

# KIM B. SHOEMAKER

CONSULTING GEOLOGIST

316-584-9709 \* WICHITA, KS

## GEOLOGIST'S REPORT

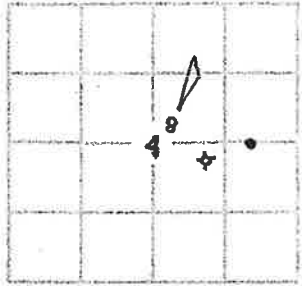
DRILLING TIME AND SAMPLE LOG

COMPANY L. D. DRILLING, Inc.  
 LEASE \*2-4 EUGENE  
 FIELD OLMITZ WEST  
 LOCATION 3055' FSL & 2310' FEL  
 SEC 4 TWP 18s RGE 15w  
 COUNTY BARTON STATE KANSAS  
 CONTRACTOR L. D. DRILLING, Inc.  
 SPUD 3-16-18 COMP 3-26-18  
 RTD 3670 LTD 3671  
 MUD UP 2815 TYPE MUD CHEMICAL

ELEVATIONS  
 KB. 1986  
 DE.  
 GL. 1981  
 Measurements Are All From 1986 KB  
 CASING SURFACE 8 5/8" @ 1018'  
 PRODUCTION 5 1/2" @  
 ELECTRICAL SURVEYS  
 DUAL TND., DENS-N. MICRO

SAMPLES SAVED FROM 2900 TO 3670  
 DRILLING TIME KEPT FROM 2900 TO 3670  
 SAMPLES EXAMINED FROM 2900 TO 3670  
 GEOLOGICAL SUPERVISION FROM 3000 TO 3670  
 GEOLOGIST ON WELL Kim B. SHOEMAKER

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	1002 + 984	1001 + 985
B/ANH	1030 + 956	1033 + 953
TOPEKA	2988 - 1002	2987 - 1001
HEEBNER	3223 - 1237	3224 - 1238
LANSING	3303 - 1317	3302 - 1316
B/KC	3504 - 1518	3502 - 1516
ARBUCKLE	3554 - 1568	3554 - 1568
BROWN LIME	3289 - 1303	3290 - 1304



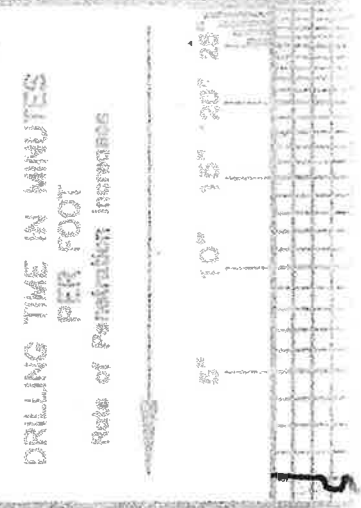
API: 15-009-26198

\*: This is a 'thin' to 1-4 Eugene drilled  
 7-31-17 - 8-4-17 original well became stuck @ 2803', Drill Collar and some drill pipe were not recovered. The new location was drilled 85' North of 1st location.

- REMARKS
- 3-16-18 SPUD
  - 3-17 @ 1003'
  - 3-18 @ 1223'
  - 3-19 @ 2270'
  - 3-20 @ 2817'
  - 3-21 @ 3180'
  - 3-22 @ 3310'
  - 3-23 @ 3377'
  - 3-24 @ 3510'
  - 3-25 @ 3580'
  - 3-26 @ 3670'

### LEGEND

- Anhydrite
- Salt
- Sandstone
- Shale
- Carb sh
- Limestone
- Dol.Lime
- Gneiss
- Dolomite

