

KIM B. SHOEMAKER

CONSULTING GEOLOGIST

316-684-9709 * WICHITA, KS

GEOLOGIST'S REPORT

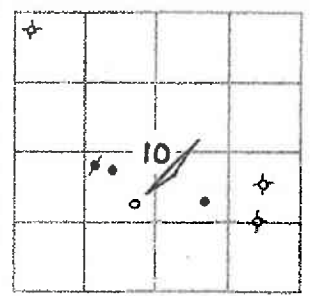
DRILLING TIME AND SAMPLE LOG

COMPANY L.D. DRILLING, INC.
 LEASE # 3-10 WATT
 FIELD DOLL EAST
 LOCATION 1650' FSL & 2310' FWL
 SEC 10 TWP 16s RGE 30w
 COUNTY LANE STATE KANSAS
 CONTRACTOR L.D. DRILLING, INC.
 SPUD 2-20-15 COMP 3-3-15
 RTD 4510 LTD 4513
 MUD UP 3447 TYPE MUD CHEMICAL

ELEVATIONS
 KB 2728
 DF _____
 GL 2723
 Measurements Are All From 2728 KB
 CASING SURFACE 8 5/8" @ 303'
 PRODUCTION 5 1/2" @
 ELECTRICAL SURVEYS
 DUAL IND., DENS.-N., MICRO

SAMPLES SAVED FROM 3600 TO 4510
 DRILLING TIME KEPT FROM 3300 TO 4510
 SAMPLES EXAMINED FROM 3600 TO 4510
 GEOLOGICAL SUPERVISION FROM 3700 TO 4510
 GEOLOGIST ON WELL KIM B. SHOEMAKER

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	2130+ 598	2131+ 597
B/ANH.	2161 - 567	2162+ 566
STOTLER	3401 - 673	3400 - 672
HEEBNER	3785 - 1057	3783 - 1055
LANSING	3823 - 1095	3820 - 1092
STARK	4076 - 1348	4074 - 1346
MARMATON	4186 - 1458	4182 - 1454
FORT SCOT	4330 - 1602	4324 - 1596
CHEROKEE	4354 - 1626	4351 - 1623
MISSISSIPPI	4426 - 1698	4422 - 1694



REMARKS

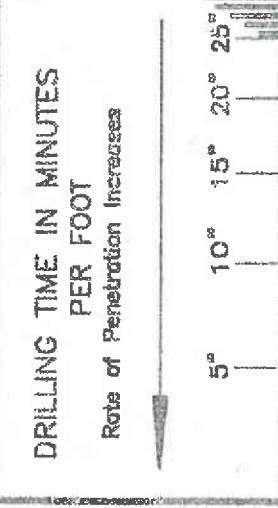
2-20-15 SPUD
 2-21 @ 306'
 2-22 @ 1669'
 2-23 @ 2635'
 2-24 @ 2938'
 2-25 @ 3470'
 2-26 @ 3923'
 2-27 @ 4100'
 2-28 @ 4209'
 3-1 @ 4315'
 3-2 @ 4415'
 3-3 @ 4510'

API: 15-101-22558

LEGEND

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

SHOE01-11



LITHOLOGY

SAMPLE DESCRIPTIONS

REMARKS

ANHYDRITE 2131+597

B/ANH. 2162+566

2200

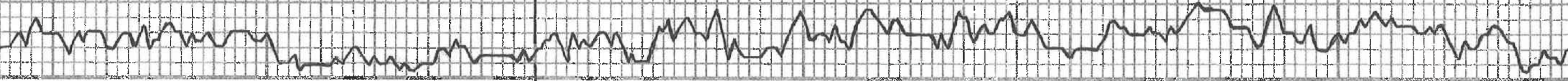
3300

3400

3500

STOTLER 3400-672

VIS: 67
SMT: 8.6
WLS: 6.4
CUL: 1500



3600

3700

3800

3900

Samples are Logged

Sh. Silty Silty

Ls. w/ V. fossils. Silty. Foss.

Ls. w/ V. fossils. Silty. Chalky.

Ls. Foss. Calcitic

Sh. Blk

Ls. Br. Gy. Silty Foss.

Sh. Chalky. Silty

Ls. w/ and Foss. Calcitic

Sh. Gy.

Ls. Silty. V. Silty Foss.

