

# KIM B. SHOEMAKER

CONSULTING GEOLOGIST

316-684-9709 \* WICHITA, KS

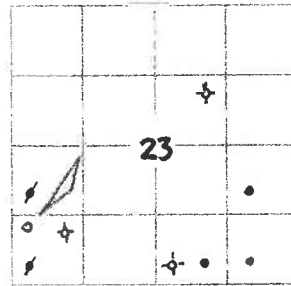
## GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY <u>L. D. DRILLING, INC.</u>	ELEVATIONS
LEASE <u># 1-23 Hiss</u>	KB <u>1900</u>
FIELD <u>LIBERTY</u>	DF _____
LOCATION <u>350' FWL &amp; 1037' FSL</u>	GL <u>1895</u>
SEC <u>23</u> TWSP <u>20s</u> RGE <u>14w</u>	Measurements Are All
COUNTY <u>BARTON</u> STATE <u>KANSAS</u>	From <u>1900 KB</u>
CONTRACTOR <u>PETROMARK DRILLING RIG 2</u>	CASING
SPUD <u>9-27-13</u> COMP <u>10-4-13</u>	SURFACE <u>8 5/8" @ 807'</u>
RTD <u>3659</u> LTD <u>3660</u>	PRODUCTION <u>5 1/2" @</u>
MUD UP <u>2841</u> TYPE MUD <u>CHEMICAL</u>	ELECTRICAL SURVEYS
	DUAL IND., DENS-W-Micro

SAMPLES SAVED FROM	<u>3000</u>	TO	<u>3659</u>
DRILLING TIME KEPT FROM	<u>2700</u>	TO	<u>3659</u>
SAMPLES EXAMINED FROM	<u>3000</u>	TO	<u>3659</u>
GEOLOGICAL SUPERVISION FROM	<u>3100</u>	TO	<u>3659</u>
GEOLOGIST ON WELL	<u>KIM B. SHOEMAKER</u>		

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	807+1093	806+1094
TOPEKA	2816-916	2818-918
HEEBNER	3161-1261	3163-1263
BROWN LIME	3265-1365	3266-1366
LANSING	3275-1375	3278-1378
B/KC	3486-1586	3487-1587
ARBUCKLE	3544-1644	3546-1646