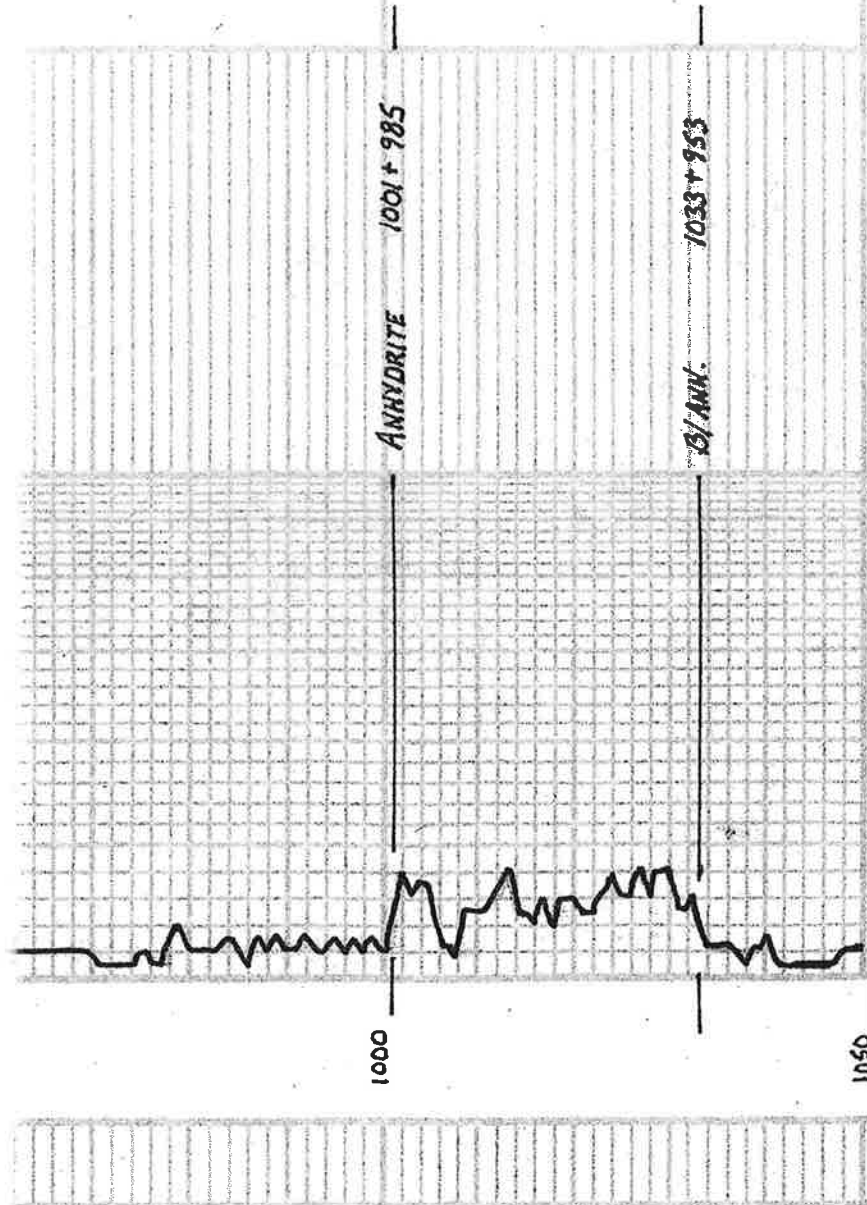


DEPTH  
950

REMARKS

SAMPLE DESCRIPTIONS

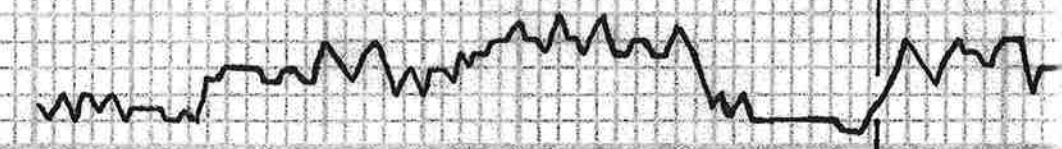
LITHOLOGY



1050

Mid V @ 2897  
Vis: 72  
WT: 8.7  
VL: 8.0  
CAL: 3300

2900



3000

Samples are logged

Sh. Ltg. Silty

Ls. Sh. Gy. Silty

Sh. Gy.

Ls. Gy. Dst.

Sh. Ltg. Silty

TOPEKA 2987-1001

Ls. Ltg. VSH Foss.

Ls. Ltg. VSH Foss. w/ DK G. Foss.

Ls. Ltg. Sh. Foss w/ DK G. Foss.

Ls. Ltg. VSH Foss VSH Chilly.

Ls. Tan. VSH Foss. Silty, Fe sp. Foss.

Ls. w/ Silty Foss. Chilly.

Sh. BLU

Sh. Ltg.

