

# KIM B. SHOEMAKER

CONSULTING GEOLOGIST

316-684-9709 \* WICHITA, KS

## GEOLOGIST'S REPORT

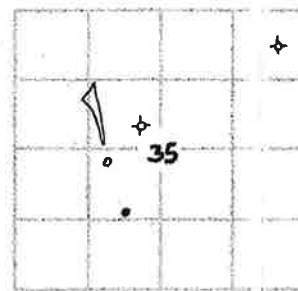
DRILLING TIME AND SAMPLE LOG

COMPANY L. D. DRILLING, INC.  
 LEASE #2 Nuss  
 FIELD ROSE GARDEN NORTHWEST  
 LOCATION 2432' ESL & 1649' FWL  
 SEC 35 T13P 13s RGE 32W  
 COUNTY LOGAN STATE KANSAS  
 CONTRACTOR L. D. DRILLING, INC.  
 SPUD 9-11-18 COMP 9-22-18  
 RTD 4710 LTD 4711  
 MUD UP 3471 TYPE MUD CHEMICAL

ELEVATIONS  
 KB 2901  
 DF \_\_\_\_\_  
 GL 2896  
 Measurements Are All From 2901 KB  
 CASING  
 SURFACE 8 5/8" @ 17'  
 PRODUCTION 5 1/2" @  
 ELECTRICAL SURVEYS  
 DUAL IND., DENS-N., MICRO

SAMPLES SAVED FROM 3500 TO 4710  
 DRILLING TIME KEPT FROM 3400 TO 4710  
 SAMPLES EXAMINED FROM 3500 TO 4710  
 GEOLOGICAL SUPERVISION FROM 3700 TO 4710  
 GEOLOGIST ON WELL KIM B. SHOEMAKER

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	2384 + 517	2387 + 519
B/ANK.	2408 + 493	2411 + 490
STOTLER	3531 - 630	3532 - 631
HEEBNER	3881 - 980	3880 - 979
LANSING	3920 - 1019	3922 - 1021
STARK	4168 - 1267	4169 - 1268
MARMATON	4269 - 1368	4268 - 1367
FORT SCOT	4421 - 1520	4419 - 1518
CHEROKEE	4448 - 1547	4446 - 1545
MISSISSIPPI	4560 - 1659	4559 - 1658
MISS. SPERGEN	4686 - 1785	4686 - 1785



APR: 15-108-21564

REMARKS  
 9-11-18 SPUD  
 9-12 @ 250'  
 9-13 @ 1760'  
 9-14 @ 2795'  
 9-15 @ 3242'  
 9-16 @ 3938'  
 9-17 @ 4053'  
 9-18 @ 4255'  
 9-19 @ 4380'  
 9-20 @ 4505'  
 9-21 @ 4658'  
 9-22 @ 4710'

### LEGEND

- Dolomite
- Chert
- Coquina
- Limestone
- Carb sh
- Shale
- Sandstone
- Salt
- Anhydrite