REMARKS

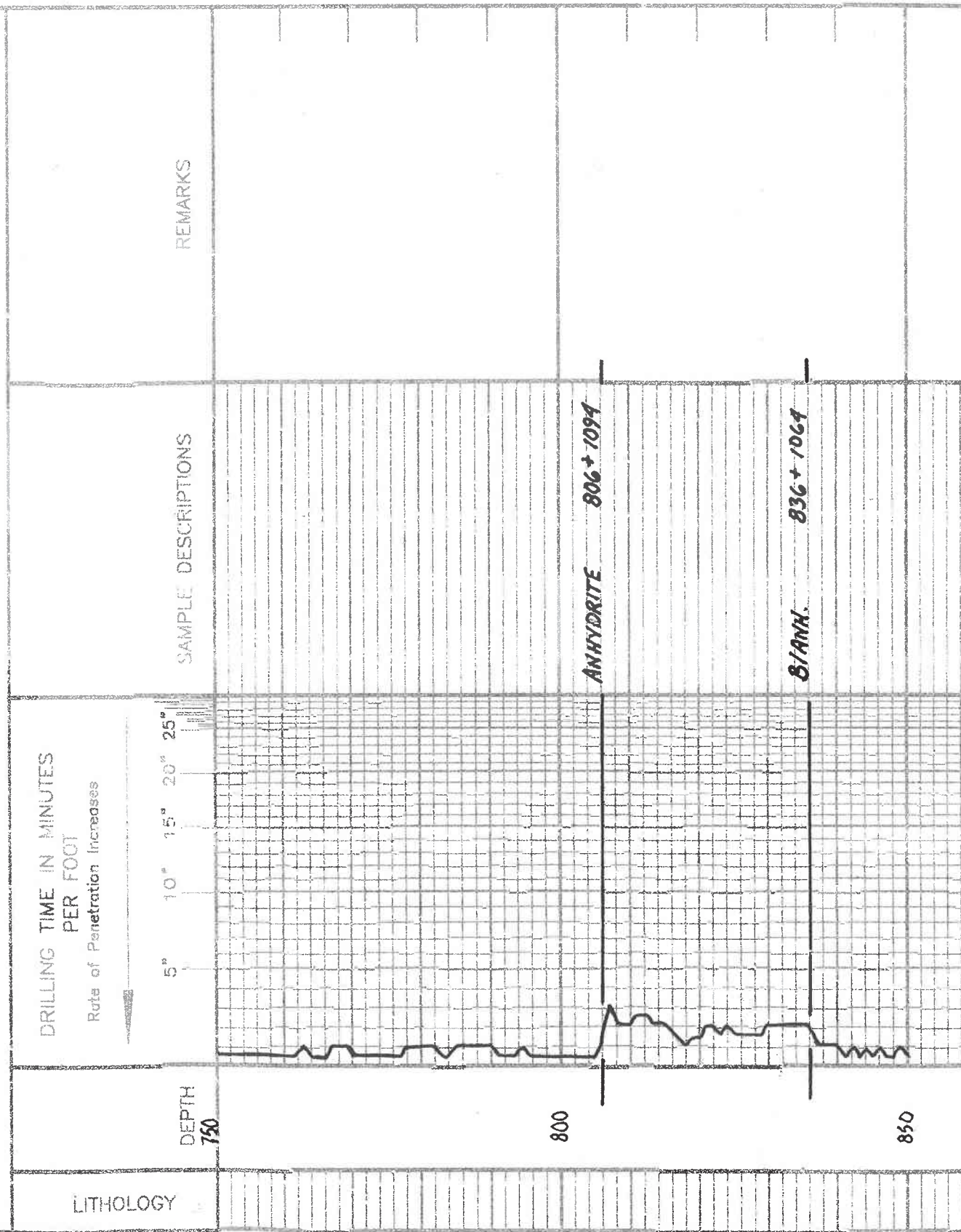
9-27-13 SPUD  
 9-28 @ 812'  
 9-29 @ 1665'  
 9-30 @ 2475'  
 10-1 @ 3350'  
 10-2 @ 3465'  
 10-3 @ 3565'  
 10-4 @ 3659'

API: 15-009-25884

### LEGEND

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

SHOE01-06



LITHOLOGY

DEPTH

DRILLING TIME IN MINUTES PER FOOT

Rate of Penetration Increases

5" 10" 15" 20" 25"

SAMPLE DESCRIPTIONS

REMARKS

ANHYDRITE 806+1094

S/ANK 836+1064

800

850

2700

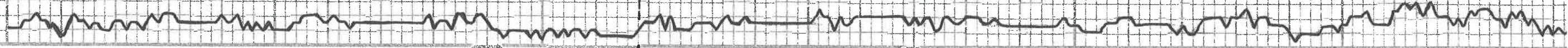
2800

2900

TOPEKA 2818-918

VISE: 65  
WPC: 84  
WL: 810  
CWC: 1000

*Samples are logged*



3000

3100

3200

3300

Sh. dk. gray blk

Sh. lgy. Cr. Silty Silty

ls. Tn. VSI: Foss. Si: A

Sh. Galy

ls. Tn. Si: Foss. Si: Chlly

ls. wt. lgy. Foss. Si: Foss. Si: Chlly

sh. Gy.

ls. wt. and sh.ool. Si: Chlly

Δ Gy

ls. wt. Si: Chlly

ls. wt. lgy. Sh.ool. and Cr. lenticles

ls. Tn. lgy. Dns.

ls. lgy. Dns. VSI: Chlly

HEBNER

Sh. Blk. Carb.

