

Max R. Lovely

# GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY <b>Raymond Oil Co.</b>	ELEVATIONS
LEASE # <b>#2 Helen Wells</b>	KB <b>3166</b>
FIELD <b>Wildcat</b>	DF _____
LOCATION <b>990'ENL, 1237'FWL</b>	GL <b>3155</b>
SEC <b>18</b> TWSP <b>20</b> RGE. <b>35W</b>	Measurements Are All From <b>KB</b>
COUNTY <b>Wichita</b> STATE <b>KS</b>	
CONTRACTOR <b>H2 #4</b>	CASING
SPUD <b>9-30-13</b> COMP <b>10-7-2013</b>	SURFACE <b>8 5/8 @ 267'</b>
RTD. <b>5052</b> LTD. <b>5054</b>	PRODUCTION <b>4Yr</b>
MUD UP <b>3450</b> TYPE MUD <b>Chem</b>	ELECTRICAL SURVEYS
	DI MICRO
	COMP M/D

## FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATA	STRUCTURAL POSITION		
				A	B	C
Base Anhydrite	2284	2280	886	888		
Stotler	3515	3514	-348	-348		
Heebner	3935	3934	-788	-786		
Lansing	3987	3986	-820	-820		
Stark	4289	4286	-1120	-1127		
Marmaton	4468	4466	-1300	-1301		
Ft. Scott	4610	4611	-1445	-1444		
Johnson	4682	4686	-1523	-1523		
Atoka	4736	4736	-1570	-1571		
Morrow SH	4816	4819	-1653	-1651		
St. Genevieve	4924	4922	-1756	-1761		
St. Louis	5001	5001	-1835	-1820		

## REFERENCE WELLS FOR STRUCTURE

A **Raymond #1 Helen Wells NW NE NW NW 18-20-35W**

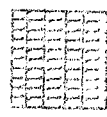
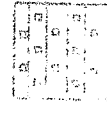
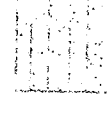
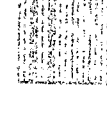
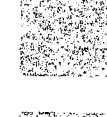
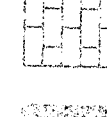

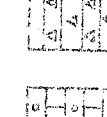
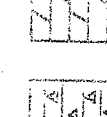
B \_\_\_\_\_

C \_\_\_\_\_

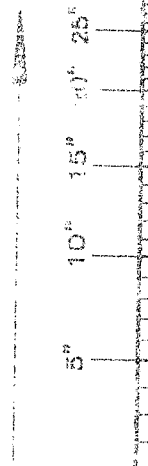
REMARKS

REMARKS

LEGEND

-  Anhydrite
-  Salt
-  sandstone
-  Shale
-  Carb sh
-  Limestone
-  Dol. Lime
-  Chert
-  Dolomite

DRILLING TIME IN MINUTES  
PER FOOT  
Rate of Penetration Decreases



LITHOLOGY

DEPTH

REMARKS

OIL SHOWS

SAMPLE DESCRIPTIONS





C. STOTLER  
3515 - 349

3500

LS, GRY, TAN, F XTLN, HRD, ABUN COX & FOSSE, V.P. 0.1 AS	LS, GRY, TAN - WCMT ID 00LS F XTLN, HRD, DMS, TITE	SH, GRY	SH, GRY, STICKY	SH, GRY, SANDY	LS, WH, GRY, F GRNLR TXT, FOSSE W/N, F 0.1 AS	SH, GRY	LS, GRY, TAN, VF XTLN, DMS, HRD, TITENS	SH, SLTY, GRY	LS, CRM, TAN, F XTLN, MED GRY XTLS W/N, NS	SH, GRY, RED
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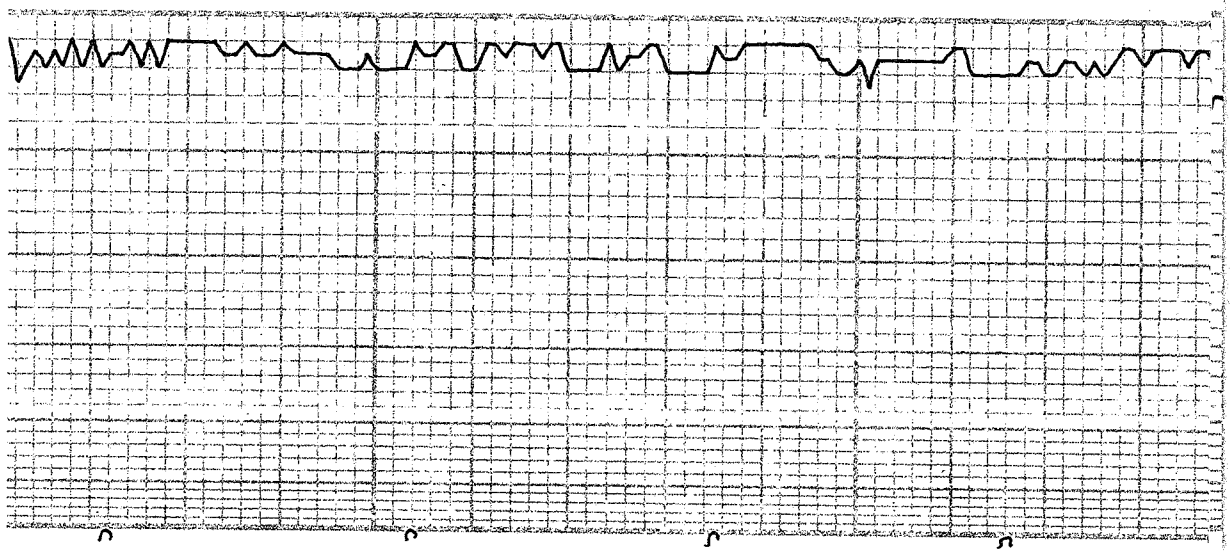


