

Max R. Lovely

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY Raymond Oil Co.
LEASE Flying S #15-1
FIELD Wildcat
LOCATION SE SE SW
SEC 15 TWP 2 RGE 26W
COUNTY Decatur STATE KS

ELEVATIONS
KB 2543
DF _____
GL 2532
Measurements Are A
From KB

CONTRACTOR H2 #3/4
SPUD 8-26-15 COMP 9-3-15
RTD 3810 LTD 3810
MUD UP 3013 TYPE MUD Chem

CASING
SURFACE 8 5/8 @ 270'
PRODUCTION _____

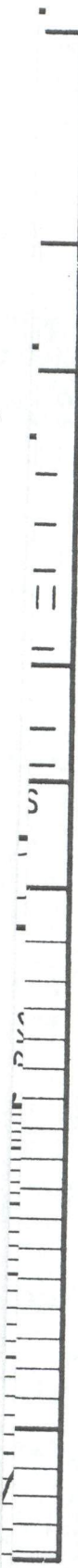
ELECTRICAL SURVEY:
DUAL IND MICRO
COMP N/D

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION		
				A	B	C
Anhydrite	2046	2047	496	501	499	
Base Anhydrite	2075	2077	466	470		
Topeka	3205	3205	-662	-662	-664	
Heebner	3372	3370	-827	-828	-828	
Toronto	3398	3398	-855	-858	-856	
Lansing	3411	3409	-866	-868	-870	
Muncie SH	3505	3504	-961	-961	-963	
BKC	3611	3610	-1067	-1068	-1068	
Arbuckle	3755	3754	-1211	-1227	-1193	

REFERENCE WELLS FOR STRUCTURE

A Murfin Stapp Farms #1-21 NW NW 21-2-26W
B Murfin Nellie New 1-15 SW SE SW 15-2-26W (key well)
C _____



REMARKS

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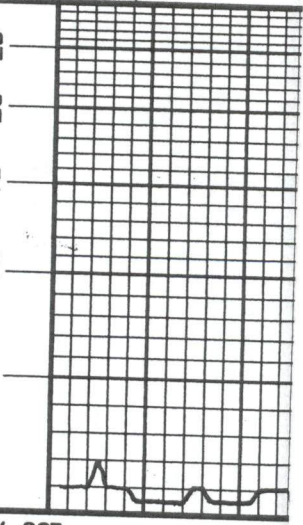
LEGEND

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

DRILLING TIME IN MINUTES
PER FOOT
Rate of Penetration Decreases



5" 10" 15" 20" 25"



DEPTH
2000

LITHOLOGY



SAMPLE DESCRIPTIONS

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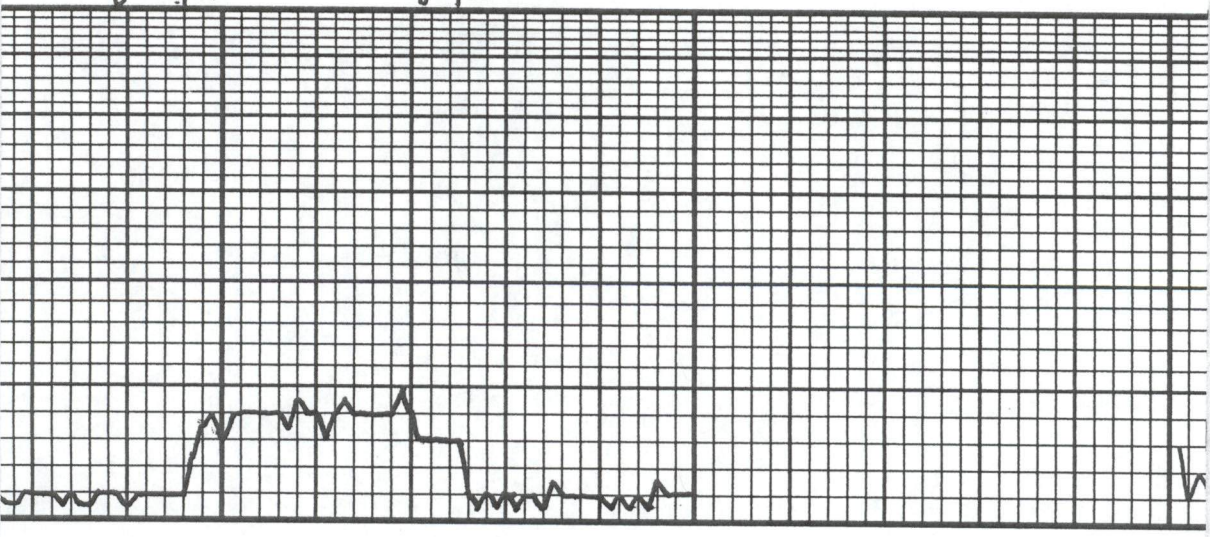
OIL SHOWS

