

George E. Peterson a.p.g.
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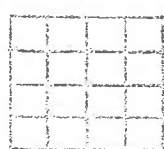
GEOLOGIST'S LOG

COMPANY: L.D. DRILLING Inc
WELL NAME: GRAU-REED #1
LOCATION: N², SW, SE, NE 2210 FNL 990 FEL
SEC. 27 T 6 S, R 13 E
COUNTY: JACKSON STATE: KANSAS
ELEVATION: GR 1193,23 KB 1263
API #: 15-085-20088-00-00
FIELD: Soldier
CONTRACTOR: Summit Drilling Inc
GEOLOGIST: George E. Peterson
SPUD DATE: 2/13/14 COME DATE: 2/13/14
SAMPLES SAVED FROM: _____ TO: _____
SAMPLES OBTAINED FROM: 1250 TO: TD
RTD: 3570 LTD: —
CORRE: NA

OPEN HOLE LOSS: N/A

SURFACE CASING SET: 300' PROD. CASING SET: —
GEOLOGICAL SUPERVISION FROM: Surf TO: TD

COMMENTS: P&A Lack of shows of negative test results



FORMATION TOPS & STRUCTURAL POSITIONS

FORMATION	SAMPLE TOP	ELECT. POTENTIAL LOG TOP	TEST WELLS			
			A	B	C	I
Hebber	1507		+115	+111	+110	+111
Lansing	1307	-104	-101	-101	-101	-99
B/KC	1659	-456	-441	-436	-443	-439
Cherokee	1855	-652	-648	-639	-640	-638
Miss	2546	-1393	-1307	-1318	-1315	-1320
Kinderhook	2656	-1453	-1420	-1382	-1417	-1422
Hunton	2865	-1662	-1639	-1626	-1619	-1653
Maq	3307	-2167	-2123	-2122	-2119	-2122
Viola	3431	-2228	-2195	-2188	-2187	-2192
Sp Dol	3542	-2339				
Sp Sl	—					
Arb	—					

REFERENCE WELL FOR STRUCTURE:

- 1 Henry Trust #1
- 2 Henry Trust #2
- 3 Dougan #1
- 4 Dougan #2

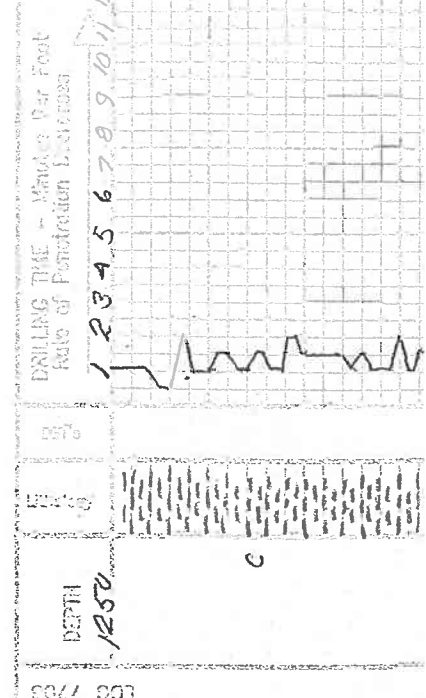
DRILL STEM TESTS

TEST	INT.	IPP	ISIP	FTP	PRF	RECOVERY
1	2860	1383.00	1010.54	1374.31	1003.47	63' 100% mud
	2892					
	Hunton					

LEGEND

- Dolomite
- Chert
- Oil Lime
- Limestone
- Carb sh
- Shale
- Sandstone
- Salt
- Anhydrite

SCALE " = 100'



REMARKS	SAMPLE DESCRIPTIONS
	54 gray sand sh
	2.4
	2.4

1620 8 PM

Sh blk dk gray gm

Ls m dk brn vck hlc

Ls 44

Ls 44

Ls 20

Sh dk gray gm 5 1/2 lb sample, ml

Sh 44

Sh 44

Sh 44 Trace

Sh 44

Sh 455

Sh 44

Sh 44

SS head dk gray 4 1/2 lb

Sh gray dk gray blk

Sh 44

Ls m brn

Sh 44

Ls 17-18-19-20

Ls 44

Ls 44

Ls 4 blk 54

Ls m dk gray dk dk trace

Ls 44

Sh 44 black

SS dk gray 1 1/2 lb

Sh 44

SS 44

Sh gray gm blk tr
Sh 44 sample - ml

44

44

44

44

44

1957 8 AM

1648 9 PM

Sample BKC 1659 (-456)