3600

3700

LS. WH. F. CRS. XTLN. FOSS. CASTS NS	LS. BRN. F. XTLN. ABUN. FOSS. + FRAGS. VWCMT. P. HRD	SLTSTN. GRY	SH. GRY.	LS. WH. TAN. FOSS. NS	SH. GRY. SLTY	LS. GRY. VE. XTLN. HRD. DMS. LITE	DOLO. TAN. FXTLN. GRAY TKT, HRD. NO VIS. Ø. NS	A. A.	LS. WH. F. XTLN. HRD. SCT LG XTLS. W/N. F. G. VUG. Ø. NS
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BRILL. ABUN. SOME FOSS. NI.



3800

LS. TAN, F. XTLM, FRD, SL ALGAS, TXT, F. Ø. NS
SLTSTN, GRY
LS. BUFE, F. XTLM, GRANR TX, MHRD, F. Ø. XTLM/Ø. NS
LS. WHT, TAN, SOFT, F. XTLM, GILS, SL CHKY, NS
LS. GRY, F. XTLM, DWS, HRD, TTE, NS
LS. WHT, TAN, SOFT, F. XTLM, GRANR TX, GLAUC, F. Ø. XTLM/Ø. NS
SH. BLK
SLTSTN, GRY
SH, RED SLTY
LS. GRM, F. XRS XTLM, SL CONKA, SOFT, BRTL, G. XTLM/Ø. NS
LS. WHT, F. XTLM, CMPT'D FOSS, ABOU LG FOSS, F. Ø. NS

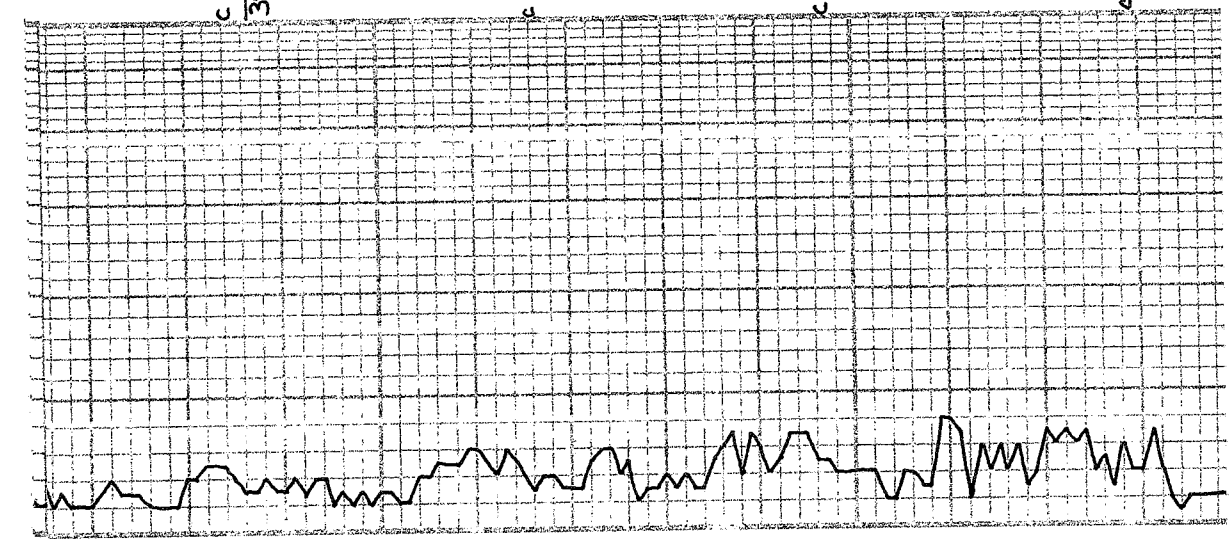
MUD CHECK  
 VIS 44 WT 8.95  
 CHLOR 5,000 LCM 2  
 FILT 7.6



