

# KIM B. SHOEMAKER

CONSULTING GEOLOGIST

316-684-9709 \* WICHITA, KS

## GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY RAYMOND OIL COMPANY, INC.

LEASE # 4 MICHAELIS

FIELD ROSE GARDEN NW

LOCATION 2349' ESE 1/4 2627' SEL

SEC 3 TWP 14s RGE 32w

COUNTY LOGAN STATE KANSAS

CONTRACTOR L.D. DRILLING, INC.

SPUD 9-24-18 COMP 10-6-18

RTD 4642 LTD 4642

MUD UP 3490 TYPE MUD CHEMICAL

SAMPLES SAVED FROM \_\_\_\_\_ 3400 TO 4642

DRILLING TIME KEPT FROM \_\_\_\_\_ 3400 TO 4642

SAMPLES EXAMINED FROM \_\_\_\_\_ 3400 TO 4642

GEOLOGICAL SUPERVISION FROM \_\_\_\_\_ 3700 TO 4642

GEOLOGIST ON WELL Kim B. SHOEMAKER

FORMATION TOPS LOG SAMPLES

ANHYDRITE 2308+520 2308+520

B/ANH. 2330+498 2329+499

STOTLER 3456-628 3456-628

HEBNER 3813-985 3813-985

LANSING 3853-1025 3852-1024

STARK 4105-1277 4104-1276

MARMATON 4201-1373 4197-1369

FORT SCOTT 4362-1534 4357-1529

CHERDKE 4381-1561 4380-1558

MISSISSIPPI 4577-1694 4520-1692

ELEVATIONS

KB 2828

DF \_\_\_\_\_

GL 2823

Measurements Are /ft  
From 2828 KB

CASING SURFACE 8 5/8" @ 260'  
PRODUCTION 4 1/2" @  
ELECTRICAL SURVEY

### REMARKS

- 24-18 600'
- 25 @ 263'
- 26 @ 1640'
- 27 @ 2745'
- 28 @ 3365'
- 29 @ 3892'
- 30 @ 3947'
- 1 @ 4097'
- 2 @ 4257'
- 3 @ 4357'
- 4 @ 4460'
- 5 @ 4505'
- 6 @ 4642'

API: 15-109-21565

### LEGEND









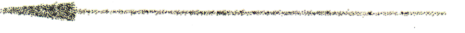






Anhydrite    Salt    Sandstone    Shale    Carb sh    Limestone    Ool. Lime    Chert    Dolomite

DRILLING TIME IN MINUTES  
 PER FOOT  
 Rate of Penetration increases



5"    10"    15"    20"    25"

DEPTH  
2250

SAMPLE DESCRIPTIONS

REMARKS

2300

ANHYDRITE    2308 + 520

S/ANL    2329 + 499

2350

3400

PLUG NOT SET

1 1/2"



Samples are Lagged

Sh. Lt. G. L. Silty

Ls. Lt. G. Silty Foss.

Sh. Lt. G. L. Silty

STOTLER 3456-628

Ls. Lt. G. Silty Foss.

Ls. wt. Lt. G. Silty Foss. chllg.

Sh. Lt. G.

Ls. T. wt. Lt. G. Dolomitic

Sh. Lt. G. L.

Ls. T. wt. Silty Foss. Sdy.

Sh. Lt. G. Sdy. Silty.

Ls. T. wt. Silty Foss. Sdy.

3456 3457  
3458 3459

Sh. Lt. Sdy. Silty.

Ls. T. wt. Foss. Silty

Ls. wt. Foss. Silty chllg.

3500

3600



ls. w. Wg. Foss. ss. Chlky.

Sh. Gy. Silty.

ls. To Foss. Calcitic

Δ Wt.

ls. To Fresh. Suc. Dolomitic

36. Ark.

sh. sd. H.G. Fr. Co. Sub. Rd.

ls. To Foss. Calcitic

Sh. Gy.

ls. w. Sil. Foss. vsi. chlky.

Sh. Ark.

ls. Fresh. Foss.

ls. Fresh. vs. Foss. Si. A

ls. Fr. Foss. ool. Si. chlky.

Δ Wt.

ls. To Foss.

HEBNER

3813-985

sh. Ark. Carb.

ls. Ark. Si. Foss.

sh. Fr. Co. Blo. G.

3700

3800



TORONTO

LS. wt. VSE Foss. SGA

PIPE STRAP: 3910.69 Bd  
3918.09 Strap  
.60 Short

Sh. Rd.

LANSING 3852-1024

DST (1) 3876-3892

1<sup>st</sup> OPEN: Blow built to 1 3/4"  
2<sup>nd</sup> OPEN: " " " 1 1/4"

30-60-45-90

Rec. 10' Clean oil 25.61 w. @ 60°F  
17' OCM (10% oil 90% M)

Tool Sample:  
20' Oil  
80% Mud

TF 27'

FP: 12-17 18-23

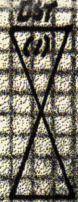
SIP: 755-736\* Temp. 111°F

LS. wt. col. SGA

LS. wt. col. Sl. Chilly.

