Georgia Geological Survey well no. 146

Toombs County, Georgia, drilling permit no. 6

Tropic Oil Company, B. M. Brown no. 1

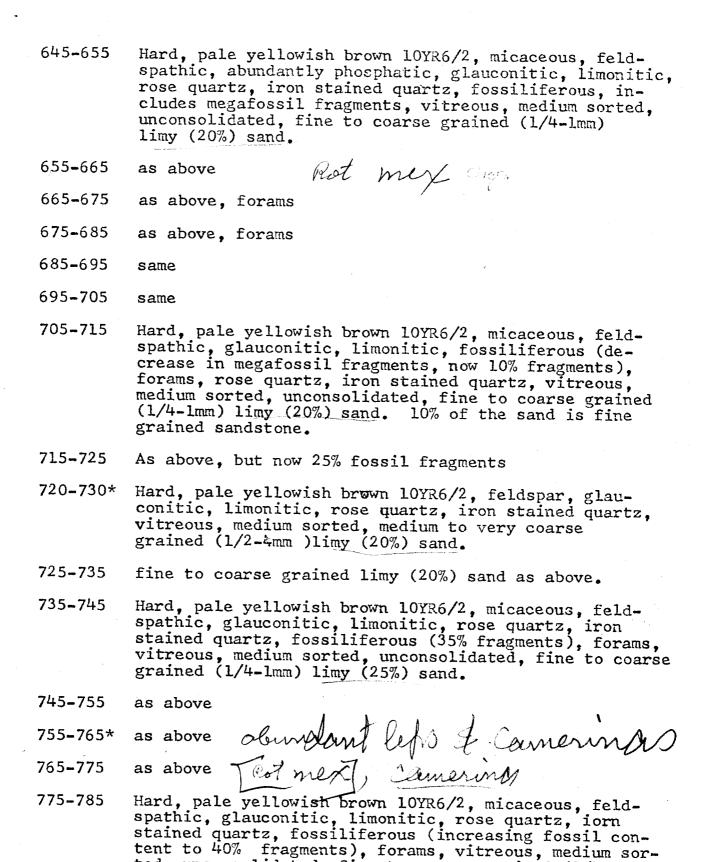
Total depth 3185 feet

Geophysical datum: none--no logs made; ground level is 198 feet; if drilling plated rm is 10 feet, reference may be 208 feet.

logged by C. Robert Hilliard, October 1976

note. an asterisk* indicates a micromaterial slide was made.

	0-485	no samples
, my	485-495	Hard, pale yellowish brown 10YR6/2. phosphate abundant, fossiliferous, vitreous, medium sorted, fine to coarse grained (1/4-1mm), cherty (2%) sand 98%, very fossiliferous, nearly a coquina; rose quartz present
N	495-505	as above a lew formand shell from a ment
•	505-515	as above a few foramo ostralos, bryozog as above none du time tup
•	515-525	as above
	525-535	as above
	535-545	as above, but an increase in phosphate
	545-555	hard, pale yellowish brown 10YR6/2, phosphate as above, less fossiliferous, rose quartz, vitreous, medium sorted, fine to coarse grained (1/4-1mm) cherty (2%) sand.
	555-565	Hard, pale yellowish brown 10YR6/2, phosphatic, cherty, fossiliferous, dull, crystalline (very fine crystals), sandy (10%), limy (40%) dolomite. Sand is unconsolidated as above.
	565-575	as above
	575-585	as above
	585 - 595	Hard, pale yellowish brown 10YR6/2, phosphatic, cherty, less fossiliferous, dull, crystalline (very fine crystalline), limy (5%) sandy (10%) dolomite. Sand unconsolidated as above.
	595 - 605	Hard, pale yellowish brown 10YR6/2, phosphate abundant, vitreous, fossiliferous, medium sorted, unconsolidated, fine to coarse grained (1/4-1mm) quartz sand.
,	605 - 615	Hard, pale yellowish brown 10YR6/2, micaceous, feldspathic, phosphate abundant, glauconitic, limonitic, rose quartz, iron stained quartz, fossiliferous, vitreous, medium sorted, unconsolidated, fine to coarse grained (1/4-1mm) quartz sand.
•	615-625	no change
6	625-635	as above
	535-645	as above; dolomite fragments are cavings?



ted, unconsolidated, fine to coarse grained (1/4-1mm)

785-795 as above

limy (25%) sand.

