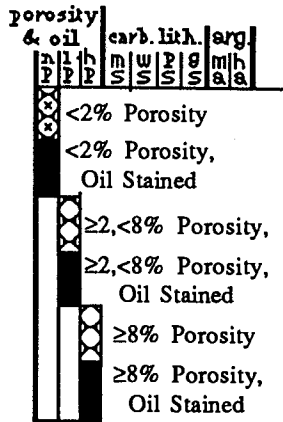
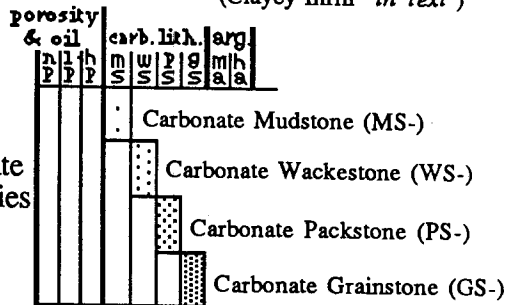


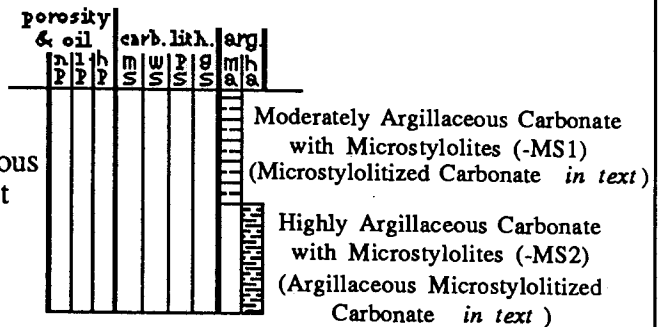
Porosity ranges based on visual estimates during core description



Carbonate Lithologies



Argillaceous Content



| porosity & oil | | | carb. lith. | | | | arg. |
|-------------------|---|---|-------------|---|---|---|------|
| p | l | h | m | w | g | m | a |

Lithologic Description and Comments

LITHOLOGY CLASSIFICATION

After the written description of each stratum, the lithology is classified by an abbreviated classification in parenthesis.

Carbonate Lithologies

- (MS-) Carbonate Mudstone
- (PS-) Carbonate Packstone
- (WS-) Carbonate Wackestone
- (GS-) Carbonate Grainstone
- (DOL-) Dolostone
- (LM-SH-) Limey Shale (Highly argillaceous microstylolitized carbonate *in text*)

Modifiers to Carbonate Lithologies

- (-F) Fossiliferous
 - (-P) Peloidal
 - (-LM) Laminated
 - (-O) Oolitic
 - (-ONC) Oncolitic
 - (-FR) Fractured
 - (-MS1) Microstylolites (less argillaceous) (microstylolitized carbonate *in text*)
 - (-MS2) Microstylolites (more argillaceous) (argillaceous microstylolitized carbonate *in text*)
 - (-B) Autoclastic Brecciation
 - (-RSH) Infilling by Gray-Colored Shale
 - (-OSH) Infilling by Red-Colored Shale
- } Clayey infill
in text

Shales

(SH-) Shale

Modifiers to Shales

- (-Z) Silty
- (-GG) Gray-Green
- (-F) Fossiliferous
- (-DG) Dark Gray
- (-RB) Red-Brown
- (-BL) Black
- (-MC) Contains Microcrystalline-Calcite Nodules