Sh. Rd.

LS. wt. LIG. wt. VSEA Pr. Vsg  
Bl. Spl. Sil. VSSPD Dst. Floor. No Ador.



VIS 1.9 WT 9.1  
WB 7.2 CHG 3000

LS. LIG. Dis.

A. wt.

LS. wt. Sl. Foss. SGA

DST (2) 3927-3947

1<sup>st</sup> OPEN: Blow built to 1 3/4"  
2<sup>nd</sup> OPEN: Surface Blow

30-60-45-90

Tool Sample: Rec. 6' MW (80% w 20% M)

95% w  
5% M

FP: 11-16 17-23\*

PH: 7

SIP: 858-841\*

RWD 51°F = .8

RWD 111°F = .392

Calc: 10,000

Temp. 111°F

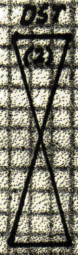
LS. wt. Chilly. LS. wt. Sl. Foss. SGA Calcitic

LS. T. Yellow VSE Foss.

Sh. Rd.

A. F. LIG.

LS. T. LIG. VSE Foss. Pr. Vsg  
L. Bl. Spl. Sil. VSSPD Dst. Floor. V. Ador.



VIS 8.1 WT 9.3  
WB 7.6 CHG 3400

Sh. Rd.

LS. wt. VSE Foss. SGA

LS. T. wt. col. SGA

LS. T. wt. SGA

LS. LIG. Dis.

LS. wt. LIG. Sl. Foss. Chilly.

MUNCIE CREEK 4013-1185

Sh. Bl. Carb.

LS. Bl. Dst. Sl. Foss.

Sh. L. Blue. G.

LS. wt. col. VSE Chilly. VSGA

3900

4000



LS. Tan. VSh. For. VSHA. Sl. Calcitic

Sh. dk. G.

Sh. dk. Blue G. Purple

LS. Tan. Sil. A. Δ wt.

LS. Tan. Sil. G. Sil. A. VSh. Chll.  
Fr. P. VSh. B. Spl. Sil. VSh. G. VSh. G. No. Flow

Sh. Purple G.

LS. Tan. Sil. For. Fr. VSh. G.  
Fr. P. Spl. Sil. Sil. VSh. G. Drill. Flow. No. Flow

LS. G. Sil. A.

**STARK 4101-1226**  
Sh. dk. Carb.  
LS. dk. B. VSh. For. E

LS. dk. G. VSh. For. Sil. A.

Δ G.

LS. G. VSh. A.

**HOSHOCKNEY 4104-1306**  
Sh. dk. Carb.

LS. Tan. Sil. For. Fr. VSh. G.  
Fr. P. Spl. Sil. VSh. G. Drill. Flow. No. Flow

LS. Sil. chll.

LS. dk. G. VSh. A.

Δ G.

LS. Sil. chll. Sil. For. Sil. chll.

**B/KC 4169-1336**

LS. Tan. Sil. For. Calcitic

Sh. Blue G. Silky Sil.

LS. G. Sil. A.

Sh. dk. Sil.

**MARMATON 4177-1369**

LS. Tan. G. VSh. For. Sil. A.

Sh. dk. Purple

LS. dk. G. Silky

Sh. dk. G. Silky

**DST (3) 4093-1087**

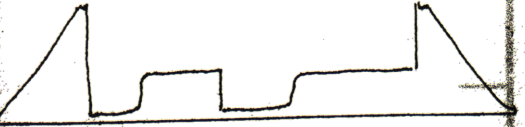
1st OPEN: Blow built to 10"  
2nd OPEN: " " " 3 3/4"  
BB: None  
DB: "

30-60-45-90

Tool Sample: Rec. 56' G.I.P.  
30% oil  
10% wfr  
60% Mvd  
16' Clean Oil  
129' OGCMW (5% G. 15% Oil 25% W. 55% M)

TF: 140'

Wfr Sample FP: 13-42 42-72"  
Lost. SIP: 822-798"



**DST (4) 4131-9150**

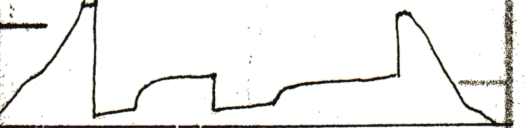
1st OPEN: Bottom bucket 9 1/4 min.  
2nd OPEN: " " 16 min.  
BB: None  
DB: "

30-45-60-90

Tool Sample Rec. 31' VSOACMW (1% Oil 51% W 48% M)  
98% W  
2% M  
552' VSMW (93% W 7% M)

TF: 589'

DN: 7  
RW: 31 @ 51° F  
RW: 139 @ 122° F  
CH: 45.000  
FP: 31-156 169-181"  
SIP: 796-766"  
Temp. 122° F



4100

VIS: 67 WT: 13  
WL: 16 CR: 5000

DST  
(4)

VIS: 58 WT: 91  
WL: 10 CR: 5000

4200

J. L. L.



1300

DST  
(5)

LS. T. Bi. Sil. Foss.

