FL-WAK1

cretacea, Globotruncana (several species) also Heterostomella austiana Pleurostomella sp. and some other species distsinctly characteristic of the Austin section. Like the above to:
(Note: There was an 80' error in measurement and the samples now being studied were adjusted to compensate this which raises the point on the top of the Eagle Ford.)

3602-12'-Apparent top of Eagle Ford. Samples similar to the above, but with the addition of numerous fragments of a fine grained pyritic and glauconitic, light gray sandstone, and fine sand washing from same also numerous fragments of Ostrea sp. washing from this sandstone. Microfauna present, a mixture of specimens from various depths, largely from the Velasco shale.
Like the above to:

3632-42'-Materials and fauna as above with the addition of some fragments of flaky, green shale. Same to:

3662-72'-Where the fragments of flaky green shale are the dominant material in the samples: Fragments of a very fine grained and very finely glauconihic sandstone also present, and some fine sand. A few irregular shaped, brown, crystalline, sideritic nodules, and some cavings of other materials, and forams from higher depths.

3682-92'-Flaky green shale as above; some fragments of fine grained sandstone and fine sand, also as above, some fragments of Ostrea sp. and cavings of various materials and forams from higher depths. A few fragments of lignite. Like the above to:

3702-12'-Like the above, almost entirely flaky green shale, and a little fine sand, with some specimens of Gümbelina, Globigerina, and Planulina eagleforedensis, apparently washing from the green shale.
Like the above to:

3752-62'-Specimens of Pleurostomella cf. watersi (common in the Eagle Ford in this area) common. Material and general faunal characteristics as above. No change to:

3792-3802'-As above (mainly flaky green shale) but a number of fragments of a very fine grained, light gray, silty, micaceous, and glauconitic sandstone, also present, and some fine sand. No marked change in microfauna. Same to:

3862-72'-Similar to the above, but with fragments of the very fine grained, light gray, glauconitic and micaceous, silty sandstone fairly common. This material may be thinly interbedded with the green flaky shale. Some fragments of a dark greenish, brown, finely light speckled shale, also present in this sample. The speckled appearacne due to the presence of aggregates of crushed and finely broken microfossils. Foram fauna similar to that noted throughout the green shale section with a few small specimens of arenaceous forams also present.
Like the above to:

3912-22'-Cuttings of green shale (as above) and some fragments of flaky gray shale, and a few of the "speckled" dark greenish-gray shale, also many fragments of several types of fine grained, micaceous, and in part glauconitic sandstone, some loose sand and forams. Indiginous fauna similar to that of the preceding samples, but with some increase in the arenaceous forms present and some specimens of Valvulineria infrequens (Eagle Ford variety) and Planulina cf. kansasensis present.

3922-32'-Similar to theabove, with fragments of a flaky, dark brownish gray, highly "speckled" shale, common in the cuttings. A variety of Globigerina cretacea is the strongly dominant species of foram, washing from the "speckled" shale. (This contrasts with the dominant fossil in the "speckled" shale at the base of the Austin section which is Globotruncana (several species)).

3932-42'-Similar to the preceding, but with cavings of green shale and other materials from somewhat higher depths common.

3942-72'-No change.

3972-82'-Cuttings of green, gray, and dark brownish gray "speckled" shale, and some fragments of very fine grained, gray, and greenish gray sandstone as above. Fauna also as above, but some coarse sand grains also present in the sample and about 25 per cent of the sample, fine to moderately fine angular, clear, quartz sand.

3982-92'-Similar to the above, but sand much less common.

3992-4002'-(Note on bag: This depth corrected to 3921.) Sample of shale as above, with light speckled shale very abundant and little sand present.

3920-30'-"Corrected depth" -- similar to the above with about 25 per cent of sample fine sand.

3930-60'-No change.

3960-70'-Shale as above, and loose sand, also many fragments of a fine grained, finely glauconitic, white sandstone (possibly present near this depth).

3970-80'-As above with some very coarse sand grains present.

3980-90'-Cuttings of flaky green, flaky dark gray, and some of the speckled shale, and about 10 per cent fine to moderately coarse, loose sand. A few specimens of Reophax, which may be caving.

3990-4010'-Materials as above. Major portion of the samples flaky green shale, probably caving from much higher depths. Schlumberger picture suggests that sand is actually being drilled.

4010-20'-Approximate top of Lower Tuscaloosa sand section. Sample 50 per cent
fi fine to coarse quartz sand and 50 per cent shale fragments, and some frggments of sandstone as above.

Note: Samples continue as cuttings of green, gray and speckled shale, some fragments of sandstone, and varying amounts, often very small, of fine to coarse quartz sand, with some of the typical greenish yellow grains of the Tuscaloosa sand present to sample 4170-80′ (corrected depth) where frggments of several types of red and varigated shale come in abundantly. The sand content of the samples at least 60 per cent and over below 4110′. Note Schlumberger point for probable top of sand section.
The Reophax noted in the samples has been found with a typical Marine Tuscaloosa fauna in the Hammond Well, Jackson County, Florida, and the Mount Warren Chandler, but a similar form occurs in the Taylor in some areas, therefore its presence alone does not necessarily suggest the Marine Tuscaloosa. However, it should be kept in mind that its presence here, coming in just below the apparent true base of the Eagle Ford speckled shale, makes it possible for the section (probably sandstone and dark flaky shale) between about 3880 and 3950′ (corrected depth) might represent a phase of the Marine Tuscaloosa section.

FL-WAK1

FLA-WAK-OT-1

3732-48 | 95% pale gngry, fissile, soft, calc sh Tr. fgrn ss, Ltbrngry sh

3742-3922 | N.S.

3922-32 | 90% brngry-gngry, fissile, soft, calc sh 10% wh, micro, hard ls Tr. fgrn ss,

3932-42 | 90% sh 5% ls 5% pale gny, f-vfgrn, glauc, Arg, calc ss

3942-52 | — do —

3952-62 | N.S.

3962-72 | 90% sh 5% ls 5% ss

3972-82 | — do —

3982-92 | — do —

3992-02 | — do —

4002-5398 | N.S.

5398-08 | 35% brngry-gngry, fissile, soft, calc sh 25% rusty red, blocky sltst 25% purple, blocky sltst
10% c-mgrn, clear qtz sd. 5% pale gny, f-vfgrn, glauc, Arg, calc ss 5% lim.

5408-18 | 30% gn sh 35% red sltst 20% purple sltst 10% sd. 5% ss

5418-38 | N.S.

