County Andrew

sec. 28 twp. 60 rge. 35

owner Charles Petroleum

elev. 993 MGS# 4336 spl ✓

farm Clark, Wm C. No. 1 TD 1433 fm@TD St. Louis? shows do

status _____ date completed 4-19-1937

remarks:

00001

4336

Or FC Greene

~~CONFIDENTIAL~~

27-F-30

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES - ROLLA, MO.

COUNTY Andrew LOG NUMBER

COMPANY OR OWNER Charles Petr. Co.

FARM W. M. Clark WELL NO. 1

LOCATION 2040 E of WL 3350 N of SL SEC. 28 T. 60 R. 35

CONTRACTOR J. D. Judd & Son

DRILLER L. Schloeman TOOL DR. A. Stineman

Lloyd George W. George

COMMENCED 5/10/1937 4/9/37

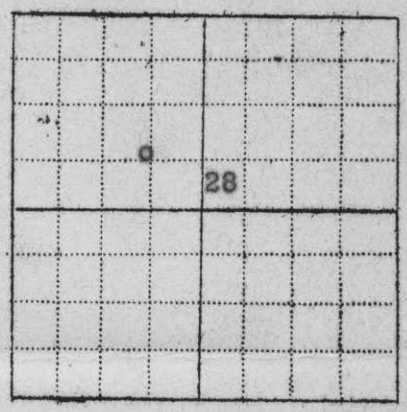
PRODUCTION D. & A. PLOTTED

CASING RECORD

WATER RECORD

SOURCE OF LOG Drillers original

REMARKS



ELEV. 990.4 P.T. (J.R.C.)

TOTAL DEPTH 1434'

CHEM. ANAL. NO.

FORMATION	THICK	DEPTH
Soil & clay	15	15
Mud & little gravel (some water at 25')	10	25
Lime(set 30' of 10")	5	30
Gray shale	4	34
Lime	4	38
Lime shells & shale	8	46
Lime	4	50
Red bed	20	70
Grayish green shale	7	77
Tan lime	7	84
Gray shale & Lime shells	6	90
Dark gray shale	15	105
Gray sandy shale	20	125
Shaley sand (water 3 GPM probably more F.C.G.)	25	150
Gray shale	24	174
Lime	3	177
Gray shale	3	180
Red bed	7	187
Gray shale	5	192
Gray lime	5	197
Gray shale	61	258
Lime	6	264
Gray shale	6	270
Gray lime	14	284
Dark shale	3	287
Lime	1	288
Dark gray shale	9	297
Gray & tan lime	5	302
Gray shale	2	304
Gray lime	4	308
Dark shale	7	315
Gray shale & lime shells	4	319
Dark lime	6	325
Gray shale & lime shells	8	333
Lime	2	335
Green shale	2	337
Lime	8	345
Light shale & lime shells	5	350 - SLM 350
Dark gray shale	28	378
Gray lime	7	385
Dark shale	18	403
Tan lime	5	408
Light shale	6	414
Lime	14	428
Gray shale-lime shells	2	430
Dark gray shale	7	437
Shaly lime	3	440
Gray shale	4	444
Lime	8	452
Gray shale	5	457
Gray lime (WS)	39	496
SWL 105' when drilling at 480. Varied from 105' to 120')		
Dark shale	6	502
Gray lime (BF)	21	523
Black slate	2	525
Lime	2	527
Green shale	5	532

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES - ROLLA, MO.

COUNTY Andrew LOG NUMBER

COMPANY OR OWNER Charles Petr. Co.

FARM W. M. Clark WELL NO. 1

LOCATION SEC. T. R.

CONTRACTOR

DRILLER TOOL DR.

COMMENCED COMPLETED

PRODUCTION PLOTTED

CASING RECORD

WATER RECORD

SOURCE OF LOG

REMARKS

ELEV.

TOTAL DEPTH

CHEM. ANAL. NO.

