

UNIVERSITY OF TEXAS
BUREAU OF ECONOMIC GEOLOGY
AUSTIN, TEXAS

Mimeograph Circular No. 17
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The mimeograph 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 drillers 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 drillers 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. M. Sellards

Record of Cushing Well in Glasscock County

Cushing 1, Enders & Co.

Located on Section 30, Block 30, W. & H. W. Ry. Co. lands,
15 miles E. of Garden City. Elevation 2560 feet.

Drillers log

	Depth in Ft. to:		Depth in Ft. to:
gray surface soil	10	sandy shale, gas and oil	
lime and shells	14	showing	698
yellow clay and gravel	35	red bed	735
yellow lime shells		light brown shale	742
and clay	58	brown shale	765
yellow lime	65	gray sand	770
yellow fire clay	75	hard blue sand	795
yellow lime	83	red sand	800
yellow clay	93	red shale	805
yellow lime and flint	100	brown shale	817
soft yellow lime	105	blue shale	820
sand, 3 strata of water	163	brown shale	845
red rock. 163' of 15"		red shale	860
casing set	275	blue shale	880
red permian	366	red graveland shale	895
brown shale	495	brown shale	965
soft red shale	506	blue shale	975
brown sandy shale, 508'		973' - 8" of 10" casing	
of 12" casing set	525	set.	
red shale	535	brown lime	980
red clay	545	blue sand	1000
red bed	590	red shale	1130
light red sand rock	610	red sand	1165
brown shale	620	red shale	1265
brown sand rock, fresh		red sand	1330
water	640	red gravel and sand	1345
red sand	652	red shale	1410
brown shale	694		

	Depth in Ft. to:		Depth in Ft. to:
salt water sand	1440	blue lime	2340
blue mud	1450	blue sand	2350
red shale	1455	gray broken lime	2405
white salt water	1460	black sandy shale	2415
white lime	1465	water sand	2455
gray lime, showing oil	1475	very hard gray lime	2460
salt water sand	1480	blue water sand	2500
brown shale	1485	gray lime mixed with sand	2505
blue mud	1490	gray lime	2545
white lime	1505	water sand	2550
red mud	1510	gray salt water sand	2555
brown oil sand	1512	gray lime	2602
red shale	1540	sulphur water and water sand	2609
brown sand, showing oil	1565	dark sand and sulphur water	2618
white lime	1567	dark water sand	2626
red shale	1580	dark gray lime	2633
oil sand	1590	gray sand	2645
water sand	1600	gray lime	2647
red sandy shale	1655	gray sand	2655
brown sand, showing oil	1665	fine blue sand	2660
blue sand	1670	blue shale	2662
sandy shale	1675	blue water sand	2667
red sandy shale	1700	light blue lime	2672
red shale	1710	blue sand	2680
red sand	1715	gray lime and sand	2696
white lime	1725	2696' - 4" of 8" csg. set	
red shale	1750	blue lime	2705
gray lime	1760	blue sandy lime	2720
red sand	1770	white lime	2728
broken sand	1790	blue lime	2740
white lime	1795	gray sandy lime, showing oil	2751
red broken sand	1855	blue sandy lime	2755
red shale	1895	water sand	2770
white lime	1905	gray sand	2775
red sand	1930	blue shale	2785
red sandy shale	1965	gray shale, salt water	2795
red hard sand	1970	gray lime	2830
broken sand	1980	blue shale	2835
red sand	1985	blue sandy shale	2845
hard white lime	2000	gray broken lime	2855
red sand	2035	gray sandy lime	2865
white lime	2050	white lime	2870
very hard gray lime	2080	gray water sand	2875
white lime	2085	blue sandy shale	2890
white sand	2090	blue shale	2900
white lime	2100	hard white lime	2920
gray lime	2130	blue shale	2925
white lime	2135	gray sandy lime	2935
gray and brown lime	2170	gray lime	2940
broken lime	2185	white lime	2955
hard gray lime	2240	blue broken shale	2962
blue lime	2275	gray lime	2972
gray lime	2310		
gray broken lime	2320		

