Detailed Geologic Sections from Auger Holes in Northeastern Charleston County, South Carolina, east of 79° 45' West Longitude

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U. S. GEOLOGICAL SURVEY OPEN-FILE REPORT 97-712-A

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature

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U.S. Geological Survey, Reston, VA 20192 1997

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Introduction

In order to prepare a detailed map of the Quaternary and pre-Quaternary geology of Charleston County, South Carolina, sediments from numerous auger holes need to be studied to determine their lithologic characteristics, spatial distribution, and temporal framework. While the distribution of major geologic units and their boundaries can be shown on geologic maps and cross sections, much of the detailed subsurface auger data can not be shown in such a visual presentation. Therefore, these data are being collected in a series of open-file reports for use by geologists, engineers, and community planners. For central Charleston County, many of these auger-hole logs have been published previously (Weems and Lemon, 1985; Weems and others, 1985a, 1985b, 1985c, 1987) and used as a database for a series of 1:24,000 scale geologic maps constructed for the isoseismal region of the 1886 Charleston, South Carolina, earthquake (Weems and Lemon 1988, 1989, 1993). These publications served as a drill-hole database for the central part of the county. However, the northeastern end and southwestern end of Charleston County presently do not have such a detailed database for geologic map compilation. In these regions, new auger holes were needed to provide a more even data base.

To provide part of this coverage, the authors augered holes spaced at approximately 2 mile intervals in the northeastern part of Charleston County , and the logs of these auger holes are presented herein. Where possible, auger holes were sited in the vicinity of a bench mark or spot elevation point on the appropriate 7.5-minute topographic quadrangle map. Elsewhere, elevations of the tops of auger holes were estimated from the contour intervals on appropriate 7.5-minute quadrangle maps. In this report, the locations of the auger holes are given by latitude and longitude and by measured positions on the topographic quadrangles. The topographic quadrangles also were divided into nine rectangles of virtually equal size, which are referred to as the "central 1/9" (CC 1/9), "northwest 1/9" (NW 1/9), "north-central 1/9" (NC 1/9), "west-central 1/9" (WC 1/9), etc. The appropriate rectangle is indicated for each auger hole. Lithic descriptions were made with the aid of a 10X hand lens, grain-size charts, and color charts. It is probable that units described as "clays" locally may include clayey silts or clayey sands. Unit names conform to those used previously in this region by Weems and others (cited above).

The data in this report were gathered by auguring with a truck-mounted, power auger using 5-foot drill-stem sections. At first, one stem was augered into the ground and then pulled to describe the soil profile. In subsequent runs, one, two, or

three new stems were added during each augering run, depending on depth and on how easily the auguring proceeded. For greater accuracy, we attempted to keep sample rise on the drill stems to a minimum. Most auger holes targeted the top of the Ashley Formation or the top of the Santee Limestone, depending on which unit was within range of the auger rig.

Age and Sequence of Units Penetrated by Auger Holes

Unit	Dominant Lithologies	Age
Modern barriers and marsh	Sand, silt, clay	Holocene
Silver Bluff beds	Sand, silt, clay	late Pleistocene
Wando Formation	Sand, silt, clay	late Pleistocene
Ten Mile Hill beds	Sand, silt, clay	middle Pleistocene
Ladson Formation	Sand, silt, clay	middle Pleistocene
Daniel Island beds	Silt, clay	early Pleistocene
Goose Creek Limestone	Limestone, sand	early Pliocene
Marks Head Formation	Sand, silty	early Miocene
Ashley Formation	Sand, muddy, calcareous	late Oligocene
Santee Limestone	Limestone	middle Eocene

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Locality Descriptions and Detailed Lithologic Logs

AWENDAW QUADRANGLE

(Depths in feet)

AW-96-1: 1.50 miles W of east quadrangle border, 3.35 miles S of north quadrangle border; 0.45 mile ESE of "BM 17" (EC 1/9, latitude 33° 03' 43"N, longitude 79° 31' 33"W). Surface elevation about 8 feet.

SILVER BLUFF BEDS	1-9	Sand, fine-grained with bimodal rounded coarse-grained fraction, yellowish-gray 5Y7/2) in top foot grading through grayish-yellow (5Y8/4) (1-6 feet) to yellowish-gray (5Y7/2), sharp basal contact
WANDO FORMATION	9-10	Silt, sandy (very fine-grained), micaceous, medium-bluish-gray (5B5/1), grades to:
	10-18	Silt, sandy (very fine-grained), interbedded with thin layers of sand (very fine- to fine-grained), silty, medium-bluish-gray (5B5/1), *Mulinia* abundant
	18-25	Silt, sandy (very fine- to fine-grained), medium-bluish-gray, contains abundant and diverse molluscan fauna including oysters, *Anadara ovalis*, *Oliva*, etc., sharp basal contact
TEN MILE HILL BEDS	25-26	Silt, clayey and sandy (very fine-grained), much stiffer than above, oysters abundant, plinthite nodules present, grayish-green (10GY5/2), grades rapidly to:
	26-29	Sand, very fine-grained, silty, shell fragments present but none appear to be oysters, grades down to:
	29-33	Silt, clayey, micaceous, medium-gray (N5) with mottles of grayish-green (10GY5/2)

ASHLEY FORMATION	33-50	Limestone (calcarenite), fine-grained, light-olive-brown (5Y5/6) grading to moderate-olive-brown (10Y4/4) by 45 feet
	50-53	Limestone (calcarenite), fine- to medium-grained, glauconitic and phosphatic, small rounded to subrounded phosphate pebbles abundant, moderate-olive-brown (5Y4/4)
SANTEE LIMESTONE	at 53	Impenetrable hard bed, presumed top of Santee Limestone

Base of Silver Bluff beds: -1 foot below sea level
Base of Wando Formation: -17 feet below sea level
Base of Ten Mile Hill beds: -25 feet below sea level
Base of Ashley Formation: -45 feet below sea level
Bottomed on Santee Limestone?

AW-96-2: 3.40 miles E of west quadrangle border, 1.35 miles S of north quadrangle border; on west side of "T" intersection (NC 1/9, latitude 33° 06' 18"N, longitude 79° 34' 01"W). Surface elevation about 23 feet.

WANDO FORMATION	1-6	Sand, fine- to very fine-grained, well sorted, very fine-grained heavy minerals abundant, pale-yellowish-orange (10YR8/6) and dark-yellowish-orange (10YR6/6) mottled in upper foot, grading through pale-yellowish-brown (10YR6/2) (1-3 feet) to dusky-brown (5YR2/2), grades to:
	6-14	Sand, very fine- to fine-grained, well sorted, very fine-grained heavy minerals abundant, thixotropic, dusky-yellow (5Y6/4) grading through grayish-yellow (5Y8/4) and yellowish-gray (5Y7/2) to light-olive-gray (5Y5/2)(11-14feet), grades to:
	14-18	Sand, fine-grained, sparsely shelly, medium-bluish-gray (5B5/1)
	18-19	Silt, very fine-grained sandy, slightly clayey, medium-bluish-gray (5B5/1)
	19-23	Sand, very fine- to fine-grained, silty, sparsely shelly, medium-bluish-gray (5B5/1)
	23-29	Silt, sandy (very fine-grained), clayey, medium-bluish-gray (5B5/1)
	29-30	Sand, very fine-grained, silty, sparsely micaceous, shelly, medium-bluish-gray (5B5/1)
	30-43	Silt, sandy (very fine-grained), clayey, medium-bluish-gray (5B5/1)
SANTEE LIMESTONE	43-46	Limestone (calcarenite), fine- to coarse-grained, angular, silty, finely phosphatic, yellowish-gray (5Y8/1)

Base of Wando Formation: - 20 feet below sea level
Bottomed in Santee Limestone

AW-96-3: 0.70 mile E of west quadrangle border, 3.70 miles S of north quadrangle border; 0.4 mile NEE of 29 foot spot elevation (WC 1/9, latitude 33° 04' 17"N, longitude 79° 36' 47"W). Surface elevation about 23 feet.

WANDO FORMATION	0-1	Sand, fine-grained, well sorted, clean, grayish-orange (10YR7/4), grades to:
	1-6	Sand, fine- to very fine-grained, thixotropic, very fine-grained heavy minerals present, yellowish-gray (5Y7/2) grading through moderate-brown (5YR3/4) (2-3 feet) to light-olive-gray (5Y6/1), grades to:
	6-14	Sand, fine- to medium-grained, micaceous, slightly silty, thixotropic, yellowish-gray (5Y8/1) grading through greenish-gray (5GY6/1) to light-olive-gray (5Y5/2), grades to:
	14-18	Sand, fine- to medium-grained, shelly (mostly ***Mulinia***), grayish-olive-green (5GY3/2), grades to:
	18-24	Sand, fine- to coarse-grained, shelly (mostly ***Mulinia***), dark-greenish-gray (5GY4/1), abrupt basal contact
TEN MILE HILL BEDS	24-38	Silt, sandy (very fine-grained), medium-light-bluish-gray (5B6/1), clayey, sparse stringers of very fine-grained sand present (burrows?), sandy lenses more abundant in basal four feet
	38-39	Sand, fine- to medium-grained, silty, medium-greenish-gray (5GY5/1)
LADSON FORMATION	39-45	Silt, sandy (very fine-grained), clayey, finely micaceous, denser than above, medium-olive-gray (5Y5/1); plant stems abundant at top of bed and roots penetrate into upper 3 feet; grades rapidly to:
	45-48	Sand, fine- to coarse-grained, silty, medium-light-bluish-gray (5B6/1), grades rapidly to:

	48-51	Silt, sandy (very fine-grained), micaceous, clayey, stiff and dense, medium-light-bluish-gray (5B6/1)
	51-90	Sand, fine- to coarse-grained, silty, loose, light-olive-gray (5Y6/1), grading down to dominantly coarse-grained by 61 feet, most of bottom 20 feet fell off stems
SANTEE LIMESTONE	90-93	Limestone (calcarenite), fine- to coarse- grained, angular fragments in creamy matrix, yellowish-gray (5Y8/1)

Base of Wando Formation: -1 foot below sea level
Base of Ten Mile Hill beds: -16 feet below sea level
Base of Ladson Formation: -67 feet below sea level
Bottomed in Santee Limestone

AW-96-4: 1.65 mile E of west quadrangle border, 1.45 miles S of north quadrangle border; 0.3 mile NE of 31 foot spot elevation (NW 1/9, latitude 33° 06' 14"N, longitude 79° 35' 47"W). Surface elevation about 30 feet.

WANDO FORMATION	0-6	Sand, fine-grained, well sorted, grayish-yellow (5Y8/4)grading through dusky-brown (5YR2/2) (2-4 feet) to pale-brown (5YR5/2), grades to:
	6-21	Sand, fine- to very fine-grained, clean, well sorted, thixotropic, slightly micaceous, yellowish-gray (5Y8/2) grading through light-olive-gray (5Y5/2) (11-14 feet) to dark-greenish-gray (5GY4/1)
	21-25	Silt, sandy (very fine-grained), medium-bluish-gray (5B5/1), clayey, contains sparse ***Mulinia***
	25-29	Sand, dominantly very fine- to fine-grained, but poorly sorted up to coarse-grained, silty, shelly, grayish-green (5G5/2)

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TEN MILE HILL BEDS	29-41	Silt, sandy (very fine-grained) and clayey, medium-light-bluish-gray (5B6/1), locally with stringers of very fine-grained sand (burrows?), grades rapidly at base to:
	41-45	Sand, fine- to coarse-grained, poorly sorted, silty, shelly (mostly ***Mulinia***), fine-grained dark heavy minerals abundant, medium-gray (N5)
	45-46	Silt, sandy (very fine-grained) and clayey, medium-light-bluish-gray (5B6/1)
	46-47	Sand, fine- to coarse-grained, poorly sorted, silty, shelly (mostly ***Mulinia***), fine-grained dark heavy minerals abundant, medium-gray (N5)
	47-48	Silt, sandy (very fine-grained) and clayey, medium-light-bluish-gray (5B6/1)

	48-52	Sand, fine- to very coarse-grained but dominantly coarse- to very coarse-grained, poorly sorted, pale-green (10G6/2); contains pebbles of limestone and quartz, quartz fraction round to subround and 1 to 1.5 in. in diameter
SANTEE LIMESTONE	52-55	Limestone (calcarenite), mostly fine-grained with a few angular fragments, creamy matrix, yellowish-gray (5Y8/1)
	at 55	Refusal, impenetrable hard bed

Base of Wando Formation: +1 foot above sea level
Base of Ten Mile Hill beds: -22 feet below sea level
Bottomed in Santee Limestone

AW-96-5: 1.25 mile W of east quadrangle border, 2.70 miles S of north quadrangle border; at 26 foot spot elevation (NE 1/9, latitude 33° 05' 08"N, longitude 79° 31' 17"W). Surface elevation 26 feet.