FORMATION	THICK	DEPTH
Gray shale & Lime shells	3	535
Lime Hertha (SLM @ 544. Red. to 8" at 549) Running 8¼ 3/20/37	12	547
Gray shale & lime shells	4	551
Black shale	2	553
Gray shale	5	558
Sandy lime	2	560
Gray shale	37	597
Shale & lime shells	2	599
Shale	2	601
Sandy lime	4	605
Gray shale	13	618
Green shale	7	625
Gray shale	5	630
Lime	2	632
Light gray shale	3	635
Lime	3	638
Light shale	7	645
Gray sandy shale	12	657
Lime	6	663
Red bed	2	665
Dark gray shale	9	674
Lime	2	676
Gray sand broken	x 6	681
Dark gray shale	11	692
Lime & shale breaks	6	698
Gray shale	5	703
Tan lime	2	705
Gray shale	10	715
Lime	1	716
Light shale	7	723
Lime	2	725
Light shale-Lime shells	8	733
Sandy lime	2	735
Light sandy shale	20	755
Gray shale	28	783
Dark shale, coal and slate	2	785
Dark gray shale	17	802
Lime	2	804
Gray shale	9	813
Lime	4	817
Black shale	4	821
Lime	1	822
Light sandy shale	10	832
Gray shale	6	838
Lime	2	840
Light shale	5	845
Gray shale	15	860
Dark gray shale	8	868
Shaly lime	2	870
Light limy shale	11	881
Light shale	9	890
Dark shale	5	895
Gray shale	16	911
Lime	2	913
Gray shale	2	915
Black slate & coal	5	920

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES - ROLLA, MO.

COUNTY Andrew LOG NUMBER

COMPANY OR OWNER Charles Petr. Co.

FARM W. M. Clark WELL NO. 1

LOCATION SEC. T. R.

CONTRACTOR

DRILLER TOOL DR.

COMMENCED COMPLETED

PRODUCTION PLOTTED

CASING RECORD

WATER RECORD

SOURCE OF LOG

REMARKS

ELEV.

TOTAL DEPTH

CHEM. ANAL. NO.

FORMATION	THICK	DEPTH	FORMATION	THICK	DEPTH
Dark gray shale	8	928	Sand and thin shale breaks	10	1295
Gray sand broken	9	937	Light sand soft	10	1305
Light shale	5	942	Coarse sand	10	1315
Gray limy shale	5	947	Firm sand	6	1321
Bkn sand & shale	14	961	Soft sand	14	1335
Gray shale	4	965	Coarse sand	5	1340
Limy shale(SWL 175 or 200. Little water @ 970-975)	5	970	Sand and some flint	33	1373
Sand & shale	10	980	Sand and some lime	7	1380
Sand (water strong at 985)	15	995	Hard sand	2	1382
Gray sandy shale Water stands @ 328	5	1000	Black slate and sand and some lime Thin layer of coal at 1383	8	1390
Sand, gray SLM 1049 Set 6¼ at 1002	49	1049	Shale and lime Probably dark to black shale	1382	1429 - See letter
Open(few cuttings)	1	1050	St. Louis Ls.	1429	1434
Limy sand(Water as soon as drilling resumed after setting 6¼ Water level 245	8	1058			T.D. 4/9/37
Dark blue shale	7	1065			
Lime	2	1067			
Sand gray	63	1130			
Limy sand	10	1140			
Sand gray	75	1215			
Limy sand	25	1240			
Hard light sand Water level 220	30	1270			
Med. Hard sand	15	1285			

April 10.
1 9 3 7

Mr. John M. Ware
% Burke - Greis Oil Co.
Cosden Bldg.
Tulsa, Okla.

Dear John:

Samples received this morning contain slightly sandy limestone of Mississippian age in the ~~same marked~~ Sample 1425 -1429 feet. Mississippian limestone is also present of course in the samples marked 1429 - 1431 feet and 1431 - 1434 feet.