Ls. w/ Silty Foss. Chilly.

Sh. Ltg. G.

Ls. w/ Ltg. Silty Foss. Calcitic

Ls. Ltg. VSH A

Sh. BLU G.

Ls. Tan. VSH Foss.

Sh. BLU

Ls. Tan. VSH Foss. Chilly.

A DK B.

Ls. Tan. VSH A

Sh. G.

Ls. G. Silty Foss. Vaggy F. Sp.

NEAR Hwy SH. FSD DE RI Hwy. No. 100

Vis: 66  
WT: 9.0  
VL: 9.2  
CAL: 7000



3100

DST (1) 3160-3180

1st OPEN: Bottom bucket 2 min. 88: 6"

2nd OPEN: " " 5 " 89: Bottom bucket

Rec. 661 G.A.P. 30.45.45.60

32' CO. 10 GRAV. 60°F

315' OGCV (3576.25/41.40/W)

370' SOCV (57001.99/41.11/M)

TR. 225'

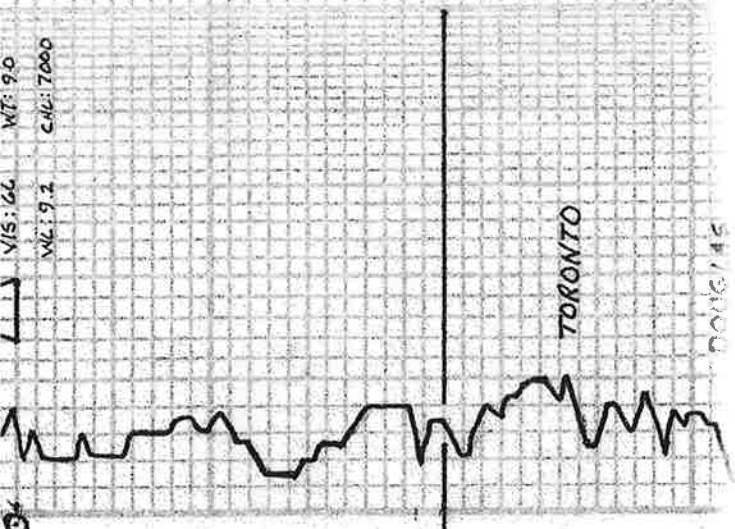
FP: 78-220 230-330 "

