THE UNIVERSITY OF TEXAS
BUREAU OF ECONOMIC GEOLOGY
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The mimeographed circulars issued from the Bureau of Economic Geology contain the record of cores and cuttings from wells received and described in the Bureau. In some instances driller's logs and other data are given, although it is usually impracticable to include logs of all wells, the logs given being selected as representative of the county or area to which the circular relates. The elevations given are for the most part those reported with the driller's log. In some instances the elevation given, as indicated, is that obtained from the location of the well on the topographic map. In all cases the elevation is to be regarded as approximate only.

E. H. Sellards

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Record of Waring Well in Concho County

Waring Ranch Well No. 1, Leonard Petroleum Co.

	Depth in feet to:
soil, none; 18" hole	0
lime	1
gravel bed	8
soft gray lime	23
soft gray lime	53
soft black slate	60
hard black lime; drew hole in to 16"	85
soft black slate	92
hard black lime	119
soft white slate	129
hard black lime	149
soft black slate	156
blue hard lime; hitch on beam 225'	256
soft black slate	296
hard black lime	311
slate and shells, hard and soft, black	350
hard, white lime; smell of oil at 375'	368
slate and shells	450
hard white lime	470
slate and shells; drew hole in at 576 to 12"	570
hard blue lime	580
soft black slate	600
hard black lime	670
soft white slate	760
soft gray, sandy lime	766
soft mud	769
hard gray lime	800
soft black slate	806
hard gray lime	830
soft white slate	834
medium gray lime	863
black slate	876
soft red, red rock; 4 blrs. water 887, 12½" csg.	879
soft white slate	884
soft gray sand	896
red, red rock	901
slate and shell	911
soft gray sand; 4 blrs. water	916
slate and shell	965
hard gray lime	1050
red, red rock; 10" csg.	1055
hard lime	1058
soft red rock; caved	1098
hard lime rock	1108
hard red rock; caved	1150
lime rock; 1160 underreamed 10" to 1180 (caved hole full water)	1160
red rock	1195
hard gray lime	1215
soft white sand	1222
soft white slate	1270
hard black lime; underreamed 10" to 1222 caving bad 2-7th	1290
red rock and shells	1315
soft gray sand	1327
soft grey slate	1360
hard black lime	1380
soft blackslate, quit cav.	1400
hard black lime	1410
soft blue slate	1455
brown sand, gas	1475
black slate	1500

	Depth in feet to:
soft red rock	1505
soft black slate	1515
soft gray, sandy lime	1525
soft black slate	1530
hard black lime	1535
soft black slate	1575
hard black lime	1600
soft black slate	1605
hard black lime	1615
soft black slate	1640
hard black lime	1675
soft black shale	1690
hard white lime; little water at 1700'	1705
soft red, red rock	1708
hard white lime	1713
soft red, red rock	1735
hard white lime; hole full water	1745
soft white sand	1750
hard white lime (1750) 8 in.	1775
soft black slate	1790
soft red, red rock	1810
soft black slate	1825
soft black lime; 8" pipe	1850
black slate	1890
soft gray lime	1900
soft black slate	1920
soft gray lime	1969
slate	2040
gray lime	2080
slate	2138
black lime	2143
white slate	2193
gray lime	2240
slate	2245
gray lime	2340
black slate	2364
black lime	2370
black slate	2380
red rock	2390
gray lime	2395
red rock	2400
lime	2480
white slate	2492
black slate	2555
white lime	2560
gray lime	2590
black slate	2630
gray lime	2660
red rock	2680
sand	2720
gray lime	2725
white sand, water	2740
brown slate	2800
sand; 5" hole, little water	2812
black slate	2870
black lime	2800
sand, oil; oil several bailers	2888
limy sand	2915
sand	2930
black lime	2935
black slate	2980
lime	2985
black slate	3080
water, red gravel	3150
lime;hole full of water	3155
conglomerate	3225

Description of samples by J. A. Udden; submitted by E. B. Blackburn; also by D. F. Sapler.