WANDO FORMATION	0-1	Sand, fine-grained with a minor component of medium-grained, mostly well sorted, clean, grayish-yellow (5Y8/4), grades to:
	1-11	Sand, fine- to very fine-grained, clean, sparse coarse mica, moderate-brown (5YR4/4) grading through dark-yellowish-orange (10YR6/6) (3-6 feet) to yellowish-gray (5Y8/1)
	11-20	Sand, dominantly fine-grained but very fine- to coarse-grained and poorly sorted, clean, light-olive-gray (5Y5/2) grading to light-olive-brown (5Y5/6) by 14 feet, grades to:
	20-22	Sand, dominantly very fine- to fine-grained but poorly sorted up to coarse-grained, silty, micaceous, medium-bluish-gray (5B5/1)
	22-26	Silt, very fine-grained sandy and clayey to sand, very fine- grained, silty, contains scattered grains of fine- to coarse-grained sand, shelly (mostly *Mulinia* but with some *Anadara transversa* and *Noetia*), medium-bluish-gray (5B5/1)
	26-31	Sand, fine- to coarse-grained, poorly sorted, silty, shelly, grayish-green (10GY5/2), grading down to fine-grained, well sorted, clean, basal foot full of coarse mica flakes, light-olive-gray (5Y6/1) down to basal six inches, which are dark-gray (N3) and very rich in mica, sharp basal contact
TEN MILE HILL BEDS	31-40	Silt, sandy (very fine-grained) and clayey, roots present in upper foot, medium-bluish-gray (5B5/1), oysters abundant below rooted zone

	40-42	Sand, fine- to medium-grained, poorly sorted, grayish-green (10GY5/2), pebbly with irregular limestone clasts to 1.5 in. in diameter and rounded quartz clasts up to 0.8 in.
SANTEE LIMESTONE	at 42	Total refusal, presumed top of limestone

Base of Wando Formation: - 5 feet below sea level
Base of Ten Mile Hill beds: -16 feet below sea level
Bottomed on top of Santee Limestone?

AW-96-6: 3.15 miles W of east quadrangle border, 2.90 miles N of south quadrangle border; 0.1 mile WNW of "Light" (CC 1/9, latitude 33° 02' 32"N, longitude 79° 33' 15"W). Surface elevation about 8 feet.

FILL	0-1	Gravel
SILVER BLUFF BEDS	1-8	Sand, fine-grained with bimodal rounded fraction, grayish-orange (10YR7/4) grading through dusky-yellow (5Y6/4) to medium-gray (N5), very fine- to fine-grained dark heavy minerals present, coarse mica sparse at top and more abundant downward
WANDO FORMATION	8-11	Silt, sandy (very fine-grained) and clayey, medium-bluish-gray (5B5/1), micaceous
	11-18	Silt, sandy (very fine-grained) and clayey, greenish-gray (5G5/2), *Mulinia* and oysters present from 14-18 feet, grades rapidly to:
	18-23	Sand, fine- to coarse-grained but dominantly fine, poorly sorted, clayey and silty, shelly, medium-gray (N5)
TEN MILE HILL BEDS	23-24	Silt, sandy (very fine-grained) and clayey, greenish-gray (10GY6/1), very stiff and dense, roots present, grades to:
	24-28	Sand, fine- to medium-grained, silty, micaceous, light-olive-gray (5Y5/2) grading downward to:
	28-41	Sand, fine-grained, well sorted, silty, micaceous, light-olive-brown (5Y5/6), interbedded locally with 2-3 inch-thick layers of very fine-grained sandy silt, medium-gray (N5)
	41-46	Silt, stiff, medium-gray (N5), dense, very micaceous

LADSON FORMATION	46-53	Sand, fine-grained, silty, very micaceous, very fine-grained heavy minerals abundant, light-olive-gray (5Y6/1), grades to:
	53-55	Sand, medium- to coarse-grained, subangular, small 0.2-0.5 in. rounded quartz pebbles present, light-gray (N7) grading to moderate-olive-brown (5Y4/4) in basal four inches
ASHLEY FORMATION	55-59	Limestone (calcarenite), fine-grained, light-olive-brown (5Y5/6)
	59-63	Limestone (calcarenite), fine- to medium-grained, quartzose and phosphatic, dark-olive-brown (5Y4/6)
SANTEE LIMESTONE	at 63	Refusal, presumed top of limestone

Base of Wando Formation: -15 feet below sea level
Base of Ten Mile Hill Beds: -38 feet below sea level
Base of Ladson Formation: -47 feet below sea level
Base of Ashley Formation: -55 feet below sea level
Bottomed on top of Santee Limestone?

AW-96-7: 1.35 miles E of west quadrangle border, 0.55 mile N of south quadrangle border; 0.45 mile NW of the "t" in Saltpond Creek". (SW 1/9, latitude 33° 00' 28"N, longitude 79° 36' 05"W). Surface elevation about 25 feet.

FILL	0-1	Mottled sand with brick and mortar fragments
WANDO FORMATION	1-8	Sand, fine-grained, well sorted, clean, very fine-grained heavy minerals abundant, dark-yellowish-orange (10YR6/6) from 1-2 feet, grading through yellowish-orange (10YR7/6) with plinthite nodules (2-3 feet), to dusky-yellow (5Y6/4), grades to:
	8- 21	Sand, very fine- to fine-grained, very fine-grained heavy minerals abundant, micaceous, thixotropic, yellowish-gray (5Y7/2) grading through greenish-gray (5Y6/1) (12-16 feet) to medium-bluish-gray (5B5/1), grades rapidly to:
	21-26	Silt, sandy (very fine-grained), clayey, micaceous, medium-bluish-gray (5B5/1), shelly in basal foot, grades rapidly to:
	26-30	Sand, fine-grained, well sorted, silty, very fine-grained heavy minerals abundant, micaceous, medium-bluish-gray (5B5/1) in upper foot then grading to medium-greenish-gray (5G5/1), grades to:
	30-45	Sand, fine- to medium-grained, very fine-grained heavy minerals abundant, contains abundant fragments of *Mulinia* and a few oysters throughout, molluscan fauna becomes much more diverse toward base, medium-greenish-gray (5G5/1)
	45-49	Silt, sandy (very fine-grained), clayey, much stiffer than beds above, medium-bluish-gray (5B5/1), grades rapidly to:
	49-53	Sand, very fine-grained to medium-grained, silty, medium-greenish-gray (5G5/1), shell fragments abundant
	53-54	Sand, medium- to very coarse-grained,

		silty, contains a few stringers of silt, clayey and sandy (very fine-grained), grayish-green (10GY5/2), 0.4-0.8 in. diameter subrounded quartz pebbles present on basal contact
TEN MILE HILL BEDS	54-60	Silt, sandy (very fine-grained), medium-bluish-gray (5B5/1), stiff, finely micaceous, sparse 0.2 in. diameter subrounded quartz pebbles on basal contact
LADSON FORMATION	60-61	Sand, fine- to very fine-grained, silty and clayey, pale-grayish-red (5R5/2), probably buried soil, grades rapidly to:
	61-67	Sand, fine- to medium-grained, very fine- to fine-grained heavy minerals abundant, micaceous, light-olive-gray (5Y6/1)
ASHLEY FORMATION	67-91	Limestone (calcarenite), fine-grained, foraminifera abundant, upper one inch dark-yellowish-brown (5YR4/2), grading rapidly to light-olive-brown (5Y5/6)

Base of Wando Formation: -29 feet below sea level
Base of Ten Mile Hill beds: -35 feet below sea level
Base of Ladson Formation: -42 feet below sea level
Bottomed in Ashley Formation

AW-96-8: 2.05 miles E of west quadrangle border, 1.35 mile N of south quadrangle border; 1.2 mile SW of the mouth of Awendaw Creek. (SW 1/9, latitude 33° 01' 23"N, longitude 79° 35' 23"W). Surface elevation about 22 feet.

WANDO FORMATION	0-9	Sand, fine-grained, well sorted, clean, very fine-grained heavy minerals abundant, grading down to fine- to medium-grained by 6 feet and with scattered coarse grains at base, dusky-yellow (5Y6/4) from 0-1 feet grading through dark-yellowish-orange (10YR6/6) from 1-5 feet to yellowish-orange (10YR5/6) from 5-9 feet, grades rapidly to:
	9-17	Sand, fine-grained, well sorted and silty, very fine-grained heavy minerals abundant, yellowish-gray (5Y7/2) at 9-11 feet, grading to pale-olive-gray (5Y6/2)
	17-18	Silt, very fine-grained sandy, clayey, micaceous, medium-dark-gray (N4)
	18-22	Sand, fine-grained, silty, dark-greenish-gray (5GY4/1)
	22-33	Silt, clayey, sandy (very fine-grained), micaceous, sparsely shelly, dark-greenish-gray (5GY4/1)
	33-40	Sand, very fine- to fine-grained, silty, shelly with oysters and *Anadara brasiliana*, grading down to medium- to coarse-grained at base
	40-41	Silt, denser than silt beds above, shelly, dark-greenish-gray
	41-44	Sand, medium- to very coarse-grained, silty, dark-greenish-gray (5GY4/1), shelly including *Anadara brasiliana* and *Noetia*
TEN MILE HILL BEDS	44-51	Silt, sandy (very fine-grained), dense, finely micaceous, dark-greenish-gray (5GY4/1), carbonaceous material scattered about; peaty and full of wood chunks from 48-51 ft, wood blackish-

		red (5R2/2) and dark-yellowish-orange (10YR6/6)
	51-69	Silt, sandy (very fine-grained), dense, finely micaceous, medium-gray (N5) grading through olive-gray (5Y3/2) (56-64 ft) to dark-greenish-gray (5GY4/1), wood fragments present from 56-58 feet
LADSON FORMATION	69-90	Sand, medium- to coarse-grained, subrounded to subangular, light-olive-gray (5Y5/2)
	90-94	Sand, medium- to coarse-grained, contains scattered 0.4 in. diameter quartz pebbles, light-olive-gray (5Y5/2)
ASHLEY FORMATION	94-97	Limestone (calcarenite), fine-grained, upper three inches olive-brown (5Y3/4), grading rapidly to light-olive-brown (5Y5/6)

Base of Wando Formation: -22 feet below sea level
Base of Ten Mile Hill beds: -47 feet below sea level
Base of Ladson Formation: -72 feet below sea level
Bottomed in Ashley Formation

BULL ISLAND QUADRANGLE

(Depths in feet)

BI-96-1: 1.2 miles E of west quadrangle border, 2.7 miles N of south quadrangle border; at 11 foot spot elevation between the words "Old" and "Fort" (SW 1/9, latitude 32° 54' 50"N, longitude 79° 36' 16"W). Surface elevation 11 feet.

HOLOCENE BARRIER SANDS	0-1	Sand, fine-grained, well sorted, clean, grayish-orange (10YR7/4) grading through dusky-yellowish-brown (10YR2/2) to pale-yellowish-brown (10YR6/2)
	1-6	Sand, fine-grained, well sorted, clean, very fine-grained dark heavy minerals abundant, yellowish-orange (10YR5/6) (1-3 feet) grading through medium-gray (N5) (3-4 feet) to yellowish-gray (5Y7/2) (4-6 feet)
	6-24.5	Sand, very fine- to fine-grained, clean, well sorted, very fine-grained dark heavy minerals abundant, shell fragments present and becoming more abundant downward, thixotropic, grayish-olive (10YR4/2)
	24.5-25	Silt, sandy (very fine-grained), medium-gray (N5)
	25-29	Sand, very fine-grained, silty, shelly, grayish-green (10GY4/2)
HOLOCENE MARSH DEPOSITS	29-41	Silt, clayey, "greasy", slightly odiferous, contains a few scattered shells, dark-greenish-gray (5GY4/1) grading by 36 feet to dark-gray (N3), rounded olive-gray (5Y4/2) phosphate pebbles up to 0.8 in. in diameter in basal foot
MARKS HEAD FORMATION	41-52.5	Sand, fine-grained, well sorted, moderate-olive-brown (5Y4/4), grades to:
	52.5-54	Sand, very fine-grained, silty and clayey, moderate-olive-brown (5Y4/4), grades to:

	54-66	Sand, fine-grained, well sorted, very finely micaceous, moderate-olive-brown (5Y4/4)
	66-80	Sand, fine-grained, well sorted, very finely micaceous, light-olive-gray (5Y4/2), coarsens downward
	80-98	Sand, fine- to medium-grained, sparsely shelly, moderate-olive-brown (5Y4/4)
ASHLEY FORMATION	98-116	Limestone (calcarenite), fine-grained, composed of small foraminifera tests, light-olive-brown (5Y5/6)

Base of Holocene barrier sands: -18 feet below sea level
Base of Holocene marsh deposits: -30 feet below sea level
Base of Marks Head Formation: -87 feet below sea level
Bottomed in Ashley Formation

BI-96-2: 2.80 miles E of west quadrangle border, 3.75 miles N of south quadrangle border; at 13 foot spot elevation 0.35 mile SSW of "Northeast Point" (CC 1/9, latitude 32° 55' 46"N, longitude 79° 34' 18"W). Surface elevation 13 feet.