DRILLING TIME IN MINUTES PER FOOT  
 Rate of Penetration increases

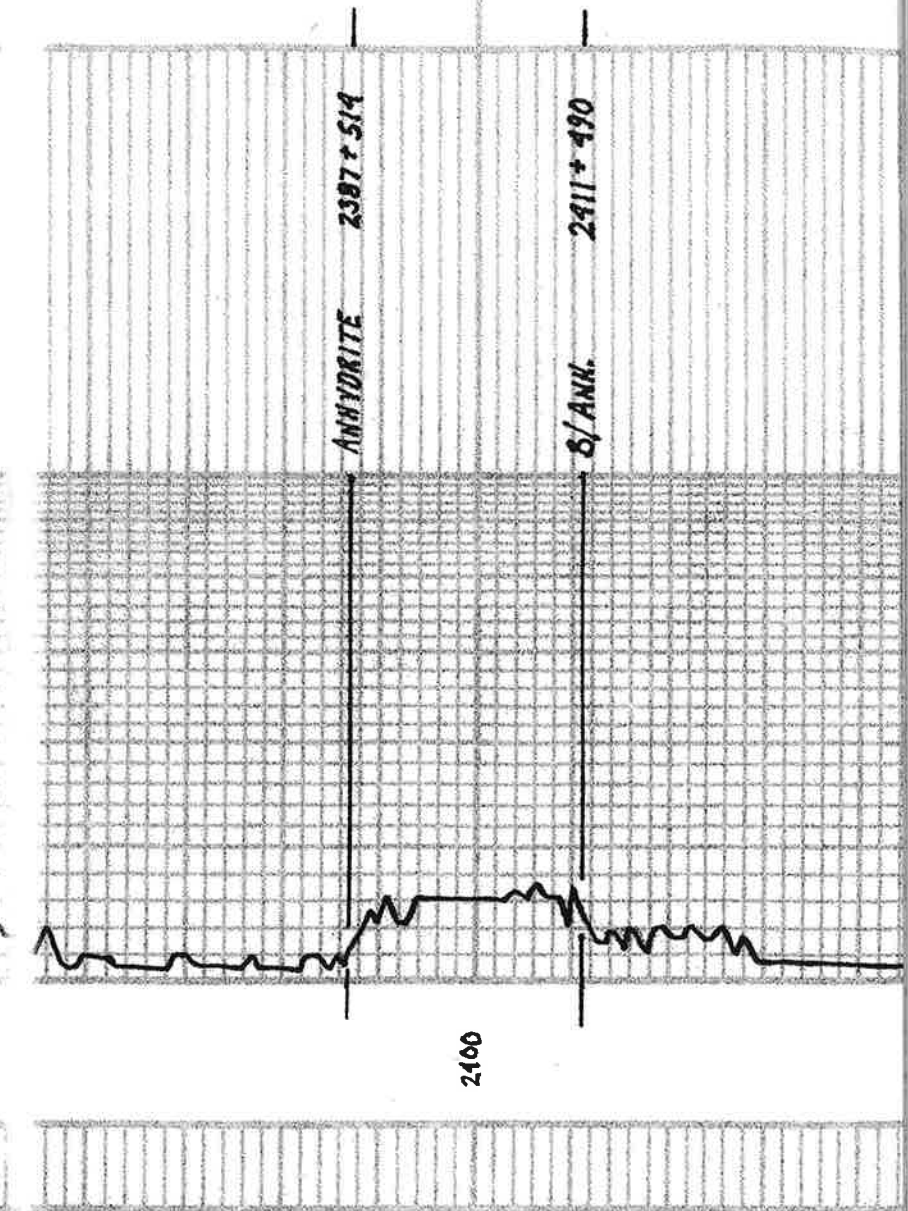


DEPTH  
 2350

LITHOLOGY

REMARKS

SAMPLE DESCRIPTIONS



2450

3400

3500

3600

Samples are logged

ls. T. l. V. St. Foss. w/ Dr. Br. S. H. G. T. P. D. M. Under

Sh. Gy. L. Gy.

**STOTLER 3532-631**

ls. L. Br. V. St. Foss.

ls. Gy. Foss. w/ Dr. Gy. Foss.

ls. L. Gy. V. St. Foss.

ls. Gy. V. St. Foss.

Sh. L. Gy. Silty-Sdy.

ls. W. Foss. Galentic

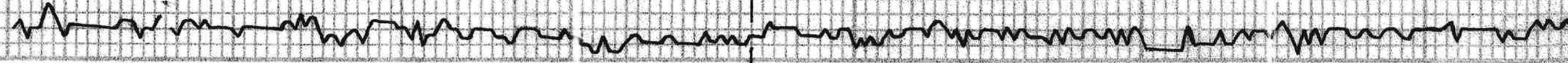
Sh. L. Gy. Silty

ls. T. Foss. St. Foss.

ls. Gy. St. Foss.

Sh. Gy.

ls. T. Foss. Galentic



ls. G. Foss.

Sh. DEg.

ls. To wt. Foss. Sil.A

Sh. Lfg. Sdy.

ls. Lf. & St. Foss.

ls. Dol. ls. V. Ex. In. Sca.

