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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 practicable 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. H. Sellards

SOME WELL RECORDS OF TOM GREEN COUNTY

Cain 1, Southwestern Petroleum Co.

Located on T. J. Moore Survey 11, 4 miles W. of San Angelo; drilled 1917. Elevation 1875 feet.

Drillers log of this well is given in University of Texas Bulletin 2807, Page 68, 1928.

Description of samples by J. A. Udden and H. T. Kniker; submitted by H. H. Jones, 1917.

Light gray limestone and darker gray shale.	1352
Gray limestone and calcareous blue shale with a few fragments of anhydrite.	1357
Light gray, finely porous dolomitic limestone with some blue non-calcareous shale, gray chert and pyrite.	1390
Blue shale containing some pyrite, and a few shreds of a coaly material.	1438(?)
Blue shale with some calcareous material.	1440
Some limestone and some dolomite with some pieces of dark shale.	1510
Light gray limestone and black asphaltic limestone.	1520
Dirty straw and gray finely porous dolomitic limestone with some dark asphaltic limestone and with considerable anhydrite and flint.	1535
Gray finely porous dolomitic limestone with fragments of anhydrite, chert, pyrite and green shale.	1538
Black bituminous marl of fine texture and containing considerable iron and manganese.	1715
Gray dolomitic limestone with some blue shale.	1718

	Depth in feet
Very light blue marl with some gray fine-grained limestone.	1825
Grayish white limestone, almost black limestone and some dark blue shale.	1830
Light gray limestone, greenish shale, and black bituminous limestone.	1878
Gray limestone, with some shale and some black bituminous limestone.	1931
Light gray limestone with fragments of anhydrite, pyrites and chert.	1946
Light gray and black highly bituminous limestone with blue shale of fine texture.	1958
Gray limestone and shale, with some black shale of very fine texture.	1978
Gray dolomitic limestone, finely porous. 2036, 2053,	2058
Gray dolomite and greenish shale of very fine texture.	2078
Dark gray, almost black shale and limestone.	2104
Dark almost black bituminous dolomite, quite compact and a little very dark and some greenish gray shale.	2247
Dark, almost black bituminous limestone, some white limestone and fragments of anhydrite.	2318
Dark bituminous dolomite with very little shale.	2322
Straw colored, hard limestone, somewhat oolitic, and containing Fusulina, Endothyra and Trocharmina. 2558,	2604
Yellowish white limestone, quite hard, and containing much chert and flint.	2800
Brownish light gray limestone of fine texture, containing considerable flint and small crystals of dolomite of sub-equal size. 2775,	2824
Dark bluish shale containing some calcareous organic material.	2825
Organic white limestone, incipiently changed to dolomite, showing in thin section fragments of shells, crinoid stems, and shreds of bryozoa. 2826,	2840
Very light gray marly shale containing considerable pyrite.	2843

	Depth in feet
Yellowish light colored organic fragmental limestone with some light bluish gray shale.	2847
Sample consists of light brownish gray dolomitic limestone and dove-colored shale.	2845, 2850
Greenish gray shale of fine texture, and with a hackly fracture more or less vertical to the indistinct lamination which is in places marked by slickensides. The following fauna has been found in this sample by Dr. J. W. Beede. Streptelasia sp., with coarse reticulate markings; Spirifer sp., (S.rockymontana group) 3 specimens; Spiriferinae, probably S. Kentuckiensis; Lepetopsis sp.; Chonetes Scnitze (?), (Strongly bilobare variety); Chonetes cf. Ostiolatus var. occidentalis Girty; Mustedia (?) sp.; Rhipidomella sp., a number of specimens, probably undescribed; Chonetes, practically non-striate, shaped much like C.verneuilanus; Composita-like shell fragments; Crinoid stems, one peculiar hollow one; Griffithides n.sp., one pygidium, minute; Pelecypod sp., extremely finely striated and fair sized; Bairdia sp., rather long; Ostracods, two or more species; Polypora (?) sp.; Bryozoan, ramose ortwig like; (not named), Fistulipora (?) sp.	2845, 2850
A mixture of impure organic limestone and blue calcareous shale, with chert and pyrite.	2850
Gray, impure limestone, with some chert and pyrite.	2852
Gray organic fragmental limestone, with a little shaly material.	2860
Dark gray and light gray, organic, fragmental limestone with white chert.	2864
Limestone like 2864.	2872
Dark, almost black bituminous shale of fine texture, with a little white limestone.	2883
White limestone and bluish, dark gray shale.	2884
Light gray almost white limestone, dark shale and some light blue shale.	2895
Nodular limestone, partly of very compact texture and containing considerable pyrite.	2883, 2897
One lot of samples were washed out from a mass of cuttings; cavings that had stuck to the drill and probably came from between 2863 and 2900 feet below the surface.	2863, 2900

