

KIM B. SHOEMAKER

CONSULTING GEOLOGIST

316-884-9709 * WICHITA, KS

GEOLOGIST'S REPORT

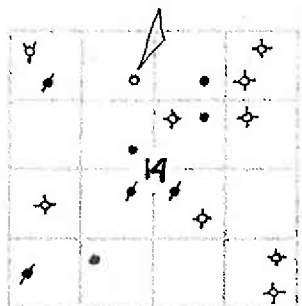
DRILLING TIME AND SAMPLE LOG

COMPANY L. D. DRILLING, INC.
 LEASE * 2 DAVIS RANCH
 FIELD SAUNDRA
 LOCATION 990' FNL & 2310' FWL
 SEC 14 TWP 21s RGE 12w
 COUNTY STAFFORD STATE KANSAS
 CONTRACTOR L. D. DRILLING, INC.
 SPUD 9-2-16 COMP 9-10-16
 RTD 3685 LTD 3681
 MUD UP 2793 TYPE MUD CHEMICAL

ELEVATIONS
 KB 1831
 OF _____
 GI 1826
 Measurements Are All From 1831 KB
 CASING
 SURFACE 8 5/8" @ 324'
 PRODUCTION 5 1/2" @
 ELECTRICAL SURVEYS
 DUAL IND., DENS-N., MICRO

SAMPLES SAVED FROM 2900 TO 3685
 DRILLING TIME KEPT FROM 2800 TO 3685
 SAMPLES EXAMINED FROM 2900 TO 3685
 GEOLOGICAL SUPERVISION FROM 3100 TO 3685
 GEOLOGIST ON WELL KIM B. SHOEMAKER

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	612+ 1219	618+ 1213
HEEBNER	3075- 1244	3080- 1249
BROWN LIME	3212- 1381	3214- 1383
LANSING	3225- 1394	3228- 1397
B/KC	3446- 1615	3446- 1615
VIOLA	3476- 1645	3476- 1645
SIMPSON	3492- 1661	3498- 1667
ARBUCKLE	3552- 1721	3554- 1723



REMARKS
 9-2-16 SPUD
 9-3 @ 446'
 9-4 @ 1919'
 9-5 @ 2493'
 9-6 @ 3280'
 9-7 @ 3415'
 9-8 @ 3500'
 9-9 @ 3583'
 9-10 @ 3634'

API: 15-185-23964

LEGEND

- Dolomite
- Chert
- Oil/Lime
- Limestone
- Carb. sh.
- Shale
- Sandstone
- Salt
- Anhydrite

DRILLING TIME IN MINUTES
 PER FOOT

Note of Penetration Increments

0" 10" 20" 30"

DEPTH
 600

650

2800

ANHYDRITE 618+1213

LITHOLOGY

REMARKS

MS-56
MS-57
MS-1010
CNC 7800

Samples are logged

Sh. 116-102

Sh. 116-102

Sh. 116

ls. 116-102

ls. 116-102

Sh. 116

ls. 116-102

49

ls. 116-102

ls. 116-102

ls. 116-102

ls. 116-102

ls. 116-102

ls. 116-102

ls. 116-102

Sh. 116

ls. 116-102

HEERWER 3080-1249
Sh. 116-102

Sh. 116

ls. 116-102

ls. 116-102

Sh. 116

Sh. 116

2900

3000

3100

TOBACCO
TOBACCO

3200

3300

3400

BROWN LIME 3214-1583

LANSING 3228-1397

DST (3) 3420-3500

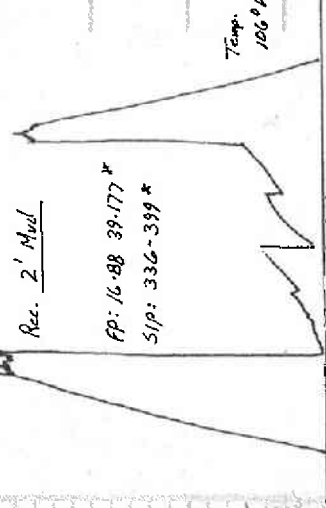
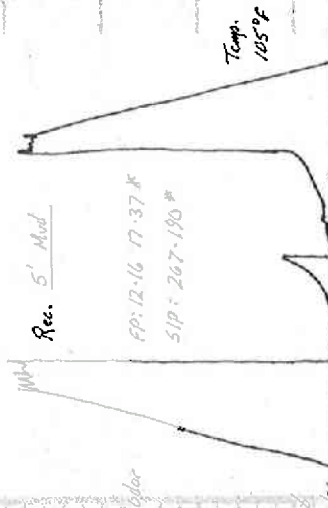
B/KC 3446-1615

