

# KIM B. SHOEMAKER

CONSULTING GEOLOGIST

316-684-9709 \* WICHITA, KS

## GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY L. D. DRILLING, INC.

LEASE # 1-20 LUTERS UNIT

FIELD SMOKE HILL

LOCATION 2408' FNL & 499' FEL

SEC 20 TWP 15s RGE 23w

COUNTY TREGO STATE KANSAS

CONTRACTOR L. D. DRILLING, INC.

SPUD 11-23-15 COMP 12-3-15

RTD 4421 LTD 4422

MUD UP 3407 TYPE MUD CHEMICAL

### ELEVATIONS

KB 2340

DF \_\_\_\_\_

GL 2335

Measurements Are All From 2340 KB

### CASING

SURFACE 8 5/8" @ 305'

PRODUCTION 5 1/2" @

### ELECTRICAL SURVEYS

DUAL IND., DEN.-N., Micro

SAMPLES SAVED FROM \_\_\_\_\_ 3500 TO 4421

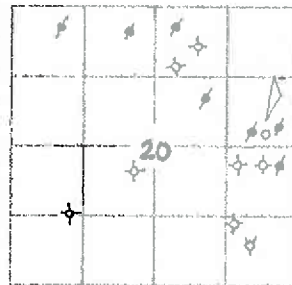
DRILLING TIME KEPT FROM \_\_\_\_\_ 3400 TO 4421

SAMPLES EXAMINED FROM \_\_\_\_\_ 3500 TO 4421

GEOLOGICAL SUPERVISION FROM \_\_\_\_\_ 3600 TO 4421

GEOLOGIST ON WELL KIM B. SHOEMAKER

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	1746+594	1749+591
B/ANN.	1784+556	1787+553
HEEBNER	3705-1365	3703-1363
LANGING	3742-1402	3742-1402
B/KC	4012-1672	4016-1676
PAWNEE	4121-1781	4121-1781
FORT SCOT	4217-1877	4216-1876
CHEROKEE	4238-1898	4240-1900
MISSISSIPPI 'U'	4296-1956	4296-1956
MISS. DOB.	4301-1961	4302-1962



### REMARKS

11-23-15 SPUD  
 11-24 @ 308'  
 11-25 @ 1374'  
 11-26 @ 2170'  
 11-27 @ 2845'  
 11-28 @ 3550'  
 11-29 @ 3795'  
 11-30 @ 4125'  
 12-1 @ 4307'  
 12-2 @ 4314'  
 12-3 @ 4421'

API: 15-195-2300

### LEGEND

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

SHOED1-11

DRILLING TIME IN MINUTES  
 PER FOOT  
 Rate of Penetration increases



LITHOLOGY

SAMPLE DESCRIPTIONS

REMARKS

ANHYDRITE 1749+594

B/ANN. 1787+553

1800

Mod T @ 3374

Vis: 30

WT: 10.0

Core: 91,000

TOPEKA 3490-7100

3400

3500

3600

Samples are tagged

Sh. clay

ls. w/ fine sh. fossils

ls. w/ sh. fossils

ls. w/ cherty

ls. w/ sh. fossils - calcitic

ls. w/ sh. fossils - calcitic

ls. w/ sh. fossils - calcitic

sh. clay

ls. w/ sh. fossils - calcitic

ls. w/ sh. fossils

ls. w/ sh. fossils - calcitic

sh. clay

ls. w/ sh. fossils

sh. clay

ls. w/ sh. fossils

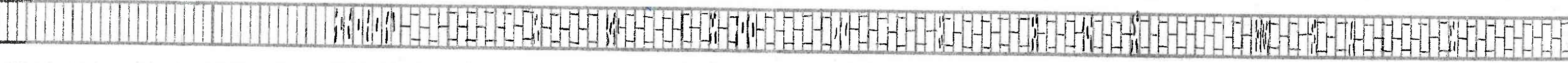
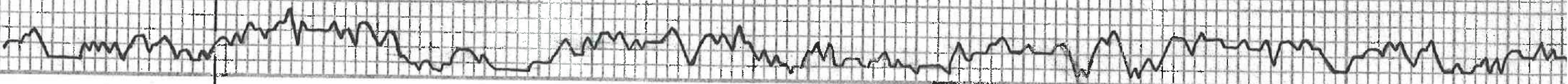
ls. w/ sh. fossils

ls. w/ cherty

sh. clay

ls. w/ sh. fossils - calcitic

ls. w/ sh. fossils



3700

3800

3900

4000

ls. Blk. 1/8 x 1/8 Sil. Foss. Sil. Chalk

HEEBNER 3703-1363

Sh. Blk. 2/8 x 1/8

ls. Tan Sil. Foss. Calcitic

Sh. Silty G. L.

ls. w/ Sil. Foss. Sil. A

ls. Tan. Foss. Sil. A

ls. w/ Chalk

Sh. G. L.