	Depth in feet
Light gray sandstone with a calcareous matrix and some black shale; some pyrite noted. Most of the sand grains are seen to be angular.	1750
Ground specimen: many foraminiferal tubules are seen under the hand lens, such as Ammodiscus tubes 3/8 mm. in diameter, and knotted Trochamina tubes. The rock is free from fine sand. In thin section this limestone is seen to contain the remains of many foraminifera in a matrix of granular calcite impregnated with bitumen. Endothyra, some valves of ostracods and some thin-walled tubular spines were noted; also some obscure traces of Bryozoa.	2595-2625
Greyish-white organic fragmental limestone, in one large fragment showing a fissure filled with asphalt. In thin section some Trochammina and other foraminifera were seen. Among other fossils noted were some indistinct fragments of oval forms and pieces of ostracod valves. Calcite in crystalline form is seen to be filling small cavities in the rock. Two very small ostracods with smooth valves.	2630-2660

Depth in feet

Hard blue shale containing a small amount of pyrite. Quartz sand. Most sand grains are from one-eighth to one-half mm. in diameter. A few small fragments of a brownish limestone and clay-ironstone present. Upon heating in closed tube, bituminous fumes and fumes of ammonia and sulphur were noted. 2807

Bluish-gray argillaceous sandstone of very fine texture with a calcareous matrix and blue-black noncalcareous shale. In thin section the sandstone is seen to be made up of quartz grains of about 1/16 mm. in diameter. Bituminous fumes and fumes of ammonia were noted upon heating in closed tube. 2870

Note: The general aspect of the limestone as well as of the shale suggests that it comes from the Canyon, higher up than the Bend. JAU., Sept.1919.

Black shale, gray limestone, some slightly calcareous brown sandstone, a little white and a fine-grained calcareous sandstone. Faint ammonia fumes noted upon heating in closed tube. 2888

Slightly calcareous black shale, some light gray sandstone with a calcareous matrix, and a little limestone. Faint odor of sulphur and fumes of ammonia noted upon heating in closed tube. 2888-2935

Black shale, some white fine-grained calcareous sandstone, and a little brownish granular limestone. When heated in closed tube, faint odor of bitumen and faint fumes of ammonia were noted. 2915

Slightly calcareous very dark shale, some greenish-gray marl, and a little quartz. When heated in closed tube, faint odor of sulphur and faint fumes of ammonia were noted. 2935-3080

Dark greenish-gray and light gray limestone; some pyrite present. In thin section the limestone is seen to contain many organic fragments. A considerable part of the mass of the rock is crystalline. Fragments of brachiopod valves were seen in the limestone. Faint fumes of ammonia noted on heating in closed tube. Apparently Marble Falls limestone. 2950-3080

Slightly calcareous black shale and some gray and brown limestone. In thin section the limestone is seen to be finely granular. An obscure Ammodiscus noted. When heated in closed tube, odor of sulphur and faint fumes of ammonia were noted. 3080-3083

Dark brown, blotched shale or clay, gray limestone of fine texture and considerable fine gravel and sand. A few small pieces of green clay of fine waxy texture noted. The gravel consists of yellow, red, and colorless flint and other quartz. In thin section the limestone is seen to be very fine grained. One fragment shows no imbedded organic fragments, while two show obscure traces of sponge spicules, undetermined organic fragments, and crystal clusters like those described in 3165. Megascopically this limestone resembles the upper part of the Ellenburger but under the microscope it resembles the Bend. It is from a formation not previously recognized in this part of the State. 3150

Depth in feet

Dark brown noncalcareous shale and light gray limestone changing to brown. In thin section the limestone is seen to be finely granular and contains many traces of sponge spicules and scattered fragments of other organic material which are indistinct. There are also present globular geode-like cavities surrounded by a layer of radiating crystalline material. In a few places a layer of radiating crystalline material surrounds what appears to be organic fragments. 3165