DST (1)

DST (2)

DST (3)

V B/KC 100



Sh. Blue-Gy. silt

Sh. Gy. silty

Sh. Gy. silty

Ls. bl. silty

Silty

Ls. bl. silty, P. V. s. p. ALBISH. SH. 55R. Red. Rec. V. F. 100'

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Ls. w. Gy. silty

Ls. bl. silty, P. V. s. p. ALBISH. SH. 55R. Red. Rec. V. F. 100'

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Sh. Gy. Ls. Foss. V. S. I. Chl.

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Ls. w. silty sh. silty

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Ls. w. silty sh. silty

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Sh. Gy.

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Sh. silty sh.

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Ls. silty sh. silty

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Sh. Gy.

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

Sh. Gy.

Ls. Toward S. in transition with clayey. Clayey. Red. Rec. V. F. 100'

A. O. Y. C. N.

50. Blk
VIOLA 3476-1645
A. wt. Fresh Cut. w/ Blk. edge. Silt.
A. wt. Blk. Sil. Tip. F. P. w/ Blk.
Blk. Sil. EFF. T. CA. No. Glass. Wooder

SIMPSON 3198-1667
Sh. Gal. Pigeon. Waxy
Sh. Hava. w. G. Tip
Sh. Mazon. Ty.

ARRUCKLE 3554-1723
Sh. Yellow. G. Tip
Dol. Blk. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.

Dol. Blk. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.
Dol. Blk. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.
Dol. Blk. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.

Dol. Blk. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.
Dol. Blk. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.

Dol. Blk. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.
Dol. Blk. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.

Dol. Blk. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.
Dol. Blk. Fresh. Suc. P. V. b.
Blk. Blk. Sil. Fresh. Suc. P. V. b.

3500

DST (7)
NIS: 5
WT: 91
WL: 18.8
CNG: 18,400

DST (4)
NIS: 68
WT: 90
WL: 13.2
CNG: 19,500

DST (6)
NIS: 51
WT: 90
WL: 15.2
CNG: 20,000

DST (5)
NIS: 51
WT: 90
WL: 15.2
CNG: 20,000

DST (6)
NIS: 51
WT: 90
WL: 15.2
CNG: 20,000

DST (7)
NIS: 51
WT: 90
WL: 15.2
CNG: 20,000

3600

3500

3600

3700

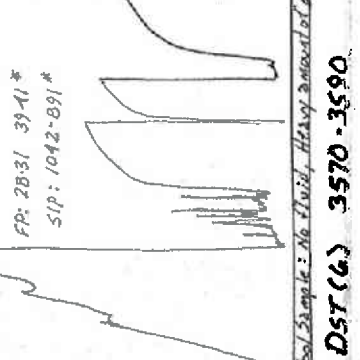
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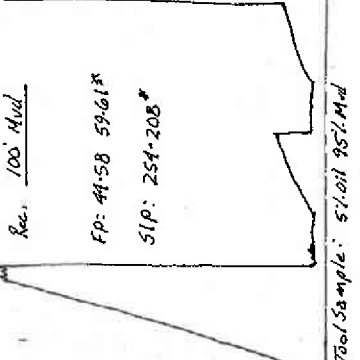
DST (4) 3560-3583
Tool slid, Packers-failed
MISS-RUN

DST (5) 3568-3583
1st OPEN: Surface Blow, plugging
2nd OPEN: No Blow
30' 45" 45'-60'
Rec. 15' Mud
FP: 2831 3941*
SLP: 1042-891*



DST (6) 3570-3590
Tool Slid, Packers-failed
MISS-RUN

DST (7) 3485-3590
1st OPEN: Blow built to 1/2"
2nd OPEN: No Blow
30' 45" 30'-45'
Rec. 100' Mud
FP: 41-58 59-61*
SLP: 254-208*



Tool Sample: 5' oil 95' Mud

3700

3700

3700

3700

3700

3700

3700