LANSTING 3712-M02

ls. Tan. w/ Sil. Foss.

ls. w/ Tan. Sil. A. Dm.

ls. Tan. Sil. Foss. Sil. A

Sh. Blk.

Sh. Blk.

ls. w/ Sil. Foss. Chalk

A. Blk.

Sh. Sil.

A. Blk.

ls. w/ Sil. Foss. Sil. A. F. 1/8 x 1/8  
Blk. Sil. Foss. Sil. A. F. 1/8 x 1/8  
Blk. Sil. Foss. Sil. A. F. 1/8 x 1/8

ls. Silty. VSIA

Sh. G. L.

ls. w/ Sil. Foss. VSIA Chalk

ls. Tan. Foss. Sil. A

Sh. Chalk

ls. Tan. Foss. Sil. A

A. G. w/

ls. w/ Chalk

ls. G. w/ Sil. Foss. Chalk

Sh. Blk.

ls. Blk. VSIA Foss.

Sh. Blk.

A. Blk.

ls. Tan. w/ Sil. A

ls. Foss. VSIA

Sh. Blk.

ls. VSIA Foss.

ls. Tan. Foss. Sil. A

ls. w/ Chalk VSIA Dm.

Sh. Chalk

ls. w/ Sil. Foss. Sil. Chalk

Sh. G. L.

ls. G. VSIA Foss.

ls. w/ Sil. Foss. VSIA

A. Blk.

Sh. G. L.

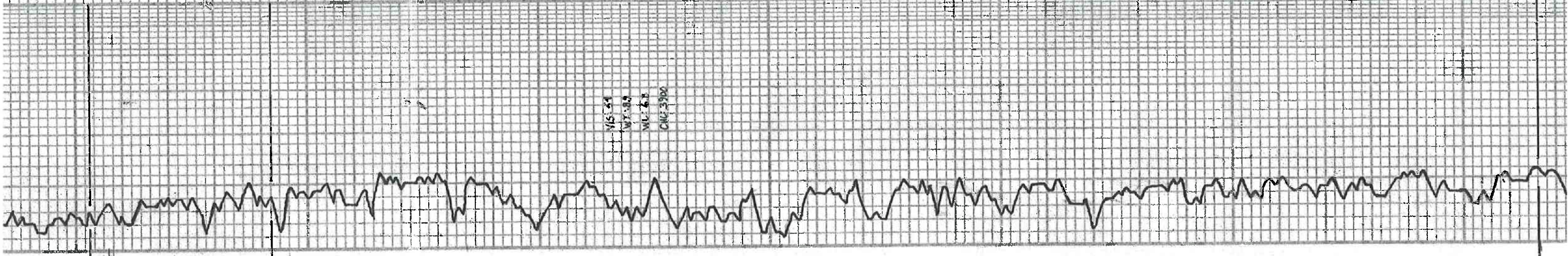
ls. w/ Sil. Foss. Sil. Chalk

ls. G. Dm.

Blk. 4016-1676

Sh. Blk. G. L.

MS 51  
WT 109  
NL 78  
CNG 3900



81KZ 4016-1676

Sh. Bl. Clay  
ls. med. sh. f. ss. - y. sh. ch. l. y.  
sh. - blk. silty  
sh. - blk. silty  
sh. Rd.  
ls. - Ta. lily. Dun.  
Sh. Rd.

4100

PRINCEE 9121-1781

ls. Gy. - V. sh. f. ss. - V. silty  
ls. Gy. - X. f. ss. l.  
ls. - Gy. med. - X. f. ss. l.  
ls. - med. - X. f. ss. l. silty

Wt: 6.0  
Wt: 9.0  
Wt: 7.4  
Cmc: 3.200

4200

FORT SCOTT 9216-1876

sh. blk. carb.  
ls. - blk. - V. sh. f. ss. - V. silty  
ls. - Ta. w/ sh. f. ss. - V. silty - clay - P. l. y.  
ls. - blk. - sh. - V. sh. f. ss. - f. f. sh. - V. silty - clay - P. l. y.  
ls. - Ta. f. - V. sh. - Carb. l.

CHEROKEE 9240-1900

sh. - blk. - Carb. l.  
ls. - blk. - V. sh. f. ss. - V. silty  
sh. - blk. - Carb. l.  
ls. - med. - sh. f. ss. - silty  
ls. - Ta. - V. sh. f. ss. - silty - Carb. l.  
sh. - blk. - Carb. l.  
sh. - blk. - Carb. l.