5438-48 | 50% gn sh 30% red sltst 5% sd. 10% ss 5% wh, micro, hard ls

5448-58 | — do —

5458-68 | 45% gn sh 45% red sltst 10% ss Tr. qtz sd.

5468-78 | 50% " 30% " 10% " 10% sd

5478-88 | 45% gn sh 40% red sltst 15% ss Tr. qtz sd, ls

5488-98 | — do —

5498-08 | 45% gn sh 35% red sltst 20% c-mgrn, wh, rd-A, qtz sd.
Tr. lim, ss, multicol ls.

-18 | 30% gn sh 10% red sltst 5% multicol, micro, hard ls 55% c-fgrn, wh, rd-A qtz sd
Tr. ss

5518-28 | 5% rusty red, blocky sltst 10% wh, ind, micro, ls 15% gn gry-brn gry fissile, calc, soft sh
70% multicol, c-fgrn, rd-A qtz sd.

5528-38 | 5% red sltst 20% wh ls 20% gn sh 55% sd

5538-48 | N.S.

5548-58 | 40% red sltst 5% ls 15% gn sh 40% sd

5558-68 | 10% red sltst 20% gn sh 70% sd. tr ls, ss

5568-78 | 30% red sltst 30% " 20% sd 10% fgrn-vfgrn, calc, Arg, plane, gn ss

5578-88 | 15% " 25% " 50% " 5% multicol, micro ls

5588-98 | 10% " 20% " 60% " 5% ls 5% fgrn-vfgrn ss as Above

5598-08 | 40% " 40% " 15% " 5% ls

5608-18 | 20% " 30% " 40% " 5% ls 5% ss

5618-26 | 10% " 15% " 45% " 5% " 5% "

5628-38 | — do —

5638-48 | — do —

5646-56 | 30% sltst 50% brn gry-gry sh 10% ls 10% ss

5656-66 | 20% sltst 50% " 20% ls 10% ss

5666-76 | 25% " 60% " 15% ls

5676-86 | 45% " 45% " 10% ss

5686-96 | 25% " 60% " 5% ls 10% ss

5696-06 | 15% " 40% " 20 % occ. gy clear sd 20% ls 5% ss

5706-16 | N.S.

5716-26 | 10% red sltst 40% sh 30% sd 15% ls 5% ss

5726-36 | 35% sltst 50% sh 5% ls 10% ss

5736-46 | 30% sltst 50% sh 10% ls 10% ss

FL-WAK1

WAK-1

2317 West Magnolia
July 19, 1943.

Mr. Herman Gunter,
State Geologist,
Drawer 631,
Tallahassee, Florida.

Dear Mr. Gunter:-

Herewith my report on samples from Brown & Ravlin No. 1 V. C. Phillips, Wakulla Co., Florida. Fla. Geol. Sur. No. W - 440.

399 - (first sample). Nodular, cream-colored, highly calcitic, somewhat porous Limestone, showing traces of a former high fossil content. Many badly worn and rolled, chalky molds of:-

Lepidocyclina sp. Camerina sp.
Cyclina sp. Coskinolina sp.
Rotalia mexicana var.

A few other indeterminate forms. Some Bryozoan fragments, also very poorly preserved.

Fauna Oligocene in age.

A small amount of clear quartz sand also present in sample.

399 - 409. Light brown, granular, crystalline porous limestone. Some vague traces of fossil impressions, and a few chalky molds as above.

409 - 439. Material as above, but more porous. A few poor molds of Bryozoan fragments noted in the limestone.

437 - 445. Similar to above. Generally much less porous.

445 - 516. Sample of chalky and crystalline limestone. Chalky material is rather evenly distributed and probably represents a former high fossil content. No definately determinable fossils noted.

516 - 546. Limestone like the preceeding, but numerous distinguishable fossils present. Common forms noted are:-

Coskinolina sp. Pseudo-orbitolina sp.
Valvulamina sp.

Also several species of Miliolids and some Bryozoan fragments.

546 - 554. Like the preceeding. Coskinolina the most abundant fossil present. Some [illegible] specimens of Dictyoconus sp. also present. Some poor molds of a large Camerina (?) sp. (thin) also present and other forms as listed from previous sample.

554 - 559. Cuttings of chalky, calcitic, fossiliferous limestone as above. Fauna the same, but very poorly preserved. Very few determinable forms. Poorly preserved small forams fairly common. Rotalia mexicana var. present.

559 - 564; 564 - 574; 574 - 584; 584 - 594; 594 - 606; 606 - 615 all similar to the above.

615 - 625. Cuttings of brown, crystalline, dolomitic and cream colored, chalky, porous limestone. Dolomitic and chalky portions fairly evenly distributed. Poor specimens of Coskinolina fairly abundant.

625 - 635. Material similar to the preceeding, but somewhat gypsiferous. The following forms are fairly well preserved and common:-

Valvulina sp.
Coskinolina sp.
Dictyoconus sp.

635 - 645; 645 - 655; 655 - 665; 665 - 675 all like the preceeding.

675 - 685. Chalky and calcitic and dolomitic fossiliferous limestone. Fossil material generally poor to undeterminable, but abundant. Fauna as above.

685 - 695. Crystalline, light brown, dolomitic and chalky, somewhat gypsiferous limestone. Fauna as above. Also a few specimens of Lepidocyclina (?) sp.

695 - 705. Material similar to preceeding. Coskinolina most abundant form. Lituonella sp. also present, and Lepidocyclina (?) sp. as above. Some specimens of Pseudorbitolina sp.

705 - 715. Light brown, granular, crystalline, porous, somewhat gypsiferous limestone.

715 - 725. Like the preceeding.

735 - 745. Highly gypsiferous, brown, granular crystalline, dolomitic limestone.

745 - 755. Light brown, granular, dolomitic and somewhat gypsiferous limestone.

755 - 765. Limestone similar to the preceeding, but also somewhat chalky and showing some fossil fragments. Many specimens of a large thick Camerina sp.; some specimens of Cypsina sp.; some Echinoid fragments; a few Coskinolinas

765 - 775. Cuttings of chalky, porous and somewhat calcitic limestone, showing traces of an original high microfossil content, but comparatively few forms well enough preserved to be determinable, even generically. Common forms recognized:-

Lepidocyclina sp.
Camerina sp. as above.

775 - 785; 785 - 795 both like the preceeding.

795 - 800. Materials similar to the preceeding. Some poor fragments of large forams and some poorly preserved, samll forams and Ostracods present.