Other Lithologies

- (SS1-) Very-fine grained Sandstone
- (ZS-) Siltstone

25

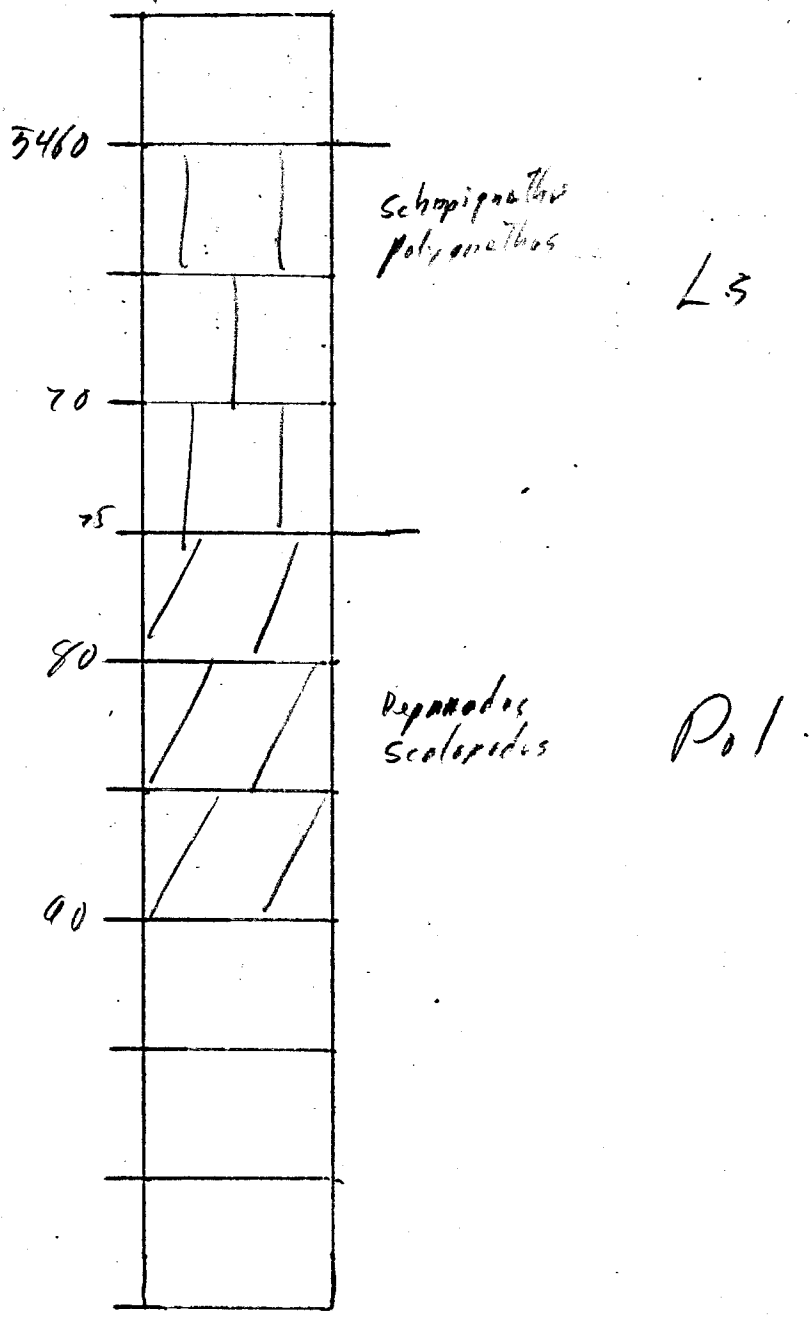
Well No. #1 Farm Guy T. Mercer County Sherman

Company Sinclair Perzing Oil Co

Spot Loc. NE NE NW sec. 28 T. 10 R. 40 W

Elev. 3756 Total Depth 5923

E-log Completion Date 9/19/42



Mercer #1
Sinclair Prairie Oil Co.
NE NE NW Sec 28, T 10S, R 40 W
Sherman County, Kansas

- 4145 - Thin section: Endothyra, algae, ostromocods, Ammover-
tella?, Tetrataxis?, bryozoans, greatly recrystal-
lized, Endothyranella, Apterrinella?, Nodosaria?,
Tolypamina?, Cornuspira?, Biasphaera.
- 4152 - All recrystallized and fossils all but erased.
- 4153 - Biasphaera, primitive staffelloid, Eostaffella?, Globo-
valvulina, Apterrinella, Endothyra, Tetrataxis,
echinoid spine.
- 4720 - Fossils largely recrystallized. One strange-looking
(probably replaced Lower Pennsylvanian staffelloid).
- 4721 - Recrystallized, oil stain.
- 4722 - Same as above.
- 4723 - All recrystallized, dolomitized?, oil stained. Beau-
tiful crystal structure.
- 4724 - Further progress in recrystallization--beautiful fabrics,
oil stained.
- 4725 - Same as above.
- 4726 - Same as above, a little weaker recrystallization.
- 4727 - Less recrystallization than above, some traces of fos-
sils ubiquitous dolomite rhombs.
- 4728 - Algae-encrusted fossil pieces, bryozoa, Tetrataxis,
Climmacamina, Biasphaera, primitive fusulinid, gas-
tropods, some dolomitization.
- 4729 - Rapid change in lithology, very dense and fine-grained.
Biasphaera, "ghosts" of fossils--recrystallized
(only one slide done).
- 4730 - Schubertella?, Apterrinella, Wedekindellina, Eoschubert-
ella, Bradyina, algae, ostromocods, gastropods, brach-
iopods, bryozoans, crinoids, strange fossils,
two of them. Penn. Missourian.
- 5411 - [Core Missing] Fragmental limestone, larger size, some
oolites.
- 5415 - Large pieces, fragmental limestone, very few oolites,
bryozoans, strange fossil?

5417 - Same as above, larger fragments, only recognizable fossil bryozoans.

5418 - Very large fragments, much interstitial calcite, crinoid ossicles, gastropods, bryozoans, few oolites, algae.

