

McElvain Energy
 1050 17th St Ste 2500 Denver
 Colorado 80265

Well & No. Pargin Ranch #11 Lateral #1 Sidetrack #3
 County Laplata
 State Colorado
 Api/Afe 05-067-098600

Location: Sec 36 Twp 33N Rng 07W
 Survey: 680' FNL & 2488' FWL
 Field: Ignacio Blanco

Formation: Fruitland Coal
 Elevations: GGL 6450' K.B. 6460'



Horizontal Mudlog @ Scale of 5" = 100'

Contractor : Aztec Well Service #507
 Directional: Scientific

Whipstock Horizontal

Entry Date
 TD Date
 Vertical Window
 KOP
 TD. Dep
 TVD Dep
 V. Sect:
 Azimuth

Logged Dates
 On site Loggers

- Anhy
- Bent
- Brec
- Cht

- Clyst
- Bright coal
- Dull coal
- Congl

- Dol
- Igne
- Marlstone
- Lmst

- Meta
- Siderite
- Salt
- Shale

ROCK TYPES

- POROSITY
- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Cleat
- Organic
- Pinpoint
- Uncons
- Vuggy

- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

- MINERAL
- Anhy
- Bent
- Breccfrag
- Calc
- Carb
- Chtdk
- Chitt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Fusinite
- Glaue
- Gyp
- Hvymin
- Kaol
- Marl

- Mica
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sll
- Vitrinite
- Tuff

- STRINGER
- Anhy
- Arg
- Bent
- Coal
- Dol

- OIL
- Anhy
- Arg
- Bent
- Coal
- Dol

Rocky Mountain Mudlogging

mudloggers@hughes.net

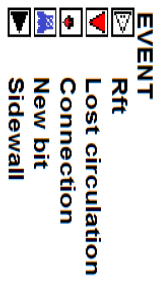
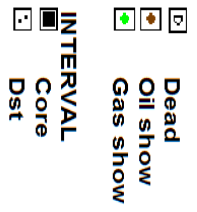
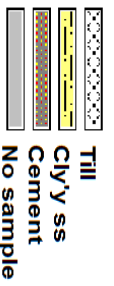
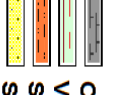
3300 N. Butler Ste. 100 Farmington NM 87401

10/23/2014
11/09/2014
7" 26# Casing
2400'-2411'
2900'

