September 1961

WELL DESIGN
TRS-1 Laurel
S36, T38S, R18E

G. H. [redacted]

I. General

This site is located approximately one-half mile east of U. S. Highway 41 South near the intersection of Laurel Road and Forest Street within a county park. Laurel Road intersects U. S. Highway 41 South in Sarasota County approximately two miles north of Venice city limits.

II. Geologic & Hyrologic Data

A. Geology

The lithology* of this site was described from an examination of drill cuttings to depth of 47' and continuous wireline core samples from 47'-654'.

*Note: Formation depths are tentative and are based on preliminary data.

0'-20'	Undifferentiated=quartz sand with minor phosphatic sand, shell fragments and dolomitic limestone, generally high porosity.
20'-86'	Tamiami Formation=- Limestone, Marl and Clay, gray or brown, contains minor phosphatic sand, is generally soft sticky or dense, and having low porosity.
86'-265'	Hawthorn Formation Upper Member=Limestone, Clay and Chert, limestone is generally gray-brown, dense, dolomitic, low porosity, commonly grades from limestone through siltstone or chert to a pure waxy clay, blue, green or gray; some lenses of clay are soft, sandy or phosphatic; limestone in this unit is typically of low porosity and partially infilled by clay. This unit is generally low in permeability.
265'-380'	Hawthorn Formation, Lower Member=predominantly limestone, tan or light gray, soft, friable, contains numerous fossil molds or casts, partially dolomitic in some places, porosity moderate-high. Some portions of this unit contain pasty or marly limestone of low permeability and thin lenses of chert.
380'-488'	Tampa Formation = predominantly siltstone (or silty limestone) gray to tan, hard, well cemented, somewhat clayey and having low porosity or permeability; contains some lenses of purer limestone typically dolomitic, somewhat phosphatic and of low porosity.

#5(8/15)

488'-654'+ Suwanee Formation = limestone, biomicritic, tan-grey, soft, somewhat chalky, slightly moldic, generally of moderate-high porosity.

Hydrogeology

The elevation at this site is between 10' and 14' above mean sea level. The May 1981 potentiometric surface map prepared by the U.S. Geological Survey indicates that the potentiometric surface is approximately 25' above mean sea level over 10' above land surface. Water levels recorded during coring to a depth of 654' never rose more than 6' above land surface possibly due to interaquifer exchange of groundwater.

During coring three or four seperate artesian zones were encountered; these are seperated from one another by sequences of confining or low permeability, dolomitized limestone, clay, and siltstone. Each artesian zone contains water of different quality and potentiometric head. Generally, it can be stated that the potentiometric head increases and the water quality becomes worse with depth. A hydrologic profile is summarized below and on the attached diagram.

A. The water table occurs in the upper 25' of strata at this site in sand and shell it is confined from below by approx. 25' of clay and other low permeability strata. No water samples were recovered for analysis from this zone.

B. The first artesian zone occurs between 50' and 58' below land surface. One water level was recorded in this zone of approximately 4½ below l.s.d. A water sample was retrieved for anlaysis and was found to have a conductivity of 1250 umhos, chloride 160 mg/l, and sulfate content of 429 mg/l. Due to the high sulfate content this water is considered non-potable.

   The lithology between 58' and 265' is relatively low in permability and is considered to be a major confiner separating the first and second artesian zones.

#5 (9/15)

C. The second artesian zone occurs between 274' and 304'. Water levels in this zone were between -2' and -3' below l.s.d. The chlorides in this zone ranged from 60-80 mg/l, sulfates from 300-900 mg/l and conductivity from 1000-1400 umho's. (Note this zone and all other permeable zones encountered did not contain potable water). The second artesian zone is separated from the third by approximately 5' of pasty or chalky, moderately hard, and partially dolomitized limestone.

D. The third artesian zone is found 310'-398' below l.s.d. The hydrostatic head measured in this zone was between +2' and +4' above l.s.d. Chlorides ranged from 90-110 mg/l, sulfates 1300-1450 mg/l, and conductivity 1700-2000 umho's. This zone is separated from the fourth artesian zone by approximately 80' of semipermeable limestone and siltstone. Since the third and fourth artesian zones are very similar in water quality and potentiometric head there is probably not a complete hydrologic separation.

E. The fourth artesian zone was found between 480' and the bottom of the hole (654') and its potentiometric head ranged between +3'-+5' above l.s.d. The chlorides in this zone ranged from 50-80 mg/l, sulfates 1300-1700, and conductivity 1900-2100.

III. Proposed Design

This site was originally intended to be a saltwater interface (defined as 250 mg/l chlorides) monitor, however, the saltwater interface was never encountered at this site. Instead this site shall be constructed to monitor upward migration of high sulfate waters. There are a number of older, deep, agricultural wells in the area near this site which have allowed upward migration of high sulfate waters from lower artesian zones (third and fourth) into upper zones. By monitoring the second artesian zone at this site (between 275'-300') the effects of further aquifer deterioration or conversly the effects of QWIP's plugging of the old, deep, wells in this area can be assessed. This well and others nearby (yet to be constructed) can be used as early warning signs of worsening aquifer conditions if upward migration of poor quality water continues.

#5(10/15)

IV. Well Construction - (See attached diagram)

This well will be constructed using the District-owned Failing 1500 Drill Rig. Approximately 30' of 12" diameter surface casing will have to be set at this site to control the surficial sand. This casing will be set by first drilling a 16" diameter hole inside of which the casing shall be seated and its annulus cemented to land surface.

A eight inch (8") nominal bit size shall be used to drill out below the surface casing and for the remainder of the hole to a depth of 300' A 4" diameter A.B.S. well casing shall be placed in the hole to a depth of 275'. The first twenty feet of the final casing will be 8" diameter p.v.c. approximately (10') feet of which shall be placed above land surface and (10') feet which shall be below l.s.d. The annulus between the casing and the hole from 275-l.s.d. shall be filled with a cement slurry injected through a tremic line. (The bottom 25' of the well or open hole portion shall be drilled after the casing has been cemented into place.)

After cementing the annulus of the well it will be pumped for 2-4 hours and surged with an air compressor to fully develop the open hole portion of the well. At this point the inside of the casing shall be swabbed clean and a mixture of HTH (dry chlorine) injected into the well to disinfect it.

A concrete culvert approximately 4' high and 18"-20" in diameter will be placed about the well at the surface to protect the casing from impacts. It may be necessary to extend the 12" diameter steel surface casing to about 1" from the top of the p.v.c. casing for the purpose of well protection rather than installing a concrete culvert about the well.

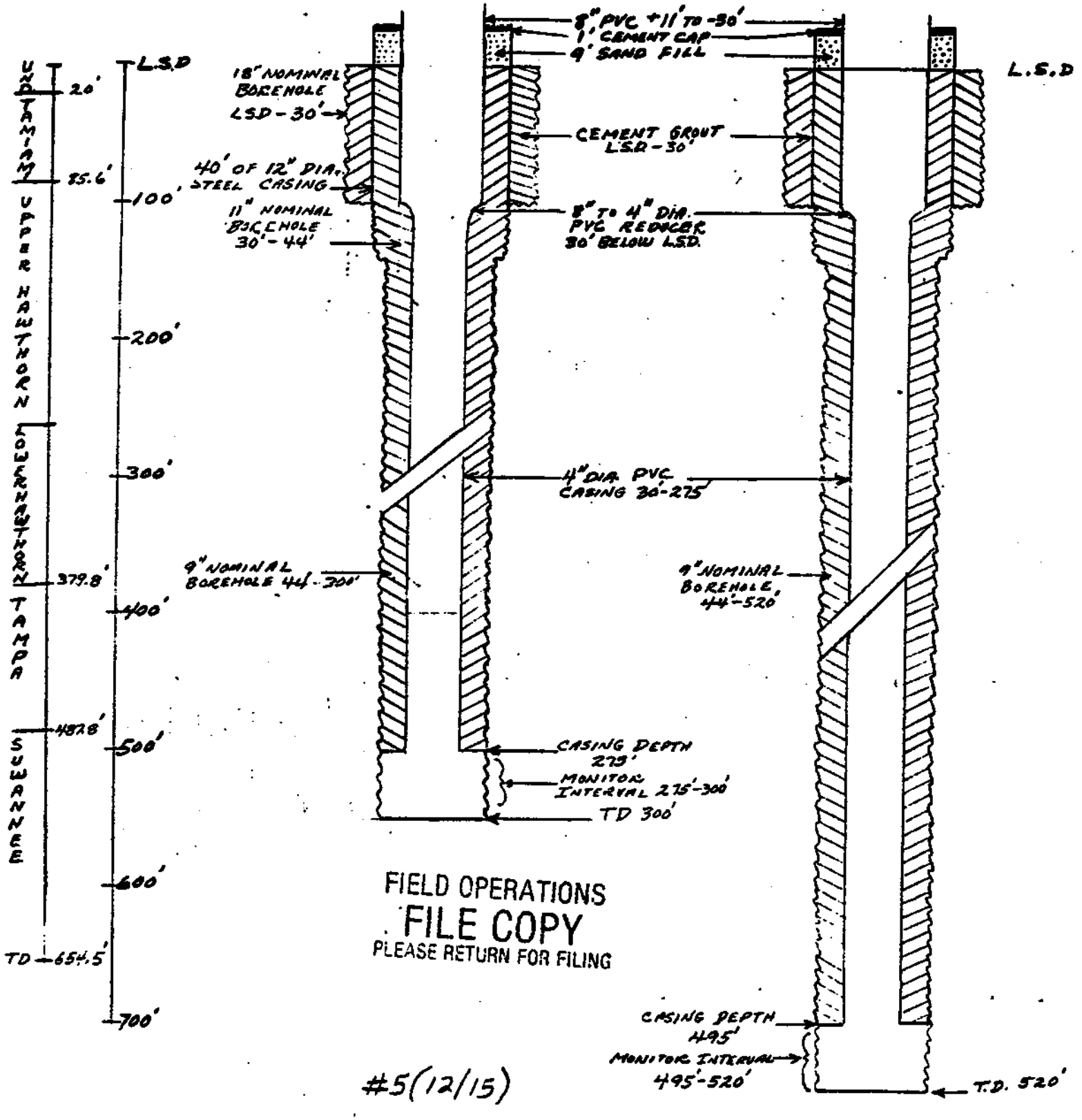
#5 (11/15)