1675 10 PM

1700 10:30 PM

1725 10:01 PM

1755 12:00 PM

1720 1 AM

1822 2:01 AM

1847 3:00 AM

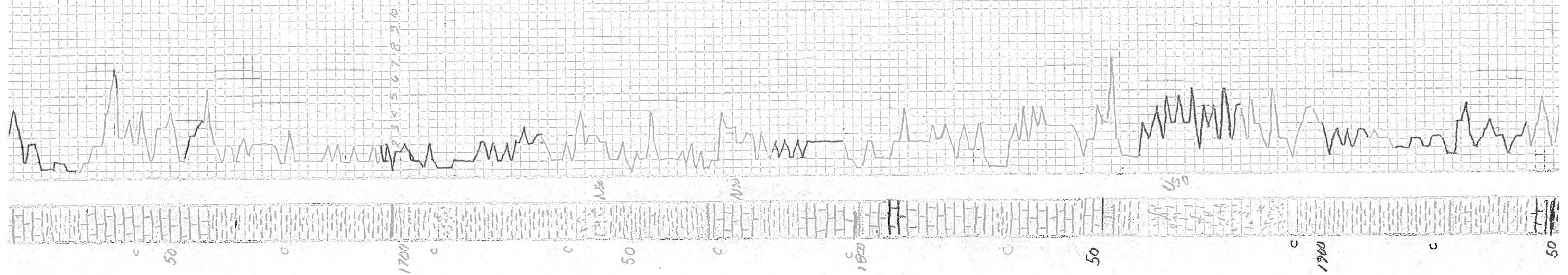
1862 5 AM
1863 4 AM

Sample Top
Chalk 1855-1852

1875 5:07 AM

1898 6:01 AM

1925 7 AM



1957 8:11 AM

aa

aa
Trough

aa

1958 9 AM

SS F-mud

aa

sa

sa aa

2024 10:11 AM

SS irregular with thin sly
found

aa

aa

aa

aa

2071 12:11 PM