	Depth in feet to:		Depth in feet to:
gray water sand	2985	blue shale	3622
gray lime	2990	very hard brown lime	3624
blue sandy shale	3002	broken lime and shale	3635
blue shale mixed with gray lime--	3005	broken lime and hard shells	3643
white mixture	3015	broken lime	3660
blue broken shale	3025	gray lime	3668
blue shale	3030	broken lime	3675
broken lime and shale	3050	gray lime	3725
broken lime	3055	gray lime and shells	3733
gray broken sandy lime	3085	gray lime	3743
dark gray broken sandy lime	3100	hard gray lime	3748
black shale	3130	hard brown lime	3754
bluish black shale	3140	hard gray lime	3757
black shale	3150	gray lime	3780
bluish black shale	3160	brown lime	3784
3150' of 6-5.8" csh. sct		gray lime	3809
gray sandy lime	3170	hard gray lime	3827
gray lime	3175	gray lime	3835
very hard gray lime	3185	hard gray lime	3842
gray lime	3192	gray lime	3858
hard gray lime	3195	hard gray lime	3865
gray lime	3212	gray lime	3869
gray sandy lime	3220	hard gray lime	3876
hard gray lime	3222	dark gray lime	3880
gray shale	3238	gray lime	3884
hard gray lime	3244	very hard brown sandy lime,	
gray lime	3250	showing gas	3891
coarse brown sugar lime	3267	gray lime, hard	3894
hard gray lime	3290	gray lime	3897
gray lime and blue shale	3320	brownish gray lime	3899
hard gray lime	3325	gray lime, gas getting stronger	
blue shale	3328	all along	3911
hard gray lime	3360	brownish gray lime; an oil	
blue shale	3370	showing here	3914
gray lime and blue shale	3390	brown sandy lime	3933
gray lime	3406	dark gray lime	3935
blue shale	3419	gray sandy lime; very strong	
black lime	3480	oil showing here	3964
brown lime	3490	grayish black sandy lime	3972
blue shale and gumbo	3535	gray sandy lime; still showing	
brown lime	3545	gas and oil	3987
hard brown lime, 6-5/8	3558	black shale and lime	3990
blue shale	3563	black shale and dolomitic lime	4000
brown lime	3567	very hard gray lime shells	4003
hard brown lime	3571	black shale and dolomitic lime	4008
brown lime	3578	blue shale	4024
hard brown lime	3579	very hard white and gray lime	4025
gray lime	3587	hard blackish gray lime	4030
chocolate-brown lime	3595	gray lime	4050
gray lime	3604	black slate	4053
hard gray lime	3609	hard gray lime	4056
gray lime	3615		

	Depth in feet to		Depth in feet to
medium hard gray lime	4065	gray lime	4446
hard gray lime	4067	gray lime, hard	4447
gray lime	4080	medium hard gray lime	4452
hard gray lime	4086	hard sandy gray lime	4457
gray lime	4091	brown sandy lime	4458
hard gray lime	4115	gray sandy lime	4460
gray lime	4149	dark sandy lime	4461
gray lime	4150	dark brown lime	4462
brown sandy lime, showing oil	4180	dark gray lime	4463
black lime shells	4211	brown lime	4467
black lime, hard	4216	light gray lime	4475
shale, whitish and shells	4231	darker gray lime. When bailer	
white chalky shale	4246	is dumped, black froth forms	
white chalky shale, very soft	4300	on top of water. This lig-	
gray lime	4390	nitic froth gives a slight	
gray hard lime	4393	test for oil with chloroform	4477
yellow sandy lime	4402	dark gray lime	4481
gray sandy lime	4400*	light gray lime	4483
brown sandy lime to gray,		darker gray lime	4487
showing oil	4429	slightly sandy gray shale	4492
very hard brown lime, showing bit	4437	gray sandy lime, small show	
very hard gray lime	4442	of gas	4496
very hard blackish-gray lime	4444	gray sandy lime, small show	
		of gas	4500
		Increase of very strong salt water.	