TR5-1 "LAUREL"

WELL DESIGN AS PROPOSED

S. 36 T.38 R.18

JLD



#5(12/15)

November 1981

ROMP SITE TR5-1 "Laurel"
Revised Well Design

G. H. New

After the original well design for this site was revised by the Resource Regulation Department of the District, it was decided that either a single two-zone monitor well or two separate wells monitoring artesian zones 2 and 3 would better serve our purposes.

Since there are considerable risks involved in multiple-zone monitor wells, the decision was made to forego these risks and drill two single-zone monitor wells. Both of these wells will be drilled employing the same technique but having different total depths.

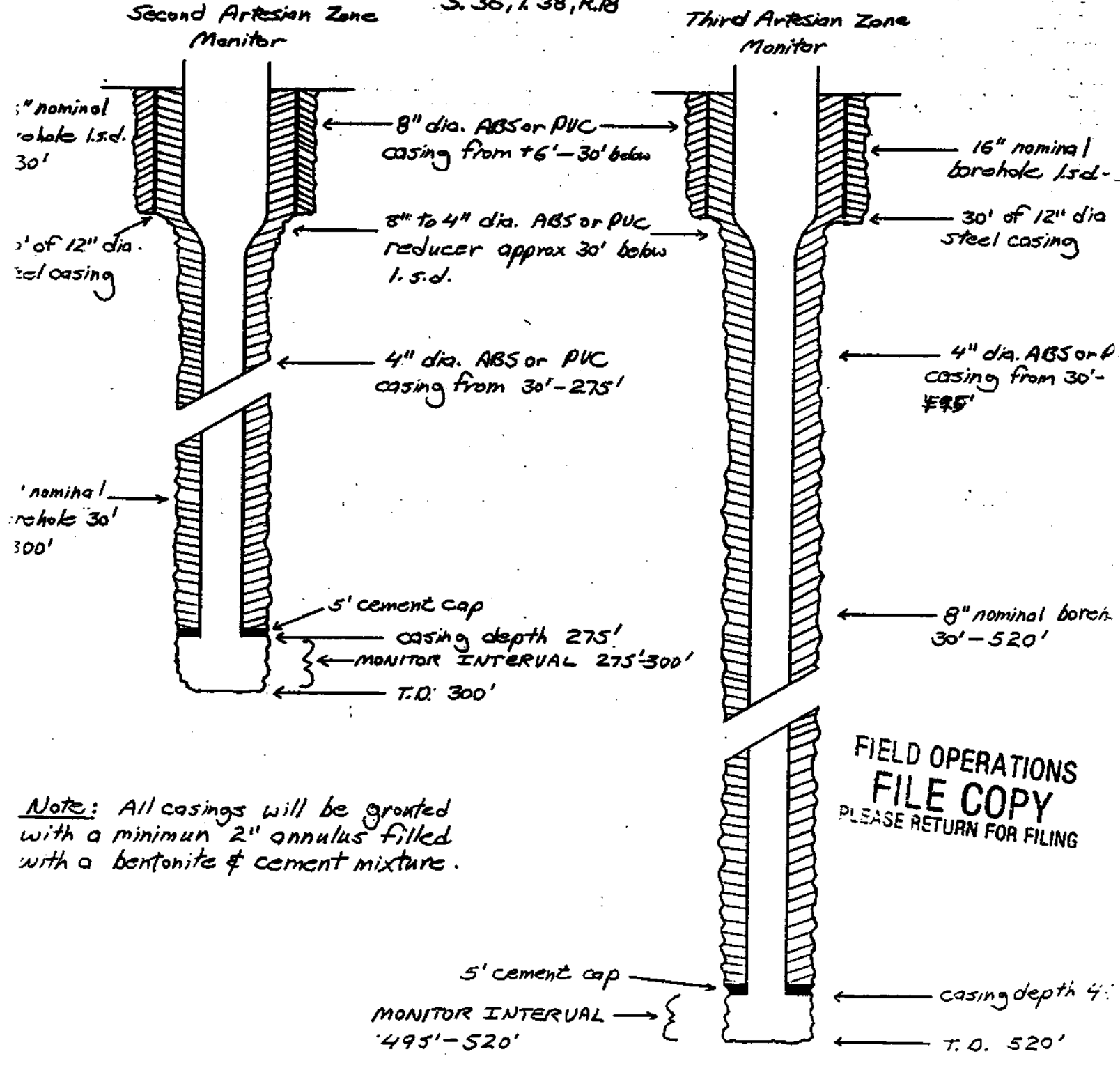
First, a 16-inch nominal diameter borehole will be drilled to an approximate depth of 30 feet and 12-inch diameter steel work casing will then be grouted into place.

Below the work casing, an 8-inch nominal diameter borehole will be drilled to the wells total depth (see attached diagram). An 8-inch PVC or ABS casing shall be used in each well from the surface to an approximate depth of 30 feet to provide adequate room for monitoring devices. The 8-inch diameter casing shall be coupled to a 4-inch casing which will extend to the total casing depth in each well. The bottom 25 feet of each well will then be sand packed and capped with a quick setting cement to prevent grout invasion during casing grouting. After this final casing has been grouted to the surface, the cement cap over the monitor zone shall be broken and a combination of reverse air lifting or surging with clean water shall be used to fully develop the monitor zone in each well.

#5(14/15)

11/81 GHW

TR 5-1
Revised Well Design
S. 36, T. 38, R. 18



Note: All casings will be grouted with a minimum 2" annulus filled with a bentonite & cement mixture.

LITHOLOGIC WELL LOG PRINTOUT

SOURCE - FGS

WELL NUMBER: W-15168
TOTAL DEPTH: 654.5 FT.
SAMPLES - NONE

COUNTY - SARASOTA
LOCATION: T.38S R.18E S.36 BB
LAT = 27D 08M 08S
LON = 82D 27M 05S

COMPLETION DATE: 22/03/82
ELEVATION: 14 FT
OTHER TYPES OF LOGS AVAILABLE - NONE

OWNER/DRILLER:S.W.F.W.M.D. [ROMP TR 5-1] (LAUREL PARK WELL)

WORKED BY:G.L. HENDERSON; CODED AND ENTERED BY RICHARD GREEN (11/90)

0.	-	20.	090UDSC	UNDIFFERENTIATED SAND AND CLAY
20.	-	86.	122TMIM	TAMIAMI FM.
86.	-	380.	122HTRN	HAWTHORN GROUP
380.	-	488.	122TAMP	TAMPA MEMBER OF ARCADIA FM.
422.	-	.	123SWNN	SUWANNEE LIMESTONE

0 - 11 SAND; WHITE TO LIGHT TAN
POROSITY: POSSIBLY HIGH PERMEABILITY, INTERGRANULAR
RANGE: FINE TO MEDIUM; POOR INDURATION
ACCESSORY MINERALS: ORGANICS-%
UPPER 3' STAINED DK GRAY-DK BRN BY ORGANIC MATERIAL.
MODERATE SORTING.

11 - 15 LIMESTONE; TAN TO LIGHT BROWN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: SUCROSIC, DOLOMITIC
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS
BIOMICRITE, COMMON PELECYPOD SHELL FRAGMENTS. LOW TO MODERATE (L-M) POROSITY.

15 - 17 SAND; WHITE
POROSITY: POSSIBLY HIGH PERMEABILITY
RANGE: MEDIUM TO COARSE; POOR INDURATION
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS
WELL SORTED, SOME OFFWHITE PELECYPOD SHELL FRAGMENTS.

17 - 20 SAND; WHITE
RANGE: MEDIUM TO COARSE; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: CALCAREOUS
WELL SORTED, SLIGHTLY MARLY IN PARTS, SOME LT BRN-BLK COARSE GRAINED PHOSPHATE SANDS. MODERATE POROSITY.