	Depth in feet
Note by Dr. Beede: "The occurrence of Fusulina from 2550 down, together with some of the fossils in the above lists, Spirifer; Spiriferina Kentuckiensis, and possible Chonetes and Rustedia, would seem to indicate that the well at the depth from which the fossils came, may be in the Cisco formation. However, other considerations, as depth, some of the fossils, Grifithedesn. sp., and the fact that most of the genera occur much higher in Trans-Pecos Texas, and the fact that the well is only down 2900 feet, instead of 3500 or 3600 feet, would seem to indicate that the drill is still in the Permo-Carboniferous. I am of the opinion that it is still 300 to 500 feet above the Cisco. The thickness of the rocks of the Colorado River section, their character and alternation, is the chief reason for this conclusion."	
About one-half of sample is white limestone.	2902
Two fragments of crinoid stems, one angular and one very small and round.	2902
Two-thirds of the sample is light gray limestone, rest is dark gray shale with some black shale.	2910
Some green shale, some very pale green earthy limestone, about two-thirds dark drab to brown shale, with considerable white and gray limestone.	2925
Light gray limestone with some green and some black shale. Two-thirds drab limestone, rest bright green shale.	2942
Mostly gray limestone with some green to black shale. White limestone, gray dolomite (?), and some pyrite.	2952
Light gray limestone with very little blue shale.	2956
White, porous limestone with some dark gray fossil-bearing marl and much white chert. ... Gray limestone with some shale.	2970
White limestone and dark gray to black shale. ... Some gray shales with minute fragments of fossil shells.	2975
Shale and white limestone.	2980
Dark gray limestone and some black shale. ... Blue shale, somewhat calcareous, containing many Fusulinas.	2992
Light gray and dark, almost black limestone, containing a small amount of pyrite.	2993, 2999
Marly soft limestone and indurated marl, of dark gray color.	3000
Bluish gray stony marl containing some pyrite and sand grains.	3002

	Depth in feet
Gray and dark bluish limestone, containing some calcite and pyrite.	3008
White and gray limestone and dark gray marl.	3017
Shale and gray limestone, with some pyrite.	3025
Impure gray limestone and shale.	3027
Gray limestone and blue shale.	3030
Dark gray to black shale with some gray limestone.	3032
Gray shale and light gray to dark gray limestone.	3038
Dark gray and light gray limestone, containing minute cavities filled with bluish white chert.	3045
Organic gray limestone and gray shale.	3056
Mostly gray limestone.	3060
White organic fragmental limestone and gray marly shale.	3065
Almost black limestone; impure.	3073
Light gray and gray limestone, with some fragments of dark shale.	3079
White organic fragmental limestone and some greenish shaly stone.	3090
Bluish and dark gray shale with some gray limestone. ... Dark gray limestone and some dark gray shale. ... Dark gray limestone and gray to black shale.	3100
Light gray and dark gray limestone, containing some pyrite.	3102-13
White limestone and greenish shale.	3105
Mostly dark gray and greenish shale.	3112
Bluish gray calcareous shale.	3120
Gray stony shale with some gray limestone.	3127
Gray calcareous shale and light gray limestone containing fragments of calcite and pyrite.	3140
Blue shale and gray limestone.	3146
Gray shale with a few fragments of light gray limestone.	3153
Bluish gray calcareous shale and white and gray limestone.	3164