795-805	as above
805-815	Brittle, very light gray N8, feldspathic, phosphatic, very fossiliferous, dull, forams, fossiliferous limestone.
815-825	as above
820-830 note:	Hard, pale yellowish brown 10YR6/2, phosphatic, very fossiliferous, forams, very fine to coarse grained (1/8-lmm) medium sorted sand.
830-840	as above
840-850	as above
850-860	as above
860-870	Hard, pale yellowish brown, 10YR6/2, phosphate, for- ams, fossiliferous, vitreous, medium sorted, very fine to coarse grained (1/8-1mm) quartz sand.
870-880	As above
880-890	As above, but less fossiliferous, perhaps 15% fossil fragments.
890-900	As above, but only 15% fossil fragments
900-910	As above
910-920	As above
920-930	Hard, pale yellowish brown 10YR6/2, phosphatic, forams, fossiliferous (lower than 820-40, 15% fossil fragments), vitreous, poorly sorted, very fine to coarse grained (1/8-lmm) sand. More large grains than in 910-20; grain size range is as in 910-920
930-940	As above
940-950	As above
950-960	As above
960-970	As above A.
970-980	As above
980-990	As above As above
990-1000	Hard, pale yellowish brown 10YR6/2, phosphatic, forams,

1000 Hard, pale yellowish brown 10YR6/2, phosphatic, forams, fossiliferous (15% fossil fragments), vitreous, poorly sorted, very fine to coarse grained (1/8-lmm) sand. grains are mostly about lmm in size.

1000-1010	As above
1010-1020	Hard, very light gray N8, micaceous, glauconitic, phosphatic, fossiliferous, dull, sandy (15%) limestone
1020-1030	As above Clarka in Ocala Home
1030-1040	As above, but with rose quartz and iron stained quartz and limonite
1040-1050	Hard, very light gray N8, glauconitic, phosphatic, rose quartz, iron stained quartz, limonite, fossiliferous, dull, sandy (15%) limestone
1050-1060	As above
1060-1070*	As above, but with a foram?
1070-1080 July Rise ?	As above, with forams? and more limonitic than 1060- 1070
1080-1090	As above
1090-1100 Liston	Hard, light gray N7, glauconitic, phosphatic, rose quartz, iron stained quartz, limonitic, fossiliferous, vitreous, medium sorted, fine to coarse grained (1/8-1mm) limy (15%) sand.
1100-1110	Hard, pale yellowish brown 10YR6/2, very glauconitic, phosphatic, siderite?, fossiliferous, dull, medium sorted, medium to coarse grained (1/4-1mm) limy (45%) sand
1110-1120	As above
1120-1130	As above
1130-1140	As above
1140-1150	As above
1150-1160	Hard, pale yellowish brown 10YR6/2, glauconitic, phosphatic, sideritic, fossiliferous, dull, medium sorted, medium to coarse grained (1/4-1mm) limy (45%) sand.
1160-1170	As above, but shell fragments are more abundant than in 1150-60
1170-1180	Hard, pale yellowish brown 10YR6/2, very glauconitic, phosphate, siderite, fossiliferous, dull, medium sorted, medium to coarse grained (1/4-1mm) limy (45%) sand. Shell fragments as above
1180-1190	Hard, light gray N7, glauconitic, phosphatic, fossil-iferous, dull, sandy (15%) claystone.