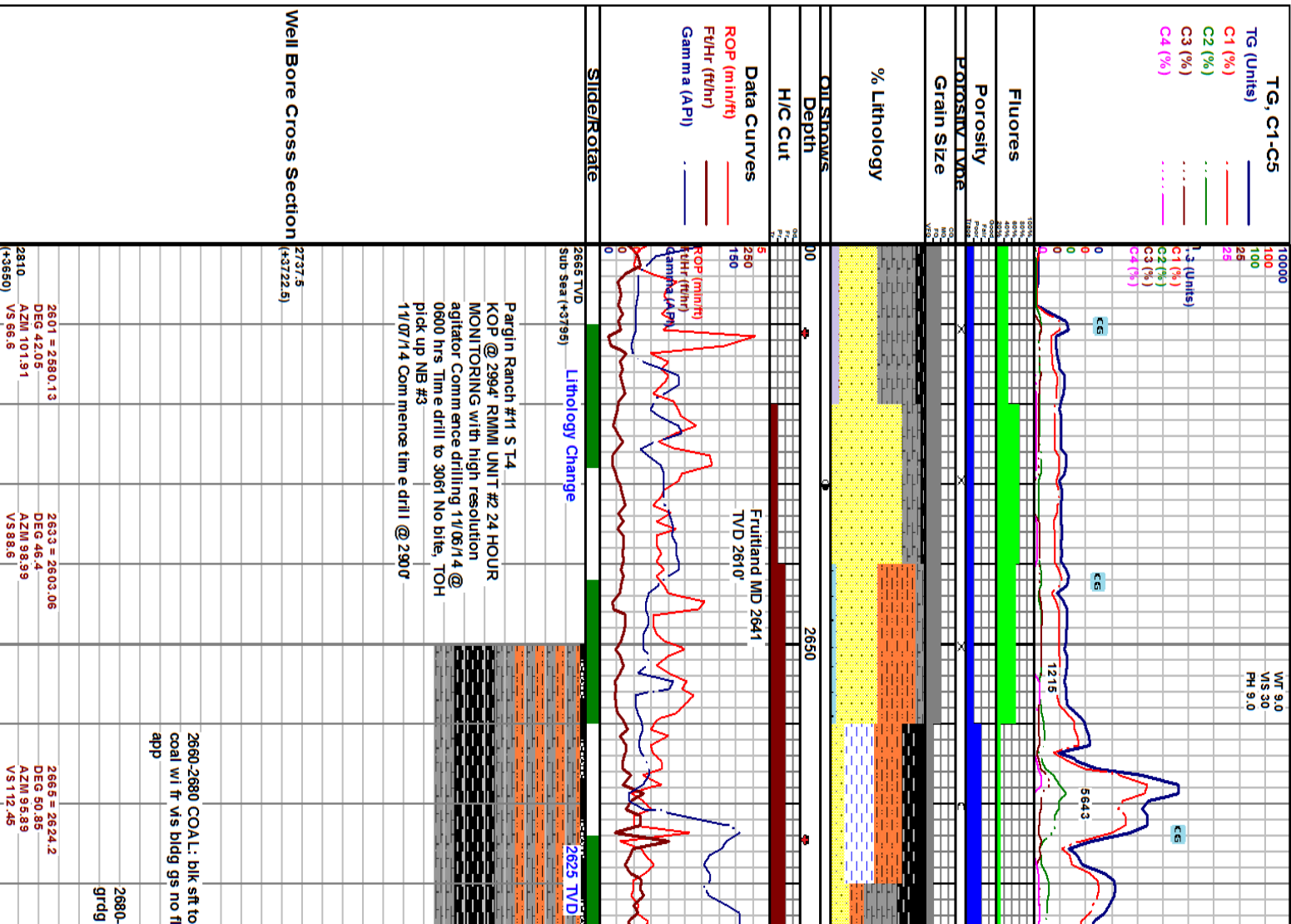
5142
2769.13
2460.5
132.05

2900' - 5142'
11/06/2014 - 11/09/2014

Rod Moore Debbie Moore



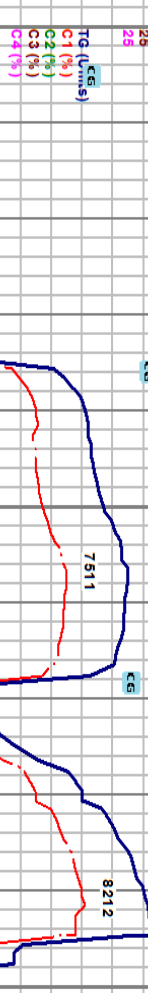
- Gyp
- Ls
- Mrst
- Slstrng
- Claystone
- Shale
- Siltstone
- Limestone
- Coal
- Carby shale
- Sandstone
- Ssstrng
- SHOW
- Shut in well
- Even
- Spotted
- Ques



WT 9.0
VS 30
PH 9.5

WT 9.0+
VIS 32
PH 9.5

WELL TAKING FLUID



2700 WOB 10/14M RPM 30/SLIDE PP 690 SPM 72

2720 WOB 23M

2800 WOB 5/8M PP 110.0 SPM 81

2865 TVD sub sea (+3795)

2700-2720 S.S.: off wh to gy to brn sl fri to fri occ frm pred v'f gr s'hang to ang w srt w cmt calc cmt w/ mod to mas cly fill m'x intrfc w/ s'fat lent bdd in app w/ mod intrst deb pred carb flks rr vis por shn dk shn gd dull gid flr w/ v fnt acid gs & sl o cut