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REMARKS

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LOG 7710



ANHYDRITE
2046 + 497

ANHYDRITE
2075 + 468

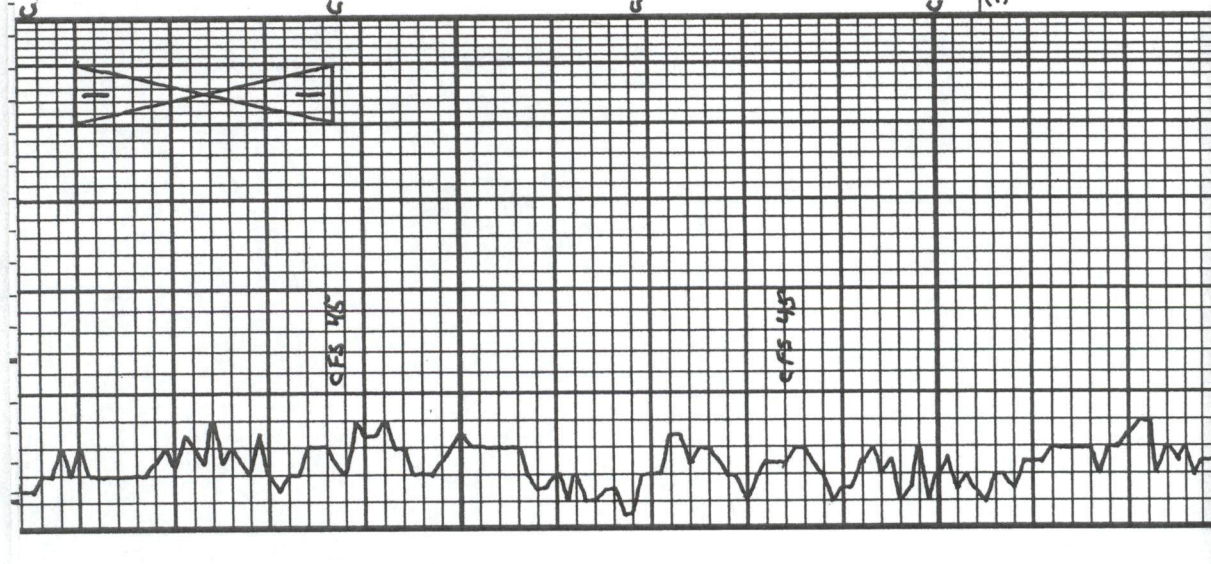
2100

3100

LS, GRAY, SCT BLK MINS WYN, M HED
PP → TITE, MS

DST #1 3110 - 3137
IF: DEADE 15MIN
FF: DEMA





C DEV 3/4"