Ls. Silty Foss. Chalky.

Ls. Foss. Calcitic

Ls. w/ Chalky.

Ls. w/ Chalky. Foss. w/ Chalky.

Ls. Br. Silty Foss. Silty Chalky.

HEEGNER 3783-1055

Sh. Blk. Clay. Silty. Foss.

Sh. Ls.

Ls. w/ Silty Foss. Silty A

Amph.

LANSING 3820-1092

Ls. w/ Silty Foss. Silty A

Ls. w/ and Silty A

Sh. Blk Gy.

Sh. Chalky.

Ls. w/ V. Silty Foss. Silty Chalky.

Sh. Blk Ls.

Ls. Gy. V. Silty Foss. Silty A

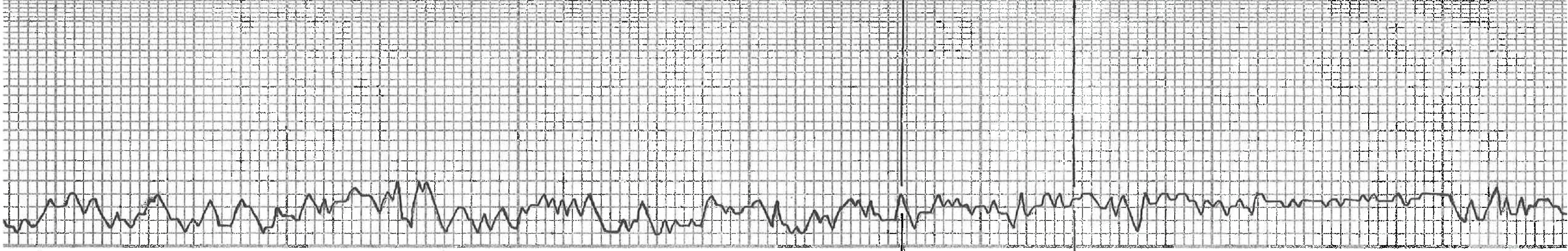
Ls. w/ V. Silty Foss. V. Silty Calcitic

Sh. Blk Gy.

Ls. Foss. Silty Foss. Chalky.

Sh. Blk

Ls. Gy. Silty A. Silty Calcitic



45 F.L.B. Exh. loc.

45. wt. Silty

45. L.G. Dis. V.Si. Chlg.

45. Gy. Dis.

MUNCIE CREEK 3986-1258
Sh. Blk. Gang
L.S. L.G. Si. Foss.

Sh. Blk.

Sh. L.G. Foss. Silty

45. F.L.G. Dis.

Sh. L.G. L.S. B.L.H. V.Si. Foss.

45. L.G. V.Si. Foss. V.Si. Chlg. F. DESK
F. F. F. NO. 0.0.0.0.

45. Blk. Gang. Dis.

45. L.G. Dis. Sil. Chlg.

45. Gy. Dis.

STARK 4074-1316
Sh. Blk. Gang.

45. To Bl. Foss. col. V.Si. Foss. Silty
556 556 Bl. Foss. F. 0.0.0.0.

45. Blk. Gang. Silty. Dis. V.Si. Foss.

45. wt. V. Chlg.

45. F.L.G. Dis.

HUSHPOCKNEY 4110-1382
Sh. Blk. Gang.

45. Blk. V.Si. Foss. Silty. Dis.

45. F.L.G. V.Si. Foss. Dis.

45. L.G. V.Si. Chlg. V.Si. Col. Dis.

45. wt. L.G. V.Si. Foss. Chlg.

B/KC 4155-1421
Sh. Blk. Gang.

