

KIM B. SHOEMAKER
 CONSULTING GEOLOGIST
 316-684-9709 * WICHITA, KS

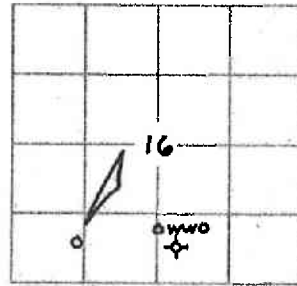
GEOLOGIST'S REPORT
 DRILLING TIME AND SAMPLE LOG

COMPANY L. D. DRILLING, INC.
 LEASE # 1-16 CHANCE
 FIELD WILDCAT
 LOCATION 690' ESL & 1290' FWL
 SEC 16 TWP 5s RGE 32w
 COUNTY RAWLINS STATE KANSAS
 CONTRACTOR L. D. DRILLING, INC.
 SPUD 10-30-14 COMP 11-6-14
 RTD 4470 LTD _____
 MUD UP 3575 TYPE MUD CHEMICAL

ELEVATIONS
 KB 3010
 DF _____
 GL 3005
 Measurements Are All
 From 3010 KB
 CASING
 SURFACE 8.5/8" @ 326'
 PRODUCTION _____
 ELECTRICAL SURVEYS
None

SAMPLES SAVED FROM 3600 TO 4470
 DRILLING TIME KEPT FROM 3500 TO 4470
 SAMPLES EXAMINED FROM 3600 TO 4470
 GEOLOGICAL SUPERVISION FROM 3700 TO 4470
 GEOLOGIST ON WELL KIM B. SHOEMAKER

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE		2708 + 302
B/ANH.		2749 + 261
TOPEKA		3765 - 755
HEEBNER		3932 - 922
LANSING		3978 - 968
B/KC		4218 - 1208
PAWNEE		4336 - 1326
FORT SCOTT		4376 - 1366
CHEROKEE		4388 - 1378
RTD		4470 - 1460