- 1190-1200* Hard, medium gray N5, glauconitic, phosphatic, sideritic, fossiliferous, forams?, dull, crystalline sandy (15%) dolomite
- 1200-1210 Hard, medium gray N6, feldspathic, glauconitic, limonitic, iron stained and rose quartz, fossiliferous, vitreous, medium sorted, unconsolidated, fine to coarse grained (1/8-lmm) dolomitic (5%) limy (10%) sand.
- Hard, light gray N7, feldspathic, glauconitic, limonitic, phosphatic, iron stained and rose quartz, fossiliferous, vitreous, medium sorted, unconsolidated, fine to coarse grained (1/8-lmm) dolomitic (5%) limy (45%) sand.
- 1220-1230 As above
- 1230-1240 As above, dirty sample
- Hard, light gray N7, feldspathic, glauconitic, limonitic, phosphatic, pyritic, iron stained and rose
 quurtz, fossiliferous, vitreous, medium sorted,
 unconsolidated, fine to coarse grained (1/8-lmm)
 dolomitic (5%) limy (10%) sand.
- 1250-1260 Hard, pale yellowish brown 10YR6/2, feldspathic, glauconitic, limonitic, cherty, phosphatic, pyritic, iron stained and rose quartz, fossiliferous, vitreous, medium sorted, unconsolidated, fine to coarse grained (1/8-lmm) limy (25%) sand.
- 1260-1270 As above, but limy (45%) sand
- 1270-1280 Hard, medium light gray N6, feldspar, pyrite, glauconite, phosphate, limonite, iron stained and rose quartz, fossiliferous, vitreous, unconsolidated, fine to coarse grained (1/8-2mm) limy (10%) sand.
- 1280-1290 As above
- 1290-1300 Hard, medium light gray N6, feldspathic, pyritic, glauconitic, phosphate, limonitic, iron stained and rose quartz, fossiliferous, vitreous, medium sorted unconsolidated, fine to coarse grained (1/8-lmm) limy (10%) sand.
- 1300-1310 As above, but fine to very coarse grained (1/8-2 mm) limy (10%) sand.
- 1310-1320 As above
- 1320-1330 Hard, light gray N7, feldspathic, pyritic, glauconitic, dull, sandy (10%) siltstone

James (visit 1330-1340 As above 1340-1350 As above Hard, medium light gray No, feldspathic, pyritic, 1350-1360 glauconitic, phosphatic, limonitic, fossiliferous, vitreous, medium sorted, unconsolidated, medium to very coarse grained (1/4-2mm) limy (10%) sand. shell frac 1360-1370 As above 1370-1380 As above 1380-1390 As above 1390-1400 As above Hard, pale yellowish brown 10YR6/2, feldspathic, 1400-1410 glauconitic, phosphatic, fossiliferous, vitreous, medium sorted, medium to very coarse grained (1/4-2mm) dolomitic (5%) limy (30%) sand 1410-1415 As above 1415-1425 As above 1425-1435 As above 1435-1445 As above 1445-1455 As above 1455-1465 Hard, pale yellowish brown 10YR6/2, feldspathic, glauconitic, phosphatic, fossiliferous, vitreous, medium sorted, medium to very coarse grained (1/4-2mm) dolomitic (5%) limy (40%) sand. 1465-1475 As above 1475-1485 Hard, pale yellowish brown 10YR6/2, feldspathic, glauconitic, phosphatic, fossiliferous, vitreous, medium sorted, medium to very coarse grained (1/4-2mm) dolomitic (5%) sandy (35%) limestone. 1485-1495 As above 1490-1500 As above 1495-1505 As above no Bisails call mount 1500-1510 As above

1510-1520

As above

	1520-1530	As above
	1525-1535	Hard, medium dark gray N4, feldspathic, glauconitic, phosphatic, fossiliferous, vitreous, medium sorted, very fine to coarse grained (1/16-1mm) clayey(15%) sand.
	1535-1545	Hard, pale yellowish brown 10YR6/2, feldspathic, glauconitic, phosphatic, fossilferous, vitreous, medium sorted, medium to very coarse grained (1/4-2mm) dolomitic (5%) sandy (35%) lime stone
	1545-1555	As above no foosies calle mount some
	1555-1565	As above
	1565-1575	As above
	1575-1585	As above
	1585-1595	As above
	1595-1605	As above
L	1605-1615	As above
V	1615-1625	Hard, medium gray N5, feldspathic, vitreous, med- ium sorted, coarse to very coarse grained (1/2-3mm) limy (45%) sand
,	1625-1635	As above
-	1635-1645	As above company shall frags, echinois plate
	1645-1655	As above
	1655-1665	As above
	1665-1675	As above
	1675-1685	As above
	1685-1695	As above
	1695-1705	As above
	1705-1715	As above
	1715-1725	As above
	1725-1735	As above
	1735-1745	As above
	1745-1755	As above