3900

HEEBNER  
3935 - 769

SH, WHT, LT GRAY
LS, BUFF, F GRNLR TST, FOSS INCL'S W/W, M HRD, NS
SH, BLK
LS, WHT, GRAY, F XTUV, V FOSS, SL HRD, F P. NS
LS, BRN, TAN, F XTUV, M XTLS + FOSS W/W, SL CHKY, P. NS
LS, WHT, F XTUV, HRD, FOSS, TITE, NS
SH, SLTY, LMY, WHT, GRAY
LS, CRW, CHKY, SHLY, SOFT, NS
SH, BLK, DK GRAY
SH, GRAY
CHALK, CRW, SHLY
LS, TAN, F XTUV, M HRD, DWS, BRTL, ABUN, SML FOSS, M,

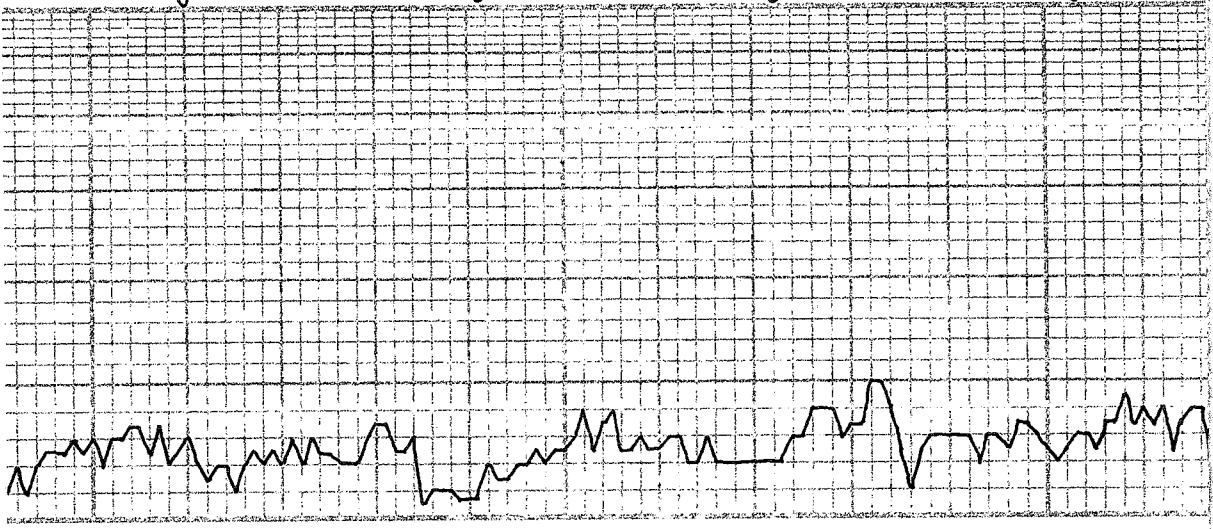


C LANSING  
3987 - 821

4000

10. TLM. EXT. N. ARD. SL. A/CAL	LS, WHT, CRM, BRN, FXTLN, V FOSS, NS	SH, BLK	LS, WHT, CRM, FXTLN, HRD, FOSS, SCT WHT FOSS CHT NS	CHT, WHT, WHT-BRN, SL FOSS	SH, GRY	CHT, GRY	SH, GRY	LS, GRY, V FXTLN, DNS, HRD, SCT GRY CHT	LS, WHT, BRTL, FXTLN, NS	LS, WHT, TAN, FXTLN, HRD, DNS NS
				AA AA AA	AA AA AA	AA AA AA	AA AA AA			