If small forms

Asterigerina sp. most common form noted.
Eponides sp. cf. jacksonensis.
Rousseola sp.

805 - 815. Like the preceeding.

815 - 825. Similar to the preceeding. A very few determinable fossils present: species as above.

825 - 835. Like the preceeding.

835 - 845. Porous, calcitic and chalky, micro-fossiliferous, slightly glauconitic limestone. Common forams noted are:-

NAF

Coskinolina sp.

Most of this fossiliferous material is extremely poor rolled molds.

861 - 870. Dolomitic, light brown, crystalline, partly chalky and slightly glauconitic limestone. Poor fossil molds as above.

870 - 880. Like the preceeding.

880 - 890. Dolomitic and somewhat chalky limestone as above. A few poor fossil molds. Coskinolina and some Ostracods noted.

890 - 900. Granular, dolomitic and gypsiferous limestone.

900 - 915. Like the preceeding.

915 - 925. Material partly chalky and partly finely crystalline, brown dolomite, which materials are rather evenly distributed throughout the sample. Some brown chert also present.

925 - 935; 935 - 945 both like the preceeding.

945 - 955. Materials like the preceeding. Some specimens of Operculinoides cf. willcoxi.

NAF 955 - 965. Like the preceeding.

965 - 975. Similar to the preceeding. Operculinoides sp. as above common.

975 - 985. Like the preceeding. Operculinoides very abundant. Chert also more abundant than in preceeding.

Opercs

985 - 995; 995 - 1005 like the preceeding.

1005 - 1018. Like the preceeding. Also many fragments of two varieties of Lepidocyclina ocalana present.

Opercs

1018 - 1030; 1030 - 1041 Like the preceeding.

1041 - 1051. Material as above. Operculinoides very abundant. Lepidocyclina rare.

1051 - 1061; 1061 - 1071; 1071 - 1081 all as above.

1081 - 1091. Material similar to the preceeding. Abundant specimens of a small Camerina sp. ; also some fragments of Lepidocyclina (but not same species as above, this one having moderately fine beads). Many specimens of Operculina marianensis; some specimens of Robulus sp. and Gypsina globula also present.

1091 - 1100. Like the preceeding.

1100 - 1110. Like the preceeding. A small Cibicides cf. pseudo-ungeriana noted.

1110 - 1120; 1120 - 1130; 1130 - 1140; 1140 - 1150; 1150 - 1160 all like the preceeding.

1160 - 1170. Like the preceeding. Operculinoides sp. and some fragments of Lepidocyclina ocalana fairly common. Many fragments of brown chert and some traces of gypsum present.

1170 - 1180. No change.

1180 - 1195. Material similar to the preceeding; few large forams present; some poor calcite molds of small forams noted.

1195 - 1205. Materialsimilar to the preceeding. Large forams again common. Species as at 1150 - 1160, etc.

1205 - 1215; 1215 - 1225; 1225 - 1235 Like the preceeding.

1235 - 1245. Materials similar to the preceeding; few large forms present. Specimens of Robulus gutticostatus fairly common. Some grayish brown speckled chert also present.

1245 - 1255; 1255 - 1265; 1265 - 1275; 1275 - 1290 Like the preceeding.

1290 - 1300. Material as above, and about 25 % of sample is uneven grained, clear quartz sand. Some cavings.

1300 - 1310; 1310 - 1320; 1320 - 1330; 1330 - 1340 like the preceeding.

1340 - 1350. Similar to the preceeding. Very little sand.

1350 - 1360. Light brown, chalky, irregularly finely dolomitic limestone(the dolomite crystals evenly distributed in the limestone fragments where present). Some specimens of Operculinoides sp. General character of material chert as above.

1360 - 1370; 1370 - 1380 Like the preceeding.

1380 - 1390. White limestone similar to preceeding in character. Chert common as above. Fauna same as for preceeding. A few specimens of Operculina cf. marianensis also present in limestone.

1390 - 1400. Like the preceeding.

1400 - 1413. Cream-colored limestone like the preceeding in character. Chert common as above. Fauna same as preceeding, and some specimens of Robulus cutticostatus also present.

1413 - 1423. No change.

1423 - 33 Materials like the preceeding, but harder and more dense. Very few fossils noted.

1433 - 1443. Materials as above. Operculinoides the dominant foram present. Some specimens of Uvigerina cf. jacksonensis and some fragments of Nodosaria also present.

JF

1443 - 1453; 1453 - 1463; 1463 - 1473; 1473 - 1503; 1503 - 1533 all like the preceeding.

1533 - 1543. Light brown limestone and chert. Like the preceeding in character. Fauna same as for the above.

1543 - 1553. Similar to the preceeding, but no Uvigerina noted and a few Operculinoides present. A small amount of uneven grained clear quartz sand in sample.

1553 - 1564; 1564 - 1575; 1575 - 1585; 1585 - 1595; Like the preceeding.

1610 - 1630. Like the preceeding, but with some cavings.

1630 - 1640. Light brown limestone, like the preceeding in character; some brown chert; a small amount of clear quartz sand. No definately indigenous fossils noted.

1640 - 1650; 1650 - 1660; 1660 - 1670; 1670 - 1685 Like the preceeding.

1685 - 1695. Cream colored limestone similar to the preceeding, but more coarse textured and showing a trace of glauconite. Many small, poorly preserved (badly rolled molds) of Coskinolina, Eponides, Miliolids, a few of Lituonella and Valvulina and Spiroline present.

Spirolina? NAF

1695 - 1705. Like the preceeding.

1705 - 1715. Similar to the preceeding. Many small Miliolid sections and a few small Coskinolina noted in the limestone. Only a small amount of chert present, and it may be caving. A few badly worn specimens of Operculina (?). Some specimens of Discorbis cf. inornatus. Limestone slightly glauconitic.

1715 - 1725. Similar to the preceeding, but more free sand present, and a number of specimens of Operculinoides, some of which are obviously caving.

1725 - 1735. Material and fauna same as for 1705 - 1715.

NAF

1735 - 1745. Similar to preceeding. A few very poor glauconitic molds of Lepidocyclina ? sp. also present.

1745 - 1757. Similar to the preceeding but glauconite more common. Glauconite apparently originally filled molds of micro-fossils, which are too badly worn and altered to be determined.

1757 - 1766. Similar to preceeding. Glauconite common. Some poor molds of Camerina and Lepidocyclina and some specimens of Robulus sp., Discorbis and other non-determinable forms.