3200
TOPEKA
3205 - 662

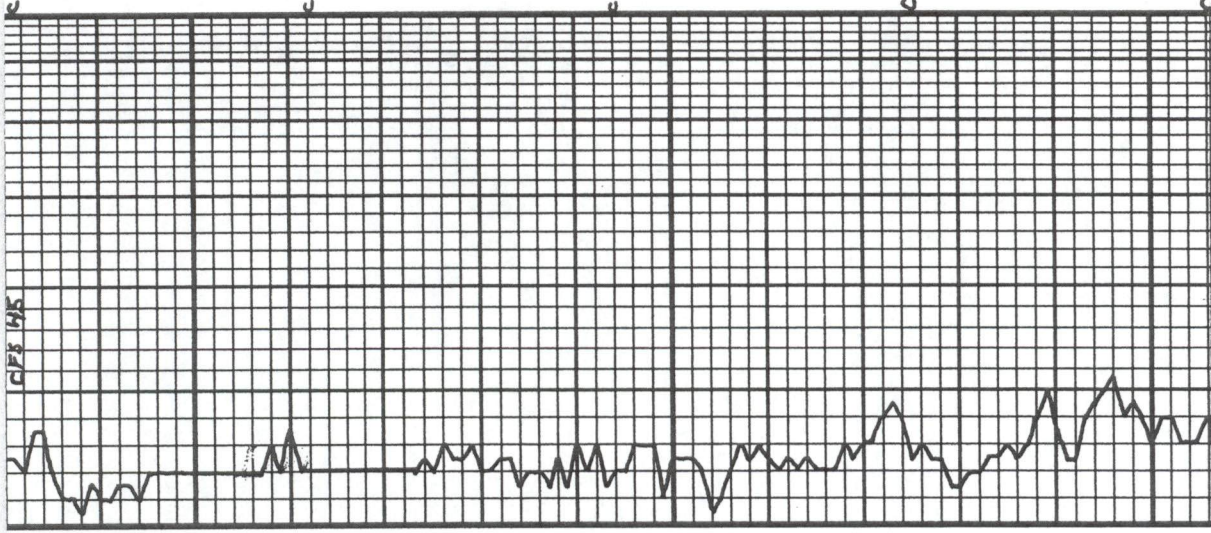
LS, WHT, M XTLN, SOFT, G XTLN, SCT SPRL'D STNG, G SFO, LT BRN OIL VAR I SIZE OIL SPTS	RAINBOW 4 pcs sho NO ODOR
20" LS. BUFF → CRM, F → CRS XTLN 1/2	NO ODOR
HRD, G. SCT XTLN w/ FEW SCT SML VUG, SCT STN STRKS, Pcs SUB SAT STNG, SL SHOGAS BBLS	
45" LS. GRAY, AA, P → FAIR XTLN, NS 9 DD OIL SPTS	
LS, WHT, CRM, VF XTLN, SL DNS, YP XTLN, NS	
LS, WHT, VF → M XTLN, M HRD, DNS, TITE, NS	
LS, WHT, F → M XTLN, SOFT, G SCT XTLN C. CHLKY, G SFO, BRK, SCT FDN TRAY, LT + AK OIL SPTS, WET, SCT OOL + FOSS, V SL BLEED LT FO	RAINBOW 4 pcs sho NO ODOR
20" 2 pcs AA, EDGE STNG, NO ODOR	
LS, GRAY, F XTLN, DNS, HRD, ABUN LG FOSS, NO APP, NS, SCT RED SH	
45" 1 sho pc from AA, ALGAL, TRGAS BBLs ON BRK	
SH, RED, BURC, Pcs w/ SCT LG Pbdls	
LS, WAT, OOL + FOSS, HRD, V SHLY - RED SH	
LS, WHT, LT GRAY, F XTLN, HRD, SCT FOSS, NO VIS P, NS	
LS, TAN BUFF, F XTLN CMT ID FRACS SCT FOSS, HRD, P, NS	
LS, BUFF, ABUN FOSS + FRACS, P SCT FOSS, S → M HRD, NS	
LS, WHT, WHT → LT GRAY, M XTLN,	

REC: 5'M
FP: 8-9, 10-12
SIP: 796-877
HP: 1440-1436

STRAP BOARD
3168.57
3169.03
SHORT .46

7:AM 8-30-15
G.I.H w/ BIT @ 3137'