HOLOCENE BARRIER SANDS	0-6	Sand, fine-grained, well sorted, very fine-grained dark heavy minerals abundant, dark-yellowish-orange (10YR6/6) in upper foot, grading through pale-yellowish-brown (10YR6/2) to yellowish-gray (5Y7/2), grades to:
	6-11	Sand, fine-grained, well sorted, thixotropic, very fine-grained dark heavy minerals abundant, shelly, dark-greenish-gray (5G4/1) grading to medium-dark-gray (N4)
	11-30	Sand, fine-grained, well sorted, thixotropic, very fine-grained dark heavy minerals abundant, more shelly than above, dark-greenish-gray (5G4/1)
HOLOCENE MARSH DEPOSITS	30-32	Silt, clayey, "greasy", odiferous, dark-gray (N3)
	32-45	Sand, very fine-grained, very silty and clayey, odiferous, slightly micaceous, 4 inch-thick lenses of clayey silt at 43 and 45 feet, dark-gray (N3)
	45-46	Sand, fine- to medium-grained, silty and clayey, odiferous, dark-gray (N3), this sand fills burrows in upper foot of unit below
DANIEL ISLAND BEDS	46-49	Silt, dense, clayey, very finely micaceous, upper foot dark-gray (N3) grading through very dark-gray (N2) to dark-greenish-gray (5GY4/1)
	49-50	Sand, medium- to very coarse-grained, contains well rounded quartz granules, dark-greenish-gray (5GY4/1)

MARKS HEAD FORMATION	50-51	Sand, very fine- to fine-grained, silty, very fine mica abundant, moderate-olive-gray (5Y4/2)

Base of Holocene barrier sands: -17 feet below sea level
Base of Holocene marsh deposits: -33 feet below sea level
Base of Daniel Island beds: -37 feet below sea level
Bottomed in Marks Head Formation

BI-96-3: 2.70 miles E of west quadrangle border, 2.25 miles N of south quadrangle border; 0.29 mile SSE of the second "E" in "REFUGE" (SC 1/9, latitude 32° 54' 28"N, longitude 79° 34' 43"W). Surface elevation about 10 feet.

HOLOCENE BARRIER SANDS	0-6	Sand, fine-grained, loose, clean, well sorted, very fine- to fine-grained dark heavy minerals abundant, pale-yellowish-orange (10YR8/6) (0-1) grading through grayish-yellow (5Y8/4) to light-brownish-gray (5YR6/1), grades to:
	6-37	Sand, fine-grained, thixotropic, clean, well sorted, very fine- to fine-grained dark heavy minerals abundant and rare coarse mica flakes present, shelly, light-olive-gray (5Y5/1) grading by 11 feet to greenish-gray (5GY5/1) and then by 29 feet to dark-greenish-gray (5G4/1), fines to silty very fine- to fine-grained sand near base but still very shelly
HOLOCENE MARSH DEPOSITS	37-41	Silt, clayey, "greasy", odiferous, medium-dark-gray (N4)
	41-44	Sand, very fine- to fine-grained, silty, sparsely shelly, medium-dark-gray (N4)
DANIEL ISLAND BEDS	44-62	Silt, clayey, "greasy", much stiffer than above, very fine mica scattered throughout, medium-dark-gray (N4)
MARKS HEAD FORMATION	62-81	Sand, fine-grained, well sorted, slightly silty, moderate-olive-brown (5Y4/4)

Base of Holocene barrier sands: -27 feet below sea level
Base of Holocene marsh deposits: -34 feet below sea level
Base of Daniel Island beds: -52 feet below sea level
Bottomed in Marks Head Formation

BI-96-4: 0.6 mile E of west quadrangle border, 0.65 mile S of north quadrangle border; at east edge of label "Sewee Camp" (NW 1/9, latitude 32° 59' 26"N, longitude 79° 36' 57"W). Surface elevation about 7 feet.

SILVER BLUFF BEDS	1-4	Sand, fine- to coarse-grained but mostly medium, clean, medium-grayish-yellow (5Y7/4) in top foot grading through dark-yellowish-orange 10YR6/6) (1-3 feet) to dusky-yellowish-brown (10YR2/2), very fine-grained dark heavy minerals abundant below 1 foot, plinthite nodules present in basal foot
WANDO FORMATION	4-6	Silt, clayey, sandy (very fine-grained), finely micaceous, yellowish-gray (55Y7/2), grading through medium-olive-brown (5Y4/4) to medium-light-gray (N6) and grayish-green (5G5/2)
	6-7	Sand, very fine-grained, silty, very shelly, grayish-olive-green (5GY3/2)
	7-18	Silt, sandy (very fine-grained), clayey, finely micaceous, sparsely shelly, grayish-green (5GY5/2), calcite-cemented lumps and some shell chunks concentrated at base
TEN MILE HILL BEDS	18-24	Silt, very clayey, sandy (very fine-grained), finely micaceous, very sticky, much denser than above, pale-green (5G6/2) grading by 21 feet to pale-grayish-green (10G6/2)
	24-27	Sand, upper foot very fine- to fine-grained, silty and a bit clayey, grades rapidly to fine- to coarse-grained, dominantly medium-grained, subangular, very silty, contains shell fragments, grayish-green (5G5/2), grades to:
	27-31	Sand, fine- to coarse-grained, very calcareous, greenish-gray (5G5/2), grades to:
	31-35	Sand, coarse- to very coarse-grained,

		subangular, contains subrounded granules, pale-olive-gray (5Y6/2)
DANIEL ISLAND BEDS	35-51	Silt, stiff, clayey, sandy (very fine-grained), finely micaceous, medium-gray (N5) grading down to greenish-gray (5G5/1)
	51-73	Silt, as above but with thin lenses of sand interbedded, sand lenses very fine-grained and light-olive-gray (5Y5/1)
	at 73	Silt, clayey and peaty, dusky-yellowish-brown (10YR2/2), layer 4 inches thick
	73-75	Sand, fine- to coarse-grained, poorly sorted, clayey and silty matrix, light-olive-gray (5Y5/1)
	75-76	Sand, medium-grained, better sorted than above, olive-gray (5Y4/1)
	76-84	Sand, medium- to very coarse-grained, poorly sorted, subrounded to angular granules and pebbles to 0.4 in. in diameter present, pebbles coarsen by 79 feet up to 1.2 in. in diameter and dominantly subround to round, light-olive-brown (5Y5/4)
ASHLEY FORMATION	84-91	Limestone (calcarenite), fine-grained, large foraminifera abundant, upper foot olive-gray (5Y3/2) and finely micaceous, below that light-olive-brown (5Y5/6) and no mica

Base of Silver Bluff beds: +3 feet above sea level
Base of Wando Formation: -11 feet below sea level
Base of Ten Mile Hill beds: -28 feet below sea level
Base of Daniel Island beds: -77 feet below sea level
Bottomed in Ashley Formation

HONEY HILL QUADRANGLE

(Depths in feet)

HH-96-1: 1.35 miles W of east quadrangle border, 0.95 miles N of south quadrangle border; on north side of SC Highway 45 0.1 mile NW of Mechaw Creek (SE 1/9, latitude 33° 08' 19"N, longitude 79° 31' 23"W). Surface elevation about 15 feet.

WANDO FORMATION	0-1	Sand, fine-grained, silty and humic, dusky-brown (5YR2/2), grades to:
	1-6	Sand, fine-grained, silty and clayey, stiff, dusky-yellow (5Y6/4) mottled dark-yellowish-orange (10YR6/6) grading down to medium-light-gray (N6) mottled dark-yellowish-orange (10YR6/6), grades rapidly to:
	6-9	Sand, fine- to coarse-grained, subrounded, moderate-yellowish-orange (10YR7/6) grading down to light-gray (N7), grades rapidly to:
	9-12	Sand, fine-grained, contains abundant shell hash composed of *Mulinia* and oysters, medium-bluish-gray (5B5/1), grading down to fine- to very fine-grained sand that is sparsely shelly, grades rapidly to:
	12-24	Silt, sandy (very fine-grained), clayey, finely micaceous, medium-bluish-gray (5B5/1), a few stringers of very fine-grained sand present (burrows?), a few pebbles of limestone on basal contact
SANTEE LIMESTONE	24-25	Limestone (calcarenite), angular fragments in creamy matrix, very light-gray (N8), contains abundant echinoid spines and mollusc fragments

Base of Wando Formation: -9 feet below sea level
Bottomed in Santee Limestone

HH-96-2: 0.70 mile E of west quadrangle border, 0.85 mile N of south quadrangle border; on SW corner of "T" intersection on Berkeley County/Charleston County line (SW 1/9, latitude 33° 08' 15"N, longitude 79° 36' 45"W). Surface elevation about 22 feet.

WANDO FORMATION	0-1	Sand, fine-grained, well sorted, clean, very fine-grained dark heavy minerals present, grayish-yellow (5Y8/4), grades to:
	1-6	Sand, fine- to medium-grained, well sorted, clean, thixotropic, grayish-yellow (5Y8/4) grading through dusky-brown (5YR2/2) (3-4 feet) to moderate-brown (5YR4/4)
	6-11	Sand, fine- to medium-grained, well sorted, clean, thixotropic, very fine-grained dark heavy minerals present, yellowish-gray (5Y7/2) except dark-yellowish-orange (10YR6/6) in basal foot
LADSON FORMATION	11-14	Silt, very fine-grained sandy, slightly clayey, dusky-brown (5YR2/2) grading to grayish-brown (5YR3/2), micaceous, abundant wood fragments, grades rapidly to:
	14-22	Silt, sandy (very fine-grained), clayey, medium-bluish-gray (5B5/1), some sandy lenses present between 18 and 22 feet, grades to:
	22-26	Sand, fine- to coarse-grained, clean, fine-grained dark heavy minerals present, light-gray (N7)
	26-38	Sand, fine- to coarse-grained, silty, light-olive-gray (5Y5/2), rare rounded quartz granules appear by 34 feet, grades to:
	38-43	Sand, dominantly medium- to coarse-grained, poorly sorted, grains subrounded to rounded, light-olive-gray (5Y5/2)

SANTEE LIMESTONE	43-50	Limestone (calcarenite), very fine-grained at top but grades down to angular fragments in creamy matrix, very light-gray (N8)

Base of Wando Formation: +11 feet above sea level
Base of Ladson Formation: -21 feet below sea level
Bottomed in Santee Limestone

HH-96-3: 3.30 miles E of west quadrangle border, 1.65 mile N of south quadrangle border; at end of road 0.25 mile north of "M" i "WAMBAW SWAMP" (SC 1/9, latitude 33° 08' 57"N, longitude 79° 34' 52"W). Surface elevation about 12 feet.

FILL	0-0.5	Gravel, Santee Limestone
WANDO FORMATION	0.5-1	Silt, clayey, sandy (very fine-grained), stiff, lumps of knobby 0.4 in. diameter caliche present, grayish-brown (5YR4/1) grading down to light-olive-brown (5Y5/6)
	1-6	Silt, dark-yellowish-orange (10YR6/6) and medium-gray (N5) mottled, grading to light-olive-gray (5Y5/2) by 4 feet, grades to:
	6-11	Sand, very fine- to fine-grained grading down to fine-grained, silty, slightly micaceous, root fragments present, dark-grayish-green (5G4/2)
	11-15	Sand, fine- to medium-grained with scattered coarse grains present, silty, dark-grayish-green (5G4/2), no prominent basal coarse bed
SANTEE LIMESTONE	15-21	Limestone (calcarenite), well cemented and broken into irregular lumps floating in silt paste, shell fragments in lumps, very light-gray (N8)

Base of Wando Formation: -3 feet below sea level
Bottomed in Santee Limestone

McCLELLANVILLE QUADRANGLE

(Depths in feet)

MC-96-1: 1.15 miles E of west quadrangle border, 1.60 miles S of north quadrangle border; on west side of SC Highway 45 0.5 mile NNW of US Highway 17 (NW 1/9, latitude 33° 06' 05"N, longitude 79° 28' 47"W). Surface elevation about 15 feet.