Depth in feet

Bluish-gray shale. Fossils from a large sample at this depth were studied by Dr. J. W. Beede, who reports on them as follows: "A species of bryozoan related to Rhombopora, that is really like a species from the upper Gaptank (a formation in Brewster County believed to be of about the same age as the Cisco in central Texas). A large part of a thin crinoid plate an inch in diameter and a large elliptical stem doubtless belonging with the plate. A fragment of a large pelecypod shell. A Polypora, too completely flattened for identification. Two or three pieces of Fenestella. A Pleurotomaria, marks well preserved, but flattened. A Streblotyrpa. The shale adheres so closely to this that it is difficult to make out the details of the surface. Various other crinoid stems. The Bryozoa so far as studied show Gaptank relationships as did this Fusulina occurring in same sample" - 3165

Blue-gray shale and light and dark gray limestone- - - - - - - - 3170

Dark gray shale, showing slickensides - - - - - - - - - - - - 3180, 3258

Gray shale somewhat calcareous - - - - - - - - - - - - - - - - - - 3182

Blue shale, slightly calcareous, containing some pyrite - - - - - - 3186

Light gray shale, slightly calcareous- - - - - - - - - - - - - - - 3190

Gray shale and a small amount of gray limestone - - - - - - - - - 3206

Gray shale with some light gray limestone - - - - - - - - - - - - 3215

Blue-gray shale and light gray limestone, about three-fourths shale and one-fourth limestone - 3220

Blue shale and gray limestone, containing some pyrite- - - - - - - 3225

Black shale. Fragments of clay, ironstone concretions noted- - - 3227

Blue-gray shale and gray limestone, about equal amounts of each- - 3230

Bluish-gray shale and dark gray limestone of about equal amounts - 3235

Gray limestone and blue-gray shale - - - - - - - - - - - - - - - - 3240

Light gray limestone and bluish-gray shale - - - - - - - - - - - - 3245

Bluish-gray shale with a very small amount of light gray limestone - 3255

Black shale and gray limestone in about equal parts - - - - - - - 3260

Light gray to dark gray limestone, with dark blue and black shale - 3265, 3268 - 3305, 3270

	Depth in feet
Black bituminous shale with gray limestone. 3271, 3274,	3278
Black bituminous shale with a small amount of gray limestone. 3282, 3290, 3295,	3300
Black coal of bright lustre and compact texture.	3305
White sandstone and black shale with particles of coal.	3305,3315
Gray limestone and much quartz sand.	3315-20
Gray limestone and black shale.	3340
Hard black shale with some clay iron-stone concretions.	3360
	3370
Hard black shale.	3378
Black, slightly calcareous shale.	3405
Black and brownish shale. 3429,	3435
Black shale. Fragments of clay ironstone. 3442, 3449, 3460, 3467,	3493
Grayish black shale and gray sandstone.	3500
Black shale with much clay ironstone, much pyrite, and a little coal noted.	3510
Black shale with much clay ironstone and much pyrite. 3514, 3518,	3523
Grayish black shale and gray sandstone. 3528, 3545, 3570, 3583, 3593, 3605, 3623, 3635, 3650, 3690, 3800,	3850
Light gray to very dark limestone and some black shale.	3865
Gray and dark gray limestone and black shale.	3868
Light gray and dark gray limestone and black shale. ... 3871, 3878, 3882, 3860-3920, 3920-3960	3940
Dark grayish black limestone. ... 3940, 3944	3951
Dark grayish black limestone and some black shale. Some pyrite and some chert present.	3955
Grayish black limestone.	3962
Grayish black and black limestone.	3964
Black shale and grayish black limestone.	3977
Hard black calcareous shale. 3980,	3985