1755-1765	Hard, medium gray N5, feldspathic, vitreous, med- ium sorted, coarse to very coarse grained (1/2-3mm) limy (45%) sand.
1765-1775	As above
1775-1785	As above
1785-1795	As above
1795-1805	As above
1805-1815	As above
1815-1825	Hard, medium gray N5, feldspathic, vitreous, med- ium sorted, medium to very coarse grained (1/4-2mm) limy (45%) sand.
1825-1835	As above
1835-1845	As above
1845-1855	As above
1855-1865	As above
1865-1875	As above
1875-1885	As above
1885-1895	As above
1895-1905	As above
1905-1915	Hard, medium gray N5, feldspathic, vitreous, medium sorted, medium to coarse grained (1/4-1mm) limy (45%) sand.
1915-1925	As above
1925-1935	As above
1935-1945	As above
1945-1955	As above
1955-1965	Hard, medium gray, N5, feldspathic, glauconitic, phosphatic, vitreous, medium sorted, medium to coarse grained (1/4-1mm) limy (50%) sand.
1965-1975	As above
1975-1985	As above

1985-1995 Hard, medium gray N5, feldspathic, glauconitic, phosphatic, vitreous, medium sorted, medium to coarse grained (1/4-1mm) limy (50%) sand. 1995-2005 As above, but with sulfur? 2005-2015 Hard, light gray N7, feldspathic, glauconitic, phosphatic, vitreous, medium sorted, medium to coarse grained (1/4-1mm) limy (45%) sand. 2015-2025 As above 2025-2035 As above, limy (30%) sand 2035-2045 As above 2045-2055 As above 2055-2060 As above 2060-2065 As above 2065-2070 As above Hard, medium light gray N6, feldspathic, glauconitic, 2070-2075 phosphatic, vitreous, medium sorted, fine to coarse grained (1/4-1/2mm) clayey (5%) sand. 2075-2080 Hard, medium light gray N6, feldspathic, pyritic, glauconitic, phosphatic, vitreous, medium sorted, fine to coarse grained (1/4-1/2 mm) clayey (5%)sand 2080-2085 As above 2085~2090 As above 2090-2095 As above 2095-2100 As above 2100-2105* Hard, medium gray N5, micaceous, feldspathic, pyritic, glauconitic, fossiliferous (forams?), vitreous, medium sorted, medium to coarse grained (1/4-1mm) limy (15%) sand. 2105-2110 As above 2110-2115 As above, no doubt forams. 2115-2120 As above 2120-2125 As above 2125-2130 As above 2130-2135

As above

2135-2140	Hard, medium gray N5, micaceous, feldspathic, pyritic, glauconitic, fossiliferous, forams, vitreous, medium sorted, medium to coarse grained (1/4-1mm) limy (15%) sand.
2140-2145	As above
2145-2150	As above
2150-2155	As above
2155-2160	As above
2160-2165	As above
2165-2170	As above
√2170 - 2175	Hard, light gray N7, micaceous, feldspathic, pyritic, glauconitic, phosphatic, fossiliferous, forams?, dull, medium sorted, medium to coarse grained (1/4-1mm) sandy (35%) clay
× 2175 - 2180	As above Carries Carries
2180-2185	As above
2185-2190	As above
2190-2195	As above
2195-2200	As above
2200-2205	Hard, light gray N7, feldspathic, pyritic, glaucon- itic, phosphatic, fossiliferous, forams, vitreous, medium sorted, medium to coarse grained (1/4-1mm), clayey (5%) sand
2205-2215	As above
2215-2220	As above
2220-2230	As above
2230-2240	As above
2240-2250	Hard, light gray N7, feldspathic, pyritic, glauconitic, phosphatic, vitreous, medium sorted, medium to coarse grained (1/4-lmm) clayey (5%) sand.
2250-2260	As above
2260-2270	As above
2270-2280	As above