WANDO FORMATION	0-1	Sand, fine-grained, well sorted, clean, dusky-yellow (5Y6/4) grading to dusky-brown (5YR2/2), grades to:
	1-6	Sand, fine-grained, well sorted, clean, very fine-grained dark heavy minerals abundant, dark-yellowish-orange (10YR6/6) grading down rapidly to yellowish-gray (5Y7/2), grades to:
	6-13	Sand, dominantly fine-grained but up to coarse-grained, poorly sorted, micaceous, light-olive-brown (5Y5/6), grades to:
	13-20	Sand, dominantly fine-grained but up to coarse-grained, poorly sorted, micaceous, medium-bluish-gray (5B5/1) grading by 15 feet to dark-gray (N3) and shelly (*Mulinia*), grades rapidly to:
	20-23	Silt, sandy (very fine-grained), shelly, micaceous, medium-bluish-gray (5B5/1)
	23-24	Sand, very fine-grained, silty, shelly (*Busycon*, oysters, etc.), medium-bluish-gray (5B5/1)
	24-28	Silt, sandy (very fine-grained), shelly, micaceous, medium-bluish-gray (5B5/1)
	28-29	Sand, fine- to coarse-grained, poorly sorted, sparsely shelly, contains subrounded quartz pebbles to 1.2 in. in diameter, medium-bluish-gray (5B5/1)

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TEN MILE HILL BEDS	29-32	Silt, clayey, dense, grayish-green (10GY5/2), finely micaceous

	32-33	Sand, fine- to coarse-grained, poorly sorted, grayish-green (10GY5/2), contains subangular pebbles of limestone up to 1.2 in. in diameter
SANTEE LIMESTONE	33-34	Limestone (calcarenite), medium-grained, angular fragments in creamy matrix, yellowish-gray (5Y8/1)
	at 34	Refusal

Base of Wando Formation: -14 feet below sea level
Base of Ten Mile Hill beds: -18 feet below sea level
Bottomed in Santee Limestone

MC-96-2: 2.05 miles W of east quadrangle border, 0.75 mile S of north quadrangle border; on NW side of road 0.4 mile SW of 9 foo spot elevation (NE 1/9, latitude 33° 06' 20" N, longitude 79° 24' 37" W). Surface elevation about 8 feet.

SILVER BLUFF BEDS	0-11	Sand, fine-grained, well sorted, clean, contains bimodal coarse-grained fraction, very fine-grained dark heavy minerals present below one foot, dark-yellowish-brown (10YR4/2) grading through dusky-yellow (5Y6/4) (3-6 feet) to olive-gray (5Y3/2), subangular quartz granules abundant along basal contact
WANDO FORMATION	11-19	Silt, sandy (very fine-grained), clayey, micaceous, shelly (mostly *Mulinia*), grayish-green (10GY5/2)
	19-20	Sand, very fine-grained, silty, micaceous, contains scattered subangular granules and 0.2-0.4 in. diameter quartz pebbles, grayish-green (10GY5/2)
	20-23	Sand, fine- to coarse-grained, poorly sorted, loose, shelly, diverse fauna but mostly broken up into a shell hash, grayish-green (10GY5/2), sharp contact with bed below
TEN MILE HILL BEDS	23-24	Silt, micaceous, very fine-grained sandy, clayey, dense and stiff, medium-olive-gray (5Y5/1)
	24-32	Sand, very fine- to fine-grained, silty, dense, stiff, clayey, dusky-brown (5YR2/2) in upper three inches then grades rapidly to olive-gray (5Y3/2) to 27 feet and then grayish-green (10GY5/2) below that, abundant irregular lumps of limestone in basal two feet
SANTEE LIMESTONE	32-48	Limestone (calcarenite), very fine- to fine-grained, silty, with abundant indurated lumps, yellowish-gray (5Y8/1) to very light-gray (N8), very soft and easy drilling and little recovery (high

porosity?)

at 48 Refusal on indurated bed

Base of Silver Bluff beds: - 3 feet below sea level
Base of Wando Formation: -15 feet below sea level
Base of Ten Mile Hill beds: -24 feet below sea level
Bottomed in Santee Limestone

MC-96-3: 2.55 miles E of west quadrangle border, 3.15 miles S of north quadrangle border; on north side of Intracoastal Waterway 0.25 mile east of center of channel of Jeremy Creek (CC 1/9, latitude 33° 04' 45" N, longitude 79° 27' 23" W). Surface elevation about 6 feet.

FILL	0-2	Sand, fine-grained, shelly, recently filled and graded
HOLOCENE	2-4	Silt, very fine-grained sandy, clayey, medium-bluish-gray (5B5/1) grading down to dark-greenish-gray (5GY4/1)
SILVER BLUFF BEDS	4-7	Sand, fine-grained, very shelly (mostly *Mulinia*), dark-gray (N3), contains bimodal coarse-grained fraction and shell hash in basal foot, sharp contact with bed below
WANDO FORMATION	7-13	Silt, very fine-grained sandy, clayey, micaceous, greasy but still stiff, shelly (mostly oysters), medium-dark-gray (N4), grades to:
	13-14	Sand, fine-grained, well sorted, shell fragments abundant, grayish-green (5G5/2)
	14-29	Sand, very fine-grained, silty, very shelly (mostly *Mulinia* sp.), medium-dark-gray (N4)
	29-30	Sand, fine-grained, silty, dense, contains granules and small pebbles of limestone up to 0.4 in. in diameter
SANTEE LIMESTONE	at 30	Refusal, presumed top of limestone

Base of Holocene: +2 feet above sea level
Base of Silver Bluff beds: -1 foot below sea level
Base of Wando Formation: -24 feet below sea level
Bottomed on top of Santee Limestone?

MC-96-4: 3.60 miles W of east quadrangle border, 1.15 miles S of north quadrangle border; on east side of road at 11 foot spot elevation (NC 1/9, latitude 33° 06 '29" N, longitude 79° 26' 14" W). Surface elevation 11 feet.

WANDO FORMATION	0-6	Sand, fine-grained, clean, well sorted, very fine-grained dark heavy minerals present below one foot, grayish-brown (5YR3/2)(0-1 foot) grading down to pale-yellowish-brown (10YR6/2), grades to:
	6-10	Sand, very fine- to medium-grained, very fine-grained, dark heavy minerals abundant, thixotropic, subrounded quartz pebble 0.2 in. in diameter and lots of coarse mica flakes in basal foot, grayish-olive (10Y4/2)
WANDO FORMATION (LOWER MEMBER)	10-12	Silt, very fine-grained sandy, clayey, finely micaceous, medium-bluish-gray (5B5/1), grades to:
	12-24	Sand, mostly fine-grained but some very fine and medium grains present, very fine-grained dark heavy minerals abundant, shelly (mostly *Mulinia*), medium-bluish-gray (5B5/1), coarsens downward to mostly medium-grained by 21 feet and oyster fragments appear, sharp basal contact
TEN MILE HILL BEDS	24-25	Silt, very fine-grained sandy, clayey, micaceous, medium-bluish-gray (5B5/1), grades rapidly to:
	25-28	Sand, fine-grained, silty, very shelly, medium-greenish-gray (5G5/1)
	28-32	Sand, fine- to coarse-grained, poorly sorted, limestone pebble clasts up to 2 in. in diameter scattered throughout, medium-greenish-gray (5G5/1)
SANTEE LIMESTONE	32-35	Limestone (calcarenite), angular fragments in creamy matrix, very light-gray (N8)

at 35 Refusal on impenetrable hard bed

Base of Silver Bluff beds: +1 foot above sea level
Base of Wando Formation: -13 feet below sea level
Base of Ten Mile Hill beds: -21 feet below sea level
Bottomed in Santee Limestone

MC-96-5: 0.85 mile E of west quadrangle border, 3.75 miles S of north quadrangle border; on NW side of road 1.55 mile WSW of center of mouth of Jeremy Creek (WC 1/9, latitude 33° 04' 15" N, longitude 79° 29' 07" W). Surface elevation about 8 feet.

SILVER BLUFF BEDS	0-6	Sand, fine-grained, well sorted but with bimodal coarse-grained fraction, dusky-brown (5YR2/2) grading through dark-yellowish-orange (10YR6/6) through yellowish-gray (5Y8/1) through brownish-gray (5YR4/1) to medium-greenish-gray (5G5/1), grades to:
	6-7	Sand ,fine-grained, well sorted but with bimodal coarse-grained fraction, coarse mica very abundant, rounded wood chip present and a smear of plant debris at base, medium-greenish-gray (5G5/1)
WANDO FORMATION	7-9	Silt, very fine-grained sandy, clayey, medium-greenish-gray (5G5/1), sparsely shelly (mostly ***Mulinia***), grades to:
	9-17	Sand, very fine- to fine-grained, very fine-grained dark heavy minerals and mica flakes abundant, very shelly, medium-greenish-gray (5G5/1), a few silty layers 2-4 inches thick present near base, grades to:
	17-20	Silt, very fine-grained sandy, clayey, micaceous, very shelly (mostly ***Mulinia***), greenish-gray (5G6/1), grades rapidly to:
	20-22	Sand, very fine- to fine-grained, very silty, very shelly, plant debris present at base, medium-greenish-gray (6G5/1)
TEN MILE HILL BEDS	22 23	Silt, very fine-grained sandy, clayey, stiff, roots present, medium-bluish-gray (5B5/1), grades to:
	23-30	Silt, very fine-grained sandy ,clayey, stiff, contains abundant oysters, greenish-gray (5G6/1), grades rapidly to:

	30-31	Sand, fine- to very coarse-grained, poorly sorted, clayey and silty, contains abundant rounded quartz granules, medium-dark-gray (N4), wood at base
	31-32	Silt, clayey, dusky-yellowish-brown (10YR2/2), contains wood chips and subangular lumps of limestone up to 2 in. in diameter
SANTEE LIMESTONE	at 32	Refusal, recovered 3 inches of finely powdered very light-gray (N8) limestone (calcarenite) on end of bit

Base of Silver Bluff beds: +1 foot above sea level
Base of Wando Formation: -14 feet below sea level
Base of Ten Mile Hill beds: -24 feet below sea level

MINIM ISLAND QUADRANGLE

(Depths in feet)

MI-96-1: 0.45 mile E of west quadrangle border, 2.05 miles N of south quadrangle border; 0.25 mile west of triangle (SW 1/9, latitude 33o 09' 16" N, longitude 79o 22' 02" W). Surface elevation about 15 feet.

SILVER BLUFF BEDS	0-14	Sand, fine-grained, well sorted, clean, bimodal coarse-grained fraction present, very fine-grained dark heavy minerals abundant below one foot, micaceous below 6 feet, brownish-black (5YR2/1) grading through dark-yellowish-orange (10YR6/6) in top foot, then grades through dusky-yellow (5Y6/4) (16 feet) to dark-yellowish-orange (10YR6/6) again, grades rapidly to:
	at 14	Silt, very fine-grained sandy, micaceous, 2 inch-thick bed, medium-bluish-gray (5B5/1)
	14-20	Sand, very fine-grained, silty, shelly, a few thin silt beds 2-4 inches thick scattered throughout, medium-bluish-gray (5B5/1)
	20-28	Silt, very fine-grained sandy, micaceous, sparsely shelly, includes a few 2-4 inch-thick beds of very fine-grained sand, medium-bluish-gray (5B5/1)
	28-33	Sand, fine- to coarse-grained, contains abundant broken shell fragments representing a diverse fauna (including *Polinices*), medium-bluish-gray (5B5/1)
WANDO FORMATION	33-48	Silt, very fine-grained sandy, denser than beds above, clayey, micaceous, contains occasional lenses of clean very fine-grained sand (burrows?), medium-bluish-gray (5B5/1)
	48-56	Sand, coarse- to very coarse-grained, clean, blue quartz present, olive-gray (5Y4/1)

	56-57	Silt, contains wood chip, medium-bluish-gray (5B5/1)
	57-65	Sand, coarse- to very coarse-grained grading down to dominantly medium-grained, fine-grained dark heavy minerals abundant, coarsely micaceous, well sorted, clean, pale-olive (10Y6/2)
SANTEE LIMESTONE	65-66	Limestone (calcarenite), angular fragments in creamy matrix, yellowish-gray (5Y7/2)

Base of Silver Bluff beds: -26 feet below sea level
Base of Wando Formation: -58 feet below sea level
Bottomed in Santee Limestone

OCEAN BAY QUADRANGLE

(Depths in feet)

OB-96-1: 1.50 miles W of east quadrangle border , 1.35 miles N of south quadrangle border; on north side of forest service road (SE 1/9, latitude 33° 01' 08" N, longitude 79° 39' 03" W). Surface elevation about 15 feet.