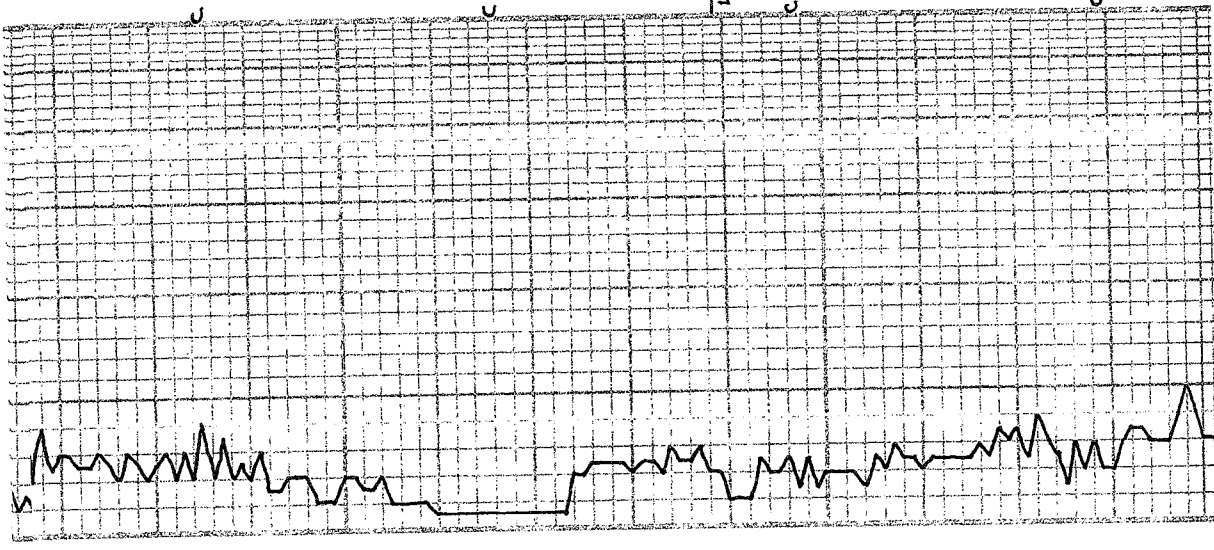




4100

4200

LS, TAN, VF XTLW, V DMS, V HRD, TITE, NS	SH, GRY	LS, WHI, HRD, EXTLW, MDV, $\phi$ NS	A.A.	SH, DK GRY	LS, BUFF, F XTLW, SL HRD, G YUG $\phi$ , NS	LS, GRY/TAN, VF XTLW, V HRD, SCT YUG, NS	LS, GRY/TAN, VF XTLW, V HRD, DMS, TITE, SCT FOSS, NS	SH, GRY, GRN	LS, TAN, BUFF, F $\rightarrow$ M XTLW, HRD, SCT SL GRN LR TIT, TITE, NS	A.A. INCR FOSS, SCT WHI, CHI
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STARK  
4289-1123

4300

SH, BLK	LS, TAN, VF XTLN, V HRD, DMS, TITE, MS
	LS, BUFF, VF XTLN CMT'D OOLS, ABUN MED OOLS, TITE, MS
	SH, BRN, GRY, RED
	LS, BUFF, FXTLN, BRTL, ABUN OOM, MS
	LS, TAN, VF XTLN CMT'D OOLS, HRD, VTITE CMT'D, MS
	SH, GRY, RED
	LS, LT GRY, VF XTLN, DMS, V FEW SCT XTLN FILL VUGS, TITE, MS
	LS, WHT, FXTLN, HRD, DMS, SCT SML FOSS W/M, TITE, MS
	LS, AA
	SH FLOOD