[Gap here]

5460 - Abrupt change in lithology, oolitic, fragmental limestone. Ostracods, pretty cruddy looking. ?L. Miss. endothyroids.

5461 - Miss. endothyroids, oolite. Large, primitive endothyroid, 1 1/2 volutions, very large proloculus.

5464 - Granuliferella granulosa. Kinderhook-Osage.

5467 - Granuliferella, poorly preserved, oolitic, fragmental limestone, ostracods, traces of planispiral foram?, some recrystallization, Endothyra with the large proloculus and 1 1/2 volution (as above 5461).

[Core missing]

5520 - Large fragments, crinoid remains, bryozoans.

5521 - Same as above.

5523 - Same as above.

5589 - Dolomite, fine-medium-grained.

5590 - Same as above.

[5400 - 5580 ft Goebel, 1966, says is Kinderhookian.]

SINCLAIR NO 1 MERCER in sec. 23, T 10 S., R. 40 W. SHERMAN COUNTY

- 260 to 270 Gravel - granitic.
- 450 Sh soft, grey, fissile, pin pt sparkle
- 40 Same with trace of limestone
- 670 Sh. soft chalk studded
- 700 Sh black prob with fish scales
- 80 Sh similar with vermilion cinnabar spots-greyish brown
- 920 Sh dark grey
- 1500 Same but chalk speckled TOP FT. HAYS @ 1500
- 60 Chalk - lumpy white lumpy
- 90 Traces of sandstone COBELL SAND
- 1620 ~~lx#~~) Sh dark grey soft
- 1820 Same with many chalk spots TOP GREENHORN @ 1820
- 50 ls. small amounts only TOP CRANEROS @ 1850
- 1930 Sh. very dark grey not chalky TOP DAKOTA @ 1930
- 2020 Ss. fine clusters Rather impure, pyrite etc. Fine texture
- 40 Same but very ferruginous
- 60 Same but rather pure qtz rock TOP KIOVA @ 2060
- 2100 Ss. Shale grey rather dark TOP CHEYENNE @ 2100
- 80 Ss. with many iron concretions & impurities Red & green
- 90 Same but strong ferruginous
- 2260 Ss. Very impure - pyrite etc.
- 90 Same but coarser and uneven grained
- 2330 Ss. but finer and rather regular type TOP MORRISON @ 2330
- 60 Clay - lumpy, waxy- sand studded- wh. tan & pale green
- 70 Also pale red
- 2420 White clay not sandy
- 80 Clay pale cream, tan & greenish mauve
- 90 Pink gypsum and blue chalcedony TOP SUNDANCE @ 2490
- 2570 Dull red clay and dull brownish red siltstone
- 80 Ss - fine rounded amber grains in calc cement TOP CIMARRON
- 2620 Red rock - brick red clay with reduction spots 2580
- 60 Silty red clay TOP DAY CREEK @ 2660
- 90 Gypsum - white scleritic
- 2900 Red clay
- 15 Red siltstone TOP BLAINE @ 2915
- 45 Gypsum - white
- 80 Sandstone - white Uneven grains med & large
- 3000 Red clay
- 50 Amber Sandstone clusters fine TOP STONE CORRAL 3100
- 60 Gypsum white top and pink lower down
- 3200 Red clay
- 3340 Red siltstone & v. f. Ss. white at top - red lower down
- 50 gypsum
- 3410 v. f. Ss
- 40 dk. & lt. red clay The dark color is unusual
- 3510 Red siltstone & some red clay
- 40 waxy grey clay (looks bentonitic)
- 60 Red siltstone
- 70 v. f. white Ss WHITE
- 3630 Red siltstone
- 50 same with much red clay TOP HERRINGTON @ 3650
- 70 Dol. dull white opq. Pin Pt decrep.
- 90 gypsum - white
- 3750 red siltstone & red clay Top Winfield or Ft Riley
- 90 DOL. white, chunky
- 3830 red rock with grey clay and some gypsum TOP LS. 3830
- 70 LIMEST. pale brown lithogr. slight grainy
- 3910 Same with gran brown dol.
- 4010 red rock , grey shale, some ls. alternating

3100 Red Clay

Complete log for Chis
Partial log for Tramm.