We have checked these samples and the residues from them and in our opinion your well, stratigraphically, entered the Mississippian section at, or possibly a few feet above the horizon that marked the top of the Mississippian in the Forest City well. The formation in both wells at the top of the Mississippian is the St. Louis.

Sincerely yours,

McQ:McC
cc/

April 8,
1 9 3 7

Mr. John Ware,
Burke-Greis Oil Corp.,
Tulsa, Oklahoma

Dear John:

I have now received samples sets from you, also from Judd, covering the interval in the Clark well at Savannah from 1405 to 1425 feet. Your last sample shows a total depth of 1433 feet, but Judd informs me that the actual depth is about 1424 feet.

At 1380 feet the base of a thick sandstone section was drilled in this well. It was marked by very coarse sand. From 1380 to the present total depth, the samples contain the following:

> Shale, black, hard, slaty; sand, coarse, sub-angular to rounded, which is probably caved from above; shale, greenish-gray, pyritic; sandstone, light-colored, fine-grained with dolomitic cement. Pyrite occurs in the samples, as does siderite, which was observed as dark brown, massive to finely crystalline particles.

In the section from 1380 to the total depth of the well we find no dolomite, limestone, or chert of Mississippian age, and the materials above described are, in our opinion, of Lower Pennsylvanian age.

In the diamond drill hole on the W. F. Davis farm, near Forest City, Holt County, coarse sandstone again marked the base of the thick sandstone section, which was reached at 1557 feet. From that depth to the top of the "Mississippi lime", black shale and fine-grained, argillaceous and calcareous sandstone was encountered. The material from your well and the material from the same interval in the Forest City well are very similar. I am sending to you under separate cover some of the material from the Forest City drill hole so that you will have it for comparison.

Sincerely yours,

McQ P
sent 4/8/37
cc: Frank Greene

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES

County: **Andrew**
Owner: **Charles Petroleum Co. - Fred Clark #1**
Location: **Sec.28, Twp.60, R.35, Savannah, Mo.**
Source: **Well**
Analysis No.: **2433**
Date Analyzed: **4-27-37**
Analyst: **R. T. Rolufs**
Collector: **F. C. Greene**

Total Depth_____ and No._____

CONSTITUENTS: In parts per Million.

Turbidity	**Turbid--Bailer Sample**	
Color	**None**	
Odor	**None**	
Total Suspended Solids	**N D**	
Total Dissolved Solids	**2242.0**	**RV**
Loss on Ignition	**147.0**	
Chloride Radicle (Cl)	**684.9**	**19.31**
Nitrate Radicle (NO_3)	**1.02**	**.02**
Sulphate (SO_4)	**316.0**	**6.57**
Bi-Carbonate Radicle (HCO_3)	**566.0**	**9.28**
Carbonate Radicle (CO_3)	**19.9**	**.66**
Sodium (Na) Potassium (K) as Na	**839.9**	**35.54**
Magnesium (Mg)	**4.4**	**.36**
Iron (Fe)	**.80**	
Manganese (Mn)	**-------**	
Silica (SiO_2)	**9.2**	
Calcium (Ca)	**10.0**	**.50**
Total Hardness	**43.0**	
Carbonate Hardness	**43.0**	
Alkalinity	**464.1**	
Precipitated Iron (Pp't. Fe.)	**N D**	
Temporary Hardness	**26.6**	
Al_2O_3	**.86**	

Remarks:
Bailer Sample from 150 ft.

Copies to: **Chem. Lab.**

F. C. Greene

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES

County: Andrew
Owner: Charles Petroleum Co. Clark well #1
Location: Sec. 28, T.60 N., R.35 W.
Source: well
Analysis No.: 2414 Total Depth_____ and No._____
Date Analyzed: 4-6-37
Analyst: R. T. Rolufs
Collector: F. C. Greene

CONSTITUENTS: In parts per Million.