SH FLOOD

H FLOOD

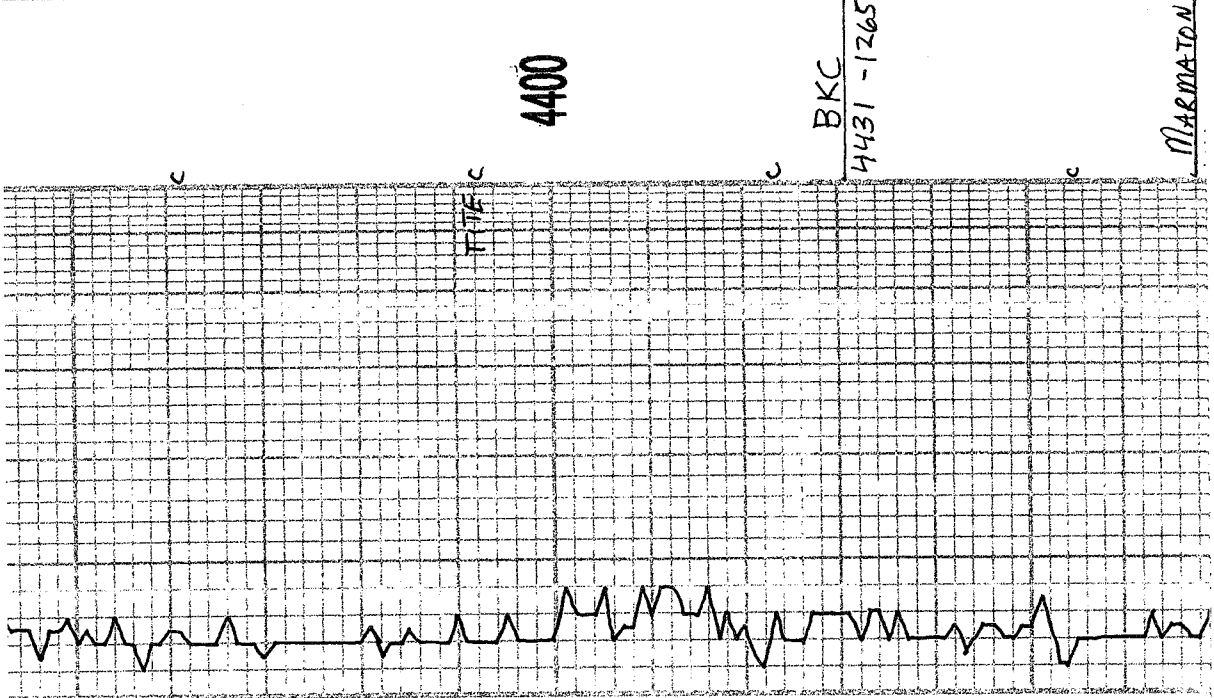
7:AM, 10-4-13

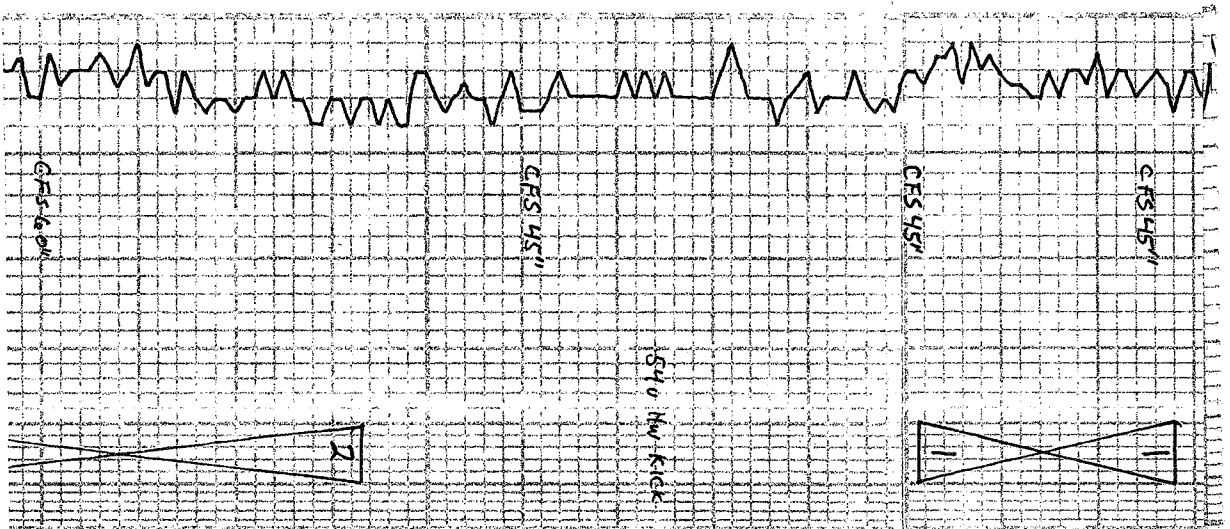
DKL6@ 4340

V

SH, GRV, SLTY-SMDY	LS, WHT, F → M XTLN, SL HRD, V FEW FOSS, FAIR XTLN PINS	LS, CRIM, WHT, SOFT, CHALKY, DIS	A.A.	LS, WHT, F → M XTLN, HRD, F → G XTLN PINS	LS, WHT, TAN, MXTLN, A HRD, FOSS, F PINS	SH, GRV	LS, TAN, MXTLN, S → M HRD, NO VIS PINS	SS, GRY CNT, CLR F → M GRNS, FRIABLE, SOFT, W SORT, V PARTYS INS	IC ADMU DICE E → M VTN
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MUD CHECK  
 VIS 57 WT 9.3  
 CHLOR 5.000 WCMZ  
 FILT 7.6





4468 -1302

4500

PAWNEE  
4566-1400

BRTL, G FLUDR STWD VUGS,  
MED GRW OIL, SL FLUDR FO  
OW BRK, G VUG

FLUDR FO  
N TRAY  
WIS P ODOOR  
IDU Kick-HW

LS BUFE, F XTUV CMT, ABUN FOSS  
HRD, VG FOSS & W/GOOD LT BRN  
+ FLUDR STAG, G ODOOR, TR  
GAS N P

20" AA, VG GASSY BLEED,  
MED BRN OIL

G ODOOR  
FO NCUP  
RATHBOW  
27U HW Kick  
31U HW Kick

SH, GRV RED  
LS, WHT, EXTU, HRD, EGS, SCT  
WHT CHT, NO VIS P, MS  
LS GRM, WHT, F XTUV, HRD, SL  
FOSS, G FLUDR OIL, C OATID VUGY  
P LEAR FO OW BRK, THIN ZONE

