

Max R. Lovely

# GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY Raymond Oil Co.  
LEASE McRae #1  
FIELD Wildcat  
LOCATION NW SE NW SW  
SEC 23 TWSP 19 RGE 36W  
COUNTY Wichita STATE KS

ELEVATIONS  
KB 3225  
DF \_\_\_\_\_  
GL 3214  
Measurements Are  
From KB

CONTRACTOR H2#1  
SPUD 10-31 COMP 11-9-14  
RTD 5200 LTD 5200  
MUD UP 3415 TYPE MUD Chem

CASING  
SURFACE 8 7/8" @ 265'  
PRODUCTION \_\_\_\_\_

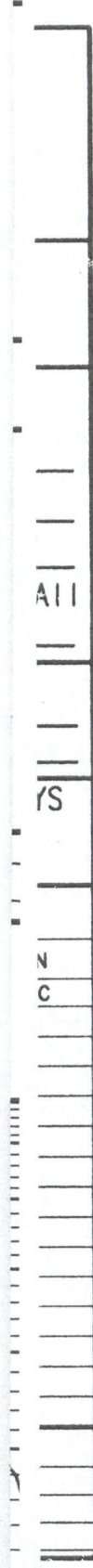
ELECTRICAL SURVEY  
DUAL IND MICRO  
COMP N/D SONIC

## FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION		
				A	B	
Anhydrite	2356	2356	869	888		
Base Anhydrite	2372	2372	853	870	863	
Stotler	3574	3574	-349	-336	-339	
Heebner	3986	3984	-759	-742	-748	
Lansing	4034	4035	-810	-792	-799	
Muncie	4235	4237	-1012	-994	-1005	
Hushpuchney	4403	4394	-1169	-1162	-1177	
Marmaton	4526	4526	-1301	-1300	-1303	
Pawnee	4624	4610	-1385	-1375	-1399	
Myric	4659	4645	-1420	-1408	-1435	
Ft. Scott	4678	4659	-1434	-1436	-1451	
Johnson	4757	4732	-1507	-1514	-1529	
Morrow SH	4888	4866	-1641	-1662	-1678	
Mississippi	5072	5072	-1847	-1848	-1897	

## REFERENCE WELLS FOR STRUCTURE

A Raymond Shimanek #1 NE SW SW SW 26-19-36W  
B Helmerich Harris #1-27 SE SE NW 27-19-36W  
C \_\_\_\_\_



REMARKS

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

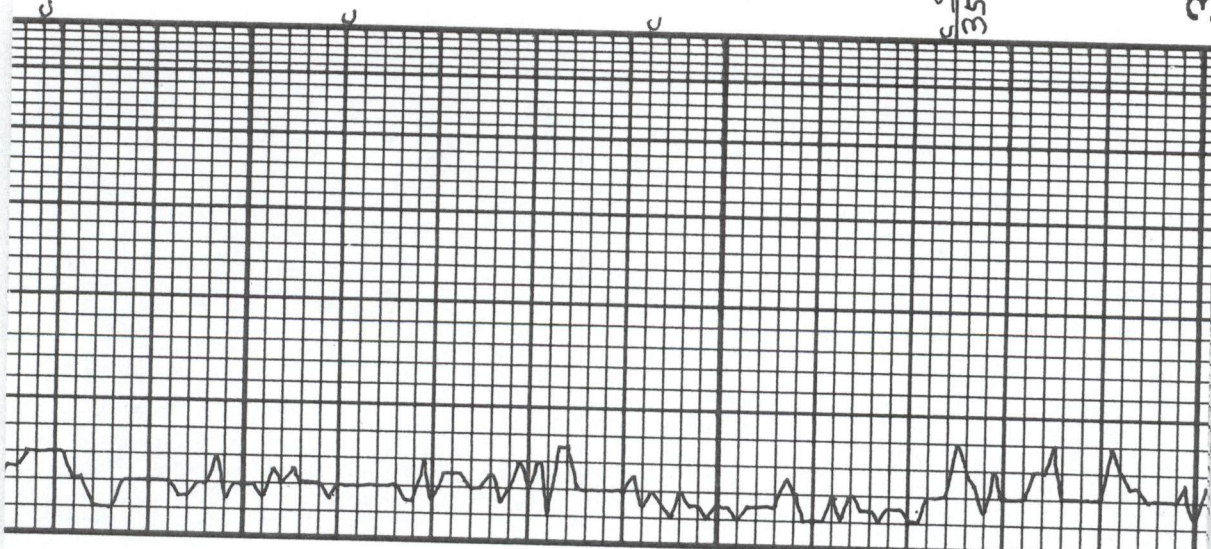
\_\_\_\_\_

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

DRILLING TIME IN MINUTES PER FOOT Rate of Penetration Decreases	DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	OIL SHOWS	REMARKS
			LS. TAN, GRY, F XTLN, ABOU FOSS HRD, P. MS		