SIP: 724-653 F

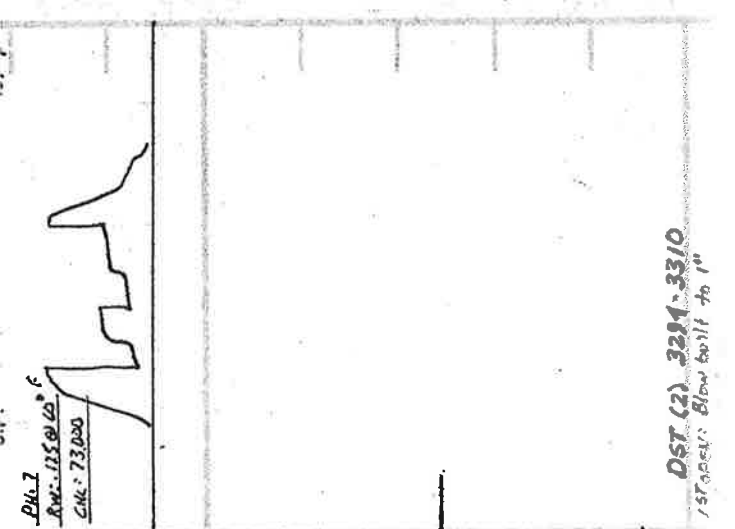
Temp. 89°F

PLZ

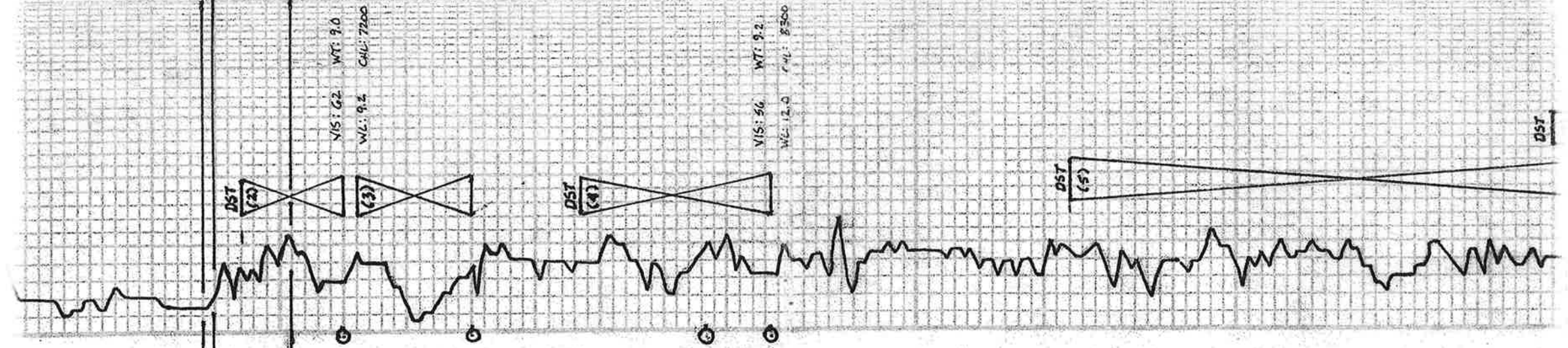




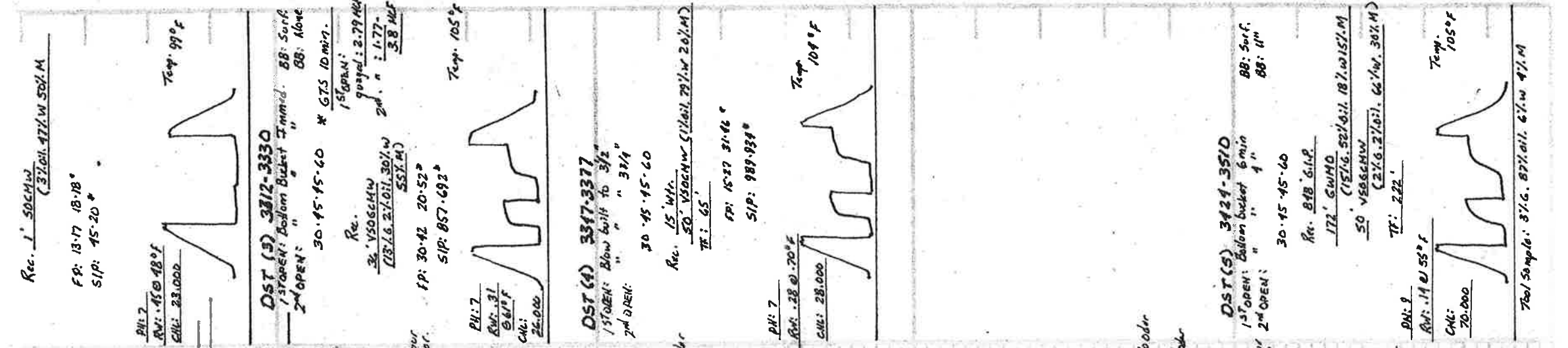
LS. M.L.H., VSH. Foss. Sil. Chlly.  
 LS. Gg. Duv.  
 LS. wt. VSH. Foss. Chlly. Fe. Fluor.  
 LS. T. H. B. Sil. A.  
**HEBNER 3224-1238**  
 Sh. Bl. Crab.  
 Sh. H. Bl. V.  
 LS. wt. Sil. Foss. Sil. A. P. V. g.  
 H. B. Sp. Sil. V. F. D. Drill Floor  
 No. Oder.  
 LS. wt. VSH. Foss. Sil. A.