REMARKS

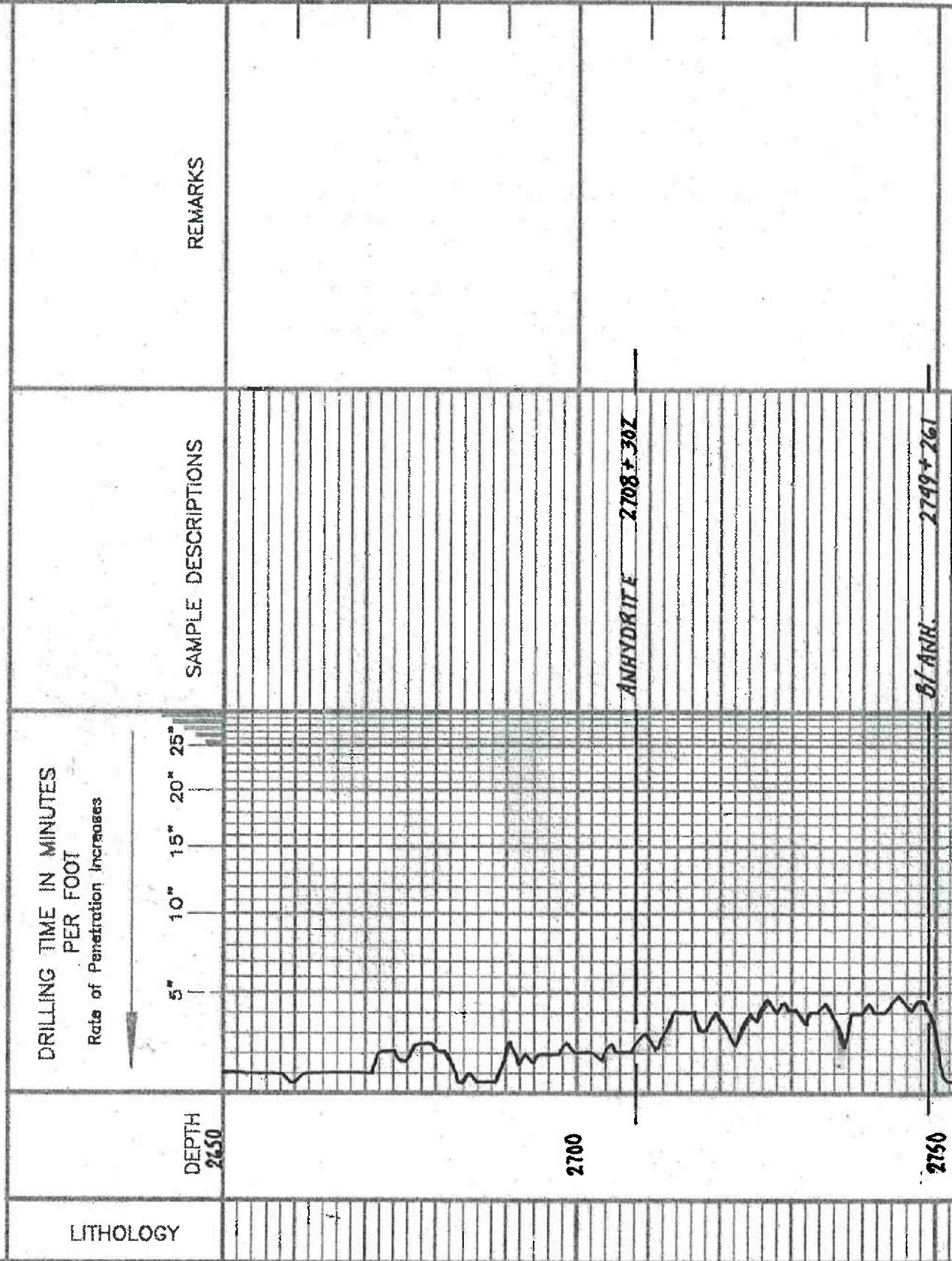
10-30-14 SPUD
 10-31 @ 329' WOC
 11-1 @ 1035'
 11-2 @ 2512'
 11-3 @ 3450'
 11-4 @ 3810'
 11-5 @ 4160'
 11-6 @ 4370'

API: 15-153-21068

LEGEND

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

SHOE01-06



REMARKS

SAMPLE DESCRIPTIONS

DRILLING TIME IN MINUTES
 PER FOOT
 Rate of Penetration Increases

5" 10" 15" 20" 25"
 2650 2700 2750

LITHOLOGY

ANHYDRITE 2708 + 302

B/ANH. 2749 + 261

2800

3500

3600

3700

Samples are lagged

65. 70. 150. 150. 150.

Sh. Pl.

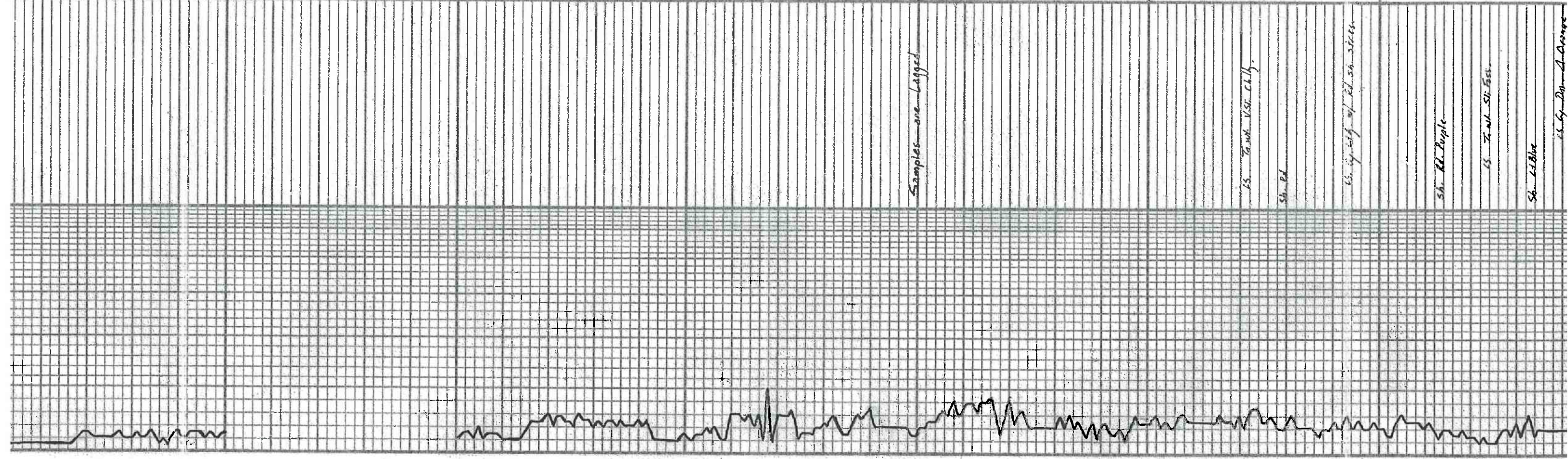
65. 70. 150. 150. 150.

