

KIM B. SHOEMAKER

CONSULTING GEOLOGIST

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GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY RITCHIE EXPLORATION, INC.

LEASE # 1 HUSEMAN 20B

FIELD WILDCAT

LOCATION 485' ENL # 1180 ENL

SEC 20 TWP 16S RGE 31W

COUNTY SCOTT STATE KANSAS

CONTRACTOR W/W DRILLING, Rig 8

SPUD 8-10-13 COMP 8-19-13

RTD 4770 LTD 4772

MUD UP 3399 TYPE MUD CHEMICAL

ELEVATIONS

KB 2945

DF _____

CL 2938

Measurements Are All
From 2943 KB

CASING

SURFACE 8 5/8" @ 225'

PRODUCTION _____

ELECTRICAL SURVEYS
Dual IND. DENS-K.

SAMPLES SAVED FROM _____ 3450 TO 4770

DRILLING TIME KEPT FROM _____ 3450 TO 4770

SAMPLES EXAMINED FROM _____ 3450 TO 4770

GEOLOGICAL SUPERVISION FROM _____ 3700 TO 4770

GEOLOGIST ON WELL KIM B. SHOEMAKER

FORMATION TOPS

LOG

SAMPLES

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	2350+593	2347 + 596
B/ANK.	2370+573	2368 + 575
STOTLER	3556-613	3557-614
HEBNER	3938-995	3936-993
LANING	3976-1033	3973-1030
STARK	4239-1296	4239-1296
MARMATON	4354-1411	4350-1407
FORT SCOTT	4500-1557	4498-1555
CHEKOE	4522-1579	4522-1579
MISSISSIPPI	4618-1675	4617-1674

REMARKS

8-10-13 SPUD
8-11 @ 311'
8-12 @ 2365'
8-13 @ 3265'
8-14 @ 3865'
8-15 @ 4045'
8-16 @ 4264'
8-17 @ 4590'
8-18 @ 4733'
8-19 @ 4770'

API: 15-171-20968

LEGEND

Anhydrite	Salt	Sandstone	Shale	Carb. sh	Limestone	Ool. Lime	Chert	Dolomite

DRILLING TIME IN MINUTES
PER FOOT
Rate of Penetration Increases



LOG

DEPTH

5" 10" 15" 20" 25"

SAMPLE DESCRIPTIONS

REMARKS

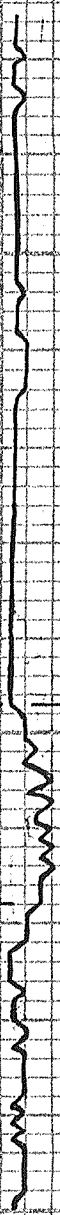
2300

ANHYDRITE 2347 + 596

B/ANH. 2368 + 575

2400

2450



3450

Samples are Lagged

ls. Gy. Foss. Calartic.

Sh. G. G.

ls. wt. G. G. V. S. Ch. G.

Sh. L. G.

3500

ls. B. G. V. S. Foss.

Sh. L. G. G. Silby

Sd. G. G. Fa. Md. G. Sub. Rd. Poorly Sorted w/ Sh. Frags.

Sh. L. G. G. Silby

ls. B. G. Sil. Foss.

Sh. G. L. G.

STOTLER

3557-614

ls. T. Foss. Calartic.

ls. w/ T. Foss.ool. Ch. G.

ls. T. V. S. Foss. V. S. Ch. G.

Sh. G. G.

3600

ls. T. w/ Sil. Foss. Sil. Ch. G.

ls. L. G. V. S. Ch. G.

Sh. G.

ls. w/ V. S. Foss. Sil. Ch. G.

ls. wt. Vchly. Sli. Foss.

Sh. Gp.

ls. Gp. Lly. Sli. Foss.

Sh. Gp. L.

ls. Gp. Dar.

Sh. Gp.

ls. Bly. Sli. Foss.

ls. To. Bl. Sli. Foss. Sli. A.

ls. Bly. Sli. Foss. Sli. Calotte.