FILL?	0-1	Sand, fine-grained, well sorted, yellowish-orange (10YR7/6) grading through olive-gray (5Y3/2) to grayish-yellow (5Y8/4)
WANDO FORMATION	1-5	Sand, fine- to very coarse-grained, subrounded, silty and a bit clayey, dark-yellowish-orange (10YR6/6) mottled very light-gray (N8)
	5-7	Sand, very fine-grained, stiff, finely micaceous, very light-olive ((5Y6/2)
	7-16	Silt, very fine-grained sandy, very fine to fine mica abundant, medium-bluish-gray (5B5/1), *Mulinia* present from 10-16 feet, grades rapidly to:
	16-19	Sand, very fine- to fine-grained grading down to medium-grained, silty, some shell fragments present, medium-bluish-gray (5B5/1)
	19-20	Silt, very fine-grained sandy, very fine to fine mica abundant, medium-bluish-gray (5B5/1), *Mulinia* present
	20-21	Sand, very fine- to medium-grained, silty, shelly with oyster and snail fragments and *Mulinia* hash
TEN MILE HILL BEDS	21-22	Silt, clayey, very fine- to medium-grained, finely micaceous, olive-gray (5Y3/2), paleosoil with wood chunk near base
	22-24	Silt, stiff, greenish-gray (5G6/1),

		grades rapidly to:
	24-35	Sand, fine- to very coarse-grained, very coarse fraction is rounded, very silty, greenish-gray (5G6/1), granular between 27-31 feet and at 27 feet grades to light-olive-gray (5Y6/2)
DANIEL ISLAND BEDS	35-38	Sand, very fine- to fine-grained, very micaceous, olive-gray (5Y4/2), sparse shell fragments present, grades to:
	38-44	Silt, very fine-grained sandy, very micaceous, dense and sticky, olive-gray (5Y4/2), contains rare chunks of wood, grades rapidly to:
	44-51	Sand, very fine- to fine-grained grading through fine- to medium-grained back to very fine- to fine-grained, silty, olive-gray (5Y4/2) grades to:
	51-77	Silt, clayey, stiff, greenish-gray (5G5/1) to 63 feet and olive-gray (5Y4/2) below that, scattered thin lenses of very light-gray (N8) very fine-grained clean sand present, grades rapidly to:
	77-81	Sand, medium- to coarse-grained grading down to fine- to medium-grained and micaceous, dark-gray (N3)
	81-86	Sand, medium- to coarse-grained, silty at top but cleaner downward, less micaceous, olive-gray (5Y4/2)
	86-88	Silt, very fine-grained sandy, clayey, micaceous, stiff, light-olive-gray (5Y5/1), contains lenses of clean very light-gray (N8) very fine-grained sand (burrows?), grades rapidly to:
	88-89	Sand, fine- to coarse-grained, very quartz pebbly with rounded and spheroidal to subrounded and elliptical clasts up to 1.6 in. in diameter

ASHLEY FORMATION	89-97	Limestone (calcarenite), very fine- to fine-grained, a few large foraminifera visible, light-olive-brown (5Y5/6)

Base of Wando Formation: - 5 feet below sea level
Base of Ladson Formation: -19 feet below sea level
Base of Ten Mile Hill beds: -73 feet below sea level
Bottomed in Ashley Formation

OB-96-2: 3.55 miles W of east quadrangle border , 0.65 miles N of south quadrangle border; on north side of forest service road 0.1 mile southeast of 16 foot spot elevation (SC 1/9, latitude 33° 00' 35" N, longitude 79° 41' 10" W). Surface elevation about 16 feet.

FILL	0-1	Gravel, Santee Limestone
WANDO FORMATION (UPPER MEMBER)	1-5	Sand, dominantly fine-grained but with medium to coarse grains scattered throughout, subangular, clean grading down to silty (2-5 feet), dusky-brown (5YR2/2) grading through yellowish-brown (10YR5/2) and dark-yellowish-orange (10YR6/6) to yellowish-gray (5Y7/2), grades to:
	5-6	Sand, very fine- to fine-grained, better sorted than above, dark-yellowish-orange (10YR6/6)
	6-12	Sand, dominantly fine-grained but with medium- to coarse-grains scattered throughout, subangular, silty, dusky-yellow (5Y6/4) grading to dark-gray (N3) in basal foot
	at 12	Silt, very fine-grained sandy, clayey, greasy, finely micaceous, medium-bluish-gray (5B5/1), bed about 3 inches thick
WANDO FORMATION (LOWER MEMBER)	12-15	Sand, very fine- to fine-grained, shelly (mostly *Mulinia*, but also *Polinices*, *Noetia*, and oyster), silty, dark-greenish-gray (5GY4/1)
	15-18	Sand, very fine-grained, very silty, shelly, dark-greenish-gray (5GY4/1)
	18-23	Silt, clayey, very fine-grained sandy, sticky, greenish-gray (5GY5/1), not shelly, contains sparse fine mica flakes, grades rapidly to:
	23-27	Sand, very fine- to coarse-grained, poorly sorted, subangular, very silty, very sparse shell fragments, greenish-

		gray (5GY5/1)
	27-31	Sand, fine- to medium-grained, better sorted than above, less silty, not shelly, olive-gray (5Y4/2), coarsens to medium- to very coarse-grained in basal foot
	31-32	Silt, very fine- to fine-grained sandy, clayey, very micaceous, dark-grayish-olive (10Y3/2), contains abundant moderate-brown (5YR4/4) wood fragments near base
TEN MILE HILL BEDS	32-36	Sand, medium- to coarse-grained, subrounded to subangular, silty layer at 34-34.5, medium-light-gray (N6) and light-olive-gray (5Y5/2)
	36-39	Sand, fine- to very coarse-grained, rounded to subrounded, silty, olive-gray (5Y4/2)
	39-46	Sand, medium- to very coarse-grained, granular, rounded, light-olive-gray (5Y5/2)
	46-49	Sand, mostly fine-grained but poorly sorted from very fine- to coarse-grained, medium to coarse fraction rounded, sparsely micaceous, olive-gray (5Y4/2)
DANIEL ISLAND BEDS	49-78	Silt, dense, clayey, very fine-grained sandy, finely micaceous, contains sparse wood fragments, greenish-gray (5GY5/1) grading to very light-olive-gray (5Y5/2) by 61 feet, wood chunk at 77 feet, grades rapidly to:
	78-84	Sand, fine-grained, well sorted, silty, pale-olive (10Y6/2), picks up medium to coarse fraction near base, subrounded to subangular, color grades to light-olive-gray (5Y5/2)
	84-86	Limestone (calcarenite), very fine-

		grained, silty, foraminifera present, very light-olive-gray (5Y6/2), appears to be a lump of Ashley worked into base of Daniel Island beds
	86-89	Sand, fine- to very coarse-grained, contains subangular quartz pebbles up to 0.4 in. in diameter, light-olive-gray (5Y5/2) and olive-gray (5Y4/2)
	89-90	Sand, fine- to very coarse-grained, very silty and clayey, light-olive-brown (5Y5/6)
ASHLEY FORMATION	90-91	Limestone (calcarenite), very fine- to fine-grained, large foraminifera abundant, top 3 inches light-olive-gray (5Y5/2), light-olive-brown (5Y5/6) below that

Base of Wando Formation (upper member): +4 feet above sea level
Base of Wando Formation (lower member): -16 feet below sea level
Base of Ten Mile Hill beds: -33 feet below sea level
Base of Daniel Island beds: -74 feet below sea level
Bottomed in Ashley Formation

OB-96-3: 1.40 miles W of east quadrangle border , 4.40 miles S of north quadrangle border; on east side of forest service road (EC 1/9, latitude 33° 03' 42" N, longitude 79° 38' 57" W). Surface elevation about 30 feet.

WANDO FORMATION (LOWER MEMBER)	0-1	Sand, fine-grained, clean, well sorted, dark-yellowish-orange (10YR6/6) and grayish-brown (5YR3/2) mottled
	1-12	Sand, very fine- to fine-grained, grayish-brown (5YR3/2) grading through yellowish-gray (5Y7/2) at 3-6 feet to greenish-gray (5GY5/1), micaceous, very fine- to fine-grained dark heavy minerals present, thixotropic
	at 12	Silt, very fine-grained sandy, clayey, greenish-gray (5GY5/1), 3 inches thick
	12-23	Sand, very fine- to fine-grained, very silty, sparsely shelly, greenish-gray (5GY5/1), thin layers of silt scattered throughout this interval
	23-25	Sand, fine- to coarse-grained, subangular, silty and clayey, shelly, much denser than above, olive-gray (5Y4/2)
TEN MILE HILL BEDS	25-32	Sand, very fine- to fine-grained, very silty, sparsely shelly, greenish-gray (5GY6/1) (25-26 feet) grading to medium-gray (N5)
	32-36	Sand, fine- to coarse-grained, subangular, silty, coarsely micaceous, mica abundant, light-olive (5Y6/2), brownish-black (5YR2/1) woody material present and carbonaceous layers 2-3 inches thick, grades to:
	36-42	Silt, very fine-grained sandy, mica abundant, greenish-gray (5GY5/1) grading by 40 feet to light-olive-gray (5Y6/2)
	42-44	Silt, very fine-grained sandy, light-olive-gray (5Y6/2), full of wood chips, branches, and roots

DANIEL ISLAND BEDS	44-51	Silt, stiffer than above, light-greenish-gray (5GY7/1), clayey and less sandy than above, grades to:
	51-61	Sand, very fine- to fine-grained, silty, sparsely shelly, dark-greenish-gray (5GY4/1), grades to:
	61-68	Sand, medium- to coarse-grained, rounded, well sorted, clean, sparse coarse mica, light-olive-gray (5Y6/2) grading to moderate-olive-brown (5Y4/4)
SANTEE LIMESTONE	at 68	Total refusal, presumed top of Santee

Base of Wando Formation (lower member): +5 feet above sea level
Base of Ten Mile Hill beds: -14 feet below sea level
Base of Daniel Island beds: -38 feet below sea level
Bottomed on Santee Limestone(?)

OB-96-4: 1.80 miles W of east quadrangle border , 1.60 miles S of north quadrangle border; on north side of road (NE 1/9, latitude 33° 06' 08" N, longitude 79° 39' 20" W). Surface elevation 42 feet.

TEN MILE HILL BEDS	0-1	Sand, fine-grained, well sorted but with scattered medium and coarse grains, sparse very fine-grained dark heavy minerals present, yellowish-orange (10YR7/6)
	1-16	Sand, fine-grained, very fine-grained dark heavy minerals present, thixotropic, pale-yellowish-brown (10YR6/2) grading through grayish-yellow (5Y7/4) (8-13 feet) to dusky-brown (5YR2/2) (13-14 feet) to brown (5YR4/2) (14-15 feet) to yellowish-brown (10YR4/4) (15-16 feet), grades to:
	16-26	Sand, dominantly fine-grained with a medium-grained fraction coarsening downward to a medium to coarse fraction, silty, sparse very fine- to fine-grained dark heavy minerals present, thixotropic, pale-brown (5YR5/2) (16-18 feet) grading through yellowish-gray (5Y7/2) (18-24 feet) to light-gray (N7), grades to:
	26-27	Sand, fine- to coarse-grained but dominantly medium-grained, yellowish-orange (10YR7/6), changes abruptly to:
	27-36	Silt, clayey and very fine-grained sandy, stiff and sticky, occasional medium and coarse grains scattered about, finely micaceous, thin laminae of silty, very fine-grained sand present from 34-36 feet, medium-gray (N5) grading rapidly to greenish-gray (5G6/1), mottles of dusky-yellowish-green (10GY3/2) present from 33-35 feet
	36-37	Sand, very fine- to fine-grained, slightly silty, very micaceous, medium-gray (N5)
	37-47	Sand, fine- to coarse-grained, silty,

		poorly sorted, medium-light-gray (N6), grains round to subround, very fine- to fine-grained dark heavy minerals present
	at 47	Silt, clayey and sticky, very fine- to fine-grained sandy, micaceous, grayish-green (10GY5/4), 4 inch-thick layer
	47-53	Sand, medium- to coarse-grained, poorly sorted, grayish-green (10GY5/4), grades to:
	53-60	Sand, very fine- to medium-grained, better sorted than above, sparse coarse mica present, yellowish-gray (5Y8/1)
SANTEE LIMESTONE?	at 60	Phosphate lumps, grayish-black (N2), lying on an impenetrable hard bed, presumed top of Santee Limestone

Base of Ten Mile Hill beds: -18 feet below sea level
Bottomed on top of Santee Limestone?