2280-2290	Hard, light gray N7, feldspathic, pyritic, glauconitic, phosphatic, vitreous, medium sorted, medium to coarse grained (1/4-lmm) clayey (5%) sand.
2290-2300	As above
2300-2310	As above
2310-2320	As above
2320-2330	As above
2330-2340	As above
2340-2350	As above
2350-2360	As above
2360-2370	As above
2370-2380	As above
2380-2390	As above
2390-2400	As above
2400-2410	As above
2410-2420	Hard, light gray N7, micaceous, feldspathic, pyritic, glauconitic, phosphatic, vitreous, medium sorted, fine to coarse grained (1/8-1mm) limy (35%) sand.
2410-2420 2431-2432	glauconitic, phosphatic, vitreous, medium sorted, fine to coarse grained (1/8-1mm) limy (35%) sand.
40,55 JUSE 1	glauconitic, phosphatic, vitreous, medium sorted, fine to coarse grained (1/8-1mm) limy (35%) sand. core Hard, indurated chips, 1-5mm in size, medium dark gray N4, micaceous, feldspathic, pyritic, glauconitic, phosphatic, fossiliferous, dull, medium sorted, lime cemented, non porous, fine to coarse grained (1/8-1mm) limy (35%) sand. fossil tooth; lignite?;
2431 –2432	glauconitic, phosphatic, vitreous, medium sorted, fine to coarse grained (1/8-1mm) limy (35%) sand. core Hard, indurated chips, 1-5mm in size, medium dark gray N4, micaceous, feldspathic, pyritic, glauconitic, phosphatic, fossiliferous, dull, medium sorted, lime cemented, non porous, fine to coarse grained (1/8-1mm) limy (35%) sand. fossil tooth; lignite?; rose quartz. core Hard sandstone, medium light gray N6, micaceous, feldsathic, pyritic, glauconitic, phosphatic, fossiliferous, vitreous, medium sorted, fine to coarse

- core Hard indurated chips 1-5 mm in size, dark gray N3, micaceous, feldspathic, pyritic, glauconitic, phosphatic, fossiliferous, dull, medium sorted, lime cemented, non porous, fine to coarse grained (1/8-1mm) limy (35%) sand; rose quartz and more mica than in 2438-2439
- 2447-2450 core As above. not as many induarated chips as in 2445-2447; more mica than 2438-2439
- 2450-2455 Hard, indurated chips 1-5 mm in size, dark gray, micaceous, feldspathic, pyritic, glauconitic, phosphatic, fossiliferous, dull, medium sorted, lime cemented, non porous, fine to coarse grained (1/8-1 mm) limy (35%) sand; rose quartz. more chips than 2447-2450; mica as in 2447-2450
- 2455-2460 As above
- 2460-2462 As above
- 2462-2467 Hard, medium gray N5, micaceous, feldspathic, pyritic, glauconitic, phosphatic, limonitic, rose and iron stained quartz, fossiliferous, vitreous, medium sorted, fine to medium grained (1/8-1/2mm) limy (10%) sand
- 2467-2477 As above
- 2477-2480 As above
- 2480-2485 As above
- 2485-2490 As above
- 2490-2493 As above
- 2495-2510 Hard, medium gray N5, micaceous, feldspathic, glauconitic, limonitic, fossiliferous (?), vitreous, medium sorted, medium to coarse grained (1/4-1mm) limy (5%) sand.
- 2496-2510 As above, iron stained quartz
- 2511-2521 Hard indurated chips 1-5 mm in size, medium gray N5, micaceous, feldspathic, glauconitic, phosphatic, limonitic, vitreous, medium sorted, fine to medium grained (1/8-1/2mm) limy (5%) sand.

2511-2521	core top hard, indurated chips, medium gray N5, very micaceous, feldspathic, glauconitic, phosphatic, limonitic, vitreous, medium sorted, fine to medium grained (1/8-1/2 mm) limy (5%) sand
2511-2521	core bottom hard, indurated chips, medium gray, N5, micaceous, feldspathic, glauconitic, phosphatic, limonitic, vitreous, medium sorted, fine to medium grained (1/8-1/2 mm) limy (5%) sand
2521-2539	c [ore?] Hard, medium dark gray N4, micaceous, feld-spathic, glauconitic, phosphatic, limonitic, vitreous, medium sorted, fine to medium grained (1/8-1/2 mm) limy (5%) sand.
2521-2539	core top hard, medium gray N5, indurated chips, micaceous, feldspathic, glauconitic, phosphatic, vitreous, medium sorted, fine to medium grained (1/8-1/2 mm) limy (10%) sand; rose quartz.
2521-2539	core middle Hard, medium dark gray N4, micaceous, feldspathic, glauconitic, phosphatic, limonitic, vitreous, medium sorted, fine to medium grained (1/8-1/2 mm) limy (5%) sand. rose quartz
2521-2539	core bottom As above
2521-2539	cuttings Hard, medium gray N5, micaceous, feldspathic, glauconitic, phosphatic, limonitic, vitreous, medium sorted, fine to medium grained (1/8-1/2mm) limy (5%) sand; rose quartz
2539-2557	core top Hard, medium gray N5, micaceous, feldspathic, glauconitic, phosphatic, limonitic, vitreous, medium sorted, fine to coarse grainedd (1/8-lmm) limy (5%) sandstone. limestone cement, indurated chips.
2539-2557	core bottom As above
2539-2557	cuttings Hard, medium light gray N6, micaceous, feldspathic, glauconitic, phosphatic, limonitic, vitreous, medium sorted, fine to medium grained (1/8-1/2mm) limy (5%) sand. no induration.
2557-2572	core top Hard, medium gray N5, micaceous, feldspathic, glauconitic, phosphatic, limonitic, vitreous, medium sorted, fine to coarse grained (1/8-lmm) limy (5%) sandstone. limestone cemented indurated chips.
2557-2572	core middle As above, but not as indurated
2557_2572	core bottom As above