1768 - 1770. Same as above.

1779 - 1789. Similar to the preceeding. Some fossils not quite so badly worn.

1789 - 1799. Like the preceeding. Some specimens of Asterocyclina monticellensis, and several species of Robulus; a few specimens of Dictyoconus, Amphistegina cf. lopeztrigoi, Lepidocyclina (Polylepidina ?), Camerina sp., Operculina sp.; Many specimens of Fabularia sp. (cf. vaughani) and Fabularia (?) sp.

1799 - 1809. Like the preceeding.

1809 - 1819. Light cream colored, fossiliferous, calcitic and somewhat glauconitic limestone. Traces of fossils abundant, but fossils are generally very fragmental and worn. Fauna apparently similar to preceeding.

1819 - 1829. Similar to the preceeding, but with an abundant fauna, fairly well preserved. Specimens of

Lepidocyclina (Polylepidina gardnerae ?) very abundant.
Amphistigina cf. lopeztrigoi
Asterocyclina monticellensis
Operculina sp.
Dictyoconus (some rolled specimens).

1829 - 1840. Like the preceeding.

1840 - 1850. Cuttings of limestone and fauna as above, and also about 50 % of sample composed of light brown, granular porous dolomitic limestone.

1850 - 1860. Mainly dolomitic limestone as above, which is also somewhat glauconitic and shows some fossil fragments and occasional small sections of various forams, common in the immediately preceeding depths.

1860 - 1871. Like the preceeding.

1871 - 1881. Hard, chalky and calcitic limestone, somewhat glauconitic, and carrying many worn and broken specimens of

Asterocyclina monticellensis Amphistegina cf. lopeztrigoi
Fragments of Lepidocyclina (Polylepidina) sp.

1881 - 1891; 1891 - 1901 Like the preceeding.

1901 - 1911. Similar to the preceeding. Although the material is highly fossiliferous, most of the fossil material is badly broken and worn before deposition. Fauna same as for preceeding sample.

1911 - 1922. Chalky and calcitic, somewhat glauconitic limestone like the preceeding. Fauna the same.

1922 - 1932; 1932 - 1942; 1942 - 1952 Like the preceeding.

1952 - 1962. Similar to preceeding; limestone more calcitic than the preceeding, and fossil material is very poor in character and less abundant.

1966 - 1983. Hard, chalky, glauconitic and finely dolomitic limestone. Some partial sections of small forams.

2056 - 2061. Sample composed of fragments of hard, nodular, cream colored limestone and at least 50 % brown and grayish tan chert.

2122 - 2157. CORE. Calcareous and highly glauconitic sandstone. Washed :- large residue of fragments of the original material, glauconitic, loose sand; some poor calcite molds of some Rotalid forms of small foraminifera.

2127 - 2137. Hard, nodular fragments of cream colored limestone, showing traces of a few small forams.

2142 - 2147. Cuttings of materials and fauna like the preceeding.

2147 - 2152. CORE. Glauconitic, irregularly very finely dolomitic, chalky limestone, composed of cemented small fragments of calcite, which apparently represent finely broken molds of fossil material and some poor molds of small forams. Cibicides sp. and a few other forms recognised.

2157 - 2162. CORE 2 Highly glauconitic and chalky sandstone. Chalky material apparently partly broken and worn fossil material. Some traces of small forams as above.

Cibicides cf. pseudo-ungeriana and Globigerina bulloides fairly common.

Triloculina trigonula and a few doubtful Rotalid forms also noted.

2188 - 2193. CORE. Chalky and very finely sandy and calcitic limestone. Traces of small forams present in poor chalky molds.

2198 - 2205. CORE. Materials like the preceeding.

2205 - 2210. CORE. White, chalky, porous limestone, composed largely of finely broken fossil material, and some molds of smaller foraminifera. Globigerina and two species of Cibicides fairly common.

Cont.

2232 - 2242. Cuttings of hard, white, chalky limestone, and at least 50 % light grayish tan colored chert. No indigenous fossils noted. Some cavings of materials and fossils from higher depths.

2242 - 2252. Hard, cream colored limestone, apparently composed mainly of small, cemented calcite fragments of very finely broken fossil molds. About 50 % of sample is light tan gray chert as above, which occurs apparently in thin lenses and inclusions in the limestone.

2252 - 2262. Like the preceeding. A few very small and non-diagnostic forams present.

2262 - 2272. Material similar to preceeding, but somewhat coarser textured than above, finely porous and somewhat glauconitic. Chert rare. Some loose sand present.

2285 - 2295. Cuttings of chalky limestone, somewhat sandy; many fragments of chert and some cavings.

2295 - 2305; 2305 - 2315; 2315 - 2325; ~~[illegible]~~ 2325 - 2335 Like the preceeding.

2335 - 2345. White, chalky, irregularly sandy and glauconitic limestone. Sand, uneven grained, clear quartz, forms about 50 % of sample. Some cavings. Some light gray chert, which may be caving.

2345 - 2355; 2355 - 2365; 2365 - 2375; 2375 - 2385; 2385 - 2395 Like the preceeding.

2395 - 2400. Like the preceeding. A few specimens of Dictyoconus present.

2405 - 2415. Like the preceeding. Rolled specimens of Dictyoconus fairly common.

2415 - 2425. Like the preceeding. A few fragments of Camerina - probably caving. Some specimens of Dictyoconus as above.

2415 - 2425. Like the preceeding.

2435 - 2445. Moderately hard, whitechalky limestone. Some chert and a trace of glauconite. A number of specimens of Operculinoides and a few of Dictyoconus.

2445 - 2467. Like the preceeding.

2455 - 2465. Chalky limestone and chert as above. No fossils noted.

2465 - 2475. Hard white chalky limestone.

2475 - 2485. Moderately hard, white, chalky limestone, and some brown and gray chert.

2485 - 2500; 2500 - 2505; 2505 - 2515 Like the preceeding.

2515 - 2525. Limestone as above. Some sand present in sample and a number of worn specimens of Dictyoconus which may be caving.

2525 - 2535. Like the preceeding.

2535 - 2545. Limestone like the preceeding. Also many fragments of hard, grayish brown, slightly sandy limestone.

2545 - 2555. Hard, dense, grayish brown, shaly limestone, breaking with angular fracture. Some calcite molds of Orbitolina ? sp.

2555 - 2565; 2565 - 2575; 2575 - 2585; 2595 - 2605; 2605 - 2615; 2615 - 2625; 2625 - 2635; 2635- 2645 Like the preceeding.