OB-96-5: 3.70 miles W of east quadrangle border , 4.30 miles S of north quadrangle border; on southeast side of county line roa (CC 1/9, latitude 33° 03' 47" N, longitude 79° 41' 22" W). Surface elevation about 53 feet.

TEN MILE HILL BEDS	0-1	Sand, fine-grained, well sorted, clean, scattered medium to coarse grains, dark-yellowish-orange (10YR6/6)
	1-13	Sand, fine-grained, well sorted, very fine-grained dark heavy minerals present, thixotropic, yellowish-gray (5Y7/2) grading to dark-yellowish-orange (10YR6/6) from 4-6 feet and to olive (10Y5/2) from 6-10 feet and to light-grayish-brown (10YR4/2)
	13-15	Silt, clayey, very fine-grained sandy, micaceous, medium-gray (N5)
	15-26	Sand, very fine- to medium-grained, scattered rounded coarse grains present, slightly silty, medium-light-gray (N6) grading through yellowish-gray (5Y8/1) from 19-21 feet to light-olive-gray (5Y5/2), grades to:
	26-28	Sand, very fine- to fine-grained, silty and clayey, very finely to mediumly micaceous, medium-dark-gray (N4), grades to:
	28-33	Sand, very fine- to medium-grained, silty and clayey, sparsely micaceous, light-olive-gray (5Y6/2), grades to:
	33-34	Sand, very fine-grained, very silty and clayey, micaceous, medium-dark-gray (N4), grades to:
	34-65	Sand, very fine- to medium-grained, thixotropic, very fine-grained dark heavy minerals locally present, yellowish-gray (5Y7/2) grading through light-olive (5Y5/2) from 36 to 51 feet to light-olive-gray (5Y6/1)
	65-70	Sand, very fine- to medium-grained, silty, medium-gray (N5)

	at 70	Peat, blackish-red (5R2/2), contains stem fragments, 3 inch-thick layer
DANIEL ISLAND BEDS	70-76	Silt, clayey, dense, sticky, finely micaceous, very fine-grained sandy, greenish-gray (5GY6/1) with a brownish-gray (5YR3/1) layer from 73-74 feet, pods of graphite scattered through interval

Base of Ten Mile Hill beds: -17 feet below sea level
Bottomed in Daniel Island beds

OB-96-6: 1.40 miles E of west quadrangle border , 1.40 miles N of south quadrangle border; on east side of county line road (SW 1/9, latitude 33° 01' 13" N, longitude 79° 43' 25" W). Surface elevation 49 feet.

TEN MILE HILL BEDS	0-11	Sand, fine-grained, contains scattered rounded medium grains, clean, well sorted, very fine- to fine-grained dark heavy minerals present, thixotropic, dark-yellowish-orange (10YR7/6) grading to light-brownish-gray (5YR7/1)
	11-19	Sand, fine-grained fining downward to very fine- to fine-grained and silty, very fine- to fine-grained dark heavy minerals abundant, light-olive-gray (5Y5/2)
	19-23	Silt, greasy, clayey, finely micaceous, very fine-grained sandy, olive-gray (5Y3/2) to light-yellowish-gray (5Y6/2)
	23-39	Sand, very fine- to fine-grained, very silty, medium-greenish-gray (5GY5/1), slightly micaceous, a few sparse dark very fine-grained mineral grains present
	39-43	Sand, very fine- to medium-grained, slightly silty, fine mica sparsely present, medium-greenish-gray (5GY5/1)
	43-47	Sand, medium- to coarse-grained, contains very rounded pebbles of phosphate to 1.6 in. in diameter and lumps of calcite-cemented quartz sand, grayish-green (5G5/2) to yellowish-gray (5Y8/1) in color
GOOSE CREEK LIMESTONE	47-51	Limestone (calcarenite), quartzose, medium- to coarse-grained, calcite-cemented lumps present, light-gray (N7) with lenses of medium-dark-gray (N4)
	51-82	Limestone (calcarenite), fine- to coarse-grained, quartzose, subrounded to subangular, cemented and uncemented beds alternating, contains shell

		fragments including *Pecten eboreus*, light-gray (N7) grading by 66 feet to medium-olive-gray (5Y5/1)
ASHLEY FORMATION	82-86	Limestone (calcarenite), very fine-grained, a few large foraminifera present, medium-olive-brown (5Y4/4)

Base of Ten Mile Hill beds: +2 feet above sea level
Base of Goose Creek Limestone: -33 feet below sea level
Bottomed in Ashley Formation

SANTEE QUADRANGLE

(Depths in feet)

SA-96-1: 3.50 miles E of west quadrangle border, 1.10 miles N of south quadrangle border; on NW side of US Highway 17 0.60 mile N of BM 25 (SC 1/9, latitude 33° 08' 26" N, longitude 79° 26' 25" W). Surface elevation about 28 feet.

WANDO FORMATION	0-6	Sand, fine-grained, well sorted ,clean, grayish-brown (5YR3/2) grading through dark-yellowish-orange (10YR6/6) in upper foot, then becoming pale-yellowish-brown (10YR6/2), grades to:
	6-16	Sand, fine-grained, well sorted ,clean, coarsely micaceous, light-olive-gray (5Y6/1)
	16-24	Sand, fine- to very fine-grained, shelly (mostly ***Mulinia***), grayish-green (10GY5/2), includes a few lenses of very fine-grained sandy silt about 2 in. thick below 20 feet
	24-27	Sand, fine- to medium-grained, silty, grayish-green (10GY5/2), contains ***Mulinia*** and oyster, sharp basal contact
	27-29	Sand ,fine-grained, well sorted ,silty, slightly clayey, much denser than above, grayish-green (5GY5/2), grades to:
	29-31	Sand, fine- to coarse-grained, poorly sorted, grayish-green (10GY5/2), abundantly shelly (including ***Mulinia***, ***Noetia***, ***Anadara ovalis***, etc.)
TEN MILE HILL BEDS	31-36	Silt, very fine-grained sandy, clayey, micaceous, dense, medium-dark-gray (N4), grades rapidly to:
	36-37	Sand, fine- to coarse-grained, gravelly with subrounded subangular quartz pebbles up to 1.6 in. in diameter, clayey and silty matrix, medium-dark-gray (N4)

SANTEE LIMESTONE	37-61	Limestone (calcarenite), angular fragments in creamy matrix, yellowish-gray (5Y8/1) grading to very light-gray (N8) by 51 feet
	at 61	Refusal on impenetrable hardbed

Base of Wando Formation: -3 feet below sea level
Base of Ten Mile Hill beds: -9 feet below sea level
Bottomed in Santee Limestone

SA-96-2: 1.85 miles W of east quadrangle border, 3.05 miles N of south quadrangle border; on NW side of US Highway 17 0.05 mile S of south bank of Santee River (EC 1/9, latitude 33° 11' 01" N, longitude 79° 24 '25" W). Surface elevation about 20 feet.

WANDO FORMATION	0-2	Sand, fine-grained, well sorted, clean, grayish-brown (5YR3/2) grading to yellowish-gray (5Y7/2) grades to:
	2-8	Sand, fine-grained, well sorted, silty, denser than above, brownish-orange (5YR6/6) grading to dark-yellowish orange (10YR6/6)
	8-11	Sand, fine-grained, well sorted, silty, very fine-grained dark heavy minerals abundant, yellowish-gray (5Y7/2)
	11-16	Sand, fine-grained with a bimodal coarse-grained fraction present, silty, very fine-grained dark heavy minerals abundant, micaceous, dusky-yellow (5Y6/4) grading down to dark-yellowish-orange (10YR6/6), grades rapidly to:
	16-32	Silt, very fine-grained sandy, clayey, micaceous, medium-bluish-gray (5B5/1), shelly below 20 feet and carbonized plant matter present below 28 feet, grades rapidly to:
	32-34	Sand, fine- to coarse-grained, poorly sorted, clayey and silty matrix, micaceous, wood fragments and subrounded quartz pebbles up to 1.2 in. in diameter present, grayish-green (5GY5/2)
SANTEE LIMESTONE	34-35	Limestone (calcarenite), angular chips in creamy matrix, very light-gray (N8)

Base of Wando Formation: -14 feet below sea level
Bottomed in Santee Limestone

SA-96-3: 1.10 miles E of west quadrangle border, 3.10 miles N of south quadrangle border; on NW side of road 0.05 mile SW of unnamed creek and 1.25 miles NW of St. James Church (WC 1/9, latitude 33° 11' 02" N, longitude 79° 28' 52" W). Surface elevation about 16 feet.

WANDO FORMATION	0-1	Sand, fine-grained, well sorted, clean, dusky-brown (5YR2/2) grading to yellowish-gray (5Y7/2) grades to:
	1-4	Sand, fine-grained, well sorted, clean, micaceous, grading down to sand, fine-grained, silty and a bit clayey, stiff, dark-yellowish-orange (10YR6/6) and light-gray (N7) mottled
	4-7	Silt, very fine-grained sandy, micaceous, dark-yellowish-orange (10YR6/6) and light-gray (N7) mottled with light-gray predominating
	7-9	Sand, fine-grained, well sorted, silty, pale-yellowish-orange (10YR8/6) grading down to yellowish-gray (5Y7/2)
	9-11	Silt, very fine-grained sandy, includes stringers of very fine-grained sand, micaceous, light-gray (N7)
	11-14	Sand, very fine-grained, silty, grayish-yellow (5Y8/4) grading down to yellowish-gray (5Y7/2)
	14-23	Sand, very fine-grained grading down by 18 feet to fine-grained, medium-bluish-gray (5B5/1), grades to:
	23-24	Sand, fine- to medium-grained, poorly sorted, contains subrounded to rounded quartz granules, medium-bluish-gray (5B5/1)
SANTEE LIMESTONE	34-35	Limestone (calcarenite), angular chips in creamy matrix, very light-gray (N8)

Base of Wando Formation: -8 feet below sea level
Bottomed in Santee Limestone

SA-96-4: 1.40 miles W of east quadrangle border, 1.50 miles N of south quadrangle border; on west side of road (SE 1/9, latitude 33° 08' 49" N, longitude 79° 23' 57" W). Surface elevation about 23 feet.

WANDO FORMATION	0-6	Sand, fine-grained, well sorted, clean, grayish-yellow (5Y7/4) grading through yellowish-orange (10YR7/6) and pale-yellowish-brown (10YR6/2) and light-brown (5YR5/6) and moderate-brown (5YR3/4) to grayish-red (5R4/2)
	6-16	Sand, fine- to medium-grained grading down to medium- to coarse grained, grains rounded, clean, well sorted, thixotropic, sparsely finely to mediumly micaceous, yellowish-gray (5Y6/2) grading through yellowish-gray (5Y7/2) from 10-14 feet to yellowish-orange (10YR7/6), grades rapidly to:
	16-19	Sand, fine-grained, well sorted, very light-gray (N9)
	at 19	Clay, silty, greasy, medium-gray (N5), 2-inch-thick layer
	19-24	Sand, very fine-grained, , medium to coarse mica abundant, thixotropic, medium-dark-gray (N4)
	at 24	Silt, clayey, very fine-grained sandy, greasy, medium-gray (N5), 2 inch-thick layer
	24-26	Sand, very fine-grained, medium to coarse mica abundant, medium-dark-gray (N4)
	26-30	Silt, very fine-grained sandy, micaceous, *Mulinia* present from 28-30 feet, very fine-grained dark heavy minerals abundant, medium-gray (N5)
	30-36	Sand, medium- to very coarse-grained, subrounded to rounded, shelly with *Mulinia* and *Mercenaria* fragments, phosphate granules present, medium-gray (N5) grading down to medium-greenish-

		gray (5GY5/1), grades to:
	36-38	Sand, fine- to coarse-grained, abundant broken and coquina-like shell fragments, medium-dark-gray (N4)
	38-39	Silt, clayey, very fine-grained sandy, medium-greenish-gray (5GY5/1)
	39-41	Sand, fine- to coarse-grained, abundant broken and coquina-like shell fragments, medium-dark-gray (N4)
	41-45	Gravel, small quartz pebbles 0.2-0.4 in. in diameter, rounded, and irregularly shaped lumps of Santee Limestone, rounded, up to 2 in. in diameter, silty, shelly
SANTEE LIMESTONE?	at 45	Impenetrable hard bed, presumed top of Santee Limestone

Base of Wando Formation: -22 feet below sea level
Bottomed on Santee Limestone?