Sh. Red Purple

65. 70. 150. 150. 150.

Sh. 1.1.1.1.1

65. 70. 150. 150. 150.



U.S. Div. - Orange

Sh. 664

TOPEKA 3765-755

LS. wt. 114 St. Bass

LS. wt. St. Bass base St. Chlg.

Sh. 61

LS. wt. St. Bass St. Chlg.

LS. city Dan

Sh. 616a

LS. city St. Bass - P. of - DE - to - Bedford St. No. 2100 (3300)

LS. To St. Bass vs. A

Sh. 61

LS. wt. 114 St. Bass w/ To - G. w. St. Chlg.

LS. wt. Y Chlg.

LS. wt. and St. Bass Chlg.

HEEBNER 3932-922

Sh. 616a

LS. A. G. St. Bass

Sh. 616a

Sh. 61

LS. wt. St. Bass P. of - DE - to - Bedford St. No. 2100 (3300)

LANSING 3978-968

Sh. To Park St. N.S.

Sh. 616

LS. wt. St. Bass w/ Bedford St. base (3000)

Sh. 616

LS. wt. 114 St. Bass

Sh. 616a

LS. city vs. A

Sh. 616

LS. To St. Bass

Sh. 616

LS. To St. Bass - P. of - DE - to - Bedford St. No. 2100 (3300)

Sh. 61

LS. wt. St. Bass P. of - DE - to - Bedford St. No. 2100 (3300)

Sh. 616

LS. To St. Bass - P. of - DE - to - Bedford St. No. 2100 (3300)

VIS: 50
VIR: 87
VCL: 6.1
CAL: 1500

3800

3900

4000

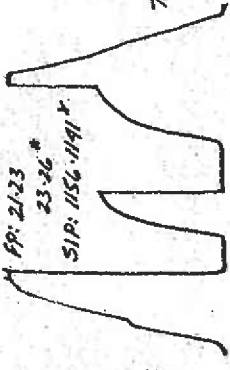
TORONTO



DEPT. OF THE INTERIOR
 BUREAU OF GEOLOGICAL SURVEY
 WASHINGTON, D. C. 20540

35. Red sandstone, silty clay.
 A. Orange clay. Sand.
MUNCIE CREEK 4080-1080
 DEq. Blt.
 Sh. Bl. Silty clay.
 Gs. Whit. sil. foss.
 Ls. Whit. sil. foss. sh. clay.
 Sh. clay. Silty.
 Ls. Tan. sil. foss. sh. clay.
 Sh. clay. sh. clay.
 Sh. Bl. sh. clay.