Δ Tr. g.

ls. Lfg. V. St. Foss.

ls. wt. Foss.

Sh. DEg.

ls. G. V. St. Foss.

Sh. G. Lfg.

ls. G. Sil. G. V. St. Foss. Sil. A.

Sh. Lfg.

ls. wt. Foss. Calcitic

Sh. Rd.

ls. To wt. St. Foss. Sil. chly.

Sh. Lfg.

ls. wt. St. Foss. chly.

ls. wt. V. St. Foss. V. chly.

Sh. Rd.

ls. To wt. Foss. Calcitic

HEERNER  
SH. DE G.

3880-979

ls. To wt. Foss.

Sh. Lfg.

ls. To wt. V. St. Foss. V. Sil. Calcitic

Sh. Rd.

LANSING 3922-1021

ls. To wt. Sil. A

Δ Tr. g.

ls. To wt. V. St. chly.

ls. To wt. St. Foss. Sil. A. Sil. V. g.  
M. St. Sil. Sil. Tr. Foss. Double Flour. No. 1000  
(3950.30)

Sh. DEg.

Sh. DEG. - 21

ls. wt. St. Foss. Sil. A

ls. wt. chly.

Sh. Rd.

ls. wt. Lfg. St. Foss. Sil. A

ls. wt. chly. ls. wt. V. St. Foss. Calcitic Sil. A

Sh. DE G.

3700

3800

3900

4000

DST  
212

PIPE STR. Bd 383.83  
Slip 370.36  
53 Long.

DST (1) 3912-3950

1st DEN. Bottom bucket 3 min.

2nd DEN. " " 4 "

30.45-45-60

AB: None

BB: "

Rec. 18' MW (20' w/ 30' w/)

189' SHW (20' w/ 10' w/)

1638' VSWW (90' w/ 17' w/)

63' " (97' w/ 37' w/)

TR: 1908'

M: 7

RW: 150720'

R: 815 @ 721' f

Calc: 520,000

PP: 51.915 418.739 \*

SIP: 1022-1028 \*

Temp: 121° F



V65 53 WT 90

V65 72 CARL 7200

Sh. G.

Alky. ls. Ltg. W. VSi. Foss. Si. A. Calcitic

Sh. G.

ls. Foss. VSi. Foss. Si. A. Calcitic

ls. Ltg. W. VSi. Foss. VSi. Chlly.

ls. W. VSi. Foss. Chlly.

ls. Ltg. vsi. Calcitic

ls. Ltg. F. Si. A

**MUNCIE CREEK 4087-4186**

Sh. Calc. ls. B.G. VSi. Foss.

Sh. Ltg. G.

ls. W. Ltg. VSi. Foss. Si. A

ls. G. Si. Foss. Si. A

Sh. Ltg.

ls. B.G. VSi. Foss.

A. G.

ls. W. Ltg. VSi. Foss. Si. Chlly.

ls. F. Foss. Calcitic Si. A

Sh. Ltg. - B.

ls. T. G. Si. Foss. Foss. B. G. VSi. Foss. Sh. Calc. VSi. Foss. Shell Foss. M. G. (4170)

ls. T. G. VSi. Foss. VSi. A

**STARK 4169-4268**

Sh. Calc. ls. DE. G. VSi. Foss.

ls. T. G. Foss. Si. Foss. Calcitic. F. P. G. L. B. Sh. - Sh. Si. VSi. Foss. F. Foss. M. G. (4170)

ls. W. Si. Foss. Si. Chlly.

**HENSHUCKNEY 4293-4302**

ls. B.G. Si. Foss. Si. A

Sh. B.G. Calc.

ls. B.G. VSi. Foss.

Sh. Ltg.

ls. T. G. VSi. Foss.

**B/KC 4230-4329**

Sh. Ltg.

ls. B. Dn. Si. Calcitic

ls. B. DE. B. VSi. Foss.

Sh. R. T. G. B. Sly. Silty.