SL FO  
N TRAY  
FNT ODOOR  
VIS 60 WT 9.3  
CHLOR 5.800 LCM 2  
FILT 8.0

SH, GRV

DST #1 4472-4499  
30.60-45.90

LS TAN, V F XTUV, DNS, HRD,  
TITE, V CLEAN LS, NS  
SCT Pcs TAN CHT

IF: BOB 3/4 MW  
IS: BOB 3/4 MW  
FF: BOB 1MWD  
FSI: BLED OFF THRU OUT  
REC: 720' GIP

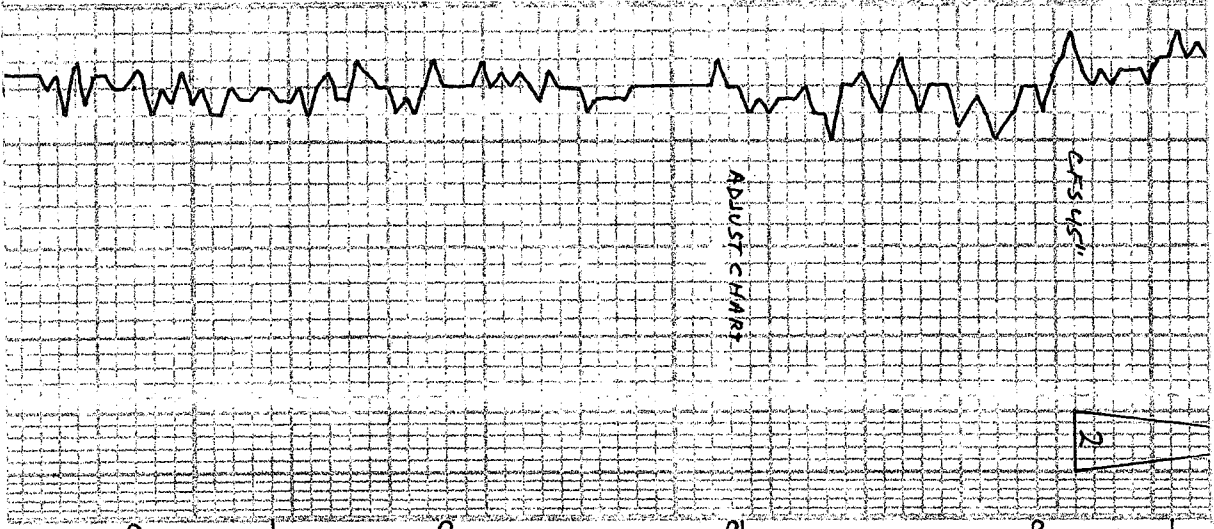
SH, BLK

60' GGO, 15% G, 85% O  
REV + 378' GGO, 20% G, 80% O  
REV + 120' MCGO, 20% G, 50% O  
FP: 83-173, 191-247  
SIP: 359-358  
HP: 2263-2184

LS BUFE, F XTUV, LG XTLS W/M, PCMTD  
FOSS, STRKS ELVOR STAG, FEW  
FLUDR FO OW BRK, G BRN FO OW  
BRK, TR GAS, G XTUV FOSS  
LS WHT, F XTUV CMTID OOLS,  
VG OIL FILL OOL, V OOL  
LS BRN/WHT, CHKY, SOFT, NS

NO ODOOR  
FD. BRK  
THIN  
ZONES  
NO ODOOR  
20 U HW Kick

211 OIL



MYRIC  
4600  
4598-1444

CHEROKEE  
4643-1477

JOHNSON  
4692-1526

4700

SH DEN	LS BRN, VEXTW, HRD G OIL COAT'D BEDDING PLATES, FEW BRN FO N TRAY SH, BLK	FEW FES
	LS BRN, TAN, GRAY, VEXTW, V HRD, DMS, FOSS, TITE, MS	
	AA	
	LS TAN, WHT, FXTW, HRD, V DK GRY FOSS W/ N TITE, MS	
	SH, BLK SH, GRY	
	LS LT GRY, TAN, VEXTW, DMS, HRD, TITE, MS	
	SH, GRY, DK GRY	
	LS TAN, WHT, FXTW, W HRD, MS	
	SH, GRY, SCLTY	
	SH, BLK, V HRD	
	LS WHT, TAN, VEXTW, HRD, ARDN FOSS, TITE, MS	
	LS WHT, FXTW, W HRD, SCT BLK DD OIL STMG, NO FO, NO ODOOR GUS?	DD OIL STMG? GUS?
	LS TAN, GRY, VEXTW, HRD, DMS TITE, MS	