LOG 7710



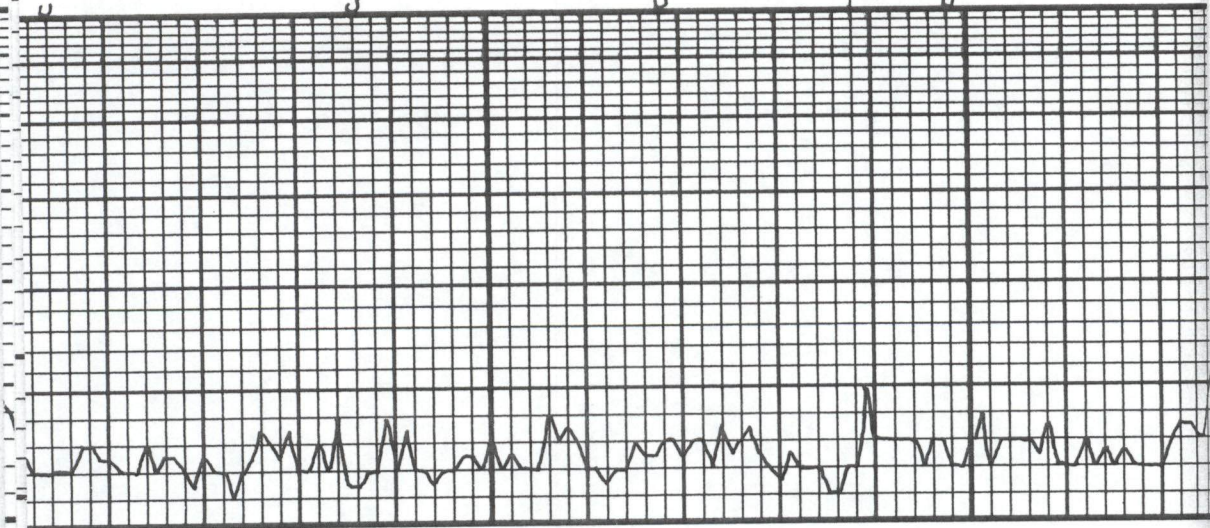
3500

STOTLER  
3574 - 349

3600

LS, CRM, TAN, F XTLN, SL DMS, M HRD, V FEW FOSS CASTS, NS	LS, LT GRY, V F XTLN, DMS, HRD TO MED HRD, NO VIS Ø, NS	LS, BRN, CRS XTLN, HRD, ABUN FOSS + FRAGS, NO VIS Ø, NS	LS, GRY, F → M XTLN, HRD, NO VIS Ø, NS	SS, GRY, CRT, CLR MED → FINE GRNS, F SORT, SOFT, F → G Ø NS	SH, GRY, DK GRY	LS, GRY, TAN, F → M XTLN, HRD, V FOSS, VP Ø, NS	LS, WHI, V F XTLN, DMS,
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HRD, CLEAN, NS	LS, CRM, WHT, EXTEN, DMS Pcs V FOSS, NS	POOR SAMPLES					LS, WHT, CRM, F → M XTLN, HRD, SCT Pcs FOSS + ALGAL, ; 8, NS	AA.	LS, TAN, M XTLN, HRD, FOSS, CHTY, NS
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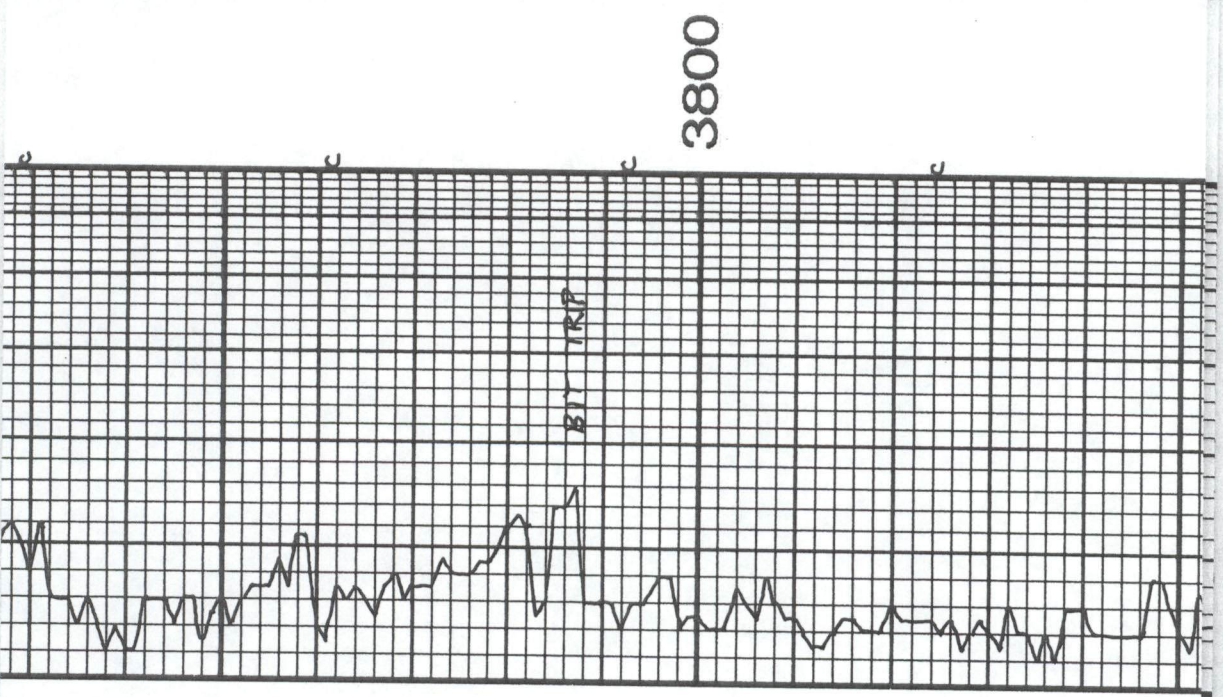
7:AM 11-3-14  
 DRLG @ 3658'  
 MUD CHECK  
 VIS: 60 WT: 8.7  
 CHLOR: 3,700 KCM: 16  
 FILT: 7.2