20 - 25 LIMESTONE; LIGHT BROWN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: DOLOMITIC
BIOMICRITE INTERMIXED WITH OFFWHITE, SOFT, PHOSPHATIC MARL.
MOD. POROSITY IN LS, LOW POROSITY IN MARL.

25 - 34 CLAY; LIGHT GREEN TO LIGHT YELLOWISH GREEN
POROSITY: LOW PERMEABILITY
SOFT, STICKY.

34 - 37 LIMESTONE; WHITE
POROSITY: LOW PERMEABILITY
ACCESSORY MINERALS: PHOSPHATIC SAND-%
SOFT, PHOSPHATIC MARL.

37 - 37.2 LIMESTONE; TAN TO LIGHT BROWN
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: DOLOMITIC
SPARSE BIOMICRITE. MODERATE POROSITY.

37.2- 44 CLAY; LIGHT GRAY TO LIGHT GREEN
POROSITY: LOW PERMEABILITY; POOR INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: PHOSPHATIC SAND-%
SOFT, STICKY PHOSPHATIC CLAY INTERMIXED WITH LT GRAY SOFT HIGHLY PHOSPHATIC MARL.

44 - 47 LIMESTONE; DARK GRAY TO BLACK
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
HIGHLY PHOSPHATIC SPARSE BIOMICRITE.

47 - 49.8 LIMESTONE; WHITE TO LIGHT GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %, CLAY- %
QUARTZ SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS
HIGHLY PHOSPHATIC SPARSE BIOMICRITE, SOME PELECYPOD MOLDS INFILLED BY CORALLINE MATERIAL, SOME MOLDS FILLED BY LT GREEN, SANDY CLAY. L-M POROSITY.

49.8- 50 CLAY; LIGHT GREEN TO OLIVE
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: QUARTZ SAND- %, PHOSPHATIC SAND-%

50 - 51.5 LIMESTONE; LIGHT GREEN TO OLIVE
GRAIN TYPE: CALCILUTITE
POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-%
SOFT, FRIABLE, MODERATE POROSITY.

51.5- 51.7 LIMESTONE; DARK GRAY TO BLACK
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION

ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC

51.7- 57.5 LIMESTONE; CREAM TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS
HIGHLY MOLDIC, BIOMICRITE, COMMON PELECYPOD CASTS AND MOLDS, SOME MOLDS FILLED BY ABOVE DESCRIBED MICRITE, SOME WORM BORINGS FILLED BY DK GRAY, COARSE PHOSPHATIC SANDS LOW-MOLDIC POROSITY.

57.5- 59.5 CLAY; LIGHT BLUISH GRAY TO MODERATE BLUISH GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
SOFT BUT DENSE, WAXY.

59.5- 67 CLAY; DARK BLUE TO OLIVE
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-01%, CALCILUTITE-01%
SOFT BUT DENSE, VERY WAXY, STICKY, TRACE OF OFFWHITE HARD PHOSPHATIC MICRITE FRAGMENTS.

67 - 74.5 CLAY; LIGHT YELLOWISH GREEN TO OLIVE
POROSITY: LOW PERMEABILITY; POOR INDURATION
SOFT BUT DENSE, STICKY, WAXY, SLIGHTLY SANDY IN UPPER 2.5'.

74.5- 79.5 CLAY; LIGHT GREEN TO LIGHT YELLOWISH GREEN
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: SILT- %, PHOSPHATIC SAND- %
OTHER FEATURES: FOSSILIFEROUS
FOSSILS: MOLLUSKS, FOSSIL MOLDS
SOFT, HIGHLY PHOSPHATIC, SILTY-STICKY CLAY GRADING TO LT GREEN, SOFT BUT DENSE, FOSSILIFEROUS SILTSTONE.

79.5- 85.6 SILT; LIGHT GREEN
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: FOSSILIFEROUS
FOSSILS: MOLLUSKS, FOSSIL MOLDS
SOFT BUT DENSE SILTSTONE, COMMON BUT INFILLED PELECYPOD MOLDS, SOME FINE PHOS. SANDS.

85.6- 91.6 LIMESTONE; WHITE TO LIGHT BLUISH GRAY
POROSITY: MOLDIC, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %, ORGANICS- %
OTHER FEATURES: DOLOMITIC
FOSSILS: WORM TRACES, FOSSIL MOLDS, MOLLUSKS
HIGHLY MOLDIC BIOMICRITE, ABUNDANT MOLLUSK MOLDS, SOME WORM BORINGS FILLED BY DK GRAY, ORGANIC MARLS, SOME MARLY PHOSPHATIC SAND LENSES AT TOP OF SECTION. MOD-HIGH POROSITY.

91.6- 92.7 LIMESTONE; WHITE TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS
SLIGHTLY MOLDIC SPARSE BIOMICRITE.

92.7- 94.7 LIMESTONE; WHITE TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS
SLIGHTLY MOLDIC SPARSE BIOMICRITE INTERMIXED W/ LT TAN HARD, SLIGHTLY PHOSPHATIC BIOMICRITE. LOW POROSITY IN DOLO. LS., MODERATE POROSITY IN PHOSPHATIC LS.

94.7- 96 CLAY; DARK GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %, ORGANICS-%
WAXY, SOFT, ORGANIC CLAY.

96 - 96.4 CLAY; LIGHT TAN TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-%

96.4- 99 LIMESTONE; LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY MOLDIC SPARSE BIOMICRITE, SOME INFILLED PELECYPOD MOLDS.

99 - 110.6 LIMESTONE; LIGHT BLUISH GRAY TO MODERATE BLUISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS, ECHINOID
MOLDIC BIOMICRITE, MODERATE-HIGH POROSITY, ABUNDANT MOLLUSK CASTS AND MOLDS.

110.6- 113.5 LIMESTONE; LIGHT TAN TO LIGHT BLUISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY FRIABLE IN PARTS, MOLDIC BIOMICRITE, COMMON MOLLUSK CASTS AND MOLDS, SOME LT GRAY, SANDY PHOSPHATIC

CLAY INFILLING SOME FOSSIL MOLDS FROM 110-112', HIGH-VERY HIGH POROSITY IN PARTS.

113.5- 119.5 LIMESTONE; LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
OTHER FEATURES: DOLOMITIC, FOSSILIFEROUS
FOSSILS: FOSSIL MOLDS, MOLLUSKS
HIGHLY DOLOMITIZED, SOME SMALL MOLLUSK MOLDS. L-MOD. POROSITY.

119.5- 123.4 LIMESTONE; LIGHT BLUISH GRAY TO CREAM
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
MODERATE INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %, CLAY- %
OTHER FEATURES: FOSSILIFEROUS, DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL MOLDS
SOME MOLLUSK MOLDS INFILLED BY HIGHLY DOLOMITIZED DK BLUISH GRAY, CLAYEY MICRITE, SOME BLACK, V.F. GRAINED PHOS. SAND LENSES LAMINATING SECTION, ONE SMALL PIECE OF A PALM TREE BRANCH? FOUND AT BOTTOM OF SECTION.

123.4- 124.3 LIMESTONE; LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND-%
SOFT BUT DENSE, VERY CLAYEY, SLIGHTLY PHOSPHATIC MICRITE.

124.3- 125.4 CLAY; LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-%
STICKY-MARLY.

125.4- 128.9 LIMESTONE; LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
MODERATE INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND-%
SOFT-HARD, VERY MARLY-CLAYEY, SPECKED W/ PHOSPHATE.

128.9- 129.2 CHERT; TAN TO BLACK
POROSITY: NOT OBSERVED; GOOD INDURATION
SEDIMENTARY STRUCTURES: BANDED
ACCESSORY MINERALS: PHOSPHATIC SAND-%
ALTERNATING SEAMS OF TAN CHALCEDONY AND BLACK, PHOSPHATIC CHERT.

129.2- 134.5 SILT; CREAM TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND- %
CALCILUTITE-%
SOFT BUT DENSE, CLAYEY, FINELY PHOSPHATIC SILTSTONE. SOME VUGS INFILLED BY LT GRAY-LT TAN, CLAYEY, PHOSPHATIC MICRITE.

134.5- 138.8 LIMESTONE; LIGHT GRAY TO LIGHT TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND-%
SOFT BUT DENSE.

138.8- 140.3 LIMESTONE;
INTERBEDDED DK BROWN CHERT, LT TAN MUDSTONE, AND PHOSPHATIC CLAY. VERY LOW POROSITY OVERALL.

140.3- 144.7 SILT; LIGHT BLUISH GRAY TO LIGHT OLIVE BROWN
POROSITY: LOW PERMEABILITY; GOOD INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND- %
CHERT- %
OTHER FEATURES: CALCAREOUS
VERY CLAYEY SILTSTONE, THIN CHERT SEAM AT 143.5-143.7'.