SA-96-5: 3.70 miles W of east quadrangle border, 4.30 miles N of south quadrangle border; on abandoned dirt road (CC 1/9, latitud 33° 11' 16" N, longitude 79° 26' 20" W). Surface elevation about 25 feet.

WANDO FORMATION	0-7	Sand, fine-grained, well sorted, clean, very fine-grained dark heavy minerals present below 2 feet, dusky-yellow (5Y6/4) grading through very pale-orange (10YR8/2) from 2-4 feet to pale-yellowish-brown (10YR6/2)
	7-10	Sand, dominantly fine-grained with a scattering of medium to coarse grains, very rounded, clean, very fine-grained dark heavy minerals present, blackish-red (5R2/2)
	10-16	Sand, fine-grained grading down to very fine- to fine-grained, well sorted, clean, sparse very fine-grained dark heavy minerals present, coarsely micaceous, moderate-yellowish-brown (10YR5/4) grading to yellowish-gray (5Y7/2)
	16-17	Silt, clayey, very fine-grained sandy, greasy light-olive-gray (5Y4/2)
	17-22	Sand, very fine-grained, silty, abundant coarse mica, light-olive-gray (5Y4/2)
	22-24	Silt, clayey, greasy, wood hunks present in upper foot, medium-dark-gray (N4)
	24-30	Sand, very fine-grained grading down to very fine- to fine-grained, silty, some stringers of clayey silt present, micaceous with sparse coarse mica at top but fining to, medium and more abundant downward, medium-dark-gray (N4)
	30-31	Sand, fine- to coarse-grained, micaceous, medium-dark-gray (N4), sand fills burrows in upper foot of bed below
TEN MILE HILL BEDS	31-35	Silt, very fine-grained sandy, clayey, dense and sticky, medium-gray, sparse

		Mulinia present and a large chunk of *Noetia ponderosa* on basal contact, a few scattered granules at basal contact
SANTEE LIMESTONE	35-36	Limestone (calcarenite), very fine- to coarse-grained, very silty, very light-gray (N8), tough drilling

Base of Wando Formation: -6 feet below sea level
Base of Ten Mile Hill beds: -10 feet below sea level
Bottomed in Santee Limestone

SA-96-6: 1.20 miles E of west quadrangle border, 0.60 miles N of south quadrangle border; on NW side of dirt road (SW 1/9, latitude 33° 08' 02" N, longitude 79° 28' 36" W). Surface elevation about 27 feet.

WANDO FORMATION	0-1	Sand, fine-grained, well sorted, clean, contains very fine-grained dark heavy minerals, dusky-yellow (5Y6/4)
	1-10	Sand, fine- to medium-grained, well sorted, clean, contains very fine-grained dark heavy minerals, dusky-brown (5Y2/2) grading through dusky-yellow (5Y6/4) to yellowish-gray (5Y7/2) by 5 feet
	10-14	Sand, fine-grained with a minor medium-grained fraction, silty, fine- to medium-grained dark heavy minerals present, light-gray (N7)
	at 14	Silt, clayey, greasy, medium-dark-gray, 3 inch-thick layer present
	14-22	Sand, very fine- to fine-grained, silty, thixotropic, coarse mica flakes present, medium-dark-gray (N4)
	22-37	Sand, very fine- to fine-grained, very fine- to fine-grained dark heavy minerals present, coarse mica flakes more abundant than above, mica fines downward, light-olive-gray (5Y5/2) grading to yellowish-gray (5Y7/2) by 30 feet, grades rapidly to:
	37-42	Sand, medium- to very coarse-grained, granular, granules subangular to subrounded, dark-gray (N3) grading down to grayish-black (N2)
SANTEE LIMESTONE	42-43	Limestone (calcarenite), fine- to very coarse-grained, silty, angular, very light-gray (N8)

Base of Wando Formation: -15 feet below sea level
Bottomed in Santee Limestone

SEWEE BAY QUADRANGLE

(Depths in feet)

SB-96-1: 1.90 miles W of east quadrangle border, 4.20 miles S of north quadrangle border; back edge of parking lot at Moores Landing (EC 1/9, latitude 32° 56' 21" N, longitude 79° 39' 29" W). Surface elevation about 7 feet.

FILL	0-1	Sand, fine-grained with bimodal coarse-grained fraction, micaceous, abundant very fine-grained dark heavy minerals, dark-yellowish-orange (10YR6/6)
HOLOCENE	1-2	Muck, very fine-grained sandy silt, clayey and carbonaceous, dusky-brown (5YR2/2)
SILVER BLUFF BEDS	2-6	Sand, fine-grained, well sorted and rounded, clean, bimodal coarse-grained fraction present, sparse very fine-grained dark heavy minerals present, light-grayish-brown (5YR4/2), grades to:
	6-8	Sand, fine-grained to very fine-grained, micaceous and silty, bimodal medium-grained fraction present, medium-greenish-gray (5GY4/1)
	at 8	Silt, very fine-grained sandy, clayey and micaceous, light-olive-gray (5Y5/2)
WANDO FORMATION	8-11	Sand, very fine-grained to fine-grained, very fine-grained dark heavy minerals abundant, silty, shelly, moderate-olive-brown (5Y4/4)
	11-19	Sand, very fine-grained to fine-grained, contains sparse very fine-grained dark heavy minerals and mica, silty, with lenses of very fine-grained sandy silt interbedded, medium-bluish-gray (5B5/1)
	19-20	Clay, silty, contains abundant *Mulinia*, medium-bluish-gray (5B5/1)
	20-22	Sand, very fine-grained to fine-grained,

		contains sparse very fine-grained dark heavy minerals and mica, silty, with lenses of very fine-grained sandy silt interbedded, medium-bluish-gray (5B5/1)
	22-24	Clay, silty, sticky, rather stiff, medium-bluish-gray (5B5/1)
	24-27	Sand, very fine-grained to fine-grained, contains sparse very fine-grained dark heavy minerals and mica, silty, with lenses of very fine-grained sandy silt interbedded, medium-bluish-gray (5B5/1)
	27-29	Sand, fine- to coarse-grained, subangular, very poorly sorted, shelly (*Rangia*, *Dinocardium*, *Mercenaria*, *Oliva*, etc.), medium-bluish-gray (5B5/1), sharp basal contact
TEN MILE HILL BEDS	29-31	Silt, very fine-grained sandy and clayey, burrows present filled with lithology from above, dark-greenish-gray (5GY4/1), grades rapidly to:
	31-33	Sand, grades rapidly downward from very fine-grained through fine-grained and medium-grained to medium- to very coarse-grained, subrounded, poorly sorted, granular, medium-gray (N5), sharp basal contact
LADSON FORMATION	33-36	Sand, fine-grained, very fine-grained dark heavy minerals and coarse mica flakes abundant, soft, medium-dark-gray (N4)
	36-41	Sand, fine- to coarse-grained, grains subangular to rounded, sparsely shelly, medium-dark-gray (N4)
GOOSE CREEK LIMESTONE	41-47	Limestone (calcarenite), fine- grading down to medium-grained, quartzose and phosphatic, *Pecten eboreus* fragments present, calcite-cemented lumps abundant, medium-light-gray (N6), phosphate pebbles present on basal

		contact
ASHLEY FORMATION	47-61	Limestone (calcarenite), very fine- to fine-grained, rounded hunks of thick oyster shells present from 47-52 feet, large foraminifera visible, light-olive-brown (5Y5/6)

Base of Holocene: +5 feet above sea level
Base of Silver Bluff beds: -1 foot below sea level
Base of Wando Formation: -22 feet below sea level
Base of Ten Mile Hill beds: -26 feet below sea level
Base of Ladson Formation: -34 feet below sea level
Base of Goose Creek Limestone: -40 feet below sea level
Bottomed in Ashley Formation

SB-96-2: 3.30 miles W of east quadrangle border, 1.50 miles S of north quadrangle border; along Clayfield Road 0.3 mile west of 1 foot spot elevation (NC 1/9, latitude 32° 58' 43" N, longitude 79° 40' 54" W). Surface elevation about 17 feet.

WANDO FORMATION	0-1	Sand, fine-grained, well sorted, clayey, humic, dusky-brown (5YR2/2) with a streak of dark-yellowish-orange (10YR6/6), grades rapidly to:
	1-7	Sand, fine-grained, very fine-grained dark heavy minerals abundant, dark-yellowish-orange (10YR6/6) grading by 6 feet to yellowish-gray (7Y7/2)
	7-12	Sand, fine- to very fine-grained, silty and clayey, contains ***Mulinia***, medium-bluish-gray (5B5/1), grades to:
	12-16	Sand, very fine-grained, clayey and silty, micaceous, medium-bluish-gray (5B5/1), grades to:
	16-24	Silt, very fine-grained sandy and clayey, stiff, micaceous, ***Mulinia*** present, medium-bluish-gray (5B5/1), grades to:
	24-30	Silt, very fine-grained sandy, clayey, ***Mulinia*** abundant, medium-bluish-gray (5B5/1)
	30-32	Sand, fine- grading down to medium-grained, clean, well sorted, medium-bluish-gray (5B5/1)
	32-36	Sand, medium- grading down to medium- to coarse-grained, blue quartz grains present, medium-gray (N5)
LADSON FORMATION	36-46	Sand, fine- to medium-grained, very micaceous, medium-light-gray (N6)
	46-53	Sand, medium- grading down to medium- to coarse-grained, micaceous, sparse shell fragments present, medium-light-gray (N6)

ASHLEY FORMATION	53-71	Limestone (calcarenite), small foraminifera abundant, moderate-olive-brown

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Base of Wando Formation: -19 feet below sea level
Base of Ladson Formation: -36 feet below sea level
Bottomed in Ashley Formation

SB-96-3: 1.25 miles W of west quadrangle border, 3.70 miles S of north quadrangle border; on north side of road 0.15 mile west of Ward Bridge at 8 foot spot elevation (WC 1/9, latitude 32° 56' 45" N, longitude 79° 43' 42" W). Surface elevation 8 feet.

SILVER BLUFF BEDS	0-1	Sand, fine-grained, well sorted and clean, pale-yellowish-brown (10YR6/2) grading to grayish-orange (10YR7/4)
	1-6	Sand, fine-grained, very fine-grained dark heavy minerals present, micaceous, clean, dark-yellowish-orange (10YR6/6) grading through grayish-orange (10YR7/4) to medium-light-gray (N6)
WANDO FORMATION	6-19	Silt, very fine-grained sandy, micaceous, contains sparse ***Mulinia***, medium-bluish-gray (5B5/1)
	19-23	Sand, fine-grained grading down to fine- to coarse-grained, poorly sorted, very silty, shelly with a diverse fauna, pebbly toward base with clasts of quartz 0.2 to 0.4 in. in diameter
LADSON FORMATION	23-32	Sand, medium- to very coarse-grained, abundant subrounded quartz pebbles 0.4-0.8 in. in diameter coarsening downward to 1.2 in., a few wood chips present, fairly clean, dark-gray (N3)
ASHLEY FORMATION	32-56	Limestone (calcarenite), fine-grained, medium-olive-brown (5Y4/4 to 5Y5/4)

Base of Silver Bluff beds: +2 feet above sea level
Base of Wando Formation: -15 feet below sea level
Base of Ladson Formation: -24 feet below sea level
Bottomed in Ashley Formation

SB-96-4: 0.70 mile W of east quadrangle border, 1.00 mile S of north quadrangle border; along dirt road 0.3 mile ENE of 19 foot spot elevation (NE 1/9, latitude 32° 59' 09" N, longitude 79° 38' 13" W). Surface elevation about 21 feet.