3163-1263

Sh. Lt. Gal.

ls. wt. Si: Foss. Si: A. Fe. Vsg. P. SCAL. DK. Bl. Sh. VSSFO No Flow. No odor

ls. wt. Si: Foss. Si: A. VSI: Chlly

sh. Gy. Cr. Silty

Sh. Lt. Cr. Gy. Silty. Silty

sh. Lt. Cr. Gy. Silty

Sh. Lt. Gy. Si: Silty

BROWN LIME 3266-1366

ls. Lt. Cr. Bl. VSI: Foss.

Sh. Gy.

LANSING 3278-1378

ls. wt. lgy. VSI: Foss.

ls. wt. Tn. Si: Foss. Foss. P. Vsg. P. Bl. Spill SK. SSG. SSG. F. F. lentic. F. lentic.

Sh. Lt. Cr. Gy.

ls. Tn. Si: Foss. Foss. P. Vsg. P. Bl. Spill SK. SSG. SSG. F. F. lentic. F. lentic.

ls. Gy. and. P. Vsg. P. Bl. Spill SK. SSG. SSG. F. F. lentic. F. lentic.

Sh. Gy.

ls. Gy. Foss. VSI: A. Fe. Vsg. P. SCAL. DK. Bl. Sh. SSG. SSG. F. F. lentic. F. lentic.

DST (1) 3283-3355

1' Spill: Blow built to 2 1/2" 2' Spill: " " " " 30.30.30.30

Rec. 60' USGM (1:50000) w/ Seism. Bl.

FP-9.31.30.46

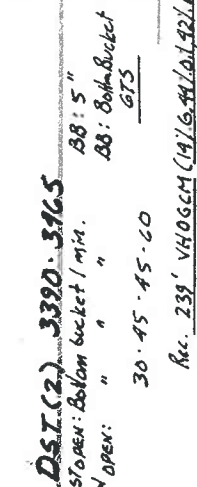
TORONTO

DOUGLAS

DST (1)

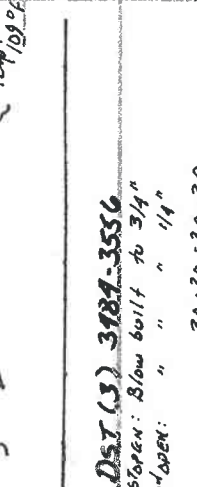


15. Talc. S.S. Chy.  
 15. wt. dol. Foss. V.S.I. Chy. F. Fly'd  
 Spl. L.A. S.S. S.S.F. No. Fly'd  
 15. wt. Ltg. Dol.  
 15. wt. Chy. F.  
 15. Talc. S.S. Chy.



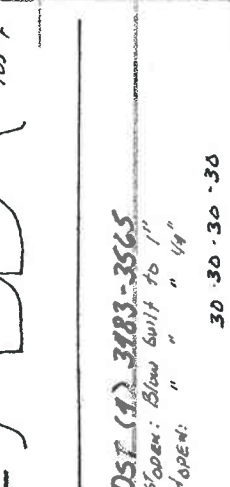
DST (2) 3380-3365  
 15' Open: Blow bucket 1 min.  
 2" Open: " " " 30.45.45.60  
 Rec. 239' VHO6CM (4/16/41/92/41)  
 306' WAGO (5/14/10/16/14/14)  
 TE: 515'  
 CK: 10.000  
 FP: 35.108  
 124.198"  
 SIP: 985.978"  
 Temp. 109°F

15. Talc. S.S. Chy. F. Fly'd  
 Spl. L.A. S.S. S.S.F. No. Fly'd  
 15. wt. Ltg. Dol.  
 15. wt. Chy. F.  
 15. Talc. S.S. Chy.