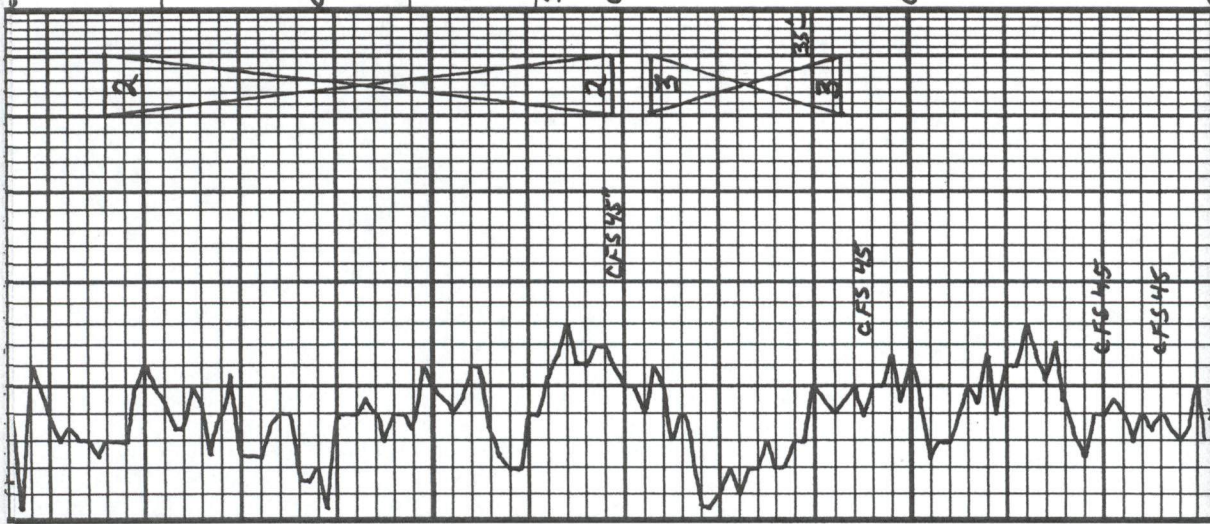
MUD CHECK
VIS: 4H WT: 9.0
CHLOR: 800 LCM: 3
FILT: 7.2



V FOSS, VP XTLN, P, S → MED HRD, NS SH, RED	LS, WHT, VF XTLN CMT'D FOSS, HRD, NO APP. NS	LS, BRN, V F XTLN, ABUN W CMT'D FOSS, V HRD, DNS, TITE, NS	LS, WHT, VF XTLN, FOSS, SL BRTH, M HRD, P → F FOSS, NS	A.A.	LS, BRN, WHT, A.A.	LS, GRY, F XTLN, HRD, SCT FOSS, P, NS	SS, CLR GRN, MED, W SORT, SOFT, G, NS, V SHLY + LMY	TRASHY SAMPLES	TRASHY SAMPLES	LS, GRY, LT GRN, F XTLN, SL GRN, M HRD, ? P, NS	A.A.
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3300

DST #2 3366-3419
 30.60.45.90
 IF: 3 1/2" ISI: NR
 FF: 1/2" FSI: NR
 REC: 140' MCW-15%W
 TOOL: 30%W, 70%M
 FP: 10-43, 51-90
 SIP: 1102-1080
 HP: 1626-1616