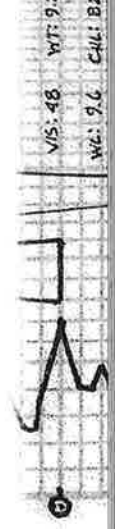
P.H. 7  
 RW: 125 @ 100° F  
 CAL: 73,000  
**DST (2) 3224-3310**  
 1st OPEN: Blow built to 1"



Sh. L. G. g. Silly.  
**BROWN LIME 3290-1304**  
 LS. B. G. V. Sil. Foss.  
 Sh. G. G.  
**LANSING 3302-1316**  
 LS. wt. Sil. Chlly. P. V. g.  
 V. H. B. Sp. Sil. V. F. D. Drill Floor  
 No. Oder.  
 LS. T. H. B. Sp. Sil. V. F. D. Drill Floor  
 No. Oder.  
 LS. wt. VSH. Foss. Sil. Chlly.  
 LS. T. H. B. Sp. Sil. A.  
 LS. L. G. g. Duv.  
 LS. DE. B. V. Sil. Foss.  
 Sh. G. g.  
 LS. T. H. B. Sp. Sil. V. F. D. Drill Floor  
 No. Oder.  
 LS. H. B. Sil. Foss.  
 LS. G. g. Sil. Foss. P. V. g. DE. B. Sp. Sil. V. F. D. Drill Floor  
 No. Oder.  
 LS. L. G. g. Sil. Foss. V. Sil. Foss.  
 LS. T. H. B. Sp. Sil. V. F. D. Drill Floor  
 No. Oder.  
 LS. DE. B. V. Sil. Foss.  
 Sh. G. g. L.  
 LS. T. H. B. Sp. Sil. V. F. D. Drill Floor  
 No. Oder.  
 LS. wt. VSH. Foss. Sil. Chlly.  
 LS. wt. VSH. Foss. Sil. A.



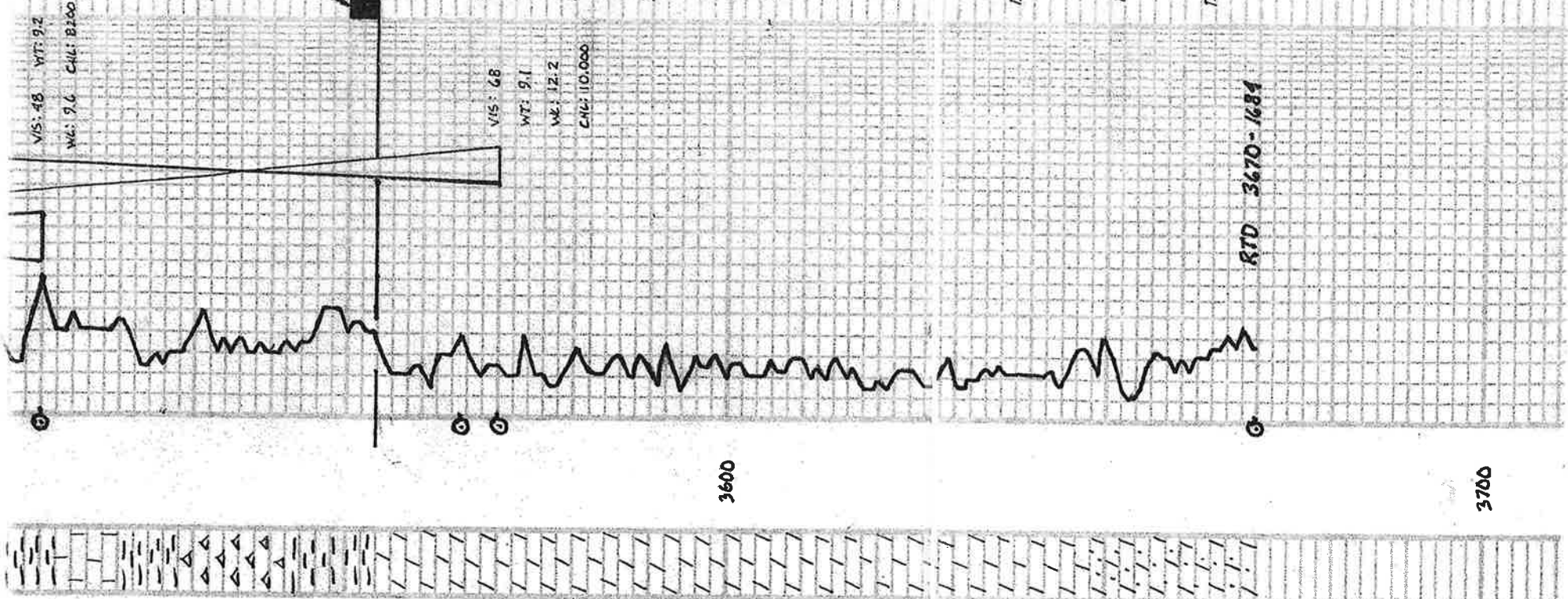
Rec. 1' 506 MW  
 (37.0% 47% W 50% M)  
 FP: 13-17 18-18°  
 SIP: 45-20°  
 P.H. 7  
 RW: 45 @ 48° F  
 CAL: 23,000  
 Temp: 99° F  
**DST (3) 3312-3330**  
 1st OPEN: Bottom Bucket 7 min. 88: Surf.  
 2nd OPEN: " " " 3 1/2" 88: 11"  
 30-45-45-60 \* 67.5 10 min. 1st OPEN:  
 2nd " " " 1-17-  
 3.8 MW  
 Rec. 26' 1506 MW  
 (13.1% 27.0% 30% W 55% M)  
 FP: 30-42 20-52°  
 SIP: 857-692°  
 Temp: 105° F  
 P.H. 7  
 RW: 31 @ 81° F  
 CAL: 26,000  
**DST (4) 3347-3377**  
 1st OPEN: Blow built to 3/2"  
 2nd OPEN: " " 3 3/4"  
 30-45-45-60  
 Rec. 15' 154° W.  
 50' 1506 MW (14.0% 29% W 20% M)  
 TP: 65°  
 FP: 15-27 31-46°  
 SIP: 989-934°  
 Temp: 109° F  
 P.H. 7  
 RW: 28 @ 70° F  
 CAL: 28,000  
**DST (5) 3424-3510**  
 1st OPEN: Bottom bucket 6 min 88: Surf.  
 2nd OPEN: " " " 4" 88: 11"  
 30-45-45-60  
 Rec. 818' 6.1 P.  
 172' G.W.M.O.  
 50' V. B. S. C. M. W.  
 (27.6% 27.0% 66% W. 30% M)  
 TP: 222°  
 P.H. 9  
 RW: 14 @ 55° F  
 CAL: 70,000  
 Temp: 105° F  
 760' Sample: 8% C. 87% oil. 6% W 4% M