TOPEKA  
 3688-463  
 3700

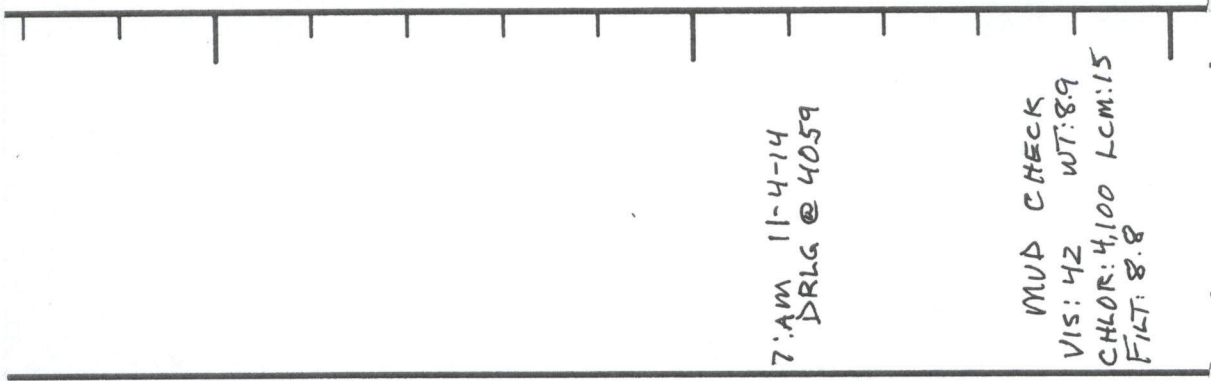
BUTANE TEST  
680 KICK

BACKGROUND INCR TO

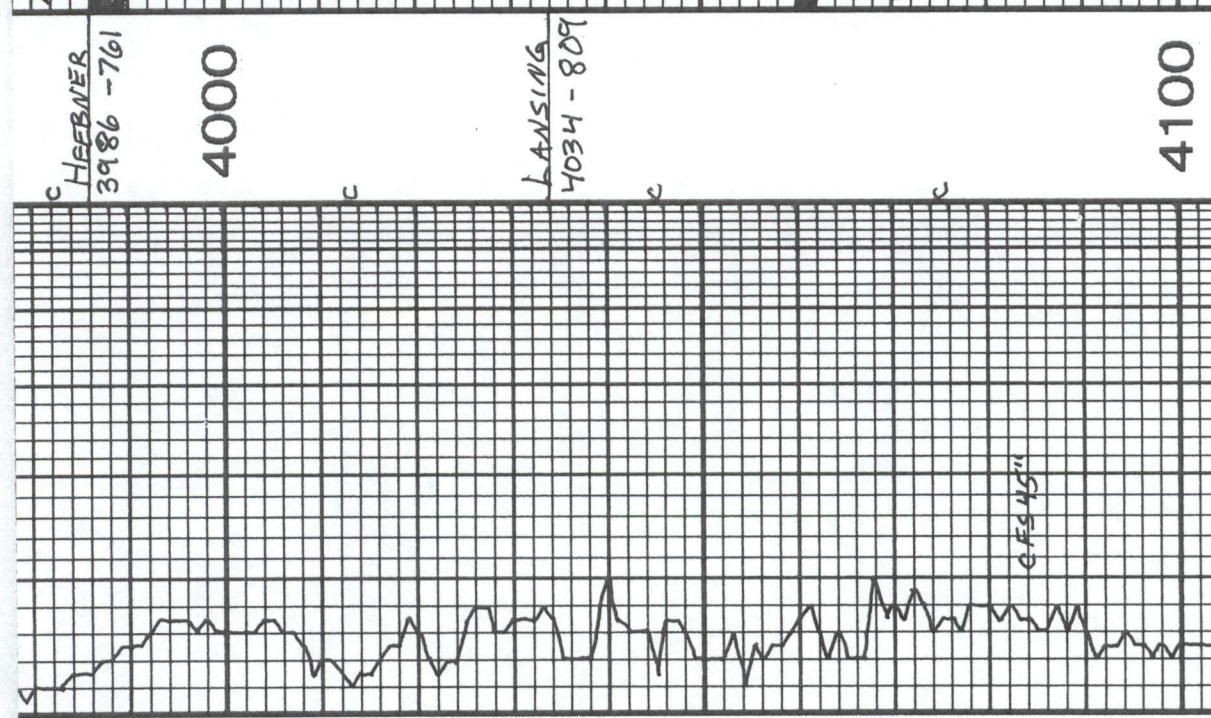
CHALK	LS, TAN, CRM, F → M XTLN, HRD, FEW FOSS, NO VIS Ø, NS
SH, GRV	
SH, GRV, LMY, HRD	
LS, CRM, TAN, F XTLN, HRD, V FOSS - ALGAL, NO APP Ø, NS	
LS, WHI, CRM, F XTLN, SOFT, SL BR TL, P → F Ø, NS	
A.A.	
LS, CRM, WHI, F XTLN, HRD, ABUN FOSS, VP Ø, NS	
LS, BRN, TAN, F XTLN, HRD, ABUN FOSS, VP Ø, NS	







CHT, WHT, FRESH	SH, BLK	LS, CRM, TAN, CHLKY, SOFT, NS	LS, WHT, F XTLN, M HRD, FAIRLY CLEAN, P XTLN, NS	LS, BRN, F XTLN, LG XTLS W/N, HRD, NO VIS, NS	LS, WHT, CRM, F XTLN, HRD, LG XTLS W/N, V FOSS, F, NS	A.A.	SH, BLK LS, BUFF, CRM, F XTLN, HRD, SCT PCS CHLKY, P, NS, NO ODR	LS, BRN, F M XTLN, V HRD, TITE LS, WHT, V F XTLN, V DNS + HRD, TITE, CLEAN, NS	LS, WHT, TAN, V F XTLN, DNS, HRD, TITE, NS	LS, AA, INCR WHT, CHT
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HEEBNER  
3986 -761

4000

LANSING  
4034 - 809

4100

RES 45"

NS

Are

RVE  
RO  
4/1C

ITIO

7:AM 11-4-14  
DRLG @ 4059

MUD CHECK  
VIS: 42 WT: 89  
CHLOR: 4,100 LCM: 15  
FILT: 8.8

HRD, CLEAN, NS

LS, WHT, TAN, VFXTLN, DNS, CTAB,  
CHTY, TITE, NS

LS, TAN, WHT, BRN, VFXTLN, V DNS,  
V HRD, CLEAN, TITE, NS

LS, CRM, WHT, F → M XTLN, HRD,  
FEW SCT VUGS, MUCH REXTLN,  
NS

LS, WHT, LT GRV, FXTLN, HRD,  
FOSS, FEW SCT VUGS, NS

LS, WHT, GRV/TAN, VFXTLN,  
HRD, DNS, TITE, NS

A.A.