LS Yellow Foss.

Sh. G. L.

LS T. G. L. Sil. A

Sh. G. L.

LS. T. G. Foss.ool. Pr. V. d  
Bi Spid Sil. Sil. V. S. P. Dull. Flow  
V. F. B. d. o. r

LS. T. V. Sil. Foss. V. S. A

Sh. G. L.

**PAWNEE 4385-4477**

LS. wt. T. V. Sil. Foss. V. S. L. G. A. Pr. V. d  
Bi Spid Sil. Sil. V. S. P. Dull. Flow. F. B. d. o. r

LS. wt. Sil. Foss. Sil. Ch. L.

Sh. Blk Carb.

LS. D. G. L. G. V. Sil. Foss.

Sh. G. L.

**MYRICK STATION 4345-4517**

LS. T. G. V. Sil. Foss. Pr. V. d  
Bi Spid Sil. Sil. V. S. P. Dull. Flow. F. B. d. o. r  
Sh. Blk Carb. Dull. Flow. R. d. o. r

**FORT SCOT 4357-4529**

LS. T. G. V. Sil. Foss.

LS. Reef Material. Coral. Ch. L.

LS. G. L. V. Sil. Foss. Sil. A

**CHEROKEE 4386-4558**

Sh. Blk Carb.

LS. Bi. G. ool. Sil. A. Pyrite

LS. Bi. wt. Sil. Foss. Sil. A. Pr. V. d  
Bi Spid Sil. Sil. V. S. P. Dull. Flow. No. d. o. r

LS. Bi. wt. Sil. A

Sh. G. L.

LS. wt. V. Sil. Foss. Ch. L.

Sh. G. L.

**JONNISON 4428-4600**

LS. wt. L. Bi. Sil. Foss. Pr. V. d  
Bi Spid Sil. Sil. V. S. P. Bleeding oil. F. B. d. o. r  
No. Flour. No. d. o. r

LS. Bi. V. Sil. Foss. Sil. A

**DST (5) 4262-4354**

1<sup>st</sup> OPEN: Blow built to 1' 4"  
2<sup>nd</sup> OPEN: No Blow

30. 60. 45-90

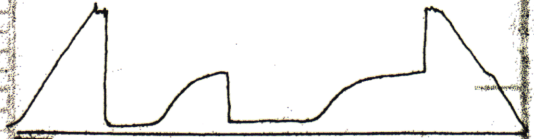
Tool Sample:  
2% oil  
98% Mud

Rec. 31' 50CM (5% oil 95% Mud)

FP: 14.20 21.25\*

SIP: 983-964\*

Temp.  
115°F



VIS 93 WT 93  
VLS 9.6 CMC 9000

V. L. G.

DST  
(6)

V. L. G.

4400

**DST (6) 4384-4460**

1<sup>st</sup> OPEN: Blow built to 3/4"  
2<sup>nd</sup> OPEN: No Blow

30. 60. 45-90

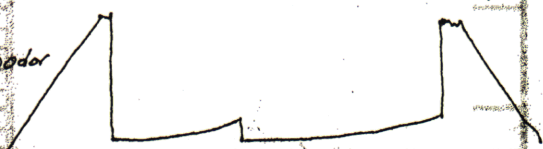
Tool Sample:  
2% oil 98% Mud

Rec. 5' 50CM (1% oil 99% M)

FP: 12.14 13.15\*

SIP: 407-421\*

Temp.  
117°F





DST (T) 4456-4522

1st OPEN: Blow 60117 to 1314"

2nd OPEN: " " " 214"

30-60-45-90

Tool Sample:

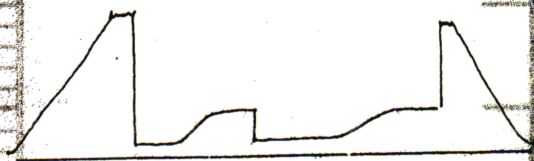
20% oil  
80% Mud

Rec. 36' OCM (15% oil 85% Mud)

FP: 14-18 22-29\*

SIP: 574-556\*

Temp. 116°F



4500

LS To Dis. Calcitic

Sh. Yellow G.

Sh. Tan. Yellow. Maroon

Sh. Tan. Yell. Sdy.

Sd. Cl. F. V. E. G. Sub. Rd. P. V. G. No odor

Sh. Yell. G. Sd. Cl. Hd. Co. G. B. B. Sub. Rd. F. V. B. B. Sub. Rd. G. S. G. S. P. D. O. I. F. L. O. W. F. J. Odor

MISSISSIPPI 4520-1692

LS Ltg. V. Sli. Foss.

LS wt. ool. sely. Sli. Chly.

VIS: 85 Wt: 4.5  
WR: 10.2 GR: 6000

LS. Tan. ool. sely. Sli. Chly.

LS To G. V. Sli. A

LS. To G. B. Sli. A

LS. B. V. Sli. A. Calcitic

A G.

LS. To wt. ool.

4600