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Description of samples by J. A. Udren, A. H. Kemp, and R.T. Short; submitted by W. F. Cushing, 1923.

	<u>Depth in feet</u>
Light to dark greenish-gray anhydrite, with considerable white anhydrite and some pink. The gray anhydrite is slightly calcareous, the white only occasionally so. The rock is minutely flecked with pyrite - - - - -	2150-2155
Massive finely granular reddish-white, pink, and light gray anhydrite, with some bluish-green and dark red shale.... - - - - -	2170-2180
Dark red silty sandstone containing white or gray or pinkish anhydrite - - - - -	2180-2190
Brownish-gray dolomitic limestone which contains large areas of pinkish anhydrite, and blotched deep red and dark bluish-gray finely laminated shale containing pockets of anhydrite - - - - -	2190-2200
Brownish-gray to white dolomite containing calcareous anhydrite and minutely flecked with pyrite - - - - -	2203
Light brownish-gray dolomite containing anhydrite and some gray shale - - - - -	2210-2220
Green and chocolate-red shale, in parts of which the two colors are closely mingled, with some gray dolomite and white anhydrite - - -	2210-2230

(copied as original)

Gray dolomite, some white anhydrite, and a few pieces of slightly calcareous red shale - - - - -	2230-2240
Dark gray shale and gray and white slightly calcareous anhydrite--	2240-2250
Light gray (slightly greenish) sandy shale, not compact, darker gray shale, and grayish-white anhydrite, all very slightly calcareous--	2250-2260
Light to dark gray soft calcareous shale with gray, pink, and white anhydrite, also some red sandy shale - - - - -	2260-2270
Soft bluish-gray shale and light gray calcareous shale, also a piece of red and gray shale - - - - -	2270-2280
Greenish-gray shale containing fine sand, and blotched gray and white anhydrite, light brownish-gray dolomitic limestone, containing anhydrite, and fine red sandy shale also containing irregular pieces of anhydrite. Several pieces of reddish clay noted - - - - -	2275-2285
Light brownish-gray limestone, gray to dark gray limestone containing white anhydrite, and dark gray, almost noncalcareous shale--	2285-2300
Gray and light limestone and anhydrite and grayish-black finely and evenly laminated shale profusely and finely flecked with pyrite--	2300-2310
Soft gray shaly limestone which in thin section is seen to be very finely granular in texture with many fine angular clear grains, much white and light gray anhydrite, and considerable bluish-gray, slightly calcareous shale which contains minute flecks of pyrite. Considerable pyrite noted in the limestone - - - - -	2310-2315
Light gray limestone, white anhydrite, and dark gray shale containing anhydrite - - - - -	2315-2320
Light gray limestone, gray dolomitic limestone and dark gray slightly calcareous shale, and considerable white anhydrite. Pyrite noted - - - - -	2320-2330
Bluish-gray finely laminated slightly calcareous shale, containing red portions and light gray calcareous anhydrite and gray dolomitic limestone - - - - -	2330-2340
Like the preceding - - - - -	2345-2348
Light gray calcareous dolomite which is finely granular in thin section with numerous small clear angular grains - - - - -	2355-2365
Bluish-gray shale, some light gray dolomite, and anhydrite - - -	2365-2370
Light gray limestone containing much pyrite and anhydrite - - - -	2375-2385
Light to dark gray limestone containing anhydrite, pyrite, and minute biotite flecks - - - - -	2385-2405
Light to dark limestone, white anhydrite, and red sandstone and a few splinters of coal present - - - - -	2405-2425