LS, WHT, GRV/TAN, VFXTLN,  
HRD, DNS, TITE, CLEAN, NS

LS, BUFF, WHT, FXTLN, BRTL,  
SOFT, G. COMP, NS

A.A.

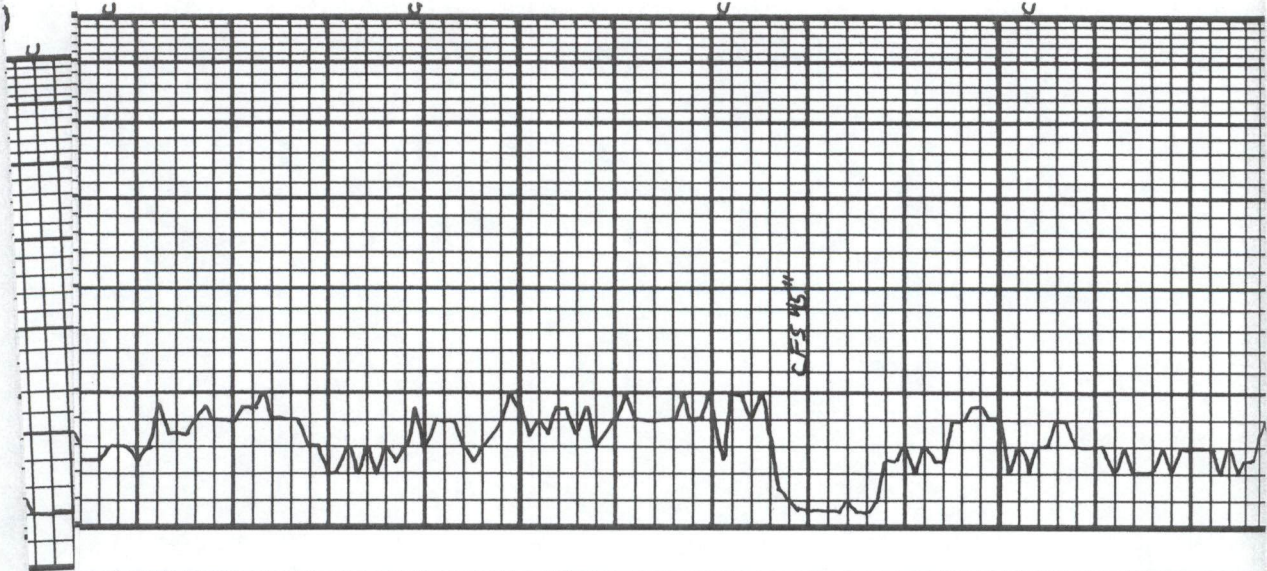
LS, WHT, FXTLN, HRD, V BRTL,  
G XTLN Ø, NS, WET

LS, TAN, VFXTLN, V HRD, DNS,  
SH-FOSS, NO RPP Ø, NS

A.A.