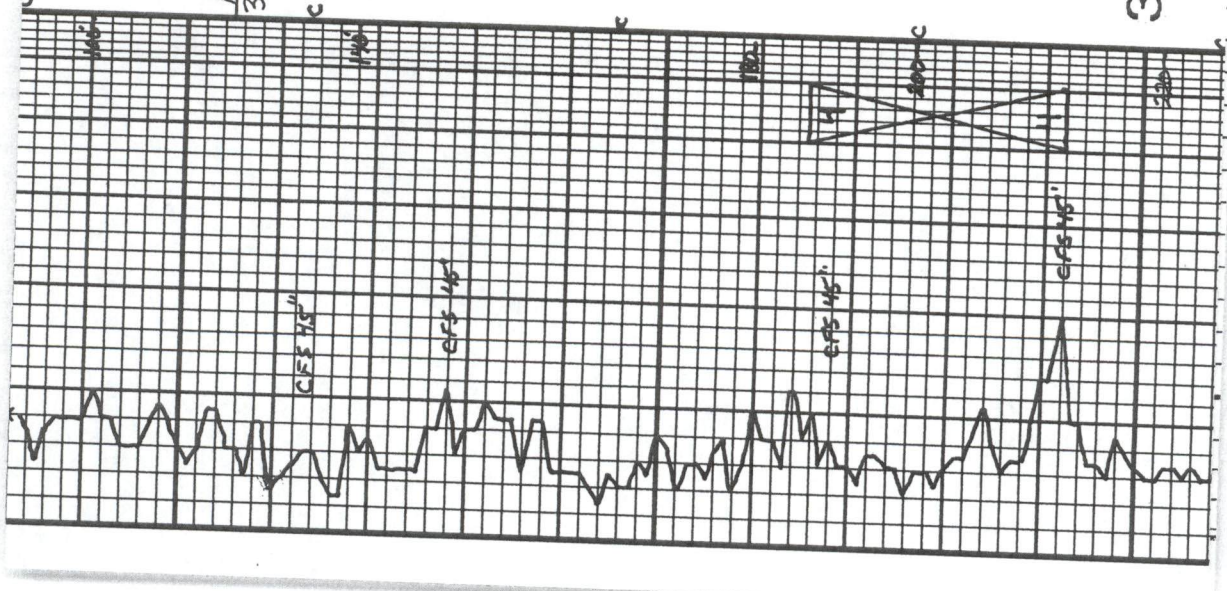


1	A.A. LS. BUFF, TAN, VF → M XTLN, V HRD, V FEW FOSS, NO APP. NS	HEEBNER	LS. WH, F, XTLN, M → V HRD, G, VUGY EDGE STND Ø, DK OIL, FEW SCT FO NTRAY, PCS SUB SKY STNG, FSTO SHD G TO BLEED. BRK, MOST V DK OLL. SOME FILMY OIL	LT ODOR SHD GAS RAINBOW
2	SH, GRY DOOR SAMPLES TRASHY	TORONTO 3400 3398-855	SH, GRY	
3	LS, WH, F, XTLN, V FOSS, HRD, G INT FOSS Ø, G FILL STNG, G SF, BRK, MED BRN OIL, FSO FILMY VUG Ø, 3 PPR, SCT FLUOR STNG. 45" LT SHD RAINBOW, SL CHLKY, TITE	LANSING 3411-868	SH, GRY, LT GRY	GO ODOR SCT SHD CAS. BRK RAINBOW
4	SS. VEG GRNS, CLR, SUB RND → SUB BAG, W SORT, FRIABLE, G BLEED Ø, G, Vg M, G SAT STNG, G SF ON TRAY SH, GRN LS, WH, F, XTLN, HRD, APW, VAR I SIZE FOSS + TR STND, OOLE, G LANT FOSS Ø, F BLEED, M → DK BRN OIL, FEW G BLS, F → C POP. BRK 45" Pcs V WAXY OIL FILM		SH, GRY, WHT, SMOKE, BRN	RAINBOW Vg ODOR
	LS, LT GRN, GRY, F XTLN, M HRD, SHLY, NO VIS Ø, NS		LS, WH, LT GRY, F XTLN, PMS, TITE NS	LT ODOR
	LS, WH, M XTLN, SOFT, Vg Ø, VGSFO LG OIL SPTS. SCT FOSS, FRAGS, SUB SAT STNG 20" 2 Pcs sho, SH, RED, BURG 45" A.A.		LS, WH, F, XTLN, HRD, DNS, FEW SCT FOSS, TITE, NS	3 sho Pcs