MISSISSIPPI NO. 9296-1956

sh. - blk. - Carb. l. w/ sh. f. ss. - V. silty - clay - P. l. y.  
MISS. DOL. 9302-1962  
Dol. - blk. - V. f. ss. - silty - Carb. l.  
Bl. - silty - sh. - Carb. l. - V. sh. f. ss. - silty - Carb. l.  
Bl. - silty - sh. - Carb. l. - V. sh. f. ss. - silty - Carb. l.  
ls. - med. - sh. f. ss. - silty - Carb. l.  
Dol. - blk. - V. f. ss. - silty - Carb. l.  
Bl. - silty - sh. - Carb. l. - V. sh. f. ss. - silty - Carb. l.  
ls. - med. - sh. f. ss. - silty - Carb. l.  
ls. - med. - sh. f. ss. - silty - Carb. l.  
ls. - med. - sh. f. ss. - silty - Carb. l.

4100

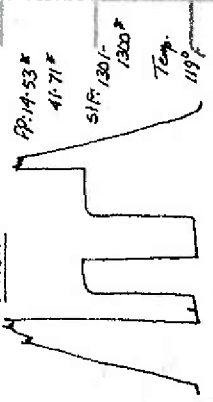
Wt: 6.6  
Wt: 9.0  
Wt: 7.8  
Cmc: 3.300

Wt: 6.4  
Wt: 4.0  
Wt: 6.8  
Cmc: 3.100

DST (1) 9269-4307

1st OPEN: Blow built to 6"  
2nd OPEN: " " " 9"  
30 - 45 - 45 - 60

Rec. 110' G.L.P.  
175' EQ. - 31.2 G.W.M. 60"  
30' HD (100' 10.1 L. HD) 2nd  
77 1957

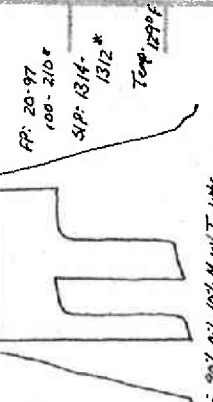


Tool Sample: 42.6, 59, 101, 377, 114

DST (2) 9301-1314

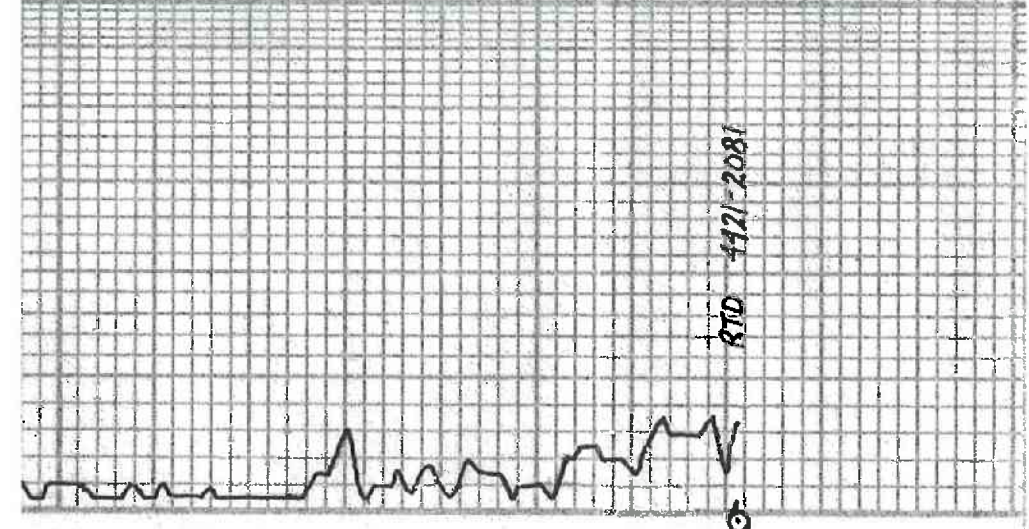
1st OPEN: Blow built 15 min  
2nd OPEN: " " " 19"  
30 - 45 - 45 - 60

Rec. 173' G.L.P.  
190' S.G. (17.6, 97, 88) 33.2 G.W.M. 40"  
30' HD (100' 10.1 L. HD) 2nd



Tool Sample: 307, 87, 107, 11, 147, 147

A. wt. 1.6 lb. Fresh Cut  
Dol. wt. 1.6 Fresh Cut  
A. wt. 1.6 Fresh Cut  
A. wt. 1.6 Fresh Cut  
Dol. wt. 1.6 Fresh Cut  
A. wt. 1.6 Fresh Cut  
15 in. Fresh Cut  
15 in. Fresh Cut



4400