7:14M 10-6-13  
CONDV FROM DST#2

DST#2 4557-4608  
30.60 45.90

IF: 4', d. ed 26min  
FF: NO BLD  
REC: 10'M  
FP: 30-32, 48-35  
SID: 1173-1126  
HP: 2275-2260

MUD CHECK  
VIS 65 WT 9.5  
CHLOR 7.000 LCM 2  
FILT 9.2

4468 -1302

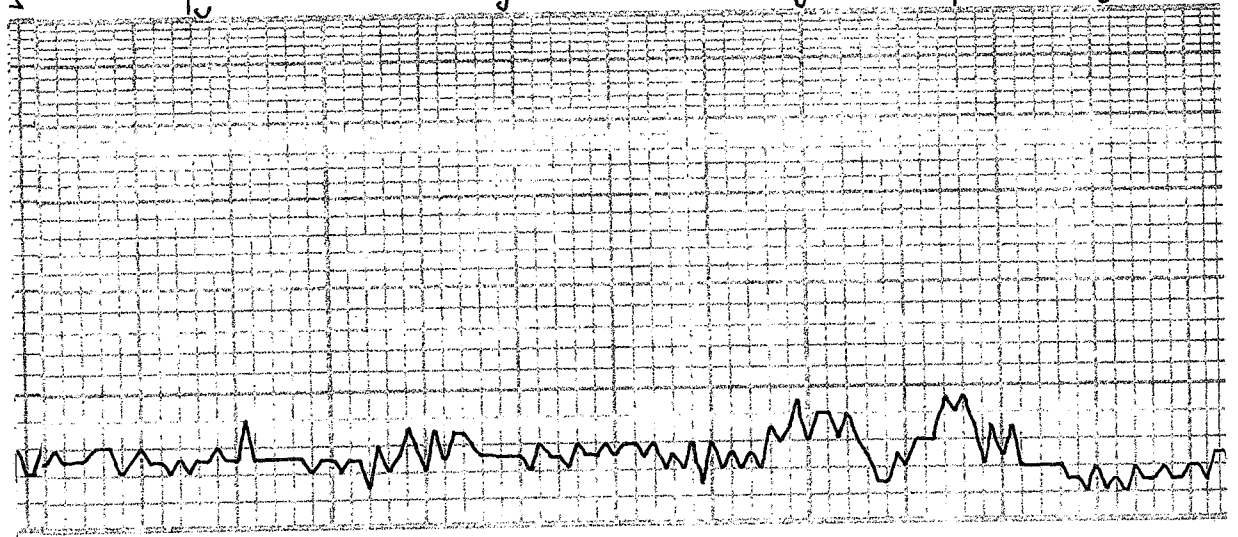
ATDKA

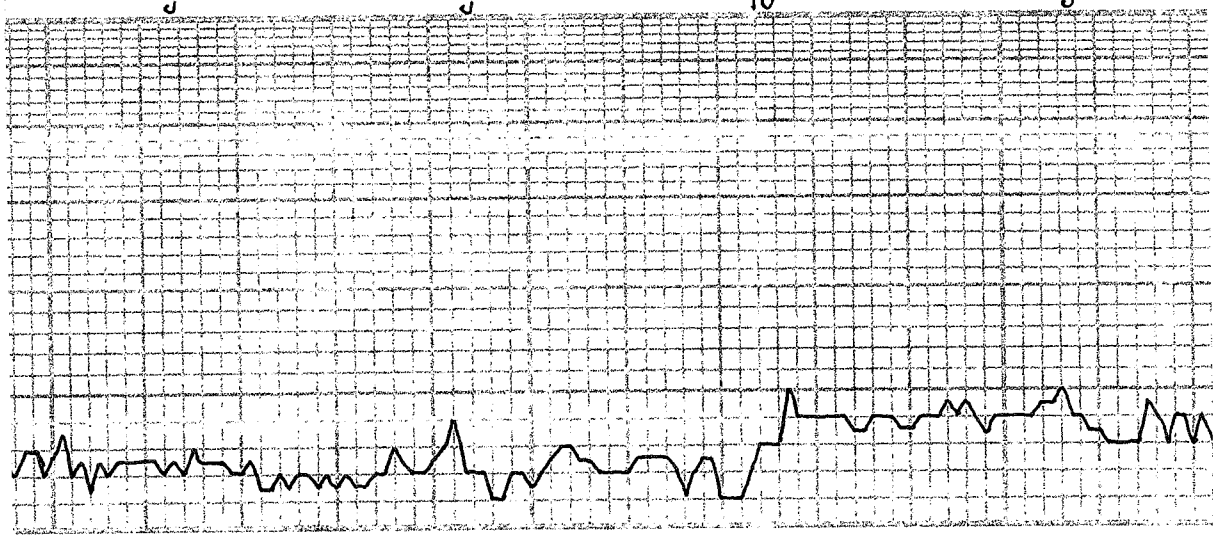
C 4736-1570

4800

MORROWSH  
4816-1650

LS, WHT, CRM, F XTLN, V HRD, DMS, MS SH, GRY	CHT, BRN, GRY, SCT FOSS, FRESH MS	LS, WHT, TAN, BRN, UF XTLN, DMS, HRD, TITE, MS	LS, A.A.	CHT, TAN, WHT, BRN, F XTLN, FOSS FRESH MS	LS WHT, GRY, F XTLN, HRD, DMS, SCT GRY XTLN WIN, TITE, MS	SH, BLK	SH, GRY	A.A.
[Hatched pattern]	[Hatched pattern]	[Hatched pattern]	[Hatched pattern]	[Hatched pattern]	[Hatched pattern]	[Hatched pattern]	[Hatched pattern]	[Hatched pattern]