2645 - 2655. Sample mainly cavings.

2665 - 2675. Gray shaley limestone, slightly sandy, and with a trace of mica. Many fragments of cream colored limestone and some fossils apparently caving. Some chert also possibly caving.

2675 - 2685. Material like the preceeding. Gray marly limestone, with much caving of other types of limestone and some chert probably caving from higher depths. A poorly preserved fauna of small forams wash from the gray marly limestone. A Velasco assemblage. Common species noted:-

Globorotalia velascoensis
Globigerina velascoensis
Globorotalia velascoensis var.
Eponides cf. exigua.

2695 - 2705. Similar to the preceeding, but a large amount of caving present.

2715 - 2725. Cuttings of gray, marly limestone and of cream colored, chalky limestone, probably caving. Fauna as above. A few specimens Globotruncana arca and G. fornicata and Pseudotextularia varians apparently washing from a white Cretaceous chalk just beginning to come into the section.

TM
JM

2725 - 2735. Materials and fauna as above.

2735 - 2745. CONT'D Greenish gray, fossiliferous and slightly micaceous marl, and many fragments of cavings of cream colored limestone and some fragments of hard, white chalk, which possibly represents the material being drilled. The chalk carries a typical Cretaceous fauna and some Inoceramus fragments. Common forams from the chalk are:-

Globotruncana arca	Pseudotextularia varians
Globotruncana fornicata	Anomalina cf. nelsoni
Lenticulina rotulata	Anomalina rubiginosa

2745 - 2755. Like the preceeding. A few specimens of Planulina taylorensis and Cibicides excolata also present.

2755 - 2765. Like the preceeding. A few pyrite nodules also present in the chalk.

2765 - 2775. Like the preceeding.

2785 - 2795. Like the preceeding. A few specimens of Anomalina cf. grosserugosa var. as in the Inoceramus Zone of Peninsular Florida.

2795 - 2805. Like the preceeding.

2845 - 2855. Materials like the preceeding. Common forams present:-

Cibicides excolata	Ciroidina micheliniana
Anomalina grosserugosa	Globotruncana arca

A few specimens of Heterostomella cf. foveolata.

2855 - 2865; 2865 - 2875 (more cavings); 2875 - 2885 Like the preceeding.

2905 - 2915. Cuttings of material and fauna as above. Some sand, apparently washing from some cavings of cream colored, soft chalk.

2915 - 2925. Materials like the preceeding. Fauna less abundant, and consists mainly of specimens of Globotruncana and Globigerina cretacea. Planulina taylorensis also fairly common.

2925 - 2935. Like the preceeding.

2935 - 2945. Like the preceeding. Some fragments of a brownish gray marl noted.

2955 - 2965; 2965 - 2975 (cavings abundant); 2975 - 2985; 2985 - 2995 as above.

2995 - 3005. Like the preceeding. Pseudoguadrienella capitosa (characteristic of Lower Taylor) and Kyphopyxa christneri. Many fragments of brownish gray marl present in sample.

3005 - 3015; 3015 - 3025; 3035 - 3045; 3045 - 3055 Like the preceeding.

3055 - 3065. Similar to the preceeding. Brownish gray marl is dominant material present. Pyrite nodules fairly common. Fauna as above.

3065 - 3075 (many cavings); 3075 - 3085; 3085 - 3095; 3105 - 3115; 3115 - 3125; 3135 - 3145; 3145 - 3155 (Inoceramus frag. common); 3155 - 3165; 3165 - 3175; 3175 - 3185; 3185 - 3195 (cavings abundant); 3195 - 3205; 3205 - 3215 No change.

Ave on 3105 - 10 = 13 on slide Austin
" 3185 - 3422 = 14 " "

3215 - 3225. Material apparently mainly cavings; uneven sand and fragments of various types of limestone and marl from higher depths. Some fossils caving from much higher depths.

3225 - 3235. As above.

3235 - 3245. Cuttings of gray marl, some white limestone, many fragments of cream colored clayey chalk which has caved continuously into the Cretaceous section, and some sand(uneven grained, clear quartz). Forams from various depths - mainly Cretaceous; no new diagnostic species noted.

3245 - 3255; 3255 - 3265; 3265 - 3275; 3275 - 3285; 3285 - 3295; 3305 - 3312; 3312 - 3322; 3322 - 3332; 3332 - 3342 Like the preceeding.

3342 - 3352. Sample composed ~~of~~ largely of fragments of brownish gray marl and about 25 % uneven grained sand. Some forams, mainly Globotruncana, and some caving from higher depths. Some materials also caving. No narrowly diagnostic foram species noted.

3352 - 3362; 3362 - 3372; 3372 - 3382; 3382 - 3392 Like the preceeding.

3392 - 3402. Similar to the preceeding. Gümbolina globulosa and small varieties of Globigerina cretacea common in this material.

3402 - 3412; 3412 - 3422; 3422 - 3432; 3432 - 3442; 3442 - 3452; 3452 - 3462; 3462 - 3472; 3472 - 3482 Like the preceeding.

3482 - 3492. Similar to the preceeding. An undescribed Gyroidina characteristic of the Austin present in fine screenings.

3492 - 3502. Materials as above. No diagnostic fossils noted.

No cavings of forams - 10 on slide

3502 - 3512; 3512 - 3522 (Gyroidina - Austin sp. present); 3522 - 3532; 3532 - 3542; 3542 - 3552 (Gümbolinas dominant) ; 3552 - 3562; 3562 - 3572; 3572 - 3582; 3582 - 3592; 3592 - 3600 Like the preceeding.

3602 - 3612. Similar to the preceeding. Some sand-coated fragments of Ostrea sp. also present, and a few flakey fragments of a dark brown, speckled shale. A number of specimens of Pleurostomella waterei (Austin sp. species).

3612 - 3622; 3622 - 3632 No change.

3632 - 3642. Like the preceeding. Some fragments of white, somewhat micaceous, fine grained sandstone; some fragments of Ostrea sp. as above; some speckled shale and some forams also as above. Most of the forams present probably caving from various higher depths.

3642 - 3652; 3652 - 3662; 3662 - 3672. Like the preceeding.

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3672 - 3682. Sample composed mainly of fragments of several types of gray and brownish gray marly shale, and some fragments of brown greasy - looking, somewhat finely light spotted, flakey shale; some fragments of flakey, olive-green shale, and a small amount of sand. Some forams, most of which wash from caving fragments from higher depths. A variety of Globigerina cretacea and Gümbolina globulosa most common forms present.