	Depth in feet
Friable red sandstone, slightly calcareous - - - - -	2425-2440
Fine-grained red sandstone, finely but profusely micaceous gray limestone and dark bluish-gray shale - - - - -	2440-2450
Gray shale, light gray limestone, much crystalline quartz, some pyrite and sticky lump of sand held together by a brown organic substance. Black coal (?) - - - - -	2450-2455
Fine-grained red sandstone, gray-green shale, anhydrite, and gray limestone - - - - -	2455-2460
The sample is badly stained with iron rust and contains many iron filings evidently from the bit - - - - -	4420-4440
Fragments of white and gray, somewhat dolomitic limestone, and a few fragments of black shale - - - - -	4435-4440
Fragments of light brown limestone and coaly shale - - - - -	4440
Small fragments of white limestone and a few fragments of black shale--	4440-4445
NOTE: The samples from 4420 to 4440 feet are possibly from the Cisco(?) formation.	
Gray to dark gray limestone and some fragments of black bituminous dolomitic shale - - - - -	4430-4435
Light-colored limestone containing much light-colored chert and some fragments of light red sandy shale - - - - -	4435-4438
Very much like the preceding sample from 4435-4438 feet - - - - -	4440
Light gray very fine-grained limestone - - - - -	4440-4441-4442
Light gray limestone and some gray slightly dolomitic limestone. The fossils noted were: ostracods, <u>Ammodiscus</u> , <u>Nodosaria</u> , and many radiolites. These radiolites somewhat resemble those found in the Toyah Bell No. 2 well in Loving County from 4281 feet. There were also seen some sponge spicules and a longitudinal section of a crinoid stem - - - - -	4442-4445
Light gray limestone and a few fragments of black bituminous shale - - - - -	4445-4446-4450
Light gray limestone containing much cherty material and some dolomite - - - - -	4450-4453-4456
Gray limestone like that from 4450-4453 feet - - - - -	4456-4458-4460
Dark gray fine-grained limestone and some fragments of gray limestone - - - - -	4460-4461
Mainly dark gray very fine-grained limestone, considerable amount of chert and coaly material are present. Some of the coal fragments have a woody cell-like structure. On heating in closed tube, very strong fumes of bitumen were given off - - - - -	4461-4462

NOTE: All the samples are ground up too finely for a satisfactory examination. The presence of chert and of Fusulina suggest that the samples may come from the Cisco. Better and coarser samples are highly desirable.

Gray fine-grained limestone containing much light brownish flint and a little pyrite - - - - -	4465-4466
Gray limestone and black noncalcareous shale - - - - -	4467-4468, 4468-4470
Mostly gray limestone - - - - -	4470-4471, 4471-4472, 4472-4474
Gray and dark gray limestone containing much bituminous material, some pyrite, and black bituminous shale - - - - -	4474-4476
Very similar to sample from 4474-4476 feet - - - - -	4477
Gray limestone and black slightly micaceous noncalcareous shale and many fragments of coaly material, many fragments of well-preserved and partly silicified wood tissue were noted - - - - -	4478-4480
Mostly gray limestone. Many fragments of black noncalcareous coaly shale are present - - - - -	4480-4481

NOTE: These samples are believed to be from the Cisco.

Gray limestone, containing much flint - - - - -	4482-4483, 4485-4486
Limestone, gray, and black shale - - - - -	4486-4487
About equal parts of gray, fine-grained limestone and black shale containing much coaly material - - - - -	4487-4490, 4490-4492
Mostly gray, fossiliferous limestone, ground up very fine by the drill. A few fragments of black shale and chert like that from the preceding samples are present. In this section the limestone is seen to be indistinctly oolitic and to contain indistinct organic fragments. Some sponge spicules and one well-defined oolitic spherule were seen. Many ostracods and fragments of palechinid spines were seen - - - - -	4492-4498
Light gray limestone containing some flint and fine sand grains. The sample is ground up very fine by the drill. Water reported at this depth by the driller - - - - -	4508-4510

NOTE: These samples are still from the Cisco.