DIST. 4120-4160
 15' open: Tool side 8', 24" blow Dec. to 1"
 24' open: No blow
 30. 45. 45. 60
 Rec. 35' Mud
 FR: 2123
 23-26 *
 SIP: 1156-1191 *
 Temp. 120°



Ls. sh. clay. Silty. Foss. Silty. sh. clay. P. V. P.
 DE. Bl. silty. sh. clay. 1152
 (4190)

STARK 412-1152
 Sh. clay.
 Gs. Bl. Clay
 Ls. Whit. sil. foss. sh. clay.
 Gs. clay. Tan.
 Sh. clay. Tan.
61K 4218-1208
 Sh. clay. Clay.
MARMATON 4234-1224
 Gs. clay. Yellow silty.
 Sh. Bl. clay.
 Sh. clay. sh. clay. Silty.
 Sh. Bl. clay.
 Ls. Tan. Yellow Foss. Calcite.
 Sh. Bl. Pink. Silty.
 Sh. Bl. Clay. Silty.
 Bl. Tan. sil. foss.
 Sh. clay. Silty.
PAWNEE 4336-1326
 A. Clay. whit. Ls. whit. Tan. Silty. Foss. R. S. No odor
 Ls. Whit. clay.
 Sh. Bl. clay. sh. clay.
FORT SCOT 4376-1366
 Ls. Tan. Foss. Calcite. Silty. R. S. No odor. No odor
 Gs. clay. Tan.
CHEROKEE 4388-1378
 Sh. Bl. clay. sh. clay.
 Sh. Bl. clay. sh. clay.
 Ls. Whit. clay.

VIS: 50
 WT: 90
 VC: 20
 CW: 1800

VIS: 48
 WT: 92
 VC: 63
 CW: 2000



4100

4200

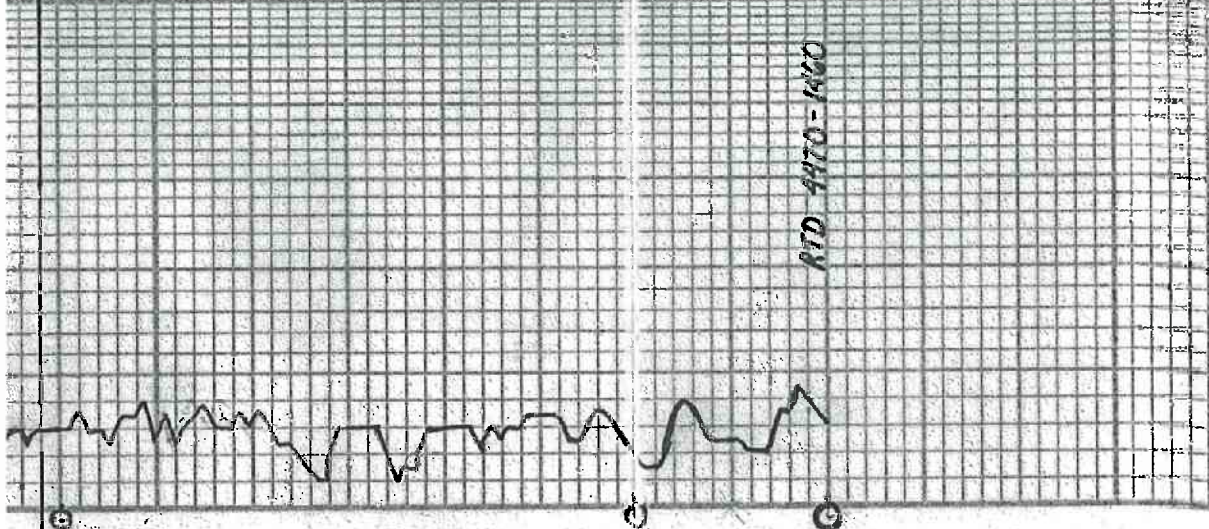
4500

4400



CHESTER 4388-7378

Sh. blk. dk. G.
Sh. Bl. Br. G.
Ls. Bl. Br. G. Dm.
Bl. and dk. v. ss. - base - Si. Chalky
Sh. Purple Bl. Blue.
Ls. Bl. Br. G. Sh.
Sh. Purple Bl. Blue.
sd. cl. br. M. Co. ls. of A. Foss.
Ls. Bl. Sh. base - base - Si. A. Chalky.
Sh. dk. Br. G.
sd. sh. Bl. G. Bl. Co. G. Bl. Sh. Br.
Sh. Bl. G. Silly - Sh. G.



RTD 4470-4480

4400

4500