WANDO FORMATION	0-1	Sand, very fine- to coarse-grained, clean but poorly sorted, grayish-orange (10YR7/4)
	1-9	Sand, fine- to medium-grained, very fine-grained dark heavy minerals present, clean, dark-yellowish-orange (10YR6/6) grading through medium-yellowish-orange (10YR5/6) (2-3) and through yellowish-gray 5Y7/2) (3-8) to light-olive-gray (5Y6/1)
	9-17	Sand, fine- to medium-grained grading downward to mostly fine-grained, very fine-grained dark heavy minerals present, thixotropic, shelly (mostly *Mulinia* and some oysters), greenish-gray (5G6/1), grades rapidly to:
	17-28	Silt, very fine-grained sandy, slightly clayey in upper foot, grading down to silt, very fine-grained sandy and clayey, finely micaceous, medium-bluish-gray (5B5/1), grades rapidly at base to:
	28-31	Sand, fine- to medium-grained, very silty, very shelly with diverse fauna, medium-bluish-gray (5B5/1)

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LADSON FORMATION	31-33	Silt, very fine-grained sandy, very clayey, contains calcite lumps (caliche?) and roots near base, greenish-gray (5G6/1), grades rapidly to:
	33-34	Silt, very fine-grained sandy, clayey, finely micaceous, medium-bluish-gray (5B5/1), grades rapidly to:
	34-44	Sand, fine- to medium-grained, very silty, grades down to medium- to coarse-grained, sparsely shelly, greenish-gray (5G6/1), grades to:

	44-51	Sand, medium- to coarse-grained, contains scattered rounded quartz pebbles 0.2-0.4 in. in diameter, medium-greenish-gray (5G5/1), grades to:
	51-55	Sand, coarse- to very coarse-grained, sparsely shelly, contains abundant subrounded to rounded quartz granules, medium-greenish-gray (5G5/1), sharp basal contact
DANIEL ISLAND BEDS	55-71	Silt, very clayey and stiff, very fine-grained sandy, includes a few sand stringers including very fine-grained well sorted clean sand laminae in basal 2 feet, very micaceous, medium-gray (N5)

Base of Wando Formation: -10 feet below sea level
Base of Ladson Formation: -34 feet below sea level
Bottomed in Daniel Island beds
Ashley Formation deeper than -50 feet below sea level

SB-96-5: 0.80 mile E of west quadrangle border, 0.50 mile S of north quadrangle border; at east corner of intersection with 32 foot spot elevation (NW 1/9, latitude 32° 59' 37" N, longitude 79° 44' 10" W). Surface elevation 32 feet.

WANDO FORMATION (LOWER MEMBER)	0-16	Sand, fine-grained, well sorted, clean, very fine-grained dark heavy minerals abundant, thixotropic below 8 feet, dark-yellowish-orange (10YR6/6) grading through moderate-brown (5YR3/4) from 2-3 feet through pinkish-gray (5YR8/1) from 3-4 feet through dusky-brown (5YR2/2) from 4-8 feet through yellowish-brown (5YR5/2) from 8-12 through grayish-yellow (5Y8/4) from 12-14 to reddish-brown (5R2/2)
	16-20	Sand, very fine- to fine-grained grading down to very fine-grained and micaceous, silty, yellowish-gray (5Y7/2 grading down to 5Y6/2)
	20-26	Silt, finely micaceous, very fine-grained sandy, medium-dark-gray (N4), a few ***Mulinia*** present, grading down to silt, clayey and a bit sticky, grayish-green (10GY5/2), grades rapidly to:
	26-28	Sand, very fine-grained, silty, soft, a few ***Mulinia*** present and a small ***Anadara ovalis***, grades back rapidly to:
	28-33	Silt, sticky, sparsely micaceous, grayish-green (10GY5/2), grades rapidly to:
	33-34	Sand, very fine- to medium-grained, gravelly with clasts of phosphate, rounded to irregular rough lumps up to 1.2 in. in diameter, grayish-green (10GY5/2)
DANIEL ISLAND BEDS	34-40	Silt, clayey, dense, sticky, finely micaceous, upper foot sandy, greenish-gray (5GY6/1) grading to grayish-green (5G5/2) by 35 feet

	40-41	Silt, clayey, dense, sticky, contains abundant wood chips, light-olive-gray (5Y5/2)
	41-45	Silt, clayey, dense, sticky, finely micaceous, grayish-green (5G5/2), round to subrounded phosphate pebbles 0.2-0.4 in. in diameter present in basal foot
ASHLEY FORMATION	45-61	Limestone (calcarenite), fine-grained grading down to very fine-grained and slightly clayey, large foraminifera present, light-olive-brown (5Y5/6)

Base of Wando Formation (lower member): -2 feet below sea level
Base of Daniel Island beds: -13 feet below sea level
Bottomed in Ashley Formation

SB-96-6: 0.60 mile W of east quadrangle border, 0.95 mile N of south quadrangle border; 0.18 mile NNW of the word "Mud" along dirt road not shown on topographic map (SE 1/9, latitude 32° 53' 20" N, longitude 79° 38' 07" W). Surface elevation about 10 feet.

HOLOCENE BARRIER SANDS	0-1	Sand, fine-grained, well sorted, clean, very fine-grained dark heavy minerals abundant, top one inch moderate-grayish-brown (5YR4/2), below that dark-yellowish-orange (10YR6/6) mottled reddish-brown (10R3/6)
	1-6	Sand, fine-grained, well sorted, clean, thixotropic, very fine-grained dark heavy minerals abundant, sparse mica present, pale-brown (10YR5/2) grading through yellowish-gray (5Y7/2) and through greenish-gray (5G6/1) to dark-olive-gray (5Y3/1)
	6-8	Sand, fine-grained, well sorted, clean, thixotropic, very fine-grained dark heavy minerals abundant, sparse mica present, shells abundant, dark-grayish-green (5G4/2)
HOLOCENE MARSH MUCK	8-28	Silt, clayey, very fine-grained sandy, greasy, odiferous, silt and sand content generally increases downward, a few lenses of very fine-grained silt present between 20 and 24 feet, medium-dark-gray (N4) grading by 20 feet to dark-greenish-gray (5GY4/1)
	28-30	Sand, very fine-grained, silty, oysters abundant, dark-greenish-gray (5GY4/1)
	30-32	Silt, clayey, very fine-grained sandy, greasy, dark-greenish-gray (5GY4/1)
DANIEL ISLAND BEDS	32-36	Sand, fine- to very coarse-grained, poorly sorted, grains subrounded, very clayey matrix, contains 0.2 to 0.4 in. diameter lumps of very rough-surfaced caliche, burrows present filled with

		very fine-grained sand, sediment finely micaceous in basal foot, bed fines downward, medium-dark-gray (N4) mottled olive-gray (5Y4/2) in upper foot, grading through grayish-green (5G5/2) mottled moderate-brown (5YR4/6) to pale-green (10G6/2) in basal foot
	36-47	Silt, very fine-grained sandy, clayey, sparse very fine mica present, grayish-green (5G4/2) grading by 40 feet to olive-gray (5Y3/2)
	47-51	Sand, very fine-grained, slightly silty, some very fine- to fine-grained dark heavy minerals and sparse shell fragments present, olive-gray (5Y3/2)
	51-55	Silt, very fine-grained sandy, clayey, olive-gray (5Y3/2), rounded quartz pebbles to 0.4 in. in diameter on basal contact
MARKS HEAD FORMATION	55-62	Sand, fine-grained, well sorted, slightly silty, moderate-olive-brown (5Y4/4), grades to:
	62-76	Sand, very fine- to fine-grained, clayey, very fine mica abundant, moderate-olive-brown (5Y4/4)

Base of Holocene barrier sands: +2 feet above sea level
Base of Holocene marsh muck: -28 feet below sea level
Base of Daniel Island beds: -45 feet below sea level
Bottomed in Marks Head Formation

SB-96-7: 1.75 mile E of west quadrangle border, 1.55 mile N of south quadrangle border; in intersection at 11 foot spot elevation (SW 1/9, latitude 32° 53' 52" N, longitude 79° 43' 14" W). Surface elevation 11 feet.

WANDO FORMATION	0-1	Sand, fine-grained, well sorted, silty, dusky-yellowish-brown (10YR2/2)
	1-8	Sand, fine- to medium-grained, a few rounded coarse grains present toward base, clean, very fine-grained dark heavy minerals abundant, dusky-yellow (10Y6/4) grading through dark-yellowish-brown (10YR4/2) and grayish-orange (10YR7/4) and yellowish-gray (5Y7/2) and dusky-yellowish-brown (10YR2/2) to brownish-black (5YR2/1)
	8-11	Sand, dominantly fine- but very fine- to medium-grained, greenish-gray (5G6/1), very shelly at top and less shelly downward
	11-24	Silt, clayey, very fine-grained sandy, finely micaceous, lenses of silty very fine-grained sand present from 17- 21 feet, grayish-green (5G5/2)
	24-34	Sand, very fine-grained grading down to fine-grained, silty and clayey, ***Mulinia*** abundant at top and less abundant downward, light-olive-gray (5Y5/2)
	34-35	Sand, fine- to coarse-grained, silty, clayey, rounded quartz pebbles present to 1.2 in. in diameter, medium-greenish-gray (5GY5/1)
GOOSE CREEK LIMESTONE	35-36	Limestone (calcarenite), medium-grained, quartzose, phosphate pebbles to 1.2 in. in diameter at base, ***Amusium mortoni*** fragments present, yellowish-gray (5Y8/1)
MARKS HEAD FORMATION	36-46	Sand, very fine- to fine-grained, clayey, finely micaceous, moderate-olive-brown (5Y4/4)

	46-77	Sand, mostly quartz and some phosphate, fine-grained, silty, a few sparse foraminifera and shell fragments present, moderate-olive-brown (5Y4/4), a few medium to coarse rounded blue quartz grains present in basal two feet
ASHLEY FORMATION	77-81	Limestone (calcarenite), fine-grained, small foraminifera abundant, light-olive-brown (5Y5/6)

Base of Wando Formation: -24 feet below sea level
Base of Goose Creek Limestone: -25 feet below sea level
Base of Marks Head Formation: -66 feet below sea level
Bottomed in Ashley Formation

SB-96-8: 3.35 miles E of west quadrangle border, 4.10 mile N of south quadrangle border; 0.10 mile SE of Sewee Road (CC 1/9, latitude 32° 56' 03" N, longitude 79° 41' 19" W). Surface elevation about 22 feet.

WANDO FORMATION	0-1	Sand, fine-grained, well sorted, slightly silty and clayey, grayish-brown (5YR3/2) grading down to dark-yellowish-orange (10YR6/6) mottled grayish-orange (10YR7/4)
	1-13	Sand, fine- to medium-grained, very fine- to fine-grained dark heavy minerals present, clean, thixotropic, sparsely micaceous below 6 feet, dark-yellowish-orange (10YR6/6) mottled grayish-orange (10YR7/4), grading by 4 feet to pale-olive-gray (5Y6/2) and then to pale-olive (10Y6/2) by 6 feet
	at 13	Silt, clayey, micaceous, medium-dark-gray (N4), 2 inch-thick layer
	13-25	Sand, fine- to medium-grained, very fine- to fine-grained dark heavy minerals present, silty, shelly (mostly ***Mulinia*** and oyster but also some ***Oliva***, ***Dinocardium***, etc.)
	at 25	Silt, clayey, micaceous, medium-dark-gray (N4), 2 inch-thick layer
	25-29	Sand, fine-grained, very fine-grained dark heavy minerals present, silty, shelly (mostly ***Mulinia*** and oyster but also some ***Oliva***, ***Dinocardium***, etc.)
	at 29	Silt, clayey, micaceous, medium-dark-gray (N4), 2 inch-thick layer
	29-38	Sand, very fine-grained, silty, shelly (mostly ***Mulinia*** and oyster but also some ***Oliva***, ***Dinocardium***, etc.)
	At 38	Silt, clayey, micaceous, medium-dark-gray (N4), 2 inch-thick layer
	38-39	Sand, fine- to medium-grained, silty, shelly (oysters, ***Mercenaria***, etc.),

		contains very rounded phosphate pebbles to 0.8 in. in diameter
MARKS HEAD FORMATION	39-54	Sand, fine-grained, well sorted, light-olive-brown (10Y5/4) grading rapidly to olive-brown (5Y3/4) from 40-50 feet and then to moderate-olive-brown (5Y4/4), large hunks of thick broken oyster shells on basal contact
ASHLEY FORMATION	54-61	Limestone (calcarenite), fine-grained, small foraminifera abundant, moderate-olive-brown (5Y6/6)

Base of Wando Formation: -17 feet below sea level
Base of Marks Head Formation: -32 feet below sea level
Bottomed in Ashley Formation