Hard, medium gray N5, micaceous, feldspathic, pyr-2572-2575 itic, glauconitic, phosphatic, fossil fragments (?), vitreous, medium sorted, medium to v ery coarse grained (1/4-3mm) limy (10%) sand; about 3% clay; iron stained quartz grains also 2575-2585 As above 2585-2595 As above, no limonite As above 2595-2605 Hard, medium gray N5, pyritic, glauconitic, phosphatic, 2605-2615* fossil fragments, vitreous, medium sorted, medium to very coarse grained (1/4-3mm) limy (10%) sand; lignite? 2615-2625 As above, no lignite; some limestone cemented sandstone chips; opaque white material, calcite? 2625-2635 Hard, medium gray N5, micaceous, pyritic, glauconitic, phosphatic, fossil fragments, vitreous, medium sorted, medium to very coarse grained (1/4-3mm) limy (10%) sand. iron stained quartz, rose quartz, indurated sandstone chips, calcite material. 2635-2645 As above 2645-2655 As above second sample Hard, medium dark gray N4, micaceous, 2645-2655 pyritic, glauconitic, phosphatic, fossil fragments, vitreous, medium sorted, medium to coarse grained (1/4-3mm) limy (10%) sand. iron stained quartz, more indurated sandstone chips than in other sample.

2655-2665 As above

2665-2675 As above

2675-2685 As above

As above 2685-2695

2695-2705 Hard, medium gray N5, micaceous, pyritic, glauconitic, phosphatic, limonitic, fossil fragments, vitreous, medium sorted, medium to coarse grained (1/4-lmm) limy (15%) sand. iron stained quartz, indurated sandstone chips, calcite.

As above, but sandstone chips not as abundant. 2705-2715

2715-2725 Hard, medium gray N5, micaceous, pyritic, glauconitic, phosphatic, limonitic, fossil fragments, vitreu us, medium sorted, medium to coarse grained (1/4-1mm) limy (15%) sand. iron stained quartz, rose quartz, sandstone chips, abundant lignite

2725-2735 As above, no lignite; calcite

2735-2745 Hard, medium gray N5, micaceous, pyritic, glauconitic, phosphatic, limonitic, fossil fragments, vitreous, medium sorted, fine to coarse grained (1/8-1mm) limy (15%) sand. iron stained quartz, rose quartz, indurated sandstone chips, calcite.

2745-2755 As above, indurated sandstone chips not as abundant as above.

2755-2765 As above

2765-2775 As above

2775-2785 As above

2785-2795 As above

2795-2805 As above, indurated sandstone chips not common

2805-2815 As above

2815-2825 As above, indurated chips about 20% of sample, same lithology, no pyrite

2825-2835 As above

2835-2845 As above

2845-2855 As above

2855-2865 As above, some clay.

2865-2875 As above, some clay

2877-2888 core? Hard, medium dark gray N4, micaceous, glauconitic, phosphatic, limonitic, dull, medium sorted, fine to medium grained (1/8-1/2mm) sandy (15%) clayey (20%) silstone; forams.

2877-2888 Hard, medium gray N5, micaceous, glauconitic, phosphatic, limonitic, fossiliferous, forams, vitreous, medium sorted, fine to coarse grained (1/8-lmm) limy (15%) sand. clay 5% of sample; trace of limestone.