100 Hw Kick

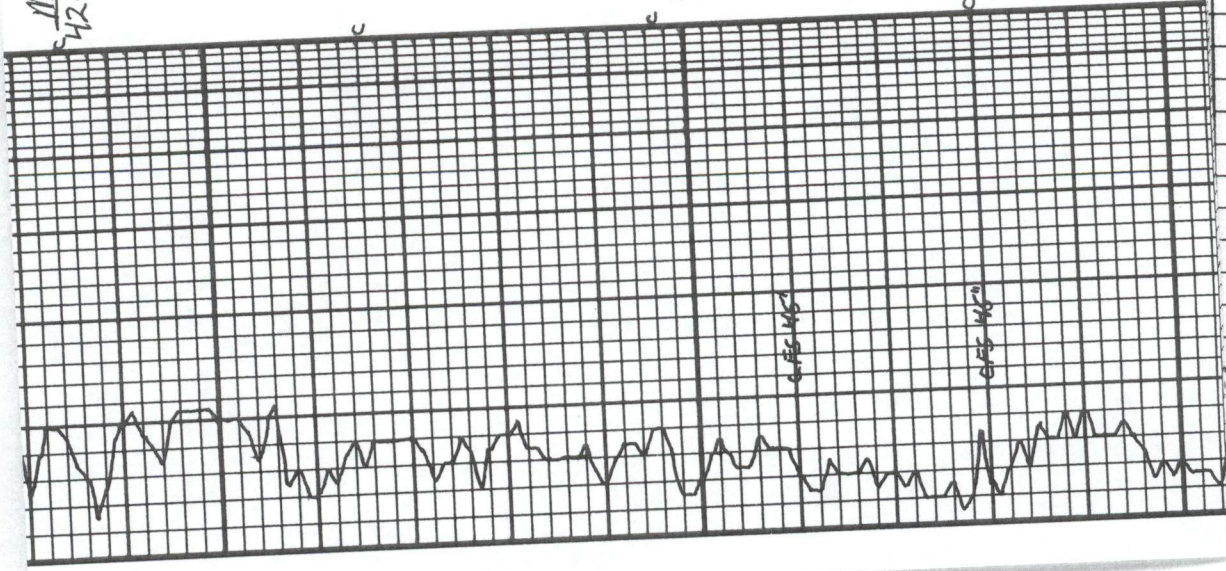
4200





MUNCIE  
4235-1010

4300



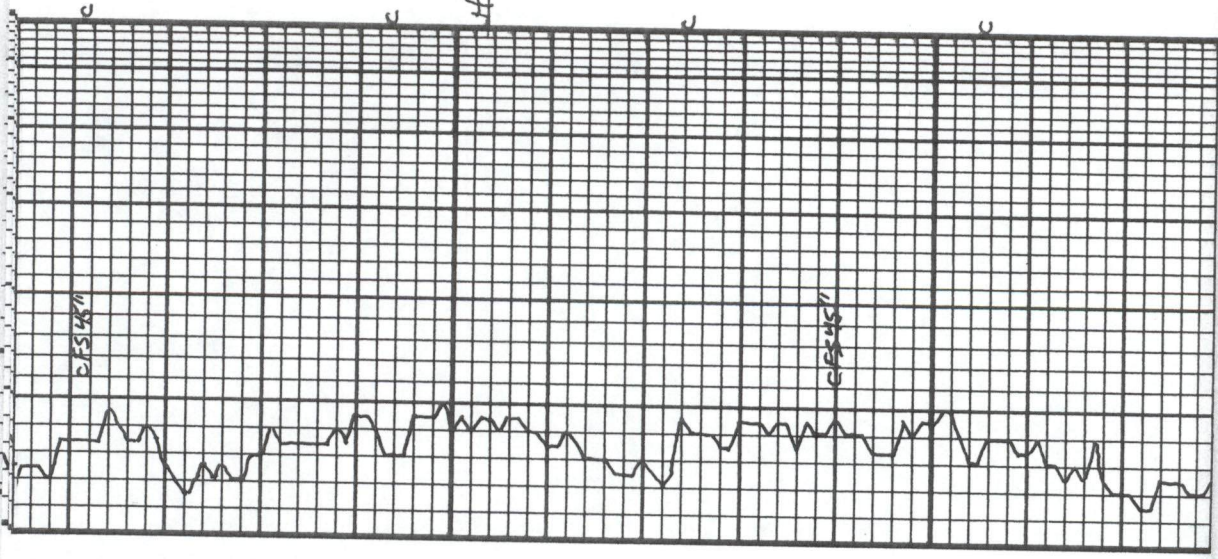
SK, BLK LS, LT GR, V F XTLN, PMS + HRD, CLEAN, NO APP, NS	LS, TAN, V F XTLN, V HRD, I TE NS	LS, WHT, F XTLN, HRD, I TE, NS	LS, TAN, WHT, F XTLN, M HRD, NO VIS, NS	SK, BLK, DK GR	LS, BRN, F XTLN, M HRD, P, NS	LS, CRM, WHT, F XTLN, S → M HRD, V SL CHKY, NS	LS, WHT / TAN, F XTLN, SOFT, V CHKY, NS	LS, WHT, TAN, F XTLN, BRTL, SOFT, ABUN FOSS, F FOSS, NS	LS, WHT, F → M XTLN, BRTL, FOSS, G, NS	LS, BUFF, F XTLN, BRTL, LT DOM, NS, NS, NO OPOR	SK, BLK, CARB LS, LT GR, BUFF, F XTLN, V FOSS NS	LS, LT GR, V F XTLN, ABUN DOGS FOSS, V. HRD, I TE
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ONS

Are

URVE  
CRO  
NIC

SITIO



4400  
HUSH/UCR/NE

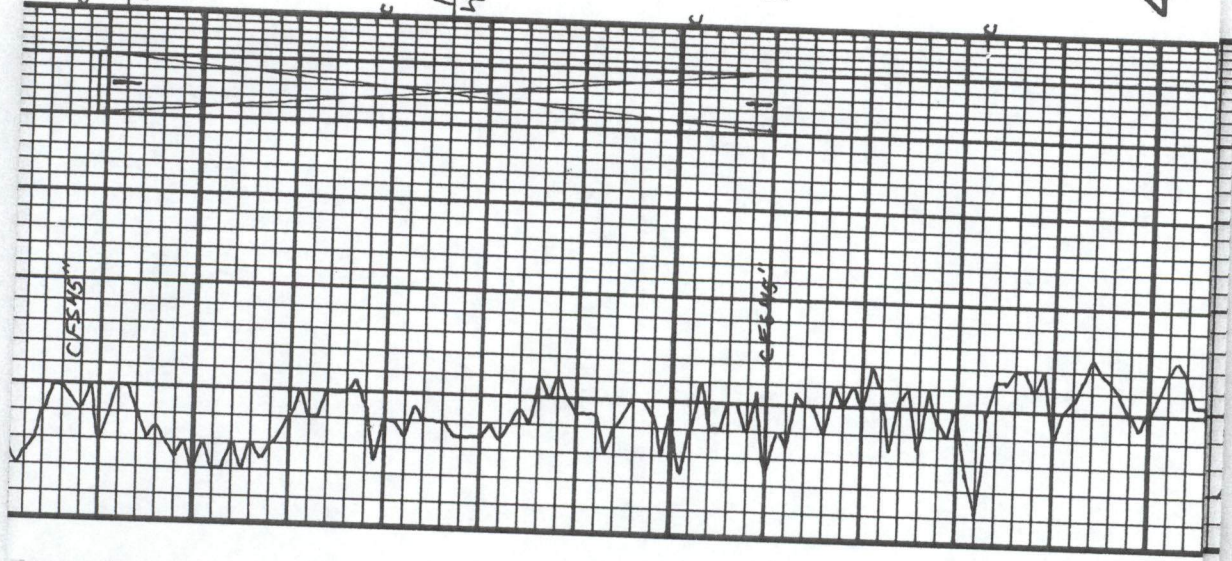
LS. WHT, TAN, F XTLN, SL FOSS, HRD, VP Ø, NS
LS. BRN, DK BRN, F → M XTLN, HRD, BRTL, V FOSS, P FOSS Ø, NS
LS. GRY, CRM, TAN, V XTLN, DMS HRD, TITE, NS
LS. BRN, A.A.
SH, BLK
LS. BUF, F XTLN, HRD, V OOM, NO VIS PERM, NS
LS. CRM, WHT, F XTLN, SOFT, SL CHLKY DW BRK, NO VIS Ø, NS NO OPOR, NO KICKS
LS. TAN, CRM, BRN, F XTLN, SL DMS HRD, NO VIS Ø, NS
LS. GRY, BRN, TAN, F XTLN, DMS, HRD, TITE, NS
LS. WHT, CRM, S → M HRD, F XTLN, VP Ø, NS
LS. TAN, F XTLN, M HRD, BRTL, ABUN W CMT'D OOLS, VP → TITE Ø, NS
LS. TAN, F XTLN, V FOSS, BRTL, F Ø, NS