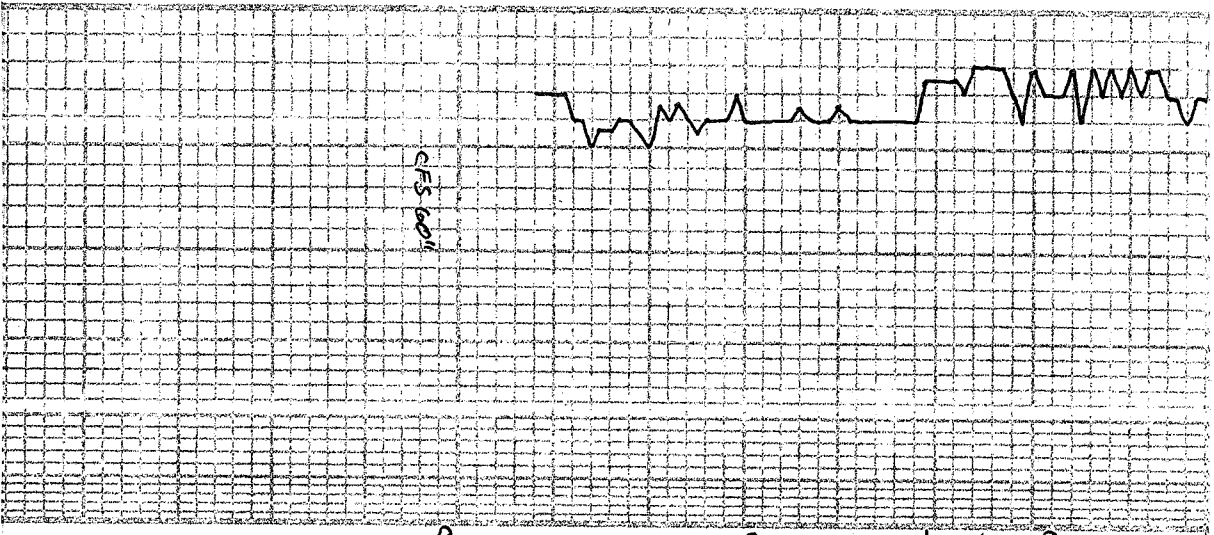




4900

Miss  
C4924-1758

SH, GRY, GRN, PYR	SS, WHT + GRN CMT, F → M GRNS, W SORT, RND, F → P CMT'D, GRNS	SH, GRY, GRN, BLK	LS, WHT, CRM, F XTLN, A BUN SML FOSS, CHTY - WHT, TAN, NOUS	SS, WHT GRNS, WHT + GRN CMT, SOFT, W SORT, F GRNS, GØ, NS	A.A.	LS, BLK, TAN, F → M XTLN, HRD, TITE, NS	LS, WHT, CRM, F → CRS XTLN, HRD, SL GRN, R. T. J. NS	A.A.	LS, BRN, TAN, F XTLN, DMS, HRD TITE, NS
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ST LOUIS  
5000  
5001 - 1835

	A.A.
	SH, FLOOD
	CHT, TAN, FOSS, FRESH, MS
	CHT, BRN, PEACH, FRESH
	A.A.
	CHT, WHI, PEACH, TAN, FRESH
	A.A.

74M 10-7-13  
DRLG @ 5031'  
MUD CHECK WT 9.5  
RSSY CHLOR 6000 LCM3  
FLT 9.2