sh dk gray blk coal

aa

aa

2100 12:55 PM

sl gray blk gm to sandy-mic

aa

aa

aa

aa

aa

aa

aa

aa

aa

aa

aa

sh aa T. l. ls

sh ls T. coals

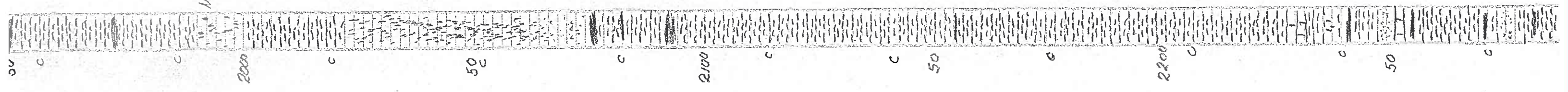
aa

aa

aa

aa

2203 7:00 PM



125

2000

50

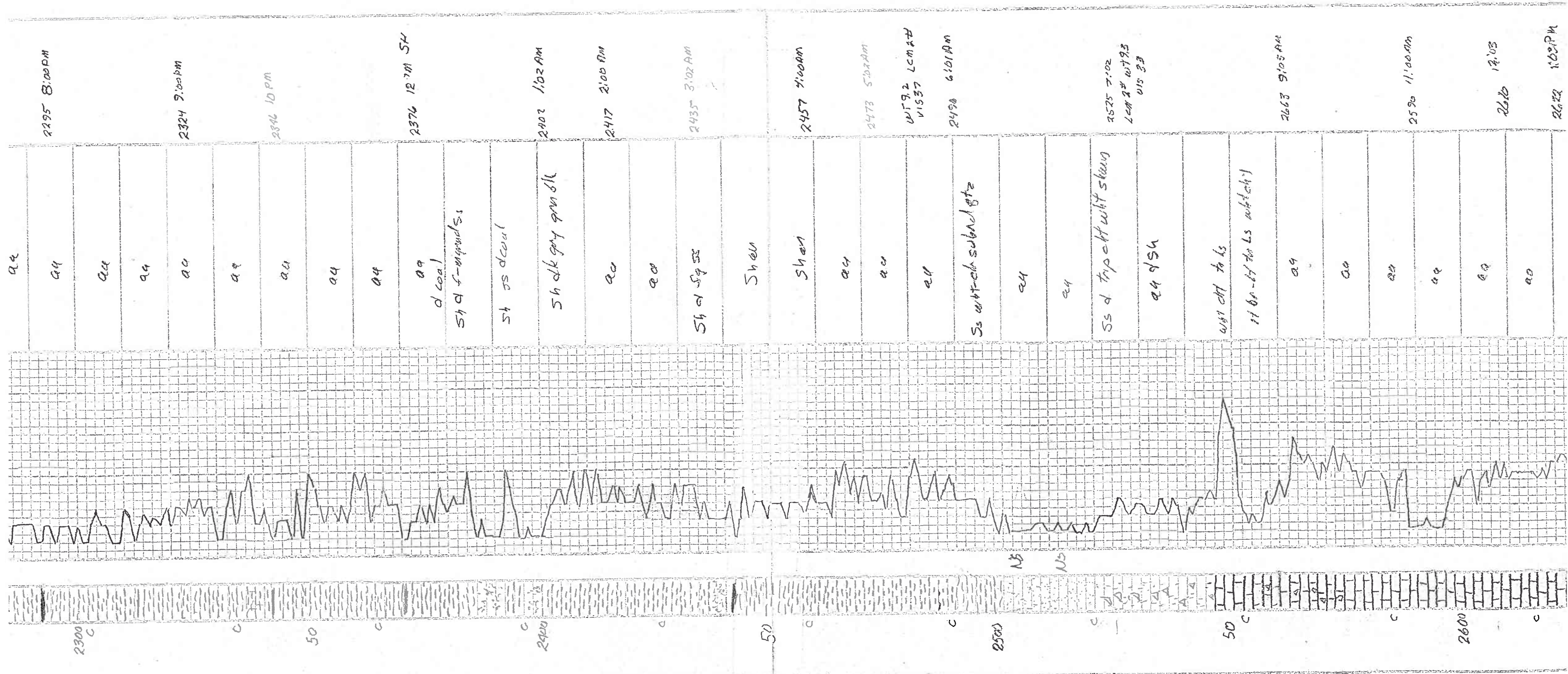
2100

50

2200

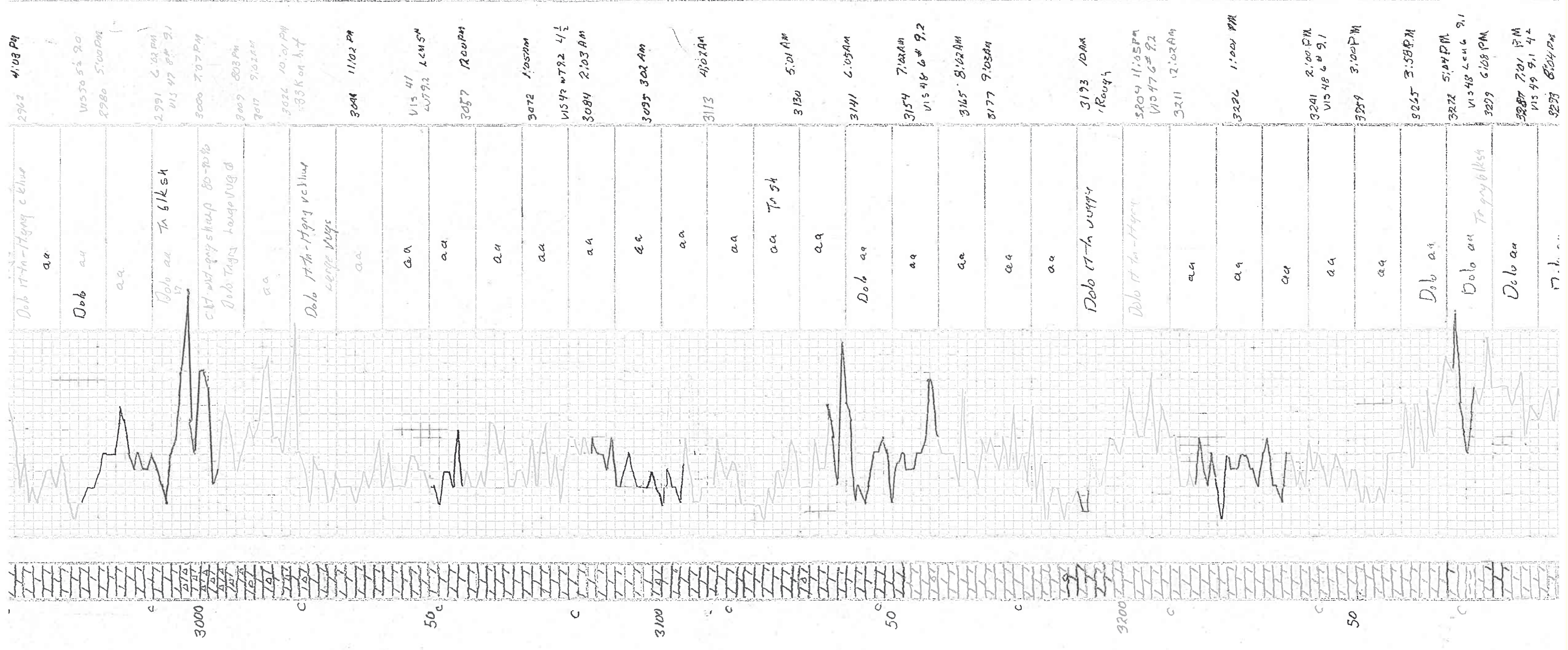
50

21345678910



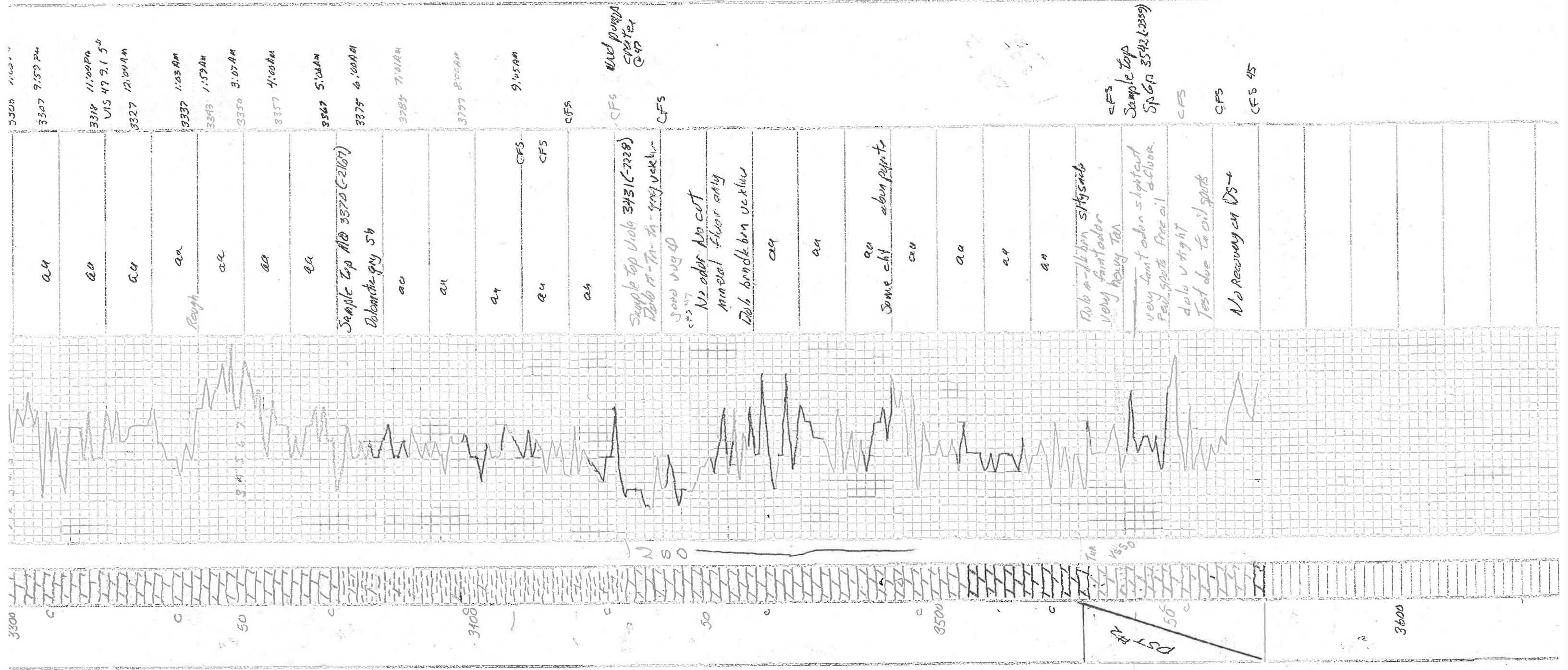
2325 8:00 PM	2324 9:00 PM	2346 10 PM	2376 12:30 AM	2402 1:02 AM	2417 2:00 AM	2435 3:02 AM	2457 4:00 AM	2473 5:00 AM	2490 6:01 AM	2525 7:02	2663 9:05 AM	2590 11:00 AM	2610 12:03	2622 1:00 PM
aa	aa	aa	aa	aa	aa	aa	aa	aa	aa	aa	aa	aa	aa	aa
			d coal	sh dk gray gm slt		sh dk gray ss	sh en	sh en		ss w/ f-cb sub and gtz		ss d trip ch w/ sh en	ss d trip ch w/ ls sub ch 1	