	Depth in feet
Dark gray limestone and black shale.	3995, 4000
Grayish black limestone.	4002
Hard grayish black calcareous shale.	4010, 4017
Hard grayish black, bituminous calcareous shale.	4020, 4025
Hard, dark grayish-black calcareous and minutely micaceous shale.	4030- 4040
Hard, dark grayish-black calcareous and minutely micaceous shale with some fragments of dark gray limestone.	4045, 4048
Grayish black and black limestone with much black shale.	4050,4052
Black, slightly calcareous, shale with a few fragments of black and grayish black limestone.	4062
Black bituminous and slightly calcareous shale.	4070
Black and grayish black limestone with some black shale.	4080
Black bituminous and slightly calcareous shale.	4090, 4100
Black, bituminous and slightly calcareous shale with a few fragments of dark gray and black limestone.	4108
Dark grayish black shale. 4124, 4130, 4140,	4145
Grayish black shale. 4160,	4170
Grayish black shale. 4180, 4190	4200
Grayish black shale, slightly calcareous and minutely but sparingly micaceous. 4210,	4220
Grayish black shale. ... 4235, 4240, 4250, 4260,	4270
Grayish black shale and gray sandstone. 4285, 4290, 4300,	4310
Very dark gray, almost black, hard calcareous shale, and some clear sandstone. The sand grains are all less than one-half mm. in size. Most of them are angular but a few are rounded. In thin section the shale is seen to contain numerous sponge spicules of varying sizes and many minute sand grains. A trimere spicule was noted. Several small crystalline areas, some of them slightly oblong and regular in outline were noted. Upon heating in closed tube there were liberated strong bituminous fumes that supported a flame and formed a deposit of oil in the tube. Ammonia fumes were also noted.	4314(?)

Depth in feet

T. J. Clegg Well, San Diego & Texas Oil Co.

Located on Section 18, Block 16, H. & T.C. Ry. survey, about 4 miles W. of Carlsbad. Elevation 2130.

Drillers log is given in University of Texas Bulletin 2807, page 73.

Description of samples by J. A. Udden and E. B. Stiles; submitted by T. J. Clegg.

Light gray limestone and black shale. In thin section the limestone is seen to be granular in texture with a few organic fragments like ostracod valves imbedded. In washed material several casts of ostracods were noted. Ammonia fumes and fumes of sulphur were noted in closed tube. 2535

Gray, granular and crystalline organic limestone. In this section a productus spine, fragments of crinoid tissue and a fragment of a bryozoan were seen. In the washed material many fragments of productus spines and crinoid fragments were noted. 2657-2659

Light gray finely crystalline limestone with some black shale. No fossils were seen. In closed tube faint bituminous fumes and faint fumes of ammonia were noted. In thin section the limestone shows dark faint blotches or streaks due probably to the presence of coaly material. 2692- 2695

Dirty gray porous dolomitic limestone, in part finely crystalline and in part coarsely crystalline. Some fragments of dark shale present. No fossils were seen. In closed tube faint fumes of bitumen and faint fumes of ammonia were noted. Permo-Carboniferous. J.A.U. 2695 - 2700

Gray dolomitic granular limestone and very dark gray noncalcareous shale. Some sand grains and a small amount of anhydrite present. No fossils were seen. In closed tube ammonia fumes and bituminous fumes sufficient to sustain a flame were given off. 2760

Like preceding sample from 2760. Only faint sulphur fumes noted in closed tube test. 2800

Like sample from 2760. The limestone is somewhat coarser grained and the shale is practically absent. Only slight sulphur fumes noted. 2896

Gray dolomitic granular limestone, and dark shale. White chert, some clear anhydrite, and pyrite present. No fossils were seen. In closed tube strong sulphur fumes were given off. 2896