3682 - 3692. Sample composed mainly of flakey fragments of olive-green, slightly carbonaceous shale; some fragments of dark brown, somewhat light spotted, speckled shale; and many fragments of cavings from higher depths.

3692 - 3702; 3702 - 3712; 3712 - 3722 Like the preceeding.

3722 - 3732. Sample almost entirely composed of flakey fragments of olive-green shale and a small amount of fine, clear quartz sand. Very few forams present.

3732 - 3742; 3742 - 3752; 3752 - 3762. Like the preceeding.

3762 - 3772. Materials like the above, carrying a few Ostrea fragments, and apparently fragments of a lense of very fine grained, light gray, micaceous sandstone.

3772 - 3782; 3782 - 3792; 3792 - 3802; 3812 - 3822; 3822 - 3832; 3832 - 3842; 3842 - 3852; 3852 - 3862; 3862 - 3872; 3872 - 3882 Like the preceeding.

3882 - 3892. Similar to the preceeding; also a number of flakey fragments of dark, brownish gray, micaceous, finely light speckled shale.

3892 - 3902. Like the preceeding. Some increase in the brownish gray shale.

3912 - 3922. No change.

3920 - 3930. Cuttings of flakey, olive-green, slightly carbonaceous shale as above, and about 50 % fragments of brownish black, flakey and micaceous, and irregularly light spotted shale. The light spots in this shale are apparently crushed and finely broken fossil material. Some free sand and a few fragments of light gray sandstone as above. The few forams present apparently caving from higher depths.

3922 - 3932; 3930 - 3940 as above.

3940 - 3950. Olive-green, flakey shale; brownish - black light spotted shale; and some fragments of fine grained, light gray micaceous sandstone as above.

3950 - 3960. Sample mainly the brownish-black flakey shale. Some sandstone fragments.

3962 - 3972. Like the above.

3972 - 3982. Brownish-black shale and many fragments of olive green.

3982 - 3992. Similar to the preceeding. Also numerous specimens of Globigerina cretacea var. (common to Eagle Ford) and some specimens of Gimbelina moremani (characteristic of Eagle Ford) from the brownish black shale.

3992 - 4002. Like the above.

3990 - 4010. Sample about 50 % olive-green shale and 50 % brownish black speckled shale. Very few forams. Species as above.

4010 - 4020. As above. Some free sand present.

4020 - 4030. Similar to preceeding. Some fragments of Ostrea sp. partly sand - coated, and some fragments of the fine grained, light gray micaceous sandstone, apparently lenticular in the shales.

4030 - 4040. Sample composed mainly of thinly flakey fragments of dark brownish gray shale, and fragments of very fine grained micaceous and slightly carbonaceous sandstone, apparently lenticular in the shale.

4040 - 4050; 4050 - 4060 as above.

4060 - 4070. Similar to the preceeding. Some large quartz grains also present in the sample.

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4070 - 4080; 4080 - 4090 as above.

4090 - 4100. Shales like the preceeding. Some of the fragments somewhat light-spotted (i.e. crushed fossil material) and also somewhat micaceous. Shales show some fine sand lenses and some finely broken carbonaceous material also.

4100 - 4110. Sample of thinly flakey fragments of dark brownish gray, slightly carbonaceous shale, and fragments of a very fine grained, micaceous sandstone, apparently lenticular in the shale. Some large, free, quartz grains.

4120 - 4130 ; 4130 - 4140. As above.

4150 - 4160. Sample about 50 % shale as above and 50 % coarse to moderately fine clear quartz sand.

4160 - 4170. As above.

4170 -4180. Sample composed of flakey fragments of dark brownish gray shale as above; fine, loose sand; many fragments of brownish red, micaceous clay.

4180 - 4190. Sample mainly composed of thinly flakey, dark gray shale and fine sand. A few fragments of red clay like that in preceeding sample.

4190 - 4200. Like the preceeding. Apparently many caving fragments also present.

4200 - 4210. Sample composed mainly of flakey fragments of dark gray shale, some fragments of brownish gray, speckled shale; some of fine grained, micaceous, light gray sandstone, and many large quartz grains.

4210 - 4220. Fine fragments of flakey, dark gray shale; fine sand; also many nodular fragments of dark brownish-red (typical "red-bed") clays, and some large nodular fragments of quartz and feldspar.

4220 - 4230. Like the preceeding. An increase in the "red-bed" material.

4230 - 4240. Like the preceeding.

4240 - 4250. Similar to the preceeding. An increase in the sand content of the sample.

4250 - 4260. Fine fragments of thinly flakey, dark gray, shale; sand about 50 %; some fragments of micaceous, fine grained, light gray sandstone and a few red-bed fragments.

4260 - 4270. As above.

Lower Cretaceous

4270 - 4280. Shale and sand as above. Also many fragments of brick red to dark brown (red-bed) hard clay; many large quartz and feldspar sand grains, and some fragments of a pink-stained, finely and highly sandy, hard, chalky limestone. About 50 % of sample is uneven grained, moderately coarse, clear quartz sand. A few fragments of lignite, and a few fragments of white, moderately coarse grained sandstone. The limestone may be nodular.

4280 - 4290. Similar to the preceeding, but only a very few limestone fragments present.

4290 - 4300. As above.

4300 - 4310. Cuttings of flakey gray shale and flakey, micaceous and sandy, clay shale; some sand, and about 50 % fragments of a brick red and light tan spotted, unctuous clay.

4310 - 4320; 4320 - 4330; 4330 - 4340. AS above.

4340 - 4350. Sample mainly fine to coarse, clear quartz; some red and some gray clay shale fragments present.

4350 - 4360. As above.

4360 - 4370. More shale fragments, otherwise as above.

4370 - 4380. As above. Sand averages coarser grained.

4380 - 4390. Small fragments of red, unctuous clay and gray, flakey shale; loose sand, usually fine grained; some obvious cavings from higher depths.

4390 - 4400. As above. 4400 - 4410; 4410 - 4420 As above.

4420 - 4430. Fragments of gray shale; red, light spotted, sticky clay; loose, fine to very coarse, sand; some fragmenst of various types of sandstone noted from higher depths.

4430 - 4440. Sand about 75 % of sample; remainder clay and shale fragments as above. Numerous moderately large flakes of colorless mica present.

