competent (~46% core recovery);

 thickness and basal contact depth is

 uncertain due to poor recovery in the cored

 intervals;

Bed 63 Sand: the recovered core consists of massive 2.5± 521.0±

 and structureless, medium grained and well

 sorted sand, no other lithic components

 noted; unconsolidated and poorly coherent

 and competent (~12% core recovery);

 thickness and basal contact depth

 is uncertain due to poor recovery in the

 cored intervals; overlies core gap:

CORE GAP 16.5 523.5±

Bed 64 Sand: medium grained and well sorted; 13.5± 540.0±

 slightly argillaceous; thinly layered at the

 top of the recovered Bed, massive and

 structureless below the upper 1 foot but

 could be very rudely layered – poor recovery,

 difficult to tell; unconsolidated and poorly

 coherent and poorly competent (~22% core

 recovery); thickness and basal contact depth

 is uncertain due to poor recovery in the cored

 intervals; overlies core gap:

CORE GAP 7.5 553.5±

Bed 65 Sand: medium to coarse grained and 1.5± 561.0±

 moderately well sorted; iron-stone cemented

 at the top of the recovered Bed, intraclasts of

 dark olive, waxy clay at the base of the

 recovered core, some interstitial clay; gypsum-

 bloom on the core surface; bioturbated;

 unconsolidated and poorly coherent and

 competent (~20% core recovery); thickness

 and basal contact depth is uncertain due

 to poor recovery in the cored intervals;

 disconformably overlies:

**UPPER CRETACEOUS, NAVARROAN-MAASTRICHTIAN**

**FORT VALLEY GROUP**

**PROBABLY NAKOMIS FORMATION - 121 feet**

**Transitional between the Nakomis and Ripley formations**

Bed 66 Kaolin: micaceous, appears to be of the “soft 16.5± 562.5±

 type” of kaolin but here it is soapy, tough and

 hard (this formation is not encountered in the

 kaolin mines up the dip); massive and

 structureless; unconsolidated but tough, hard

 and poorly competent (~25% core recovery);

 thickness and basal contact depth

 is uncertain due to poor recovery in the cored

 intervals; grades broadly downward by

 introduction of sand into:

Bed 67 Sandy kaolin/kaolinitic sand: quartz sand is 11.0± 579.0±

 fine grained and well sorted; kaolinitic with

 kaolin content decreasing down-section;

 somewhat micaceous; massive and

 structureless; very tough and almost hard

 but poorly competent (~20% core recovery);

 thickness and basal contact depth

 is uncertain due to poor recovery in the

 cored intervals; grades broadly downward

 into:

Bed 68 Sand: medium grained and well sorted; 3.0± 590.0±

 clayey and somewhat micaceous; massive

 and structureless; unconsolidated, still tough

 as the overlying bed and the clay present

 strongly influences the texture and

 hardness of the sediment, poorly

 competent (~20% core recovery); thickness

 and basal contact depth is uncertain due to

 poor recovery in the cored intervals; overlies

 core gap:

CORE GAP 8.0 593.0±

Bed 69 Sand: variably medium to coarse and 82.5± 601.0±

 granully, variably well to poorly sorted, the

 coarse sand may be well sorted or poorly

 sorted, the basal 1 foot of the Bed is very

 coarse grained and poorly sorted; scattered

 thin layers of clay/kaolin but probably very

 little interstitial clay/kaolin, the clay/kaolin

 layers range from soft and plastic on one

 hand to soapy, waxy, brittle and hard on the

 other hand; slightly micaceous but the mica

 appears to be associated mostly with the

 clay/kaolin, some lignitic material and/or

 pyritic material associated with the clay/

 kaolin; unconsolidated and the sand is

 mostly loose and poorly coherent, poorly

 competent (~19% core recovery), thickness

 and basal contact depth is uncertain due

 to poor recovery in the cored intervals;

 grades abruptly downward into:

**UPPER CRETACEOUS, NAVARROAN-MAASTRICHTIAN**

**RIPLEY FORMATION – 83.5 feet+**

Bed 70 Clay: finely micaceous with very fine sand/ 10.5± 683.5±

 silt along clay partings, some scattered

 lignitic material on clay partings and a pyrite

 nodule noted in the basal, transitional zone;

 very thin and delicate layering but

 bioturbated in the basal, transitional zone;

 unconsolidated and waxy but moderately

 good competence (~70% core recovery);

 thickness and basal contact depth is

 uncertain due to poor recovery in the cored

 intervals; grades broadly downward into:

Bed 71 Sand: fine to medium grained and moderately 6.5± 694.0±

 sorted; clayey and carbonaceous; massive and

 structureless; unconsolidated and poorly

 coherent and competent (~23% core recovery);

 thickness and basal contact depth is uncertain

 due to poor recovery in the cored intervals;

 grades abruptly downward into:

Bed 72 Sandy clay/clayey sand: finely sandy clay at 2.5± 700.5±

 the top of the Bed, becoming more finely

 sandy and less clayey downward; no other

 lithic components noted; massive bedded;

 probably poorly competent (~24% core

 recovery in the core interval); thickness and

 basal contact depth is uncertain due to poor

 recovery in the cored intervals; overlies

 core gap:

CORE GAP 8.3 703.0±

Bed 73 Clay: weathered orange/ochre, drilling mud 0.7± 711.3±

 or caving? overlies:

Bed 74 Sand: slightly fining upward; fine/medium 10.0± 712.0±

 grained and well sorted in the lower part of

 the Bed, becoming fine grained and well

 sorted upward; little clay noted in the lower

 part of the Bed, interstitial clay content is

 somewhat irregular in the upper part; no

 other lithic components noted; mostly

 massive bedded; unconsolidated, poorly

 coherent and poorly competent; thickness

 and basal contact depth is uncertain due

 to poor recovery in the cored intervals;

 grades downward into:

Bed 75 Sand: silty, very fine to fine grained and well 3.0± 722.0±

 sorted with a few somewhat coarse layers;

 somewhat argillaceous, slightly and finely

 micaceous with darker colored, thin layers

 or streaks of dark minerals; mostly massive

 in appearance but with subtle, rude layering;

 unconsolidated and poorly coherent and

 competent (~30% core recovery); thickness

 and basal contact depth is uncertain due to

 poor recovery in the cored intervals; overlies

 core gap:

CORE GAP 6.0 725.0±

Bed 76 Clay: with silty partings, probably very finely 2.0± 731.0±

 sandy in the lower part, no other lithic

 components noted; thinly layered to laminated

 but somewhat wispy and bioturbated in the

 lower few inches of the recovered core;

 unconsolidated and poorly competent (~20%

 core recovery); mostly black in color but gray

 in the basal few inches; thickness and basal

 contact depth is uncertain due to poor

 recovery in the cored intervals; overlies

 core gap:

CORE GAP 8.0 733.0±

Bed 77 Sand: fine to medium/fine grained and well 26.0± 741.0

 sorted; argillaceous becoming less

 argillaceous downward, a few thin clayey

 intervals; finely micaceous; massive in

 appearance but some thin intervals

 suggest rude stratification; unconsolidated

 and variably coherent, some mostly very

 soft, almost incompetent intervals, other

 intervals are competent (the average core

 recovery is ~49%); thickness and basal

 contact depth is uncertain due to poor

 recovery in the cored intervals; bottom of

 the logged core at 767 feet.

NOT LOGGED BELOW 767 FEET 13.0 767.0

NOT CORED BELOW 780 FEET 910.0 780.0

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TOTAL DEPTH – 1690 FEET