Turbidity	Turbid - bailer sample	
Color	None	
Odor	Oily	
Total Suspended Solids	N.D.	
Total Dissolved Solids	5236.0	R.V.
Loss on Ignition	97.0	
Chloride Radicle (Cl)	2540.9	71.65
Nitrate Radicle (NO_3)	00	
Sulphate (SO_4)	266.7	5.55
Bi-Carbonate Radicle (HCO_3)	448.7	7.36
Carbonate Radicle (CO_3)	5.8	.19
Sodium (Na) Potassium (K) as Na	1970.9	85.73
Magnesium (Mg)	16.1	1.32
Iron (Fe)	.35	
Manganese (Mn)		
Silica (SiO_2)	15.6	
Calcium (Ca)	45.0	2.25
Total Hardness	178.5	
Carbonate Hardness	178.5	
Alkalinity	367.9	
Precipitated Iron (Pp't. Fe.)	N.D.	
Temporary Hardness	135.1	
Al_2O_3	2.70	

Remarks: Bailer sample from 965 to 995 ft.
Probably represents water from 970-975 ft. indicated on drillers log as "little water" and water @ 985 indicated on drillers log as "strong water".

Copies to: F. C. Greene
John Ware
N. W. Judd

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES

County: **Andrew**
Owner: **Charles Petroleum Co.-Fred Clark #1**
Location: **Sec.28, Twp.60, R.35, Savannah, Mo.**
Source: **Well**
Analysis No.: **2434** Total Depth_____ and No._____
Date Analyzed: **4-7-37**
Analyst: **R. T. Rolufs**
Collector: **F. C. Greene**

CONSTITUENTS: In parts per Million.

Turbidity	**Turbid-Bailer Sample**	
Color	**None**	
Odor	**None**	
Total Suspended Solids	**N.D.**	
Total Dissolved Solids	**4948.0**	**RV**
Loss on Ignition	**108.0**	
Chloride Radicle (Cl)	**2399.5**	**67.67**
Nitrate Radicle (NO_3)	**00**	
Sulphate (SO_4)	**238.5**	**4.96**
Bi-Carbonate Radicle (HCO_3)	**444.8**	**7.29**
Carbonate Radicle (CO_3)	**2.8**	**.09**
Sodium (Na) Potassium (K) as Na	**1835.2**	**79.83**
Magnesium (Mg)	**22.0**	**1.81**
Iron (Fe)	**.18**	
Manganese (Mn)	**-----**	
Silica (SiO_2)	**9.6**	
Calcium (Ca)	**62.8**	**3.13**
Total Hardness	**105.9**	
Carbonate Hardness	**105.9**	
Alkalinity	**364.7**	
Precipitated Iron (Pp't. Fe.)	**N.D.**	
Temporary Hardness	**100.1**	
Al_2O_3	**.54**	

The following results were obtained by G. Carpenter:

Fluorine..... 1.80
Manganese..... .04

Remarks: **Cl..... High**

Copies to: **Chem. Lab.**

F. C. Greene

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES

County: **Andrew**
Owner: **Charles Petroleum Co. - Fred Clark #1**
Location: **Sec.28, Twp.60, R.35**
Source: **Well**
Analysis No.: **2435**
Date Analyzed: **4-27-37**
Analyst: **R. T. Rolufs**
Collector: **F. C. Greene**

Total Depth_____ and No._____

CONSTITUENTS: In parts per Million.