CHASE

| | | |
|-------------------------|---------|--|
| First show oil | 3780-85 | In slightly porous dolomite. Oil odor & stain |
| | 3865-80 | Faint oil stain in tan, fine soft dolomite |
| 7/15 Twist off 4135 | | Circulating oil |
| Recovered bit 7/24 Core | 4145-63 | Rec. 3' hard, med. xln. dolomite-faint oil stain |
| | 4175-80 | Fair oil saturation, porous, soft dolomite. |

HARTVILLE

| | | |
|-------|-------------|--|
| | 4290-4305 | Porous soft dolomite-questionable oil stain |
| | 4688-4694 | " colitic limestone - no show |
| | 4716 - 4718 | Soft sucrose dolomite - trace oil stain |
| Cored | 4718-4730 | Rec. 9'6". 1' gray shale; 7'6" white lime, slightly dolomitic, non-porous lime, no show; 1' gray shale. |
| | 4745-4777 | Gray & white dolomitic, medium grained sand-slightly porous with traces of asphaltic residue in basal portion. |
| | 5142-5146 | Gray, well bonded medium sandstone. |
| | 5199-5202 | Glaucanitic, fine, tight sand - no show |

CHEROKEE

| | | |
|-------|-----------|--|
| Cored | 5202-5209 | Rec. 3'10"; 8" fine, tight, calcareous glauc. sd. 1'8" gray, med. xln. very crinoidal fossilif. ls. 1'6" platy green shale |
| Cored | 5209-5226 | Rec. 11'6"; 6' Pale green tight limy sd, 4' gray silty shale with irreg. sd. laminae. 1 1/2' black fissile shale |
| | 5232-5238 | Greenish, glauconitic fine tight sand |

MISSISSIPPIAN

| | | |
|--|-----------|--|
| | 5288-5296 | Brown & gray soft sucrose porous dolomite. |
|--|-----------|--|

Dense Mississippi lime 5415-30. Less dense and somewhat chalky to 5574. Soft spot at 5434 and 5460, circulating each 3 hrs., no show. Cored 5460 to 5478 - Rec. 9' dense dolomitic lime - no oil show. Coring and drilling rate indicated lime to have 3" to 6" soft streaks. Cuttings corrected for log show dry asphaltic oil stain from 5470 to 5490. Soft spot 5500 to 5505 circ. 3 1/2 hrs. no show. Cored 5505 to 5523 - Rec. 6' of dense dolomitic lime - no show. Drilled hard calcareous sand 5574 to 5576 taking 2 hrs. per foot. Circ. 3 hrs. Top of Arbuckle lime 5576. Soft to 5582, circ. 4 1/2 hrs., no show. Cored 5586 to 5599, Rec. 100% gray-brown medium coarse granular porous dolomite with irregular dark gray spots of dolomitic lime, fossiliferous - no oil. This phase continued to 5630. Soft 5611, circ. 6 hrs. some oil show which may be from caving - circ. oil.

Cored 5631 to 5649. Rec. 15' of core, Grey granular slightly porous dolomitic lime, streaks of dense dark gray mottled dolomitic lime - no shows. This character continued to 5750. Hard streak 5674 and 5683 - 1 1/2 hrs. per foot, cuttings showed much loose sand which seemed to increase downward.

Soft 5785 to 5789. Circ. 12 hrs., some oil stain. Cored 5789 to 5807. Rec. 9'. Gray coarsely xln. glauconitic porous dolomite with pyrite layers. Interbedded dark gray highly glauconitic lime, chalky when rubbed. This phase continued to base of Arbuckle with an increase of glauconite and sand. Hard 5862 to 5869, average 2 hrs. per foot. 5900, 1 hr. per ft.

TOP OF REAGAN sand 5908. A hard quartz cemented sand that drilled at rate of about 1 foot per 5 hours.

Drilled 9" hole to 5910. Top of Reagan sand 5908.

Cored 7" hole to 5911. Rec. 8" white sand - 1/4" ring oil stain from oil in sd. below?

Cored 7" " " 5912. " 8" " " mottled oil stain from oil in sd. below? This might be top of oil sand.

Cored 6-1/4" hole 5912 to 5914. Rec. 22" sand. Top 4" saturated oil; 16" white slightly oil stained; 2" white, streak 1/2" oil saturated.

Mercer #1 - P. 3.

Cored 6-1/4" hole 5914 to 5923. Rec. 8'9" sand. Top 3" oil saturated; 3' white sand faint oil stain, no odor; 2' white sand slight dry oil stain, no odor; 2 1/2' bluish banded white sand faint dry oil stain, no odor; 1' bluish banded white sand faint dry oil stain, no odor.

Bottom of hole, Drillers measurement 5923'.

Reamed 6-1/4" hole from 5912 to 23 to 6-3/4". Lost Geophone and sinker bar, which went into 6-3/4" rat hole. Reamed hole to 9" from 5910 to 5913'6" leaving 9'6" fish in rat hole. Failed to recover with basket.

Set 5891' of 5" combination casing 28# J-55 on top and bottom and 28# H-40 between, and cemented with 200 sacks of cement.

S.I.M. after drilling out plug 5903 to top of fish, making 10'6" correction, and top of Reagan sand 5897.6.

Casing 5", run 5891.