2720-2740 S.S.: gy to brn gy frm to hd pred v'f gr to l'v'f gr s'hang to ang w srt w to vw cmt calc cmt t'grd'g to s'p'ly drs tt to no vis por mod intrst deb pred carb flks tr s'p'ly carb shn gd dull gid flr no cut acid or crush

2740-2760 S.S.: brn to gry to m of to wh to off wh tr s'f'f' to fri to pred hd occ s'ly rdd to s'brdd to occ s'hang l'v'g to v'f'g to fg fr s'rt w cmt l'ny carb incl tr dk shn occ tr vis por pred no 30% dull to occ bri gid flr tr m'kly gs cut no oil cut

2760-2780 SH: dk gy to brn gy to dk brn s'f'f' to brit s'p'ly sm th to s'ly tx sl to mod calc v carb occ gr'd'g to durtle wi tr free dull to bri coal

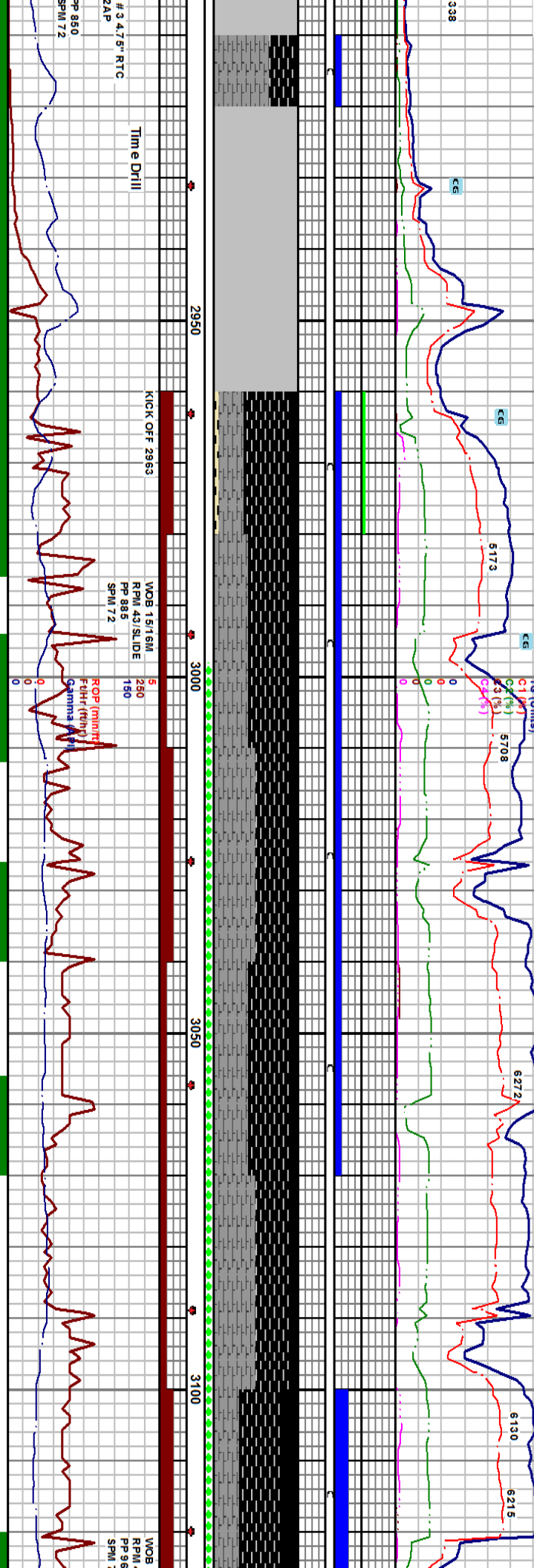
2780-2790 COAL: blk s'f'f' to sl brit s'p'ly to s'p'ly pred sh'ly tx tr float coal dns pred durtle no vis cleat or b'ldg gs w/ v fnt slow gs cut