144.7- 147 LIMESTONE; CREAM TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND- %
PHOSPHATIC GRAVEL- %
FOSSILS: FOSSIL MOLDS, MOLLUSKS, ECHINOID
BIOMICRITE, COMMON MOLLUSK CASTS AND MOLDS, SOME 1/4" PHOSPHATE PEBBLES, LOW-MOD. POROSITY.

147 - 149.7 MUDSTONE; CREAM
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
SOFT BUT DENSE MUDSTONE.

149.7- 152.5 LIMESTONE; CREAM TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND- %
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY MOLDIC SPARSE BIOMICRITE, SOME PELECYPOD MOLDS SOME FILLED IN BY DK GREENISH OLIVE CLAY. DK GREEN CHERT NODULE AT 152.4', THIN CLAY BED AT BOTTOM OF SECTION.

152.5- 156 SILT; CREAM TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY; GOOD INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND- %
PHOSPHATIC GRAVEL- %
OTHER FEATURES: CALCAREOUS
HIGHLY PHOSPHATIC IN LOWER 1' OF SECTION, CALCARENITIC SILTSTONE.

156 - 161 AS ABOVE
INTERMIXED WITH CREAM-LT BLUISH GRAY, HARD, CLAYEY PHOSPHATIC, SLIGHTLY MOLDIC SPARSE BIOMICRITE.

161 - 161.5 CHERT; DARK BROWN
POROSITY: NOT OBSERVED; GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-%
MICROCRYSTALLINE CHERT WITH DK BRN-BLACK WAVY PHOSPHATIC LAMINATIONS.

161.5- 162.7 LIMESTONE; LIGHT BLUISH GRAY TO MODERATE BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: DOLOMITIC, COQUINA
FOSSILS: FOSSIL MOLDS, MOLLUSKS, WORM TRACES
SLIGHTLY FRIABLE, COQUINAL BIOMICRITE. LOW-MOD. POROSITY.

162.7- 163.1 CHERT;
SAME AS 161-161.5'.

163.1- 164.5 LIMESTONE; CREAM TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: CLAY- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS
SPARSE BIOMICRITE, SLIGHTLY DOLOMITIC.

164.5- 165.4 AS ABOVE
EXCEPT VERY CLAYEY.

165.4- 171.7 LIMESTONE; LIGHT BLUISH GRAY TO CREAM
POROSITY: LOW PERMEABILITY, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
SEDIMENTARY STRUCTURES: BRECCIATED
ACCESSORY MINERALS: PHOSPHATIC GRAVEL- %, LIMESTONE- % CLAY- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS
SPARSE BIOMICRITE, DENSE BUT HIGHLY MOLDIC IN BOTTOM HALF OF SECTION, ENTIRE SECTION BRECCIATED BY TAN, CLAYEY DOLOMITIC LS PEBBLES AND DK BRN-BLK PHOS. PEBBLES. LOW-MOD. POROSITY.

171.7- 174.5 LIMESTONE; LIGHT BLUISH GRAY TO LIGHT GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND-%
SOFT BUT DENSE, MUDSTONE GRADING TO LT GRAY, SOFT, VERY CLAYEY, PHOSPHATIC MICRITE.

174.5- 176.2 LIMESTONE; CREAM TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC

FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY PHOSPHATIC, SLIGHTLY MOLDIC SPARSE BIOMICRITE.
BOTTOM 1' OF SECTION HAVING VUGS OF WORM BORINGS FILLED BY LT BLUISH GREEN, STICKY, WAXY, CLAY.

176.2- 179.5 LIMESTONE;
MUDSTONE AS ABOVE INTERMIXED WITH CREAM-LT BLUISH GRAY SOFT, MARLY CLAY AND LT BLUSIH GRAY, HARD, FOSSILIFEROUS SILTSTONE. VERY LOW POROSITY OVERALL.

179.5- 182 SILT; LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
SEDIMENTARY STRUCTURES: LAMINATED
ACCESSORY MINERALS: CLAY-%
CLAYEY SILTSTONE. SOFT BUT DENSE.

182 - 184.5 CLAY; LIGHT GRAY TO MODERATE BLUISH GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
STICKY, WAXY, SOFT BUT DENSE.

184.5- 189.5 CLAY; LIGHT BLUISH GRAY TO DARK BLUISH GREEN
POROSITY: LOW PERMEABILITY; POOR INDURATION
VARIBLE COLORATION. SOFT, STICKY-WAXY.

189.5- 192.2 SILT; LIGHT GRAY
POROSITY: FRACTURE, LOW PERMEABILITY; GOOD INDURATION
SEDIMENTARY STRUCTURES: BRECCIATED
ACCESSORY MINERALS: CLAY- %
OTHER FEATURES: CALCAREOUS
DENSE, SLIGHTLY CALCARENITIC SILTSTONE, SECTION HIGHLY FRACTURED AND BRECCIATED BY DK GREEN CLAY. L-MOD. POROSITY.

192.2- 192.4 CHERT; DARK GRAY TO BLACK
POROSITY: NOT OBSERVED; GOOD INDURATION

192.4- 192.6 CLAY; LIGHT GRAY TO DARK GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-%
SOFT, WAXY CLAY.

192.6- 194.5 SILT;
SILTSTONE --SAME AS 189.5-192.2'.

194.5- 194.6 CHERT;
SAME AS 192.2-192.4'.

194.6- 196.3 DOLOSTONE; LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY, VUGULAR
GOOD INDURATION
ACCESSORY MINERALS: CHERT- %, CALCILUTITE-%
DENSE, "VARVY" DOLOMITE, HIGHLY VUGGULAR WITH SOME VUGS FILLED BY LT TAN DOLOMITIC MICRITE. SOME DARK BRN CHERT BRECCIA.

196.3- 199.3 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE

GOOD INDURATION
OTHER FEATURES: FOSSILIFEROUS, CHALKY
SLIGHTLY FRIABLE, VERY CHALKY-CLAYEY, LOW-MOD. POROSITY.

199.3- 199.5 CHERT;
AS 192.2-192.4'.

199.5- 200.7 CLAY; LIGHT GRAY TO LIGHT TAN
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: CHERT- %
OTHER FEATURES: CHALKY
MOTTLED LT-DK GRAY-LT TAN-CREAM COLOR. SOFT, WAXY, CHALKY CLAY. DK BRN-DK GRAY CHERT FRAGMENTS AT 200.5'.

200.7- 203.2 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY, DOLOMITIC, FOSSILIFEROUS

203.2- 207.1 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %, CLAY- %
OTHER FEATURES: FOSSILIFEROUS
FOSSILS: WORM TRACES
DENSE, SOME SMALL WORM BORINGS IN LOWER PART OF SECTION WHICH HAVE BEEN FILLED IN BY PHOSPHATE AND CLAY.
LOW-MODERATE POROSITY.

207.1- 210 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
SEDIMENTARY STRUCTURES: LAMINATED
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC, FOSSILIFEROUS
FOSSILS: WORM TRACES
SLIGHTLY PHOSPHATIC MICRITE, SOME SMALL WORM BORINGS FILLED BY DK GRAY-BLACK PHOS., SECTION LAMINATED BY LIGHT TAN CLAYEY, DENSE, DOLOMITIC LS WITH SOME BLACK,SOFT, COARSE GRAINED, PHOSPHATIC SAND LENSES IN BOTTOM 1' OF SECTION.

210 - 210.1 CHERT;
DK GRAY-BLACK CHERT SEAM.

210.1- 218.5 LIMESTONE; LIGHT GRAY TO LIGHT GREENISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %, CLAY-%
SOFT BUT DENSE, PHOSPHATE IS BLACK.

218.5- 218.7 LIMESTONE; CREAM
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE

POOR INDURATION
SEDIMENTARY STRUCTURES: BRECCIATED
ACCESSORY MINERALS: CLAY-%
SOFT BUT DENSE, CLAYEY MICRITE.

218.7- 220 CLAY; LIGHT GREEN TO DARK GREEN
POROSITY: LOW PERMEABILITY; POOR INDURATION
SOFT BUT DENSE, STICKY-WAXY.

220 - 220.5 DOLOSTONE; LIGHT GRAY TO DARK GRAY
POROSITY: LOW PERMEABILITY
GOOD INDURATION
ACCESSORY MINERALS: CLAY- %, CHERT-%
CLAYEY, SLIGHTLY CHERTY DOLOMITE.

220.5- 227.1 LIMESTONE; CREAM TO DARK GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
ACCESSORY MINERALS: CLAY- %, DOLOMITE-%
SOFT BUT DENSE, CLAYEY MUDSTONE, SOME DOLOMITE FRAGMENTS OR THIN SEAMS RUNNING THROUGHOUT SECTION.

227.1- 227.5 LIMESTONE; LIGHT GRAY TO LIGHT BLUISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
PHOSPHATIC GRAVEL-%
COMMON SMALL PHOSPHATIC PEBBLES. MOD-HIGH POROSITY IN PARTS.

227.5- 227.7 CHERT; DARK GRAY TO BLACK
POROSITY: NOT OBSERVED; GOOD INDURATION
MICROCRYSTALLINE CHERT SEAM.