Turbidity	**Turbid-Bailer Sample**	
Color	**None**	
Odor	**Sl. Oily**	
Total Suspended Solids	**N.D.**	
Total Dissolved Solids	**3599.0**	**R.V.**
Loss on Ignition	**146.0**	
Chloride Radicle (Cl)	**1312.4**	**37.01**
Nitrate Radicle (NO_3)	**00**	
Sulphate (SO_4)	**495.9**	**10.31**
Bi-Carbonate Radicle (HCO_3)	**622.4**	**10.21**
Carbonate Radicle (CO_3)	**2.8**	**.09**
Sodium (Na) Potassium (K) as Na	**1317.9**	**57.33**
Magnesium (Mg)	**13.3**	**1.09**
Iron (Fe)	**.18**	
Manganese (Mn)	**------**	
Silica (SiO_2)	**12.4**	
Calcium (Ca)	**35.7**	**1.78**
Total Hardness	**143.8**	
Carbonate Hardness	**143.8**	
Alkalinity	**510.4**	
Precipitated Iron (Pp't. Fe.)	**N.D.**	
Temporary Hardness	**113.5**	
Al_2O_3	**.54**	

The following results were obtained by G. Carpenter:

Fluorine.....	**4.06**
Manganese.....	**.10**

Remarks: **High Cl**

Bailer Sample from 1225 ft.

Copies to:

Chem. Lab.

F. C. Greene

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES

County: Andrew
Owner: Charles Petroleum Co. - Fred Clark #1
Location: Sec.28, Twp.60, R.35 Savannah, Mo.
Source: Well
Analysis No.: 2436 Total Depth _____ and No. _____
Date Analyzed: 4-27-37
Analyst: R. T. Rolufs
Collector: F. C. Greene

CONSTITUENTS: In parts per Million.

Turbidity	Turbid-Bailer Sample	
Color	None	
Odor	None	
Total Suspended Solids	N D	
Total Dissolved Solids	3423.0	RV
Loss on Ignition	126.0	
Chloride Radicle (Cl)	1118.0	31.53
Nitrate Radicle (NO_3)	00	
Sulphate (SO_4)	556.8	11.58
Bi-Carbonate Radicle (HCO_3)	646.9	10.61
Carbonate Radicle (CO_3)	12.8	.43
Sodium (Na) Potassium (K) as Na	1166.4	50.74
Magnesium (Mg)	16.2	1.33
Iron (Fe)	.15	
Manganese (Mn)	------	
Silica (SiO_2)	10.4	
Calcium (Ca)	30.0	1.50
Total Hardness	141.4	
Carbonate Hardness	141.4	
Alkalinity	532.9	
Precipitated Iron (Pp't. Fe.)	N D	
Temporary Hardness	87.7	
Al_2O_3	.59	

Remarks:

Bailer Sample from 1375 ft.

Copies to:

Chem. Lab.

F. C. Greene

Partial Analysis 27-F-29

MISSOURI GEOLOGICAL SURVEY AND WATER RESOURCES

County: **Andrew**
Owner: **Fred Clark #1**
Location: **Sec.28, Twp.60, R.35**
Source: **Well**
Analysis No.: **2465** Total Depth **1433** and No._____
Date Analyzed: **4-26-37**
Analyst: **R. T. Rolufs**
Collector: **F. C. Greene**

CONSTITUENTS: In parts per Million.

Turbidity	**Turbid--Bailer Sample**
Color	**None**
Odor	**Sl. Oily**
Total Suspended Solids	
Total Dissolved Solids	**3419.0**
Loss on Ignition	------
Chloride Radicle (Cl)	**1365.4**
Nitrate Radicle (NO_3)	------
Sulphate (SO_4)	**462.3**
Bi-Carbonate Radicle (HCO_3)	
Carbonate Radicle (CO_3)	
Sodium (Na) Potassium (K) as Na	
Magnesium (Mg)	
Iron (Fe)	
Manganese (Mn)	
Silica (SiO_2)	
Calcium (Ca)	
Total Hardness	
Carbonate Hardness	
Alkalinity	
Precipitated Iron (Pp't. Fe.)	
Temporary Hardness	
Al_2O_3	

Remarks:
Bailer sample from bottom of hole 1433 ft.
Nearly all sludge--could get only about 350 cc water.

Copies to:
Chem. Lab.

F. C. Greene