2887-2890 As above, indurated sandstone chips 30% of sample

2888-2901	cuttings. Hard, light gray N7, micaceous, glaucon- itic, phosphatic, dull, medium sorted, fine to coarse grained (1/8-1mm) sandy (10%) clay
2888-2901	core top Hard, medium dark gray N4, micaceous, glau- conitic, phosphatic, limonitic, dull, medium sorted, fine to medium grained (1/8-1/2mm) sandy (10%) silty (20%) clay; red shale, lignite
2888-2901	core middle Hard, medium gray N5, micaceous, glau- conitic, phosphatic, dull, medium sorted, fine to medium grained (1/8-1/2 mm) sandy (20%) shale; also carbonate, 10% of sample; and 10% lignite
2888-2901	core bottom Hard, medium gray N5, micaceous, glaucontic, phosphatic, dull, medium sorted, fine to medium grained (1/8-1/2 mm) sandy (20%) shale. less carbonate and lignite
2901-2905	70% sandstone, limy (5%), hard, light gray N7, micaceous, phosphatic, medium sorted, medium tofine grained (1/8-1/2mm) 30% clay
-2 905 - 2915	5% clay 10% glauconitic, sandy limestone 85% hard, medium gray N5, micaceous, glauconitic, phosphtic, fossiliferous, vitreous, medium sorted medium to coarse grained (1/4-lmm) limy (10%) sand.
2915-2925	As above
2925-2935	As above
2935-2945	As above
2945-2955	As above
2955 - 2965	Hard, medium gray N5, micacrous, glauconitic, phosphatic, vitreous, medium sorted, medium to very coarse grained (1/4-3mm) limy (10%) sand. 85% of sample 10% glauconitic, sandy limestone 5% clay
2965-2975	As above
29 75- 2985	As above
2985 - 2995	As above

2995-3005 55% Hard, medium gray N5, micaceous, glauconitic, phosphatic, limonitic, fossiliferous, vitreous, medium sorted, medium to very coarse grained (1/4-3mm) limy (10%) sand. 10% glauconitic sandy limestone 5% clay 30% indurated sandstone chips, same lithology as sand above 3005-3015 As above 3015-3025 As above 3025-3030 60% Hard, medium gray N5, micaceous, glauconitic, phosphatic, limonitic, fossiliferous, vitreous, medium sorted, medium to very coarse grained (1/4-2mm) limy (10%) sand 5% glauconitic sandy limestone 5% clay 30% unaccounted for in manuscript -- probably indurated sandstone 3030-3035 80% limy (10%) sand as above 10% glauconitic sandy limestone 5% siltstone; rose quartz 3035-3040 80% hard, medium gray N5, micaceous, glauconitic, phosphatic, limonitic, fossiliferous, vitreous. medium sorted, medium to very coarse grained (1/4-3mm) limy (10%) sand. 10% glauconitic sandy limestone 5% clay 5% siltstone 3040-3045 80% limy (10%) sand as above 10% glauconitic sandy limestone 5% clay 5% siltstone lignite, rose quartz 3045-3050 As above, no lignite, rose quartz abundant 3050-3055 70% limy (10%) sand as above 15% siltstone 15% limestone 3055-3060 As above 3060-3065 As above 3065-3070 As above

3070-3075 70% limy sandstone as above 15% siltstone 15% limestone 3075-3080 As above 3080-3085 50% hard, medium gray N5, micaceous, glauconitic, phosphatic, limonitic, fossiliferous, vitreous, medium sorted, medium to very coarse grained (1/4-3mm) sand 45% clay 5% dolomite 3085-3090 As above 3090-3095 hard, medium gray N5, micaceous, glauconitic, phosphatic, limonitic, fodsiliferous, medium sorted, fine to very coarse grained (1/8-3mm) limy (10%) sand 3095-3100 As above 3100-3105 70% hard, medium gray N5, micaceous, glauconitic, phosphatic, limonitic, vitreous, medium sorted, fine to coarse grained (1/8-lmm) sand 30% clay 3105-3110 As above 3110-3115 As above 3115-3120 As above 3120-3125 As above 3125-3130 As above 3130-3135 As above 3135-3140 As above 3140-3145 As above

bottom of hole.