227.7- 236.4 LIMESTONE; LIGHT GREENISH GRAY TO OLIVE
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC GRAVEL- %
PHOSPHATIC SAND-%
OLIVE, WAXY CLAY INTERBEDDED WITH LT GREENISH GRAY PHOSPHATIC, CLAYEY MUDSTONE.

236.4- 236.8 CHERT; DARK GRAY TO BROWNISH GRAY
POROSITY: NOT OBSERVED; GOOD INDURATION
SEDIMENTARY STRUCTURES: LAMINATED, BRECCIATED
ACCESSORY MINERALS: PHOSPHATIC GRAVEL-%

236.8- 239.7 DOLOSTONE; CREAM TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC GRAVEL- %
OTHER FEATURES: FOSSILIFEROUS
FOSSILS: FOSSIL MOLDS

239.7- 244.2 DOLOSTONE; CREAM TO LIGHT GRAY
POROSITY: LOW PERMEABILITY
GOOD INDURATION
ACCESSORY MINERALS: CLAY- %
OTHER FEATURES: FOSSILIFEROUS
SLIGHTLY MOLDIC, CLAYEY, DOLOMITE. SOME FOSSIL VUGS INFILLED BY LT GREEN CLAY.

244.2- 245.2 LIMESTONE; LIGHT GRAY TO LIGHT GREENISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND-%
SOFT BUT DENSE MUDSTONE.

245.2- 246.5 CLAY; LIGHT GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-%
SOFT, STICKY CLAY.

246.5- 248.2 CLAY;
LT GRAY-OLIVE, SOFT, PHOSPHATIC CLAY INTERFINGERED WITH MUDSTONE DESCRIBED ABOVE. LOW POROSITY OVERALL.

248.2- 249.5 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
HARD, MOLDIC SPARSE BIOMICRITE INTERMIXED WITH A LT GRAY-LT GREENISH GRAY MUDSTONE. L-M POROSITY IN LS, LOW POROSITY IN MUDSTONE.

249.5- 252.5 CLAY; LIGHT GRAY TO LIGHT GREENISH GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: SILT-%
SOFT, SILTY CLAY.

252.5- 258.1 LIMESTONE; LIGHT GRAY TO OLIVE
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
ACCESSORY MINERALS: CLAY- %, LIMESTONE- %
PHOSPHATIC SAND-%
SOFT BUT DENSE, CLAYEY MUDSTONE, SOME CREAM-LT TAN, HARD LS INCLUSIONS, COMMON PHOS. SAND STRINGERS.

258.1- 259.5 CLAY; LIGHT GRAY TO LIGHT GREENISH GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: SILT- %, PHOSPHATIC SAND-%

259.5- 264.5 SILT; LIGHT GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-%
SOFT, PHOSPHATIC SILTSTONE. LOW-MOD. POROSITY. NO CORE RECOVERED FOR THIS INTERVAL--DESCRIBED FROM CUTTINGS.

264.5- 264.7 CLAY;

SAME AS 258.1-259.5'.

264.7- 265 LIMESTONE; LIGHT GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: CLAY-01%
OTHER FEATURES: DOLOMITIC
LOW-MOD. POROSITY. TRACE OF LT GREEN CLAY LENSES.

265 - 275.8 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: QUARTZ SAND- %
FOSSILS: FOSSIL MOLDS, CRUSTACEA, MOLLUSKS
SANDY MOLDIC BIOMICRITE, COMMON MOLLUSK STEINKERNS AND MOLDS, SOME CRAB CLAW CASTS, MOD-HIGH POROSITY IN PARTS. DK BROWN-OLIVE CHERT SEAM AT 269.8-269.9'.

275.8- 283 LIMESTONE; TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: CLAY- %, QUARTZ SAND- %
FOSSILS: FOSSIL MOLDS, MOLLUSKS, CRUSTACEA
FRIABLE, SPARSE BIOMICRITE, SOME SMALL PELECYPOD CASTS AND MOLDS, MOD-HIGH POROSITY.

283 - 284.5 LIMESTONE; TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, INTERGRANULAR
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: QUARTZ SAND- %
OTHER FEATURES: COQUINA
FOSSILS: FOSSIL MOLDS, MOLLUSKS
FRIABLE, SANDY, MICROCOQUINAL BIOMICRITE, SOME SMALL PELECYPOD CASTS AND MOLDS, SOME CORALLINE INFILLING OF SOME FOSSIL MOLDS. HIGH-VERY HIGH POROSITY.

284.5- 299.5 LIMESTONE; TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, INTERGRANULAR
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %, QUARTZ SAND- %
OTHER FEATURES: COQUINA
FOSSILS: FOSSIL MOLDS, MOLLUSKS
FRIABLE, SANDY, MICROCOQUINAL BIOMICRITE, SOME SMALL PELECYPOD CASTS AND MOLDS, SOME CORALLINE INFILLING OF SOME FOSSIL MOLDS, SOME ARAGONITIZED PELECYPOD SHELL FRAGMENTS LAMINATING PARTS OF SECTION. HIGH POROSITY. SLIGHTLY CHALKY IN LOWER 5' OF SECTION.

299.5- 304.7 LIMESTONE; TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION

ACCESSORY MINERALS: PHOSPHATIC GRAVEL-01%, QUARTZ SAND- %
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY FRIABLE, BIOMICRITE, ABUNDANT MOLLUSK CASTS AND MOLDS. MODERATE-HIGH POROSITY.

304.7- 307.2 LIMESTONE; TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: WEATHERED, CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS
VERY CHALKY, SPARSE BIOMICRITE, SOME FOSSIL MOLDS INFILLED AND HAVING WEATHERING RINDS. LOW-MODERATE POROSITY.

307.2- 309.5 LIMESTONE; TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS, CORAL
SLIGHTLY DOLOMITIC IN PARTS, MOLDIC BIOMICRITE, COMMON MOLLUSK CASTS AND MOLDS, SOME CORAL CASTS AND MOLDS. MOD-HIGH POROSITY.

309.5- 317 LIMESTONE; TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY, DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY CHALKY AND DOLOMITIC IN PARTS, HIGHLY MOLDIC BIOMICRITE, ABUNDANT MOLLUSK CASTS AND MOLDS, SOME BORING SPONGE? REMAINS PARTIALLY INFILLING SOME MOLDS. MOD-HIGH POROSITY.

317 - 318 NO SAMPLES
CAVITY.

318 - 324.5 LIMESTONE;
SAME AS 309.5-317'.

324.5- 329.5 LIMESTONE; WHITE TO TAN
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY DOLOMITIC, SLIGHTLY PHOSPHATIC, MOLDIC BIOMICRITE. COMMON MOLLUSK CASTS AND MOLDS. HIGH POROSITY.

329.5- 334.5 LIMESTONE; TAN TO LIGHT GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS

BIOMICRITE, COMMON MOLLUSK CASTS, MOLDS, AND SOME LARGE GASTROPOD STEINKERNS. HIGH POROSITY.

334.5- 339.5 LIMESTONE; TAN
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: CLAY- %, PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: MILIOLIDS, FOSSIL MOLDS, MOLLUSKS
FOSSIL FRAGMENTS
FRIABLE, MILLIOLOIDAL SPARSE BIOMICRITE WITH LT GRAY DOLOMITIZED SECTIONS, GRADING TO OFFWHITE-LT GRAY, HARD SLIGHTLY CLAYEY-PHOSPHATIC, SPARSE BIOMICRITE, MAINLY MICROFAUNAL MOLDS WITH SOME TAN CALCITIZED PELECYPOD SHELL FRAGMENTS SCATTERED THROUGHOUT SECTION, MOD-HIGH POROSITY OVERALL. POOR CORE RECOVERY FOR THIS SECTION PROBABLY DUE TO WASHING OUT OF CLAYEY LS DESCRIBED ABOVE.

339.5- 344.5 LIMESTONE; LIGHT GRAY TO TAN
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY PHOSPHATIC, MOLDIC BIOMICRITE, HIGH POROSITY.

344.5- 347 LIMESTONE; LIGHT GRAY TO TAN
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS, FOSSIL FRAGMENTS
WORM TRACES
MILLIOLOIDAL BIOMICRITE, ABUNDANT MOLLUSK CASTS AND MOLDS COMMON WORM BURROW CASTS?, HIGH POROSITY. SOME ARAGONITIZED PELECYPOD SHELL FRAGMENTS.

347 - 349.5 LIMESTONE; TAN TO LIGHT BROWNISH GRAY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS, CORAL, FOSSIL FRAGMENTS
MILIOLIDS
SLIGHTLY FRIABLE-CHALKY-MOLDIC, SPARSE BIOMICRITE, LARGE CORAL FRAGMENT FROM 347.4-347.6', MODERATE POROSITY.
SPECIAL NOTE: WHILE PUMPING WATER INTO WATER TRUCK ABUNDANT CUTTINGS WERE OBTAINED. THE BELOW DESCRIBED SANDS PROBABLY FILLED THE IRREGULAR VUGS IN THE ABOVE SECTION: OFFWHITE-TAN LS SAND, SOFT BUT DENSE, COARSE-V.C. GRAINED MILLIOLOIDAL MICRITE SANDS. HIGH POROSITY.