7:AM 11-5-14  
DRLG @ 4395'

BUTANE TEST: 420 KICK

MUD CHECK

VIS: 45 WT: 9.2  
CHLOR: 5000 LCM: 12  
FLT: 9.6



BKC  
4492-1267  
4500

MARMATON  
4526-1301

DEV 1°

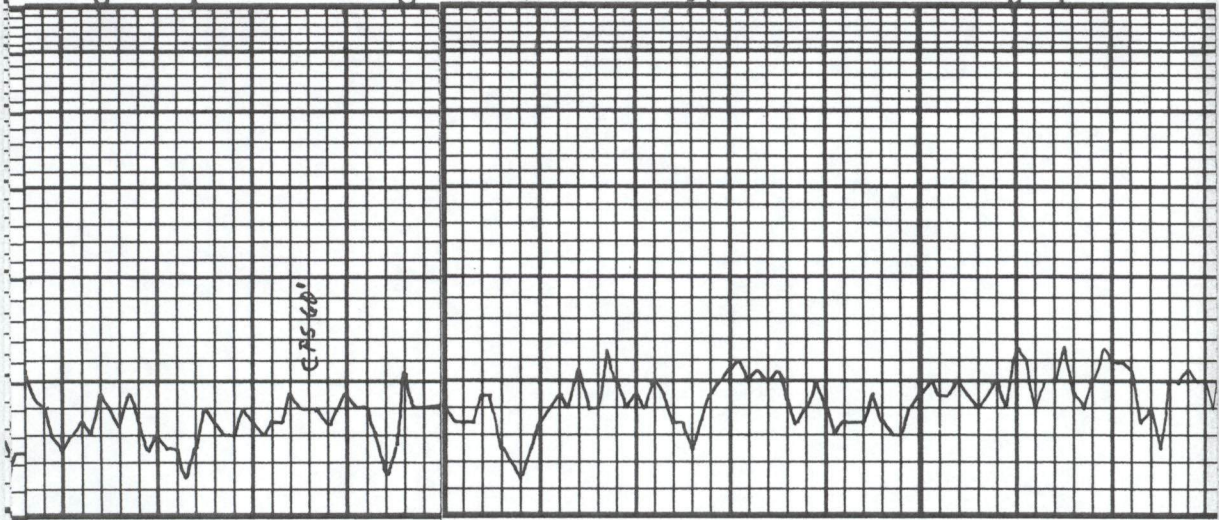
4600

LS, TAN, F XTLN, FOSS, TITE, NS	LS, TAN, F XTLN, HRD, SCT, F INT XTLN P → F SHD, DULL FLUOR STNG FEW DULL FLUOR FO BN BRN, FAIR SH BRN FO ON WRK
SH, GRY, SMDY N PCS, SML CLR GRNS, G Ø, NS	LS, TAN, F XTLN, CM TID OOLS, ABUN M → LG OOLS, VW CM TID, SHO SCT F → PP XTLN, EDGESTN P, 1 PL FOOL Ø W TR FAIR STNG + FO
SLT STN, BRN, GRY, GRN, SILT, CLR GRNS, FINE GRNS, SOFT, G Ø, NS	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
LS, BRN, M XTLN, HRD, SL INT XTLN Ø, NS	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
SH, GRY	LS, GRY, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
LS, BRN, F → M XTLN, HRD, PCS	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
BR TL, SCT FOSS, NO APP Ø, NS	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
LS, RDISH BRN, F XTLN, M → V HRD, SCT BRN OIL SPTS, FAIR SHO FO ON BRK	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
LS, BRN, F XTLN, HRD, SCT, F INT XTLN Ø, P → F SHD, DULL FLUOR STNG FEW DULL FLUOR FO BN BRN, FAIR SH BRN FO ON WRK	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
LS, TAN, F XTLN, CM TID OOLS, ABUN M → LG OOLS, VW CM TID, SHO SCT F → PP XTLN, EDGESTN P, 1 PL FOOL Ø W TR FAIR STNG + FO	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
LS, GRY, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
LS, CRM, F XTLN, ABUN GRY OOLS, W CM TID, SL BR TL, NS	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS
SH, DK GRY, HRD	LS, CRM, F XTLN CM TID OOLS, LG OOLS, VW CM TID, TITE, NS

DST #1 4489-4560  
30.60.45.90  
IF: SURF BLD, DIED 12 MIN  
FF: DEAD  
REC: 5'M  
TOOL: 1Y. 014, 99Y. M  
FP: 13-14, 16-16  
SIP: 423-449  
HP: 2110-2103