VIS: 4.8 WT: 9.2  
 CAL: 8200

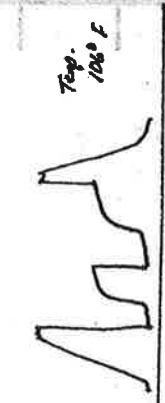


VIS: 4.8 WT: 9.2  
 CAL: 8200



VIS: 48 WT: 9.2  
 WC: 9.6 CMC: B200  
 45. wt. vsl: Fss. Sil. Chl. w/ Rd sh. Incl.  
 sh. Rd. G. G.  
 Δ Rd. Orng. To Bl. Sil. weathered  
 sh. Rd. G.  
**ARBUCKLE**  
 3559-1568  
 Dol. w/ Coxln F. Xh. β  
 Bl. SAT. SH. SFD F. Flow F. odor  
 Dol. w/ Mid. Coxln F. Xh. β  
 Bl. SAT. SH. SFD T. Gals. F. Flow  
 F. odor  
 Dol. w/ Coxln F. Xh. β  
 SAT. SH. SFD ESTD F. Flow  
 F. odor  
 Dol. w/ G. Coxln F. Xh. β  
 D.E. Bl. Sph. SH. SFD Dull Flow  
 Col. odor  
 Dol. wt. Mid. Coxln, T. Sph. Co. G.  
 Dol. w/ Lig. Coxln T. Glauc. T. Pyrite  
 Dol. w/ G. Mid. Coxln T. Glauc.  
 Dol. wt. Fresh Sph. Mid. Co. G.  
 Dol. T. G. Very Sph. Mid. Co. Sph. Rd.

DST (6) 3500-3570  
 1st OPEN: Bottom bucket 13.5 min. 88: 500  
 2nd OPEN: " " " " 88: 1/2  
 30.45-45-60  
 Rev. 378 G.I.P.  
 252' 56 WAD  
 [41.6.53/dil. 31 w. 98% M]  
 FP: 26-29 73-120 \*  
 SIP: 925-892 \*



Top Sample: 95' - 101' 11" w. 91% M

3600

3700

RTD 3670-1684