349.5- 353 LIMESTONE; TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL

GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: CHALKY
SLIGHTLY FRIABLE, CHALKY, PHOSPHATIC, MOLDIC, MILLIOLOIDAL SPARSE BIOMICRITE, MOD-HIGH POROSITY.

353 - 354.5 LIMESTONE; TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY DOLOMITIC, SLIGHTLY PHOSPHATIC, HIGHLY MOLDIC BIOMICRITE, ABUNDANT CHIONE MOLDS, SOME GASTROPOD CASTS AND MOLDS, HIGH POROSITY.

354.5- 359.3 LIMESTONE; TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-01%
OTHER FEATURES: DOLOMITIC, COQUINA
FOSSILS: FOSSIL MOLDS, MOLLUSKS
HIGHLY MOLDIC COQUINAL BIOMICRITE, ABUNDANT CHIONE, ARCA CASTS AND MOLDS, COMMON TURRITELLA MOLDS AND CASTS. HIGH POROSITY.

359.3- 359.5 LIMESTONE;
SAME AS 349.5-353'.

359.5- 364.8 AS ABOVE

364.8- 369.8 LIMESTONE; WHITE TO LIGHT GRAY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: QUARTZ SAND- %
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: MOLLUSKS, FOSSIL MOLDS
MODERATE POROSITY, SLIGHTLY CHALKY-SANDY MICRITE.

369.8- 374.5 AS ABOVE
LS AS ABOVE INTERMIXED WITH OFFWHITE-CREAM-LT GRAY SOFT-HARD, MARLY, CALCILUTITIC MUDSTONE, L-M POROSITY OVERALL.

374.5- 378.5 LIMESTONE; LIGHT GRAY TO LIGHT BLUISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS

378.5- 379.5 AS ABOVE
LS AS ABOVE INTERMIXED WITH MUDSTONE DESCRIBED FROM 369.8-374.5', LOW-MOD. POROSITY OVERALL.

379.5- 379.8 CHERT; LIGHT TAN
POROSITY: NOT OBSERVED; GOOD INDURATION

379.8- 384.5 LIMESTONE; LIGHT GRAY TO LIGHT BLUISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS
MOLDIC BIOMICRITE, COMMON SMALL MOLLUSK CASTS AND MOLDS.

384.5- 386 SILT; TAN TO LIGHT GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: CALCAREOUS
SOFT BUT DENSE, FRIABLE, CALCARENITIC SILTSTONE. MOD-HIGH POROSITY.

386 - 389.5 SILT; TAN TO LIGHT GRAY
POROSITY: LOW PERMEABILITY; GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-01%
OTHER FEATURES: CALCAREOUS
SLIGHTLY FRIABLE CALCARENITIC SILTSTONE GRADING TO LT TAN HARD, SLIGHTLY PHOSPHATIC, SLIGHTLY MOLDIC, CALCARENITIC FOSSILIFEROUS SILTSTONE. L-M POROSITY.

389.5- 394.5 SILT; LIGHT TAN
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: CALCAREOUS
SLIGHTLY MOLDIC CACLARENITIC SILTSOTNE, TRACE OF PHOSPHATIC BANDING. MODERATE POROSITY.

394.5- 404.7 LIMESTONE; LIGHT GRAY TO LIGHT BROWNISH GRAY
POROSITY: LOW PERMEABILITY, MOLDIC
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: SILT- %, PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: FOSSIL MOLDS, MOLLUSKS
MUDSTONE INTERMIXED WITH HARD, HIGHLY DOLOMITIZED, MOLDIC BIOMICRITE, COMMON SMALL MOLLUSK CASTS AND MOLDS. TRACE OF GASTROPOD FOSSIL VUGS. LOW-MODERATE POROSITY.

404.7- 404.9 SILT; LIGHT GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: CALCAREOUS
FOSSILS: PLANT REMAINS
SOFT BUT DENSE SILTSTONE. ONE WELL PRESERVED PALM TREE BRANCH FRAGMENT FOUND.

404.9- 411.5 LIMESTONE; LIGHT TAN TO LIGHT BROWNISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %

FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS
SLIGHTLY MOLDIC SPARSE BIOMICRITE, SOME OSTREA SHELL FRAGMENTS. SOME DK GRAY, HARD, CLAYEY SILTSTONE BRECCIATING BOTTOM 1' OF SECTION, COMMON TAN OSTREA FRAGMENTS AND MOLDS WITH DEPTH. LOW-MODERATE POROSITY.

411.5- 414.5 LIMESTONE; LIGHT GRAY TO LIGHT BROWNISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS
SLIGHTLY MOLDIC SPARSE BIOMICRITE W/ SOME LARGE OSTREA MOLDS AND SHELL FRAGMENTS, GRADING TO A LT GRAY, HARD, WELL CEMENTED, SLIGHTLY CALCARENITIC SILTSTONE.

414.5- 421.2 SILT; LIGHT GRAY TO DARK GRAY
POROSITY: LOW PERMEABILITY; GOOD INDURATION
ACCESSORY MINERALS: ORGANICS- %
OTHER FEATURES: CALCAREOUS
SOFT-HARD, DENSE, WELL CEMENTED, SLIGHTLY CALCARENITIC SILTSTONE, BOTTOM 1' OF SECTION HEAVILY STAINED DARK BROWNISH GRAY-DK BROWN BY ORGANIC MATERIAL. L-MOD POROSITY.

421.2- 421.4 LIMESTONE; TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
SOFT, CALCILUTITIC MARL.

421.4- 427.2 LIMESTONE; TAN
POROSITY: LOW PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC
FOSSILS: WORM TRACES, FOSSIL MOLDS
SLIGHTLY DOLOMITIC AND MOLDIC SPARSE BIOMICRITE, COMMON WORM BORINGS AND FOSSIL MOLDS, SOME FILLED BY COARSE GRAINED CALCITE SANDS. BOTTOM 2' OF SECTION IS HIGHLY PHOSPHATIC. HIGHLY MOLDIC FROM 424.6-425.3'. SOME HARD PHOSPHATIC, DOLOMITIC INCLUSIONS IN BOTTOM 2.7'.

427.2- 428.4 SILT; LIGHT GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: CLAY-%
SOFT BUT DENSE, SLIGHTLY CLAYEY SILTSTONE. L-M POROSITY.

428.4- 436.3 SILT; TAN
POROSITY: LOW PERMEABILITY; GOOD INDURATION
OTHER FEATURES: CALCAREOUS
CALCARENITIC SILTSTONE, DENSE, WELL CEMENTED.

436.3- 439.5 AS ABOVE
SAME AS 428.4-436.3' AND 436.3-437.3'.

439.5- 443.1 SILT; CREAM TO TAN

POROSITY: LOW PERMEABILITY; GOOD INDURATION
SEDIMENTARY STRUCTURES: MOTTLED
ACCESSORY MINERALS: CLAY- %
OTHER FEATURES: CALCAREOUS
HARD, SLIGHTLY CLAYEY, CALCERENITIC SILTSTONE.

443.1- 443.3 SILT; TAN
POROSITY: LOW PERMEABILITY; POOR INDURATION
ACCESSORY MINERALS: CLAY- %
OTHER FEATURES: CALCAREOUS
SOFT BUT DENSE, CLAYEY, CALCARENITIC SILTSTONE.

443.3- 446.7 LIMESTONE; TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: DOLOMITIC, FOSSILIFEROUS
FOSSILS: WORM TRACES
SLIGHTLY MOLDIC MICRITE. ALTERNATING WITH SEAMS OF LT GRAY-LT TANNISH GRAY, SOFT-HARD, FRIABLE, CALCARENITIC FOSSILIFEROUS SILTSTONE IN LOWER 1.1'. L-M POROSITY.

446.7- 449.7 SILT; TAN TO LIGHT BROWNISH GRAY
POROSITY: LOW PERMEABILITY; GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND- %
OTHER FEATURES: FOSSILIFEROUS, CALCAREOUS
SLIGHTLY CALCARENITIC SILTSTONE.

449.7- 451.9 SILT; LIGHT GRAY TO LIGHT BROWNISH GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
OTHER FEATURES: CALCAREOUS
SOFT BUT DENSE, MARLY, SLIGHTLY CALCARENITIC SILTSTONE.

451.9- 452.8 SILT; LIGHT TAN TO LIGHT GRAY
POROSITY: LOW PERMEABILITY; GOOD INDURATION
CALCARENITIC SILTSTONE, DENSE.

452.8- 459.5 SILT; LIGHT GRAY
POROSITY: LOW PERMEABILITY; GOOD INDURATION
OTHER FEATURES: CALCAREOUS
DENSE, CALCARENITIC SILTSTONE GRADING TO LT GRAY-LT BLUISH GRAY, HARD, DENSE, SLIGHTLY WAXY, CALCILUTITIC MUDSTONE W/ LT BLUISH GRAY ORGANIC STREAKS LAMINATING SECTION.