7:AM 11-6-14  
G1H w/DST#1 @ 4560'  
MUD CHECK  
VIS: 56 WT: 9.2  
CHLOR: 5,100 LCM: 10  
FILT: 8.0

? ODOR  
2 PCS  
SHO  
4 PCS  
FLUOR  
FO + STN  
MO ODOR  
? VSK ODOR  
3 PCS

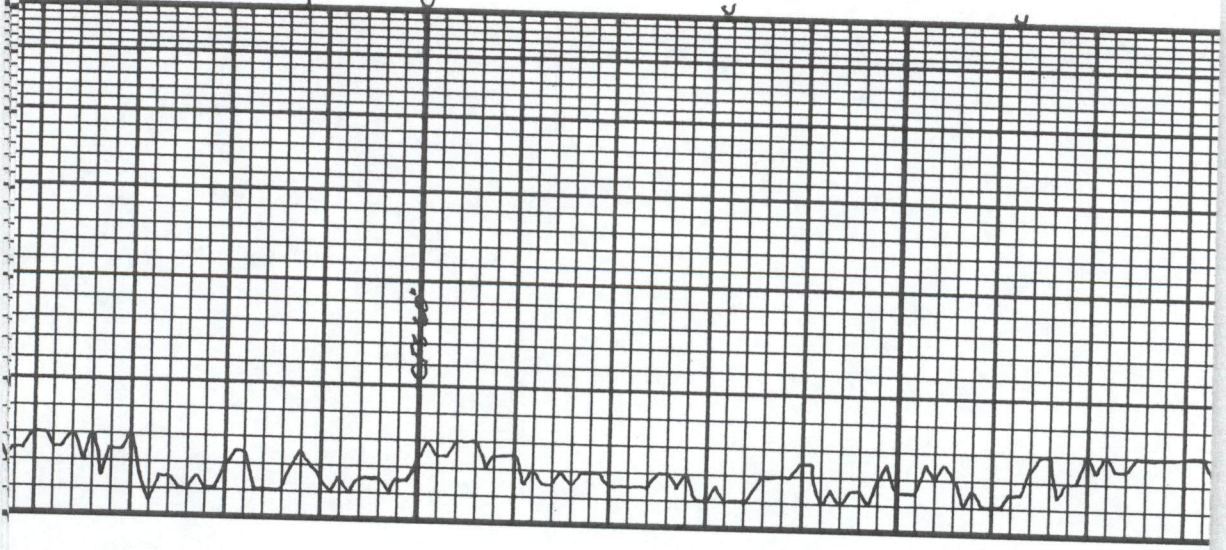


<p>PAWNEE 4624-1399</p>	<p>SH, GRY LS, GRY, VF XTLN, HRD, DNS, NO APP, NS</p> <p>SH, BLK</p> <p>LS, LT GRY, CRM, F XTLN, BRTL, FOSS, NO APP, NS</p> <p>LS, GRY, F XTLN, V HRD, DNS, TITE NS</p> <p>CHT, CRM, SCT CLR INCL'S W/M, WHT, CAR, OPAL, SHARP, NS</p> <p>CHT, FLESH W/ WHT INCL'S W/M SHARP</p> <p>SH, BLK</p> <p>LS, TAN, BRN, F M XTLN, HRD, FOSS, NO APP, NS</p> <p>SH, BLK</p> <p>LS, GRY, TAN, BRN, VF XTLN, DNS, HRD, TITE, NS</p> <p>LS, TAN, VF XTLN, DNS, HRD, TITE NS</p> <p>LS, WHT, TAN, VF XTLN, BRTL, SL HRD, FOSS, VP XTLN, NPS, NS</p> <p>AA.</p> <p>SH, BLK-CARB, GRY</p> <p>LS, CRM, F XTLN, S M HRD, V BRTL, NS</p>	<p>MYRIC 4659-1434</p>	<p>ST. SCOTT 4678-1453</p>
<p>4700</p>		<p>CHEROKEE 4715-1490</p>	

7:15 AM 11-7-14  
DRLG @ 4680'