DST#3 3423-3443
30.60.45.90
IF: 6 1/2" ISI: NR
FF: 4 1/4" FSI: NR
REC: 1' FO
190' MCW - 90'/W
TOOL: MCW-15'/M, 85'/W
FP: 14-76, 83-118
SIP: 997-935
HP: 1659-1630

7:AM 8-31-15
DST#2 @ 3419'
MUD CHECK
VIS: 60+ WT: 9.1
CHLOR: 1000 LCM: 3
FILT: 7.6

7:AM 9-1-15
CFS@ 3470'



3500
MUNCIESH
3505 - 962

3600

SH, RED	LS, WHT, F, XTLN, M → V HRD, BRTL, G, V FOSSIL SML VUGS, G VUG, FILL STNG, FSFO, BRK, V DK OIL, NO VIS ENERGY, THIN SHO ZONE,	NO ODOR
A A A	CHT, DPAQ, TAN	
45" SH, RED, GRY	SH, RED, GRY, BLK	
LS, WHT, CHLKY, LI FLUOR, POOR SHOW OF DUL FLOR FO, SOFT, NO ODOR	LS, WHT, M XTLN, M HRD, 3PCS-VLT STNG, VP SFO-BRK	NO ODOR
LS, CRM, VF + DNS → M XTLN + M HRD, TITE NS	LS, CRM, VF + DNS → M XTLN + M HRD, TITE NS	6 sho pcs WISP ODOR
45" LS, WHT, CRS FRAGS (CREW), SPITY OIL, FILM'D VUGS, FSFO-BRK, MOSTLY TITE	LS, WHT, F, XTLN, DNS, V HRD, TITE, NS	
SH, RED, GRY-FISSLE		
SH, LT GRY, LMY-VF GRNS		
LS, WHT, CRM, M XTLN, ABOV SML FOSS, SCT FOSSIL, SCT EDGE STNG, V FEW FO SPTS ON BRK, LS, CRM, VF XTLN, DNS, V HRD, TITE, NS		NO ODOR
SH, GRY		
SH, RED		
LS, WHT, LT CRM, F, XTLN, STRKY BRN STNG, EVEN OIL FIL VUGS, ABOV PP XTLN, SCT FO ON BRK		NO ODOR
LS, CLR, WHT, CRS XTLN, BRTL, SL HRD, G XTLN + VUGS, G STNG, GS FO 20' AA-G RAINBOW FROM BBS, FAIR		
FLUOR, SL VUGS, SHO GAS, LG FO SPTS @ SL BLEED		LT ODOR
LS, WHT, RED STNG, F, XTLN, S → M HRD, SML FOSS, P.P. NS		SHO GAS RAINBOW
SH, GRY		
LS, WHT, GRY, F, XTLN, W/SET CRS XTLN W/M HRD, NO VIS P. NS		

MUD CHECK
VIS: 60 WT: 9.3
CHDR: 1200 LCM: 3
FILT: 8

DST # 4 3565 - 3592
30.60.45.90
IF: 2 1/2" → 1/2"
FF: DEAD
REC: 10' M
TOOL: 100' M
FP: 29-31, 31-40
SIP: 464-339
HP: 1708-1711