459.5- 462.5 LIMESTONE; LIGHT GRAY TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
SEDIMENTARY STRUCTURES: LAMINATED
ACCESSORY MINERALS: ORGANICS-%
HARD, DENSE, SLIGHTLY WAXY, CALCILUTITIC MUDSTONE WITH LT BLUISH GRAY ORGANIC STREAKS LAMINATING SECTION.

462.5- 463.8 SILT; LIGHT GRAY
POROSITY: LOW PERMEABILITY; GOOD INDURATION
OTHER FEATURES: CALCAREOUS

SILTSTONE, DENSE, CALCARENITIC.

463.8- 464.5 LIMESTONE;
MUDSTONE AS 459.5-462.5'.

464.5- 466.8 SILT; LIGHT GRAY
POROSITY: LOW PERMEABILITY; GOOD INDURATION
OTHER FEATURES: CALCAREOUS
DENSE, CALCARENITIC SILTSTONE.

466.8- 468.3 SILT; LIGHT GRAY TO DARK GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
OTHER FEATURES: CALCAREOUS
SOFT BUT DENSE, CALCARENITIC SILTSTONE, L-M POROSITY.

468.3- 469.1 LIMESTONE; CREAM TO LIGHT GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: PHOSPHATIC SAND-01%
OTHER FEATURES: UNWASHED SAMPLE

469.1- 472.2 SILT; LIGHT GRAY TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY; POOR INDURATION
SEDIMENTARY STRUCTURES: MOTTLED
OTHER FEATURES: CALCAREOUS
SOFT BUT DENSE, CALCARENITIC, DIRTY SILTSTONE.

472.2- 473.3 SILT;
MIX OF SILTSTONE AS ABOVE WITH POCKETS OF CREAM-LT TAN- LT TANNISH GRAY, SOFT, MUDSTONE AND LT TAN, SOFT BUT DENSE PHOSPHATIC, FOSSILIFEROUS MICRITE. L-M POROSITY.

473.3- 474 LIMESTONE;
LT TAN-LT. TANNISH GRAY, SOFT BUT DENSE, MUDSTONE GRADING TO LT TAN-LT GRAY, HARD, CALCARENITIC SILTSTONE. LOW POROSITY.

474 - 482.6 LIMESTONE; CREAM TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
SEDIMENTARY STRUCTURES: MOTTLED
ACCESSORY MINERALS: SILT- %, ORGANICS- %
FOSSILS: WORM TRACES
MARLY-SLIGHTLY SILTY, CALCILUTITIC MUDSTONE, SOME SILTY ORGANIC STAINED, LT BLUISH GRAY STREAKS THROUGHOUT SECTION SOME SMALL WORM BORINGS? FILLED WITH LIGNITIC SILTS. TAN HARD, SILTY-CHALKY, SLIGHTLY MOLDIC BIOMICRITE IN LOWER 0.6'.

482.6- 487.8 LIMESTONE; LIGHT GRAY TO BROWNISH GRAY
POROSITY: LOW PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: SILT- %
OTHER FEATURES: DOLOMITIC

SPARSE BIOMICRITE, W/ LS FROM BOTTOM OF ABOVE SECTION POCKETING UPPER 6" OF SECTION. MOLLUSK MOLDS BECOME COMMON IN LOWER 3.3' OF SECTION. SOME MOLDS INFILLED. SOME VERTICAL FRACTURES INFILLED THROUGHOUT LOWER 3.3'.

487.8- 489.5 LIMESTONE; TAN
POROSITY: LOW PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL MOLDS
FRIABLE, MOLDIC BIOMICRITE, COMMON CHIONE CASTS AND MOLDS SOME FOSSIL MOLDS ARAGONITIZED AT TOP OF SECTION, SOME VERTICAL INFILLED FRACTURES. LOW-MODERATE POROSITY.

489.5- 492.1 LIMESTONE; LIGHT TAN TO LIGHT BLUISH GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: DOLOMITIC
FOSSILS: MILIOLIDS
FRIABLE BIOMICRITE, BOTTOM 1' OF SECTION DOLOMITIZED LT BLUISH GRAY, L-M POROSITY. UPPER 0.2' OF SECTION IS A DK GRAY, SILTY, SOFT BUT DENSE, MUDSTONE. BOTTOM 0.2' OF SECTION IS LT GRAY-OLIVE CLAY, WAXY, SOFT BUT DENSE.

492.1- 496.6 LIMESTONE; TAN TO LIGHT BLUISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: DOLOMITIC
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL MOLDS, WORM TRACES
BIOMICRITE, COMMON PELECYPOD CASTS AND MOLDS, SOME SMALL WORM BORINGS, SOME LT BLUISH GRAY, HIGHLY DOLOMITIZED SECTIONS. MOD-HIGH POROSITY.

496.6- 499.5 LIMESTONE; LIGHT TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: WEATHERED, CHALKY
FOSSILS: FOSSIL MOLDS, WORM TRACES
SPARSE BIOMICRITE, UPPER 1' OF SECTION HAVING FOSSIL VUGS OR MOLDS W/ WEATHERING RINDS THAT ARE FILLED BY LT BLUISH GRAY, DOLOMITIC LS, GIVING THIS PORTION OF SECTION A BRECCIATED APPEAREANCE, ABUNDANT SMALL WORM BORINGS THROUGHOUT SECTION. MOD-HIGH POROSITY.

499.5- 504.5 LIMESTONE; LIGHT TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
FOSSILS: MILIOLIDS
HARD, FRIABLE, SLIGHTLY MOLDIC BIOMICRITE. MOD-HIGH POROSITY.

504.5- 507 LIMESTONE; TAN
POROSITY: LOW PERMEABILITY, MOLDIC

GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS
CHALKY-SLIGHTLY FRIABLE IN PARTS, BIOMICRITE, COMMON PELECYPOD CASTS AND MOLDS. LOW-MOD. POROSITY.

507 - 509.7 LIMESTONE; TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY MOLDIC SPARSE BIOMICRITE, SOME TURRITELLA MOLDS L-M POROSITY.

509.7- 512.4 LIMESTONE; TAN
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS, WORM TRACES
CHALKY-SLIGHTLY FRIABLE IN PARTS, BIOMICRITE, COMMON PELECYPOD CASTS AND MOLDS, COMMON WORM BORINGS, MOD-HIGH POROSITY.

512.4- 515.7 LIMESTONE; LIGHT TAN TO TAN
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: MILIOLIDS, FOSSIL MOLDS, MOLLUSKS
SLIGHTLY MOLDIC SPARSE BIOMICRITE, MOD-HIGH POROSITY, HARD.

515.7- 519.5 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: LOW PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS
HARD, HIGH MOLDIC BIOMICRITE, COMMON MOLLUSK CASTS AND MOLDS, MARLY IN BOTTOM 4" OF SECTION. L-M POROSITY.

519.5- 522 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
ACCESSORY MINERALS: CLAY- %, SILT- %
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS, WORM TRACES
SOFT-HARD, CHALKY-MARLY, SLIGHTLY MOLDIC SPARSE BIOMICRITE
TRACE OF LT GREEN SILTY CLAY FILLING SOME FOSSIL MOLDS.
LOW-MOD. POROSITY.

522 - 524.5 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: LOW PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE

GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS, MILIOLIDS
HIGHLY MOLDIC BIOMICRITE, COMMON MOLLUSK MOLDS AND CASTS
LOW-MODERATE POROSITY.

524.5- 529.7 LIMESTONE; CREAM TO WHITE
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL MOLDS
VERY CHALKY-MARLY AT BOTTOM, SLIGHTLY MOLDIC, MILLIOLOIDAL
SPARSE BIOMICRITE, SOME SMALL PELECYPOD CASTS AND MOLDS.
LOW-MOD. POROSITY.

529.7- 530.5 LIMESTONE; CREAM TO WHITE
POROSITY: LOW PERMEABILITY
POOR INDURATION
OTHER FEATURES: CHALKY
MARL, TRACE OF LT OLIVE MOTTLING, MODERATE SOLUBILITY.

530.5- 532.1 LIMESTONE; CREAM TO WHITE
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: MILIOLIDS
SLIGHTLY FRIABLE-CHALKY BIOMICRITE. L-M POROSITY.

532.1- 532.7 LIMESTONE; CREAM TO WHITE
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
OTHER FEATURES: CHALKY
MUDSTONE. SOFT BUT DENSE.

532.7- 534.5 LIMESTONE; CREAM TO WHITE
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY, FOSSILIFEROUS
CHALKY-MARLY, MICRITE.

534.5- 544.5 LIMESTONE; CREAM TO WHITE
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
OTHER FEATURES: PLASTIC
SOFT BUT DENSE, VERY MARLY-PLASTIC, MUDSTONE.

544.5- 549.5 AS ABOVE
INTERMIXED W/ CREAM-OFFWHITE, SOFT BUT DENSE, SILTY- VERY
MARLY, MICRITE. LOW POROSITY IN LS.