MUD CHECK  
VIS: 54 WT: 9.1  
CHDR: 6.000 LCM: 10  
FILT: 9.6  
BUTANE TEST: 43.0 MW

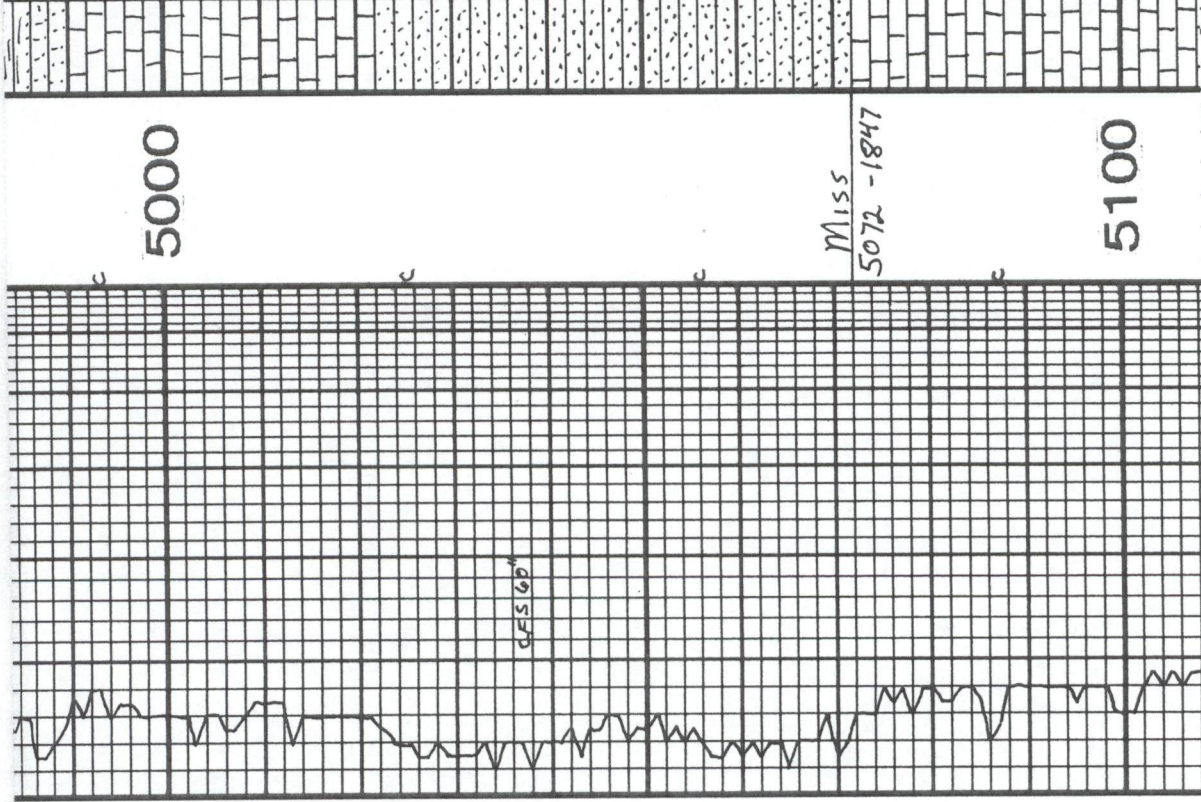




MORROW SH  
4888-1663

4900

CHT, CRM, FRESH, NS	CHT, CRM, FRESH, NS
LS, DK GR, CHTY, FXTLN, V HARD, DMS, TITE	LS, DK GR, CHTY, FXTLN, V HARD, DMS, TITE
LS, DK GR, BLK, CHTY, V FXTLN, DMS, HRD, TITE, NS	LS, DK GR, BLK, CHTY, V FXTLN, DMS, HRD, TITE, NS
SH, BLK	SH, BLK
SH, LT + DK GR	SH, LT + DK GR
SS CLR GRMS GRY CMT, HRD, W CMT P, VP, NS	SS CLR GRMS GRY CMT, HRD, W CMT P, VP, NS
SH, GR, GRN, SCT BRN LS	SH, GR, GRN, SCT BRN LS
A.A	A.A
LS, TAN, FXTLN, SOFT, PXTLN, NS	LS, TAN, FXTLN, SOFT, PXTLN, NS
M.A	M.A
SH, LT + DK GR	SH, LT + DK GR
SH, GR, GRN	SH, GR, GRN



5000

Miss  
5072 - 1847

5100

SS, WHIT, GRN, F → MED GRNS, SOFT MED GRNS @ BASE, W SORTS, NS	NO KICKS
LS, BRN, F XTLN, HRD, SCT BRN FRESH CHT, NS	
LS, WHIT, F XTLN, HRD, FEW FOSS, CASTS, MOSTLY DNS, NO VIS P, NS	
LS, AA.	
SS, WHIT, F → LG GRNS, P SORT, ANG, S → M HRD, NO VIS P, NS W CMTID	
SS, AA.	
SS, WHIT, M GRNS, W SORT, SUB RND → RND, CLR GRNS, SOFT, NS, W CMTID	NO KICKS
LS, TAN, F XTLN, HRD, SL FOSS, TITE, NS	
LS, AA.	
LS, BRN, F XTLN, HRD, DNS, ? FRAC P, NS	
LS, WHIT, F XTLN, V, CHTY-CRM	

7:AM 11-8-14  
DRLG @ 4990'

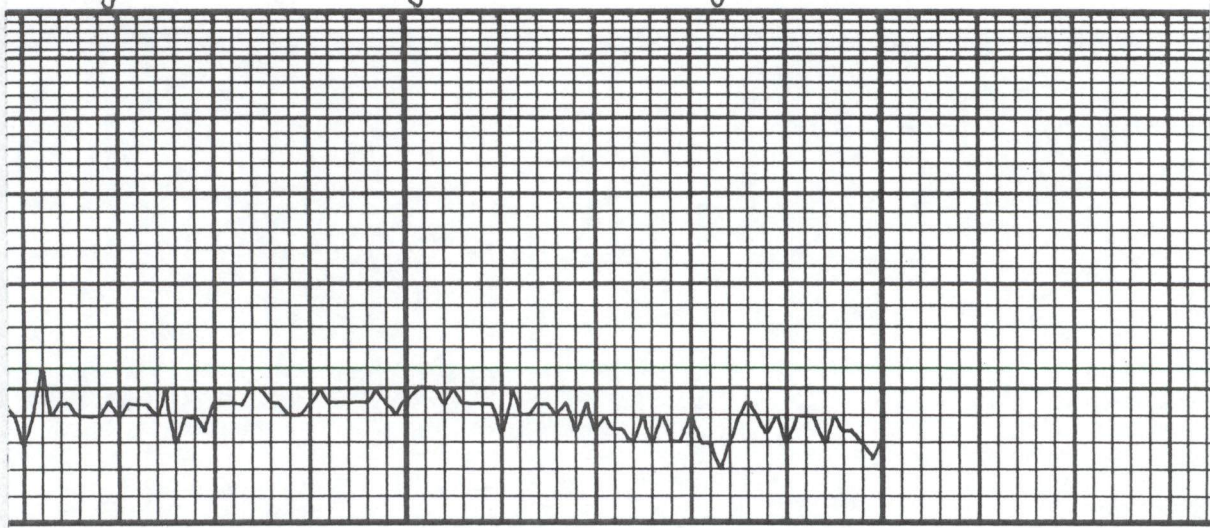
Butane Test: Neg  
Flow Panels Had Been  
SAUT By MBC WHEN UNIT  
WAS CHECKED 11-7  
RETEST: 63 u Hw Kick

MUD CHECK

VIS: 55 WT: 9.2  
CHLOR: 6000 LCM: 8  
FLT: 9.6

SD FLOOD





5200

FRESH, TITE, NS	LS. CR M, VEX TLN, V CLEAN, TITE, NS	AA.	LS. WHT, MXTLN, VHRD, NO VISD NS	LS. TAN, MXTLN, GRNY TXT, HRD, TITE, NS	LS. CR M, TAN, A.A.	AA.	LS. TAN, VEX TLN, DNS, HRD, TITE, NS						
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7:AM 11-9-14  
LOGGING @ 5200'TA