Dirty neutral gray, organic fragmental limestone, containing considerable glauconite of a bright green color. Several joints of crinoid stems noted; one Fusulina. In thin section the limestone resembles the coarsely fragmental limestone noted in the Bend. Some straight spicular-like bodies were noted. The rest of the sample, fully two-thirds of the whole, consists of gray shale and dark brown minutely lumpy shale. 3175

Purple, greenish, and dark gray shale, and some gray and white limestone of very fine texture. The limestone was seen to be blotched with purple in one fragment. In thin section some was seen to be finely and evenly granular, some showed indistinct imbedded organic fragments, and some had a blotched texture. 3180

Gray limestone, blotched to purple-gray, splitting along layers. Fusulina is quite common in this limestone. In thin section this is seen to be in part an organic oolite, in which the oolitic grains vary from long tubular bodies to spheres, and in which these have a sharply defined outer bounding layer. In part the limestone is granular and of a blotchy texture, ill-defined under magnification. Both kinds of this limestone contain Fusulina and smaller coiled and chambered foraminifera. The limestone shows occasional bright green glauconite. 3190

Dark purple shale, green slaty shale, both with straight cleavage, dirty greenish-yellow dolomite, of compact fine texture, and a few fragments of white limestone. The limestone in thin section is seen to be of a lumpy nondescript texture and is cut by a stylolitic vein filled with columnar, or fibrous, calcite. 3195

Dark purple and very dark gray shale with mostly rough and uneven fracture. 3200

Mostly angular pieces of red flint with some white flint and some quartz. With this, which is believed to represent a conglomerate, is some red indurated clay containing a few large sand grains and some grains of glauconite. There is also a blue and red shale which splits along straight planes. 3205

Brown, dark dirty green and dark gray shale, with some white, fine-grained limestone and some deep red chert. Rhombopora lepidodendroides present. 3210

Purple and dark gray shale and green shale, with some gray and some white limestone, and considerable yellow impure limestone. The latter in thin section is seen to be finely and evenly granular and to contain a few organic remains. The gray limestone is an organic oolite in which were noted a Fusulina and an Bodothyra and also crinoid stems. 3215

Depth in feet

Brown shale of lumpy texture and speckled with green shale and dark gray shale. The larger part of the sample is red, yellow, brown, and white flint, evidently from a conglomerate. There is also some limestone present. 3225

**It is evident that the Ellenburger has not been reached at the depths given. None of these samples shows any typical sponge spicule rock of the Bend, but some of the sections of limestone resemble the whitest parts of the Marble Falls noted in other wells. A peculiarity of the glauconite in these samples is that it is bright green, differing decidedly in color from the glauconite of the Bend limestones seen in other borings in central Texas. J.A.U.

About equal parts of light gray to pinkish-gray coarsely and in part oolitic crystalline dolomite, reddish-brown sandy shale, and greenish fine-textured shale. Some fragments of chert and worn quartz sand grains present. No fossils were seen. In closed tube strong fumes of ammonia and a faint odor of bitumen noted. 3225-3255

Cream-white dolomite consisting of crystals averaging three-eighths mm. in diameter and containing a few concretions grains several times this diameter. One of these shows a concentric structure on one side while another shows a number of opaque spherules with their external surface covered with short thick ---- . These spherules are near one-fortieth mm. in diameter. 3260

White dolomite, reddish-brown, greenish and dark shale, worn sand grains and some pink or salmon-colored chert. A few grains of bright green material resembling glauconite noted. No fossils seen. Sulphur and ammonia fumes noted in closed tube. 3265

**No reliable determinations can be made from these samples. J.A.U.

Cream-colored dolomite. Crystals averaged a tenth mm. in diameter and are seen in thin section to have a purplish or pink-red color. Ellenburger. 3270-3280

Yellowish-gray dolomite. 3280-3290, 3290-3310, 3300-3310

**E.B.Blackburn reports fresh warm water at 3275 feet.