DROP SOAP STICK
ROUGH DRUG, MANUAL DRILL
SLOWED RPM

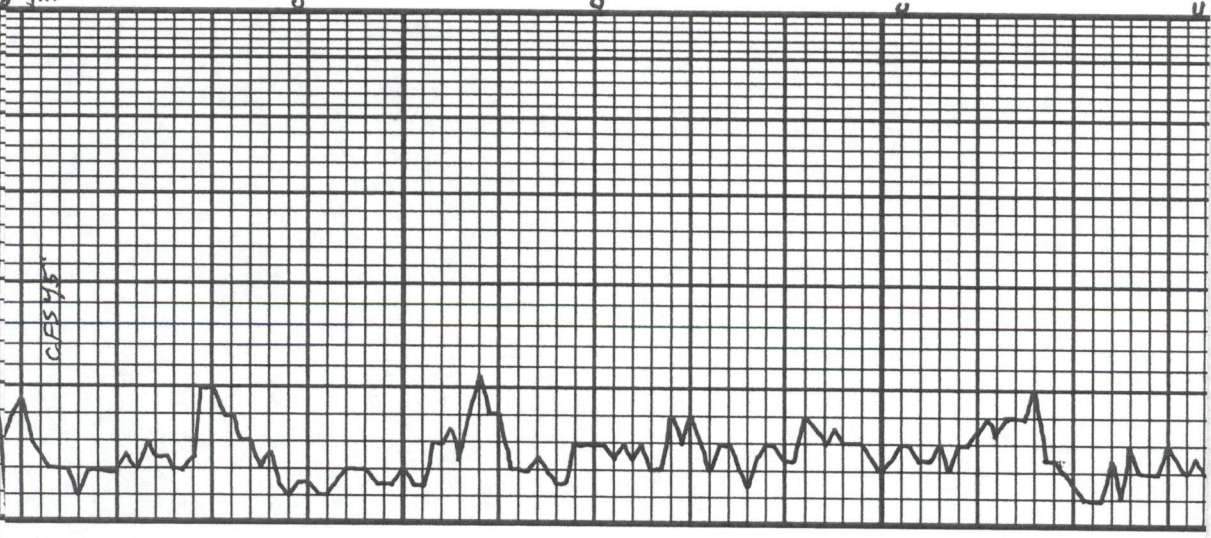
9-2-15 7:AM
GIH w/bit @ 3592'

MUD CHECK
 VIS: 53
 CHLOR: 1200
 FILT: 7.8

WT: 9.5
 LCM: 4

BKC
 3611-1068

3700



SH, BRN	SH, BRN
SH, RED, SANDY	SH, RED, SANDY
LS, GRAY, CRM, WHT, VF XTLN, SL DMS, SL HRD, NO VIS Ø, NS	LS, GRAY, CRM, WHT, VF XTLN, SL DMS, SL HRD, NO VIS Ø, NS
LS, WHT, F XTLN, HRD, SCT GRN MINS W/N, NO VIS Ø, NS	LS, WHT, F XTLN, HRD, SCT GRN MINS W/N, NO VIS Ø, NS
SS, CLR ANG, V SHLY, VP CNT'D, VG Ø, NS	SS, CLR ANG, V SHLY, VP CNT'D, VG Ø, NS
SH, RED	SH, RED
DOL, WHT, GRN, F GRAY TXT, M HRD, SL LMY, F G CNT'D, NO VIS Ø, NS	DOL, WHT, GRN, F GRAY TXT, M HRD, SL LMY, F G CNT'D, NO VIS Ø, NS
SH, BURG, BRN, P.s SANDY	SH, BURG, BRN, P.s SANDY
SH, BURG	SH, BURG
LS, WHT, PINKISH WHT, F XTLN, V HRD P.s, DMS, TITE, NS	LS, WHT, PINKISH WHT, F XTLN, V HRD P.s, DMS, TITE, NS
SH, BURG, GRAY	SH, BURG, GRAY
LS, CRM, VF XTLN, DMS, BR TTL, FEW CRIN W/N, NO Ø, NS	LS, CRM, VF XTLN, DMS, BR TTL, FEW CRIN W/N, NO Ø, NS
LS, CRM, GRAY, VF XTLN, HRD, BR TTL, TITE, NS	LS, CRM, GRAY, VF XTLN, HRD, BR TTL, TITE, NS
SH, RED, GUMMY, STICKY	SH, RED, GUMMY, STICKY
SH, RED	SH, RED
LS, WHT, CRM, VF XTLN, DMS, HRD, FRAC'G, NO APP Ø, NS	LS, WHT, CRM, VF XTLN, DMS, HRD, FRAC'G, NO APP Ø, NS
SH, RED	SH, RED