45. Gy. Dis.

Sh. Blk. L. Bluc. Silty

MARMATON 4182-1454

45. F.L.G. V.Si. Foss. Silty

Sh. Blk. L. Bluc. Silty

45. L.G. V.Si. Foss. Silty

Sh. Blk. L. Bluc. Silty

45. L.G. V.Si. Foss. Silty

Sh. Blk. L. Bluc. Silty

45. L.G. V.Si. Foss. Silty

Sh. Blk. L. Bluc. Silty

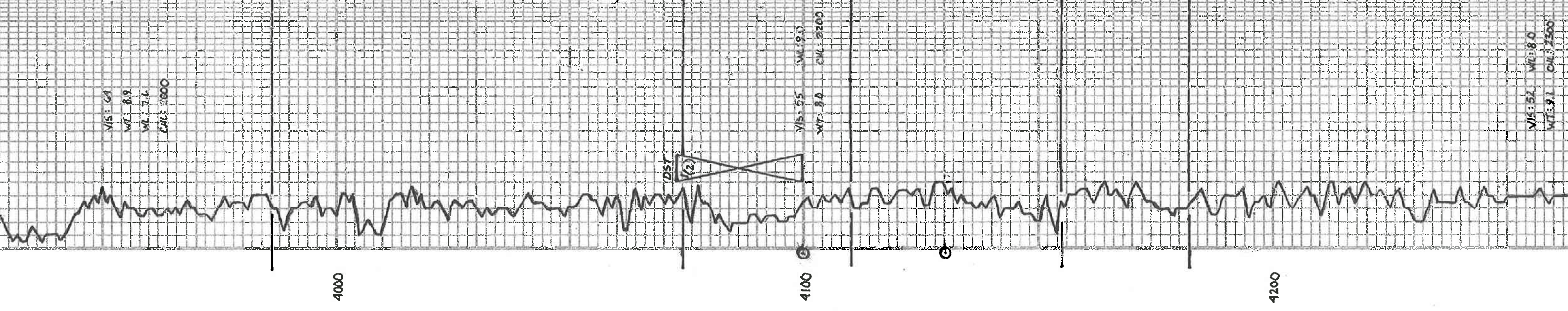
45. L.G. V.Si. Foss. Silty

Sh. Blk. L. Bluc. Silty

VIS: 64
WT: 8.9
WT: 7.6
CAL: 2000

VIS: 55
WT: 8.0
CAL: 2200

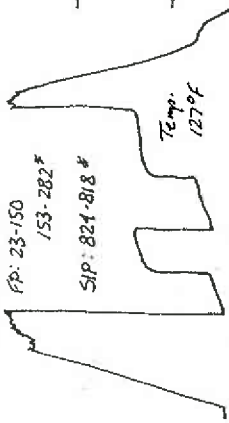
VIS: 52
WT: 8.0
CAL: 2500



DST (1) 4073-4100
HIT BRIDGE, MIS-RUN

DST (2) 4073-4100
1st OPEN: Bottom bucket 7 min.
2nd OPEN: " " 9 " 88: " 88: "

30-45-45-60
60 G.I.P.
Rec. 1' CO
580 GCMW (51.6.251/M 70/10)
TF 581' CLK: 41,000



Test Sample: 30% H 70% W

DST (3) 4267-4315
1st OPEN: Blow count to 1 1/2"
2nd OPEN: Bottom bucket 45 min.
30-30-45-60
60 G.I.P.
Rec. 32' V50CM (2.3/101) Est.

PAWNEE 4912-1594
 11. wt. To. VSH. Boss. V. AT. P. R. P. H. B.
 DE. R. SH. Ed. Sp. M. SH. ES. Ed. E. Ed. Ed. V. Ed. Ed.

ES. Tan. g. Dul.
 SS. BLK. Carb. 11. DE. R. V. SH. Foss.
 MYRICK STATION 4305-1577
 ES. Tan. g. SH. Foss. V. AT. P. R. P. H. B.
 11. wt. To. VSH. Boss. V. AT. P. R. P. H. B.
 DE. R. SH. Ed. Sp. M. SH. ES. Ed. E. Ed. Ed. V. Ed. Ed.