	Depth in feet
Gray granular dolomitic limestone and black shale. Pyrite and anhydrite and gray chert present. No fossils seen. In closed tube sulphur fumes were noted.	2900B
Like sample from 2900B.	2910
Gray granular dolomitic limestone with some black shale and grayish chert. No fossils seen.	2985
Like sample from 2985.	2990
Light gray fine to coarsely crystalline fossiliferous limestone and some dark gray slightly calcareous shale. Fragments of crinoid stems are numerous, a number of Fusulinas were seen, and Palechinid spines, ostracod shells, and other fossil fragments are present. No fumes were noted in closed tube.	3080
Grayish white fine to coarse fossiliferous limestone, gray shale, and a few grains of pyrite. In thin section there were identified a number of Fusulina and a bryozoa fragment. An abundance of Fusulina, crinoid fragments, and an ostracod shell were found in washed material. Very faint ammonia fumes were obtained in closed tube.	3100
Light gray mostly fine grained limestone, gray shale containing minute coaly shreds and mica scales and some pyrite.	3125
Finely crystalline light gray dolomitic limestone, fine grained white limestone, some dark gray shale and a few grains of pyrite.	3220
Very light gray fine grained fossiliferous limestone. 3240, 3265,	3280
Gray medium crystalline dolomitic limestone and some white fossiliferous limestone.	3350
White and light gray chert and gray dolomitic limestone.	3365
Very light gray chert containing some calcareous areas.	3385
White and gray chert and gray coarse dolomitic limestone. The chert contains considerable calcareous material.	3385
Like sample from 3385 feet.	3390
Gray and white chert and gray rather coarse dolomitic limestone.	3395
Gray chert, gray quartzitic sandstone, and a few grains of calcite.	3410

	Depth in feet
Gray chert, siliceous and shaly limestone, several fragments of calcite, anhydrite, pyrite, and a few quartz crystals.	3425
Gray siliceous limestone splitting in thin layered fragments.	3465 - 75
Dark gray and gray limestone which has been replaced to a considerable extent by silica. 3480, 3480-90, 3495, 3500,	3505
Light gray fine textured and dolomitic limestone which is quite porous.	3515
Light gray cherty limestone.	3520-3525
Light gray limestone containing some chert and clear quartz.	3537
Light gray and white limestone, white and gray chert, and some quartz sand.	3535
Light gray disintegrated limestone containing some chert and clear quartz.	3540
Very light gray limestone containing some pyrite, fine sand, and chert.	3547
Light gray cherty limestone containing many organic outlines in a matrix partly granular and partly crystalline with irregular areas of silica.	3575
Gray cherty limestone.	3560 -3570
Light gray organic limestone containing some chert.	3575 -3585
Gray limestone and much quartz like vein quartz.	3585 -3595
Gray limestone.	3595 -3605
Gray limestone.	3605 -3615
Gray and bluish gray dolomitic limestone containing organic remains. In thin section some fragments are seen to be entirely silicified while others are only partially replaced. Many areas of Crinoid tissue are seen the fragments as well as other organic remains which could not be identified. In washed material a fragment of a Bryozoan was seen. Some single crystals apparently of dolomite were also noted in washed material. These were abundant in one thin section. In closed tube faint fumes of bitumen and ammonia fumes were noted.	3605

Depth in feet

J. W. Harris 1, San Angelo Oil and Gas Co.

Located on Section 170, W. C. R. lands, 5 miles N. of San Angelo; drilled 1914. Cable tools. Elevation 1955 feet. IM cubic feet of gas reported at 2464½ and 2466 feet.

The drillers log of this well is given in University of Texas Bulletin 2807, page 78, 1928. The well is there listed as Harris No. 1, Fannin Oil and Development Company.

Description of samples by T. L. Bailey and E. W. Berry, submitted by John Y. Rust, 1924. All the samples are cuttings.