549.5- 554.5 LIMESTONE; WHITE
POROSITY: LOW PERMEABILITY

GRAIN TYPE: CALCILUTITE
MODERATE INDURATION
ACCESSORY MINERALS: CLAY- %
OTHER FEATURES: FOSSILIFEROUS
FOSSILS: MILIOLIDS
SOFT BUT DENSE-HARD IN PLACES, CLAYEY-MARLY, CALCARENITIC MICRITE, SOME HEAVILY ALTERED MILLIOLIDS?, SOME LT BLUISH GRAY-TAN, CALCILUTITIC CLAY STREAKS.

554.5- 559.7 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
MODERATE INDURATION
OTHER FEATURES: CHALKY
FOSSILS: MILIOLIDS
MIX OF LS AND MUDSTONE. THE LS IS CHALKY-MARLY, BIOMICRITE GRADING TO CREAM-LT TAN, SOFT BUT DENSE, MUDSTONE, SOME TAN DOLOMITIC MICRITE BRECCIATING SECTION NEAR 558'. SOME HEAVILY ALTERED MICROFAUNA. MARLY.

559.7- 566.5 LIMESTONE; CREAM TO TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: MOLLUSKS, FOSSIL MOLDS, MILIOLIDS
CHALKY-SLIGHTLY FRIABLE BIOMICRITE, TRACE OF SMALL "SLICKENSIDE" FAULT (APPROX. 45 DEGREE ANGLE) AT TOP OF SECTION. LOW-MOD. POROSITY.

566.5- 569.5 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL MOLDS
VERY CHALKY-MARLY SPARSE BIOMICRITE, GRADING TO A FOSSILIFEROUS MICRITE, THREE SMALL "SLICKENSLIDE" FAULTS (APPROX. 60 DEGREE DIAGONAL) FOUND. 0.2' THICK THICK, LT-DK GRAY, SOFT, ORGANIC STAINED, WAXY CLAY FOUND AT 569.1-569.3'.

569.5- 574.5 LIMESTONE; LIGHT TAN TO LIGHT BROWNISH GRAY
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS, MILIOLIDS, WORM TRACES
FRIABLE-SLIGHTLY CHALKY, BIOMICRITE, COMMON MILLIOLIDS
COMMON MOLLUSK CASTS AND MOLDS (TURRITELLA), SOME LT GREEN DISCOLORATION IN SOME FOSSIL MOLDS, M-HIGH POROSITY.

574.5- 577.3 LIMESTONE; WHITE TO LIGHT BROWNISH GRAY
POROSITY: LOW PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: CLAY- %

OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS
CHALKY-VERY CLAYEY AT BOTTOM OF SECTION, HIGHLY MOLDIC BIOMICRITE, COMMON SMALL MOLLUSK CASTS AND MOLDS, SOME LT TAN DOLOMITIC MICRITE BRECCIATING CLAYEY PARTS OF SECTION. L-M POROSITY.

577.3- 579.5 LIMESTONE; TAN
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
OTHER FEATURES: FOSSILIFEROUS
FOSSILS: MILIOLIDS
HARD, FRIABLE, SLIGHTLY MILLIOLOIDAL MICRITE. HIGH POROSITY.

579.5- 584.5 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: MOLLUSKS, FOSSIL MOLDS
FRIABLE-SLIGHTLY CHALKY IN PARTS, SLIGHTLY MOLDIC MICRITE TRACE OF SMALL PELECYPOD MOLDS, MOD-HIGH POROSITY.

584.5- 589.5 LIMESTONE;
LS AS ABOVE GRADING TO CREAM-OFFWHITE-LT TAN, HARD CHALKY-MARLY, CALCARENITIC MICRITE, SOME OFFWHITE, SOFT BUT DENSE, MUDSTONE IN PARTS. MOD POROSITY IN LS., LOW POROSITY IN MUDSTONE.

589.5- 594.5 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: CALCILUTITE, BIOGENIC
GOOD INDURATION
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FRIABLE-CHALKY, CALCARENITIC MICRITE, MOD-HIGH POROSITY.

594.5- 598.1 AS ABOVE
GRADING TO TAN, HARD, SLIGHTLY.CHALKY, MICROCOQUINAL BIOMICRITE, ABUNDANT MILLIOLIDS, L-M POROSITY.

598.1- 599.5 LIMESTONE; CREAM TO LIGHT GRAY
POROSITY: LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
POOR INDURATION
SOFT BUT VERY DENSE, EARTHY-SLIGHTLY WAXY MUDSTONE GRADING TO LT-DK GRAY, SOFT, STICKY-WAXY, CALCAREOUS, ORGANIC CLAY.

599.5- 605.5 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: MILIOLIDS
BIOMICRITE GRADING TO LT TAN-TAN, INDURATED, SLIGHTLY MOLDIC, COQUINAL BIOMICRITE, COMMON MILLIOLIDS, SOME OSTREA

SHELL FRAGMENTS AND SMALL MOLDS, SOME LT GRAY, SOFT CLAY PARTIALLY FILLING SOME FOSSIL MOLDS, MOD-HIGH POROSITY.

605.5- 609.5 LIMESTONE; LIGHT TAN TO TAN
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: MILIOLIDS
MILLIOLOIDAL BIOMICRITE GRADING TO TAN, HARD, SLIGHTLY CHALKY-FRIABLE, CALCARENITIC FOSSILIFEROUS MICRITE, SOME PELEYCPOD MOLDS AND LT GRAY SHELL FRAGMENTS, TRACE OF TAN CALCITIZED CRAB CLAW FRAGMENTS, MOD-HIGH POROSITY.

609.5- 615.8 LIMESTONE; TAN
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS
CRUSTACEA
SLIGHTLY CHALKY-FRIABLE, CALCARENITIC MICRITE, MOD-HIGH POROSITY.

615.8- 619.5 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY CHALKY-FRIABLE, SLIGHTLY MOLDIC, CALCARENITIC SPARSE BIOMICRITE, MOD-HIGH POROSITY.

619.5- 624.1 LIMESTONE; CREAM TO LIGHT TAN
POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS, MOLLUSKS
SLIGHTLY CHALKY-FRIABLE, CALCARENITIC BIOMICRITE, COMMON SMALL MOLLUSK (CHIONE, CHLAMYS, TURRITELLA) CASTS AND MOLDS, HIGH POROSITY. 0.1' THICK LAYER OF SOFT, DENSE ORGANIC STAINED, WAXY CLAY AT BOTTOM OF INTERVAL, ONE SMALL "SLICKENSLIDE" FAULT (APPROX. 45 DEGREE DIAGONAL) FOUND. VERY LOW POROSITY IN CLAY.

624.1- 624.8 LIMESTONE;
SAME AS 609.5-615.8' EXCEPT HIGH-V. HIGH POROSITY.

624.8- 629.5 LIMESTONE; LIGHT TAN TO TAN
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: MILIOLIDS
SLIGHTLY CHALKY-FRIABLE, MILLIOLOIDAL BIOMICRITE.
MODERATE-HIGH POROSITY.

629.5- 639.5 LIMESTONE; LIGHT TAN
POROSITY: POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
OTHER FEATURES: COQUINA
FOSSILS: ECHINOID, FOSSIL FRAGMENTS, MOLLUSKS, MILIOLIDS
FRIABLE, MICROCOQUINAL BIOMICRITE, ABUNDANT MILLIOLIDS
SOME ECHINOID OSSICLES AND PELECYPOD SHELL FRAGMENTS IN
LOWER HALF OF SECTION. MOD-HIGH POROSITY.

639.5- 644.5 LIMESTONE; LIGHT TAN TO TAN
POROSITY: MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY, COQUINA
FOSSILS: MILIOLIDS, FOSSIL MOLDS, MOLLUSKS, WORM TRACES
CORAL
SLIGHTLY FRIABLE-CHALKY, MOLDIC-HIGHLY MOLDIC AT BOTTOM OF
SECTION, MICROCOQUINAL BIOMICRITE, MILLIOLOIDAL MATRIX W/
COMMON MOLLUSK CASTS ADN MOLDS, COMMON BORING SPONGE MOLDS
OR WORM BORINGS, MANY PARTIALLY LINED BY CORALLINE
MATERIAL. LOW-MOD. POROSITY.

644.5- 649.5 LIMESTONE; LIGHT TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS, FOSSIL MOLDS
WORM TRACES, MILIOLIDS
SLIGHTLY FRIABLE-CHALKY, SLIGHTLY MOLDIC, MILLOILOIDAL
BIOMICRITE, L-MOD. POROSITY.

649.5- 654.5 LIMESTONE; LIGHT TAN TO TAN
POROSITY: LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GOOD INDURATION
ACCESSORY MINERALS: SILT- %
OTHER FEATURES: CHALKY
FOSSILS: MILIOLIDS
FRIABLE-CHALKY, BIOMICRITE, COMMON SMALL ALTERED
MILLIOLIDS, SOME VERY THIN, TAN CLAY SEAMS LAMINATING
CENTER OF SECTION GIVING IT A "BUTTER AND MOLLASSES"
APPEAREANCE. LOW-MOD. POROSITY.

654.5 TOTAL DEPTH