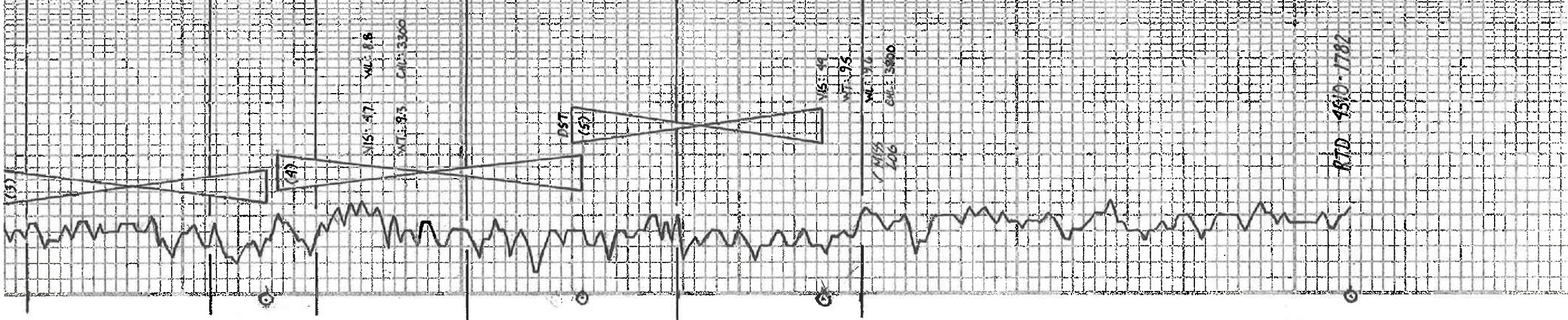
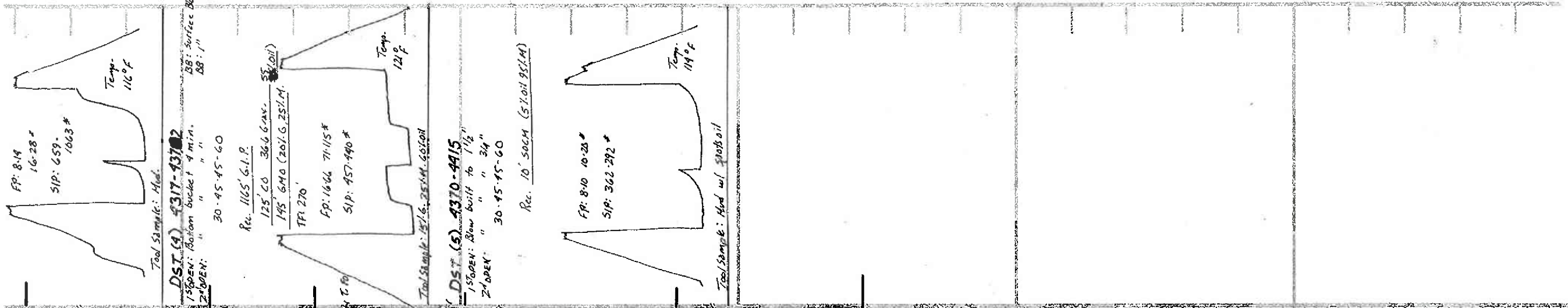
ES. Tan. g. Dul.
 SS. BLK. Carb. 11. DE. R. V. SH. Foss.
 FORT SCOT 4324-1596
 ES. Tan. g. SH. Foss. V. AT. P. R. P. H. B.
 11. wt. To. VSH. Boss. V. AT. P. R. P. H. B.
 DE. R. SH. Ed. Sp. M. SH. ES. Ed. E. Ed. Ed. V. Ed. Ed.

ES. Tan. g. Dul.
 SS. BLK. Carb. 11. DE. R. V. SH. Foss.
 CHEROKEE 4351-1625
 ES. Tan. g. SH. Foss. V. AT. P. R. P. H. B.
 11. wt. To. VSH. Boss. V. AT. P. R. P. H. B.
 DE. R. SH. Ed. Sp. M. SH. ES. Ed. E. Ed. Ed. V. Ed. Ed.

ES. Tan. g. Dul.
 SS. BLK. Carb. 11. DE. R. V. SH. Foss.
 JOHNSON 4380-1661
 ES. Tan. g. SH. Foss. V. AT. P. R. P. H. B.
 11. wt. To. VSH. Boss. V. AT. P. R. P. H. B.
 DE. R. SH. Ed. Sp. M. SH. ES. Ed. E. Ed. Ed. V. Ed. Ed.

ES. Tan. g. Dul.
 SS. BLK. Carb. 11. DE. R. V. SH. Foss.
 MISSISSIPPI 4422-1694
 ES. Tan. g. SH. Foss. V. AT. P. R. P. H. B.
 11. wt. To. VSH. Boss. V. AT. P. R. P. H. B.
 DE. R. SH. Ed. Sp. M. SH. ES. Ed. E. Ed. Ed. V. Ed. Ed.

ES. Tan. g. Dul.
 SS. BLK. Carb. 11. DE. R. V. SH. Foss.



4300
 4400
 4500