Pebbles of cretaceous and other limestone, chert and other quartz, from an inch in diameter down to sand. 80

Red marly clay containing some sand, mostly less than one-eighth mm. in diameter. 97

Dark greenish gray shale, containing some silt and much scattered pyrite in minute grains. "3 ft. thick."

Brown shale mottled with some grayish green shale, containing some silt and calcareous material. 210-255

Small gravel and sand. 769

Gray shale and light gray limestone of fine texture. 1046

Fibrous gypsum, evidently from a layer more than an inch in thickness in red clay, as indicated by the color of the specimen. 1250-1275

Gray limestone and dark gray shale with some anhydrite. 1560

Mostly gray dolomitic limestone with some anhydrite. 1650

Gray dolomitic limestone with some black shale, anhydrite, and much marcasite. 1660

White and yellowish gray limestone. 1670

Gray limestone with some white fragments. 1675

Limestone, impure, silty shale, and anhydrite. ... Taken from dump, after boring was below 1420

White limestone; dark, almost black limestone; white chert with a profusion of sponge spicules, some pyrite, dark gray shale and many small crystals of gypsum. ... Taken from dump after boring was below ... 1420

Gray and dark gray limestone, in part dolomitic with some anhydrite. ... Taken from dump after boring was below 1420

	Depth in feet
Gray limestone, black, calcareous, and highly bituminous shales, and some anhydrite.	1825
(From the samples submitted, it is not possible to say whether this hole has yet reached the horizon of the 1000 foot sand at Electra. On the basis of the general geological structure of this part of the state, so far as known, it seems quite certain that the horizon of the 1800-1900 foot sand at Electra has not been reached. ... J. A. Udden, Dec.29,1914)	
Light gray limestone and a dark gray calcareous shale.	1830
Gray dolomitic limestone and a dark gray bituminous limestone.	1835.
Dirty gray dolomitic limestone, and a very dark gray highly bituminous limestone.	1845
Light gray dolomitic limestone, and much smaller amount of dark gray bituminous limestone.	1850
Gray, calcareous shale, containing some gray dolomitic material.	1975
Fine-grained, gray, stony, calcareous shale, showing thin irregular dark seams.	2040
Dirty gray dolomitic limestone and dark gray carbonaceous calcareous shale, almost a limestone.	2100
Gray dolomitic limestone and dark gray bituminous shale.	2230 -2240
Dirty gray dolomitic limestone and dark gray calcareous bituminous shale.	2225 -2240
Dirty gray dolomitic limestone and dark gray bituminous calcareous shale.	2240
Gray dolomitic limestone, dark gray, calcareous shale, anhydrite, and some quartz grains, and pyrite present.	2250
Mr. W. E. Foreman, San Angelo, reports that drillers of this well suffered from gas that caused agony to their eyes, and blinded them for from twelve to twenty-four hours. Well then down to a depth of	2470
Dark gray to black carbonaceous and a little greenish shale.	3212
Cream-colored limestone and dark gray carbonaceous shale.	3220
Cream-colored limestone with a small amount of blue-gray to black shale.	3230

	Depth in feet
Mouse-colored, calcareous, gray shale with a small percentage of limestone.	3240
Dark gray to black shale, 75%, with a small amount of cream-colored limestone 25%.	3250
Gray to cream-colored limestone with some gray shales.	3260
A mixture of brown-colored coarsely crystalline limestone, impregnated with bituminous material and a greenish or bluish-gray fine grained shale.	3275
Black bituminous, calcareous shales and some limestone. The black shale is silty in texture.	3280
Gray shales and limestone with small crystals of pyrite in it.	3290
Dark gray, shaly limestone breaking into irregular masses.	3300
Large irregular pieces of gray limestone.	3305

Note: These samples are believed to be from the Pennsylvanian, probably from the Lower Cisco or Canyon Group.