**MARMATON 4248-4367**

ls. T. B. G. Si. Foss. Calcitic. A

Sh. B.G.

Sh. Calc. Silty

ls. T. B. G. Si. Foss. Foss.

ls. Ltg. Si. Chlly.

Sh. G.

ls. W. VSi. Foss. Si. A

Sh. Blue-G.

VIS: 67  
WT: 92  
WL: 8.8  
CAL: 4500



4100

4200

4300

VIS: 77  
WT: 94  
WL: 10.4  
CAL: 5000



**DST (2) 4137-4200**

1st OPEN: Blow drill to 6" BB: None  
2nd OPEN: " " " " BB: "

30-45-45-60

Rec: 68' 6.1.P. Grav. 35@40°F

20' Circul

98' 11.4 (207.4 @ 30'L.A)

6.3' 11.4 (70.7 @ 30'L.A)

TF: 131'

PH: 7

RM: 2 @ 74°F

" : 116 @ 121°F

CAL: 36000

FP: 14.35 39.64 K

SIP: 1181.1159\*

Temp.

121°F



**DST (3) 4324-4380**

1st OPEN: Bottom bucket 6 1/2 min. BB: None  
2nd OPEN: " " " " BB: 1 1/4"

30-45-45-60

Rec: 68' 6.1.P.

5' Circul

6.3' 15.06 C.W. (276.1 @ 107.1) 10.50

126' 50.66 C.W. (287.6 @ 107.1) 10.50

6.3' 50.66 C.W. (287.6 @ 107.1) 10.50

50.2' 50.66 C.W. (570.1 @ 107.1) 10.50

TF: 950

FP: 33.244 240.1443\*

SIP: 1137.005\*

Temp.

107°F



45. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2  
 46. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2  
 47. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2

**PAWNEE 4363-4462**  
 50' Dwg.

45. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2  
 46. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2  
 47. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2

45. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2  
 46. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2

**MYRIK STATION 4404-4503**  
 45' Dwg.

45. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2  
 46. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2

**FORTSCOTT 4419-4518**  
 45' Dwg.

45. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2  
 46. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2

**CHEROKEE 4446-4545**  
 50' Dwg.

45. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2  
 46. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2

**JOHNSON 4492-4591**  
 50' Dwg.

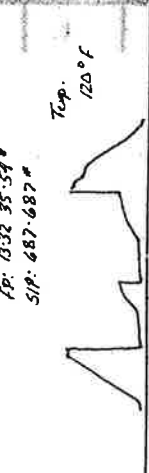
45. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2  
 46. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2

**MISSISSIPPI 4559-4658**  
 50' Dwg.

45. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2  
 46. Tan Ltg. cool. Sil. Foss. Sil. A. P. V. 1/2

**DST (4) 4392-4463**  
 1' OPEN: Blow drill to 10.7"  
 2' OPEN: Bottom bucket 22.5 min.  
 30.45-45-60

Rec. 338 6.1.2 26.7 travel 60° F  
 10' Core 0.2  
 30' HOLE (20% 60% M)  
 63' HOLE (20% 60% M)  
 7F: 103'



**DST (5) 4466-4531**  
 1' OPEN: Blow drill to Bottom bucket 14 min. 08.1"  
 2' OPEN: " " " " 14 " 20.14"

30.45-45-60  
 Rec. 572 6.1.2 28.5 travel 60° F  
 25' Core 0.2  
 63' HOLE (20% 60% M)  
 63' HOLE (20% 60% M)  
 63' HOLE (20% 60% M)  
 7F: 214'



VIS: 57  
 WT: 9.6  
 W: 10.4  
 CAL: 5400

4400

4500

4600

15. To G. cool. Sdy. Hd. to G. RL 504 PA.

16. st. cool. Sdy.

15. To RL 1081 A. Si. Calcitic

MISS. SPERGEN 406-1785

16. To L. G. Y. En. In. S. v.

15. To B. G. cool. Si. chily

15. L. G. B. cool. w/ B. G. cool.

4700

⊙

RTD 4710-1809