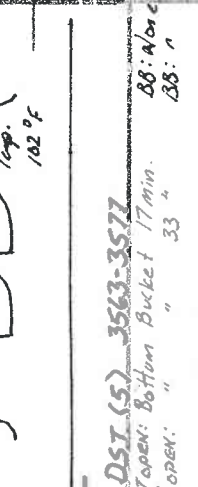
DST (3) 3184-3556  
 15' Open: Blow built to 3/4"  
 2" Open: " " " 14"  
 30.30.30.30-30  
 Rec. 20' SOCM (6/10/19/14)  
 51300/TOP  
 FP: 10.17  
 18.22"  
 SIP: 292.914"  
 Temp. 105°F

15. Talc. S.S. Chy.  
 15. wt. Ltg. Dol.  
 15. wt. Chy. F.  
 15. Talc. S.S. Chy.



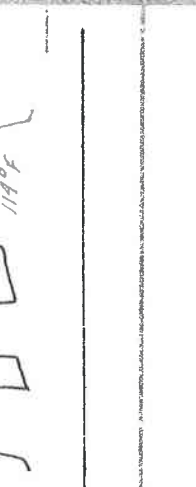
DST (1) 3183-3565  
 15' Open: Blow built to 1"  
 2" Open: " " " 14"  
 30.30.30.30-30  
 Rec. 40' 506CM (6/16.17/01/20/14)  
 FP: 13.24  
 25.34"  
 SIP: 426.374"  
 Temp. 102°F

15. wt. Yellow w/ Rd. sh. stick.  
 15. Rd.  
 15. wt. Ltg. Dol.  
 15. wt. Chy. F.



DST (5) 3563-3572  
 15' Open: Bottom Bucket 17 min.  
 2" Open: " " " 33"  
 30.45.45.60  
 Rec. 492' SCMW (1/16.5/11/99/14)  
 FP: 11.113.115.205  
 SIP: 1029.951"  
 Temp. 119°F

15. wt. Ltg. Dol.  
 15. wt. Chy. F.

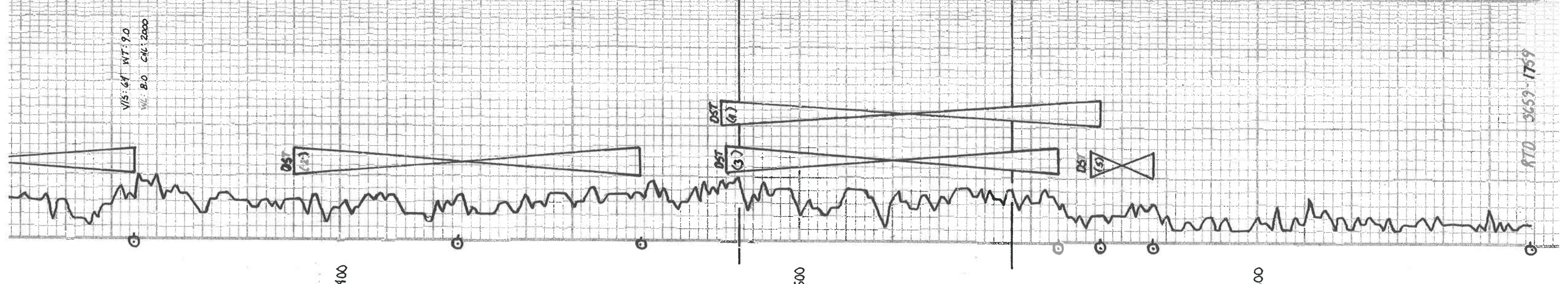


15. Talc. S.S. Chy.  
 15. wt. Ltg. Dol.

Dol. Talc. S.S. Chy. F.  
 Dol. Ltg. Dol.  
 Dol. wt. Ltg. Dol.



Dol. Talc. S.S. Chy. wt. Chalk.  
 Temp. 102°F



3400  
 3500  
 3600  
 3659-1759  
 RTO