Sh. Gp. DK. Gp.

ls. L. Bl. Bl. Foss. Calotte.

ls. DK. Gp. Sli. Foss.

ls. To. Bl. Sli. Foss. Sli. A.

Sh. L. Gp.

ls. To. wt. Foss. ool. Calotte.

ls. To. Sli. Foss. Sli. Chly.

Sh. DK. Gp.

ls. To. wt. Sli. Foss. Sli. Chly.

ls. To. Gp. Sli. A.

ls. wt. Lly. ool. Calotte.

3700

3800

3900

Sh. Ltg.

Ls. wt. Sil. Foss. Sil. Chlg.

Ls. wt.ool. Foss. Sil. Chlg.

Ls. wt. Chlg.

Δ wt. Chlg.

Ls. Ta. Foss.ool. w/ Gy. Br. Dol.

VIS: 55

WT: 9.0

WL: 6.4

CHL: 2000

Ls. Br. Fax. low w/ Foss. Sil. Chlg.

HEEBNER 3936-993
Sh. BLK Carb. (3950)

Ls. Ta. Chlg. Sil. Foss. Sil. Chlg.

Sh. Ltg.

Ls. wt. V. Sil. Foss. Sil. A

Ls. wt.ool. Sil. Foss. Sil. A

Δ wt.

Sh. Rd. G.

LANSING 3973-1030

Ls. wt. Ta. V. Sil. Chlg.

Ls. Ta.ool. Sil. A. Dns.

TORONTO

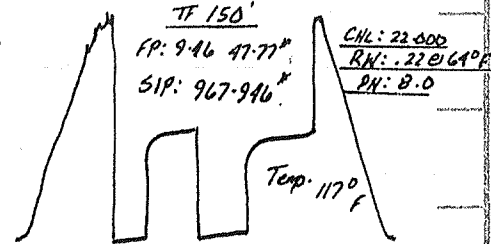
(2) Collars run
on DST's

DST (1) 3996-4014

1st OPEN: Blow built to 3 1/2"
2nd OPEN: " " " 3"

30.45.45.60

Rec. 30' MW (65' w. 35' M)
120' SMW (92' w. 87' M)



Total Sample: 90' w. 101' M

4000



Sh. G.

Ls. Ta. wt. Sil.ool. Sil. A - Sil. Chlg. No. odor

Ls. wt. Chlg.

Sh. G. G.

Ls. Ltg. Sil. Foss. Calcite.

Ls. G. Sil. Foss. Sil. A



KANSAS CITY

Sh. Rtg. G.

Ls. Ta. Chlg. V. Sil. Foss. V. Sil. Chlg. F. P. V. G. Sp. D. R. Bl. Str. V. S. F. P. F. L. D. Dol. Drill Plug (4070)
Ls. wt. Sil. Foss. Sil. Chlg. V. Sil. Chlg. F. P. V. G. Bl. Sp. D. Str. V. S. F. P. Drill Plug

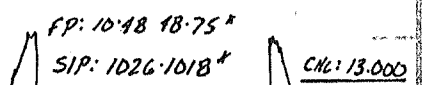
Ls. G. V. Sil. Foss. Dns.

DST (2) 4050-4075

1st OPEN: Blow built to 3"
2nd OPEN: " " " 2 1/2"

30.45.45.60

Rec. 135' MW (65' w. 35' M)

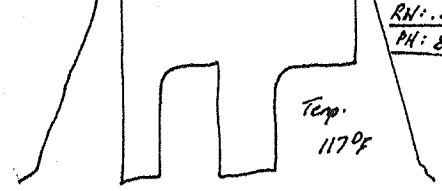


CHL: 13,000

VIS: 49
WTE: 9.2
YWL: 8.0
CWL: 2200

LS. wt. Ltg. Sh.ool. Foss.

LS. Ta. Ltg. Sh.ool. ox. sd. ool. p.



Tool Sample: 75% w. 25% M.W. w/ Seum Oil

4100

LS. wt. chlg.

LS. Ltg. V.Si. chlg.

Sh. Gy. D.K.