4440 - 4450; 4450 - 4460; 4460 - 4470 (less mica); 4470 -4480; 4480 - 4490;
4490 - 4500; 4500 - 4510; 4510 - 4520; 4520 - 4530; 4530 - 4540; As above.

4540 - 4550. Small sample, mainly flakey fragments of dark gray shale.

4550 - 4560. Sample about 50 % small flakey fragments of gray shale andred-brown clay, and 50 % fine to moderately coarse,(mainly fine) sand. Some flakes of clear mica and additional odd fragments of various materials from higher depths.

4560 - 4570; 4570 - 4580; 4580 - 4590 As above.

4590 - 4600. Sand averaging coarser; otherwise like the above.

4600 - 4610. Sample mainly greenish gray, and dark gray shale fragments and small fragments of brick red clay. Some sand.

4610 - 4620. Sample about 50 % sand and 50 % small clay and shale fragments. Some flakes of clear mica.

4620 - 4630; 4630 - 4640. Like the proceeding.

4640 - 4650. Sample about 50 % red-brown, somewhat light spotted clay and 50 % fine to moderately coarse (mainly fine) sand. Some gray shale fragments and other cavings. Some mica.

4650 - 4660; 4660 - 4670; 4670 - 4680; 4680 - 4690; 4690 - 4700; 4700 - 4710 As above.

4710 - 4720. Like the above. A little green shale also present, probably coming from near this depth.

4720 - 4730. As above.

4730 - 4740. Sample about 50 % brick red clay shale and 50 % very fine to moderately coarse, quartz sand (mainly fine); some mica.

4740 - 4750. Like the above. Some gray clay shale fragments, probably cavings.

4750 - 4760; 4760 - 4770. As above.

4770 - 4780. AS above. Many coarse yellow and clear quartz grains present.

4780 - 4790; 4790 - 4800; 4800 - 4810. No change.

4810 - 4820. Sample mainly composed of flakey fragments of gray shale and sand. Some red clay fragments also present.

4820 - 4830. Fine to coarse clear quartz sand, and fragments of gray clay shale and brick-red clay as above. Stray fragments of other materials from higher depths.

4830 - 4840. Mainly flakey fragments of gray shale and fine sand.

4840 - 4850. About 50 % small fragments of brick-red clay and 50 % fine to moderately coarse (mainly fine) sand. Some colorless mica.

4890 - 4900. Apparently mainly cavings from much higher depths. Some sand.

4900 - 4910. Small fragments of brick-red clay; small flakey fragments of gray clay shale. Some fine sand.

4910 - 4920. As above.

4920 - 4930. Similar to the above. Cavings very abundant.

4930 - 4940; 4940 - 4950; 4950 - 4960; 4960 - 4970 Like the preceeding.

4970 - 4980. Sample mainly fine to coarse quartz sand. Some clay and shale fragments as above and cavings of fragments of various materials from higher depths.

4980 - 4990; 4990 - 5000; 5000 - 5010. No change.

5010 - 5020. Cuttings of brick red, micaceous, "red-bed" clay, and about ~~50%~~ 25 % fine to coarse clear quartz sand. Some gray clay shale and cavings.

5020 - 5030. AS above.

5030 - 5040. Dark purple and brick red clay and fine to coarse (at least 50 % coarse) sand, mainly clear and yellow grains; mainly quartz and some feldspar.

5040 - 5050; 5050 - 5060. Like the preceeding.

5060 - 5070. Mainly very coarse sand. Yellow and clear grains of quartz and some feldspar. A few grains of rose quartz. Some colorless mica.

5070 - 5080. As above.

5080 - 5090. As above. Sand averages slightly finer than the above. Some clay and shale fragments still present and some cavings from much higher depths.

5090 - 5100. Like the above.

5108 - 5118. Sample composed of about 50 % small flakey fragments of red clay-shale, greenish gray shale and fine to coarse sand. Some cavings.

5118 - 5128. (Ostrea frag. caving ?); 5128 - 5138; 5138 - 5148; 5148 - 5158; 5158 - 5168; 5168 - 5178; 5178 - 5188; 5188 - 5198; 5198 - 5208. All like the preceeding. No change.

5208 - 5218. Small sample. Mainly flakey fragments of yellowish green shale.

5218 - 5228. Small flakey fragments of gray and brick-red clay shale, and fine to coarse sand (mainly fine). Some clear mica.

5228 - 5238; 5238 - 5248; 5248 - 5258; 5258 - 5268 No change.

5268 - 5278. Similar to the above. Flakey fragments of green shale very common.

5288 - 5298. Similar to preceeding, but sample larger and 50 % sand present; also much caving.

5298 - 5308. Sample again moderately small. Flakey fragments of red, gray and green clay shale; some sand; many cavings.

5308 - 5318; 5318 - 5328; 5348 - 5358; 5358 - 5368; 5398 - 5408; 5408 - 5418; 5418 - 5428; Like the preceeding.

5428 - 5438. Mainly small flakey fragments of brick red clay and green, flakey clay shale.

5438 - 5448. As above, and about 25 % sand. Some cavings.

5448 - 5458. Like the above. Some gray clay shale. Many obvious cavings.

5458 - 5468; 5468 - 5478; 5478 - 5488; 5488 - 5498 No change.

5498 - 5508. Large sample. Clays as above and at least 50 % fine to coarse sand.

5508 - 5518; 5518 - 5528; 5528 - 5538; Like the preceeding.

5538 - 5548. Sample mainly moderately coarse sand; mainly clear quartz with a few yellow grains. About 10 % of sample is fragments of various types of clay and shale and some other materials noted from higher depths.

5548 - 5558. Similar to preceeding, with sand somewhat finer grained on an average.

5558 - 5568. Like above.

5568 - 5578. Sample comparatively small; about 50 % shale and clay fragments, and 50 % sand. Fragments of reddish brown, sticky clay very abundant.

5578 - 5588. Sample again largely moderately coarse sand, with clay fragments and fragments of various other materials forming about 10 % of sample.

5588 - 5598. Like the preceeding.

5598 - 5608. Sample about 50 % fragments of red-brown and gray shale, and 50 % sand. Some cavings.

5608 - 5618. Sand about 75 %. Shale fragments and cavings about 25 %.

5618 - 5628; 5628 - 5638. Like the preceeding.

5638 - 5648. Like the preceeding. Small fragments of red-brown clay still very common.

5646 - 5656. Like the above.

5656 - 5666. Sample mainly fine to coarse sand (fine predominating). About 25 % of sample is various materials, mainly fragments of gray clay shale and light gray very fine grained, highly micaceous sandstone . This sandstone and other stray fragments of various materials probably caving.