K₅



2962	4:03 PM	aa	Dob 17th-Hygy c blue
11550 5 ^h 20		aa	
2980	5:00 PM	aa	
2991	6:02 PM	aa	Dob aa TA 61KSH
115 47 8 ^h 9.1		aa	
3000	7:07 PM	aa	CMT wt-gy-sharp 80-80%
3009	8:03 PM	aa	Dob Tgyr large vug d
3010	9:02 AM	aa	
3024	10:01 PM	aa	Dob 17th-Hygy vct line
333K on bit		aa	large vugs
3044	11:02 PM	aa	
115 41		aa	
29792	1:05 PM	aa	
3057	2:00 PM	aa	
3072	1:05 PM	aa	
11542	WT92 4 1/2	aa	
3084	2:03 AM	aa	
3095	3:02 AM	aa	
3113	4:02 AM	aa	
3130	5:01 AM	aa	aa Tgyt
3141	6:05 AM	aa	
3154	7:02 AM	aa	Dob aa
115 48 6 ^h 9.2		aa	
3165	8:02 AM	aa	
3177	9:03 AM	aa	
3193	10 AM	aa	Dob 17th vuggy
1 Rough		aa	
3204	11:05 PM	aa	Dob 17th-17404
110 47 6 ^h 9.2		aa	
3211	12:02 AM	aa	
3226	1:00 PM	aa	
3241	2:00 PM	aa	
115 48 6 ^h 9.1		aa	
3259	3:00 PM	aa	
3265	3:58 PM	aa	Dob aa
3272	5:04 PM	aa	Dob aa Tgy 61KSH
115 48 6 ^h 9.1		aa	
3299	6:08 PM	aa	Dob aa
3307	7:01 PM	aa	
115 49 9.1 4.2		aa	
3329	8:04 PM	aa	

3000
50
3100
50
3200
50



3300 9:00 AM

aa

3318 11:00 PM

aa

3327 12:00 AM

aa

3337 1:03 AM

aa

3343 1:59 AM

aa

3350 3:07 AM

aa

3357 4:00 AM

aa

3367 5:00 AM

aa

3375 6:00 AM

Sample top 110 3370 (2107)
Dolomite gray sh

3383 7:01 AM

aa

3397 8:00 AM

aa

3408 9:15 AM

aa

CFS

CFS

CFS

CFS

CFS

CFS

CFS

CFS

CFS

CFS

CFS

CFS

CFS

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CFS

CFS

CFS

CFS

CFS

Sample top 110 3431 (-2288)
Dark gray sh - gray vermicular

Good very d

No odor No cut

mineral flour only

Del break ben vetcher

Rob m - dk ben silty shale

Very faint odor

Very heavy tan

very faint odor slight cut

Few spots fine oil

del v tight

Test due to oil spots

No Recovery ch DS+

Sample top
SPGR 3542 (-2309)

DS+ 45
50

N 50

Tar 1550

DS+ 45
50

3600