MUNCIE CREEK 4144-1201

Sh. BLK Carb. (4160)

LS. Br. Ltg. V.Si. Foss. V.Si. Calcitic.

Sh. Ltg. G.

Δ wt. Ltg. Si. Foss.

LS. wt. Ta. Sh.ool. Foss. Si. Δ

LS. Ta. Ltg. V.Si. Δ

Sh. Gy. D.K.

LS. Ta. Ltg. V.Si. Foss. Si. Calcitic.

4200

LS. wt. Ta. Sh.ool. Foss. Si. Δ V.Si. Chlg.

LS. Ta. Ltg. V.Si. Foss. Si. Δ
Sh. Ltg.

LS. Ta. Ltg. Si. Foss. Si. Chlg.

STARK 4239-1296

Sh. BLK Carb. (4244 30")

LS. D.K. Br. Si. Foss.

Δ Ltg. Si. Foss.

LS. Ta. Ltg. Sh.ool. wt. Si. Foss. Calcitic.

LS. Ta. wt. V.Si. Foss. Si. Δ

LS. Ta. Ltg. Si. Foss. Si. Chlg.

HUSHPUCKNEY 4278-1335

Sh. BLK Carb.

LS. Ltg. Si. Foss.

Sh. Ltg.

VIS: 49
WTE: 9.4

LS. Ta. Ltg.ool. w/ D.K. Br. ool. V.Si. Chlg.

4300

W.C. 7-2
C.H.L. 3000

Ls. Tn. VSl: A. VSl: Calcitr.

Ls. Tn. B. Sl: A

B/KC 4320-1377

Ls. wt. G. ool. VSl: Chlly.

Sh. Blk. Silty Silty

MARMATON 4350-1407

Ls. Tn. VSl: Foss. VSl: Chlly.

Sh. Lt. G. Gy. Rd. Silty

ALTAMONT

Ls. Lt. G. Dns.

Ls. Lt. G. Silty Lt. Tn. ool. Sl: A

Sh. Lt. G. Gy.

Ls. Lt. G. Sl: Foss. VSl: Chlly.

Ls. Tn. wt. ool. Sl: A Dns.

Ls. Gy. Dns. VSl: Calcitr.

Sh. Blk. Carb. (4460)

PAWNEE 4451-1508

Ls. wt. Lt. G. Sl: Foss

Ls. wt. Sl: Foss. Sl: Chlly.

Ls. Tn. B. Dns. VSl: A

Sh. Blk. Carb.

Ls. Dk. Bl. Dns.

Sh. Lt. G. Gw

MYRICK STATION

Ls. Tn. Gy. VSl: Foss. Sl: A

Sh. Blk. Carb. (4510)