5666 - 5676. Sample about 75 % small fragments of red-brown and gray clay shale; some fragments of flakey green shale and of the micaceous sandstone, noted above. Some obvious cavings. About 25 % fine sand.

5676 - 5686. Small sample. Mainly red-gray and some green flakey clay shale.

5686 - 5696. As above.

5696 - 5706. Materials like the above and about 50 % sand.

5706 - 5716; 5716 - 5726. No change.

5726 - 5736. Sample about 50 % small fragments of dark gray shale and small fragments of brownish red clay; and 50 % fine sand. Some cavings. Some fragments of an uneven grained (generally modertaely coarse)

somewhat micaceous, yellow- stained, hard sandstone, possibly coming from near this depth.

5736 - 5746. Sample mainly composed of small fragments of red clay, and gray flakey clay shale, some sand and cavings. Some fragments of red, sandy limestone, probably concretionary in the red clay.

SUMMARY

The contacts suggested below are questionable, but are the best I can do at present. This indefinateness is due partly to the fact that many of the samples contained large amounts of cavings, not always easy to recognize where the lithology was uniform or had a ~~variable~~ uniform variability over a considerable thickness ofsection. Also the fauna and lithology of the subsurface section in this critical part of the State has not yet been studied in sufficient detail from carefully sampled wells, to enable one to make clear-cut correlations with other areas.

OLIGOCENE. 399 - 915.

Chalky, calcitic and dolomitic limestone, carrying a fauna of Oligocene age.

EOCENE. JACKSON. OCALA. 915 - 1433 (?).
Chalky and dolomitic limestone, with varying amounts of brown chert. Typical Jackson species present.

JACKSON AND/OR CLAIBORNE. LITUONELLA ZONE ? 1433 (?) - 1745 (?)
The probable equivalent of the Lituonella Zone of peninsular Florida. The fauna shows a resemblance to both the Jackson and the Claiborne. The lithology is somewhat similar to the Jackson.

CLAIBORNE AND WILCOX (?) 1745 (?) - 2545.
The equivalent of my Dictyoconus Zone in peninsular Florida. This part of the section carries a number of species which are definately Claiborne in age, and a number which definately correlate it with the Dictyoconus Zone. Lithologically, this portion of the section is mainly a glauconitic limestone.

VELASCO. 2545 - 2725.
A hard, gray, marly limestone, carrying only Globigerina and Orbulina in the upper part of the section, but a large and very characteristic Velasco fauna in the bluish and greenish marls from 2675 and deeper.

UPPER CRETACEOUS. ("Selma") NAVARRO. Top 2725.
White chalk. Navarro fauna with typical Navarro species present at 2725 - 2745.

TAYLOR. Top 2745
Taylor species first appear. Top of my "Inoceramus Zone" of peninsular Florida.

PECAN GAP. TOP 2845
Species first abundant.

Brownish gray marl section. Top. 2935.

LOWER TAYLOR. Top 2995.
Top of section carrying a fauna characteristic of the lower part of the Lower Taylor.

AUSTIN. Top 3482.
First forams typical of the Austin noted.
At 3602, the first appearance of dark brown, "light speckled" shaley marl.

Probable top of "Eutaw" at 3632.
Section below this point carries brown and gray, somewhat micaceous and somewhat carbonaceous, thinly flakey shales; some dark brown, greasy and light speckled shales; some olive green flakey shales; micaceous and carbonaceous sand lenses; some fragments of Ostrea sp.

EAGLEFORD. Top 3982.
First forams characteristic of the Eagle Ford noted.

"TUSCALOOSA". Probable top 4210.
Red beds and coarse sands, some green and gray shales.
No indigenous fossils.
At 4270 - 80, a possible lense of pink stained, hard, chalky and sandy limestone. It is impossible to tell from samples whether this is a lense or nodules in the red-bed section.

Age?

T.D. 5746

Work over on a part of the Brown and Ravilin, V. G. Philips No. 1, Wakulla County, Florida.

3005-15'-Gray marl, some fragments of chalk from above. Many Inoceramus prisms and fairly numerous forams. Globotruncana common. No forams representing formations older thanthe Taylor noted. Same to:

3055-65'-Approximate top of the Austin Section. Material and fauna as above, with some fragments of a brownish-gray marl introduced into the section. Microfauna present in this sample apparently coming mainly from the overlying gray marl section. Some specimens of Globigerina cretacea, several species of Globotruncana, Gaudryina austiana, and Globorotalia umbilicata present.
(Samples continue as above, with a gradual increase in the amount of brownish gray shale fragments, and fauna from same in which Globorotalia umbilicata is common at 3105-15.) Sample continue similar to the above, with small washed residues, which in many cases consist mainly of material and fossils from higher depths to: Materials being drilled apparently a dark gray and brownish gray, soft, marly shale.

3342-52'-Fragments of brownish gray marl, and cavings of shale. Forams and some sand from higher depths as in the preceding samples, also a few fragments of somewhat light, speckled, brownish gray marl. The light spotting due, apparently to the presence of much crushed, microfossil material. Indigenous micro-fauna apparently the same as for the preceding samples of Austin age.
Like the above to:

3422-32'-Similar to the above with many fragments of brown-white streaked and spotted marl present. This a typical Lower Austin marl. Samples continue as gray and brownish gray marl and some fragments of the white, finely streaked and spotted, brownish gray marl. Forams from this and various higher depths, and some cavings of material also from much higher depths. About 25 per cent of the samples fine to moderately fine sand (also probably caving). No forams diagnostic of beds older than Austin noted.

3482-92'-As above, with fragments of a dark gray, flaky "speckled" shale fairly common.
Same to 3502-12-

1502-12'-Materials as above, but comparatively little caving from much higher depths. Micro-fauna includes Globorotalia umbilicata, Kyphophxa christneri, Dorothia alexanderi, Ventilabella austiana, Ventilabrella eggeri, Planulina texana (small variety) Heterostomella austinana, Eouvigerina cf. aculeata, Pleurostomella sp. Fauna is Austin in character.
Ssmples remain similar to the above, many with cavings from the Velasco forming a major portion of the samples to:

3572-82'-Fragments of dark brownish gray, frequently light spotted, and streaked shale common, and some fragments of gray, marly shale, and some of limestone, chert, and other materials coving from much higher depths. A little sand, also probably caving. Micro-fauna mainly species caving from the Velasco shale, with some specimens of Globigerina