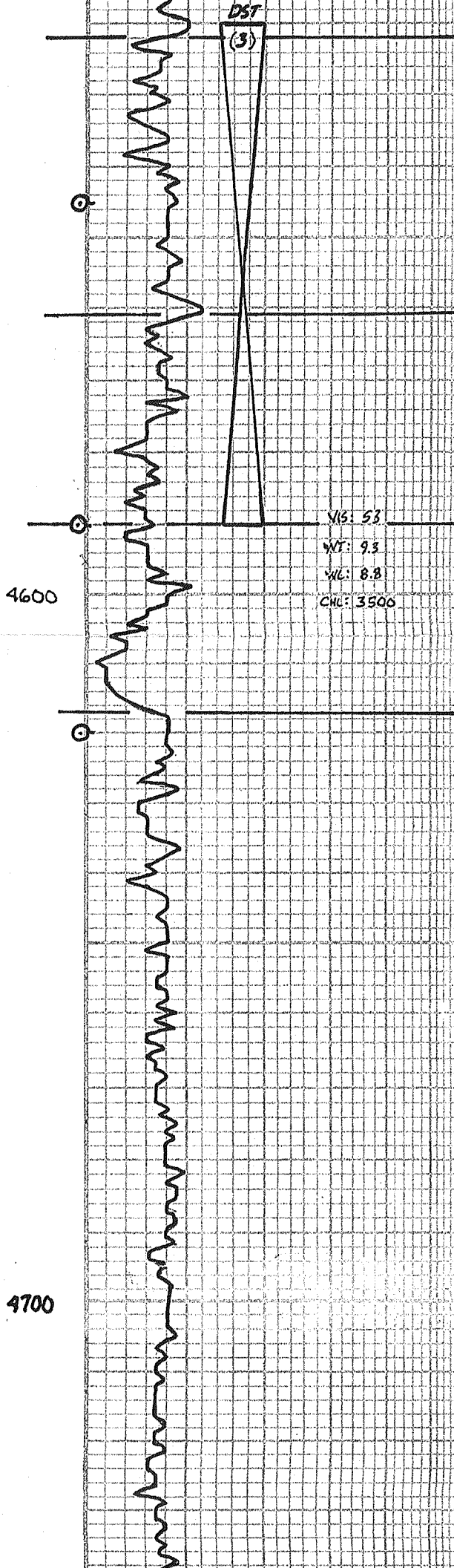
FORT SCOTT 4498-1555

Ls. Tn. G. B. ool. Sl: A
Lt. G. Bl. ool.

Ls. wt. Lt. G. VSl: Foss. Sl: A Dns.

4400

4500



CHEROKEE 4522-1579

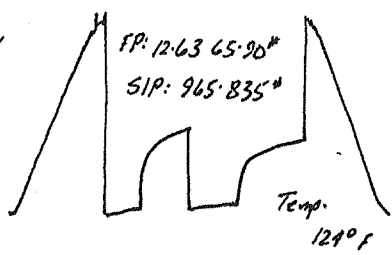
Sh. Blk. Calc. (4540)
 Ls. To ool. w/ DK Bl. Gy. ool.
 Ls. Lsh. VSl: Foss. Fe. P. Vg. sh
 Br. Spid. Str. Tr. Fo. Dull. Flow. No. Oiler (4545-30")
 Sh. DK. G.

DST (3) 4520-4590

1ST OPEN: Blow built to 3 3/4"
 2ND OPEN: " " " 3"
 30' 45' 15' 60'

JOHNSON 4561-1618

Ls. To sh. VSl: Foss. VSl: Lsh. P. Vg. sh
 DK Bl. Spid. Str. SS. Fo. Dull. Flow. No. Oiler
 Ls. To wt. Lsh. Br. VSl: Foss. Sl: Chlg. P. Vg. sh
 DK Bl. Spid. Str. SS. Fo. Dull. Flow. No. Oiler
 V.F. Ddar.
 Ls. Gy. Dm.



MORROW 4590-1647

VIS: 53
 WT: 9.3
 WL: 8.8
 CHU: 3500

Sd. Clc. w/ sh. Fa. Md. G. Sub. Rd. Dm. Poor. Sortid
 Sh. L. Bl. Vg. sh
 Sd. wt. Clc. Fa. Md. G. Sub. Rd. Dm. w/ Pyrite Sples.
 Sd. L. G. Fa. Md. G. Sub. Rd.
 Sd. Clc. Gy. L. G. Md. Co. G. Sub. Rd. Poorly sortid
 Tr. Br. Sl: Foss.

Tool Sample: Mud w/ sso.

MISSISSIPPI 4617-1674

Ls. wt. Sdy. VSl: Chlg.
 Ls. wt. Sdy. Sl: Chlg.
 Ls. wt. Sdy. Chlg.
 Ls. Gy. Dm. VSl: Chlg.
 Ls. wt. ool. Sl: Chlg.
 Δ wt
 Ls. Gy. VSl: Chlg. ool.
 Ls. Gy. wt. ool. Sl: Calcitic.
 Ls. Lsh. wt. ool. Sl: Sdy.
 Ls. Lsh. VSl: Δ

4600

4700

LS. Br. G. Das.

Δ. Gray. LS. G. wool w/ Glaucl.

LS. Br. Das.

LS. wt. to Sl. Foss. Sl. A

RTD 4770-1827

VIS: 51 WT: 9.9

WCL: 9.6

CNL: 3000