2820-2850 COAL: blk s'f'f' to v s'f'f' pred v'f' c'g's pred float c'g's occ bri pred dull to gr's'y just s'p'ly to thin ply rr vis cleat pr vis b'ldg gs w/ fr slow m'kly gs & o cut

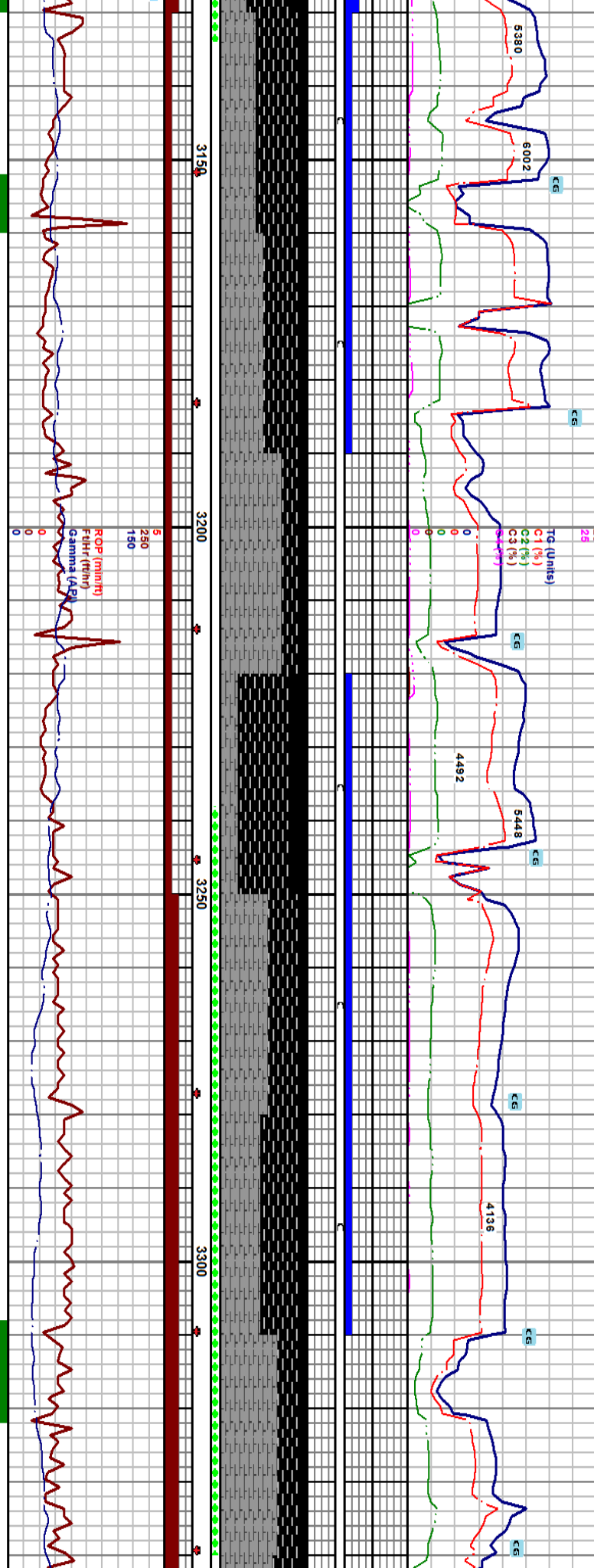
2850-2880 COAL: blk s'f'f' to v s'f'f' pred v'f' float c'g's pred dull l'v' gr's'y just occ bri s'p'ly to s'p'ly pred h'ackled sh'ly tx ip pr v' b'ldg gs w/ pr m'kly gs & o cut frothy

2880-2910 SH: dk choc br carb gr'd'g to durtle wi pr v

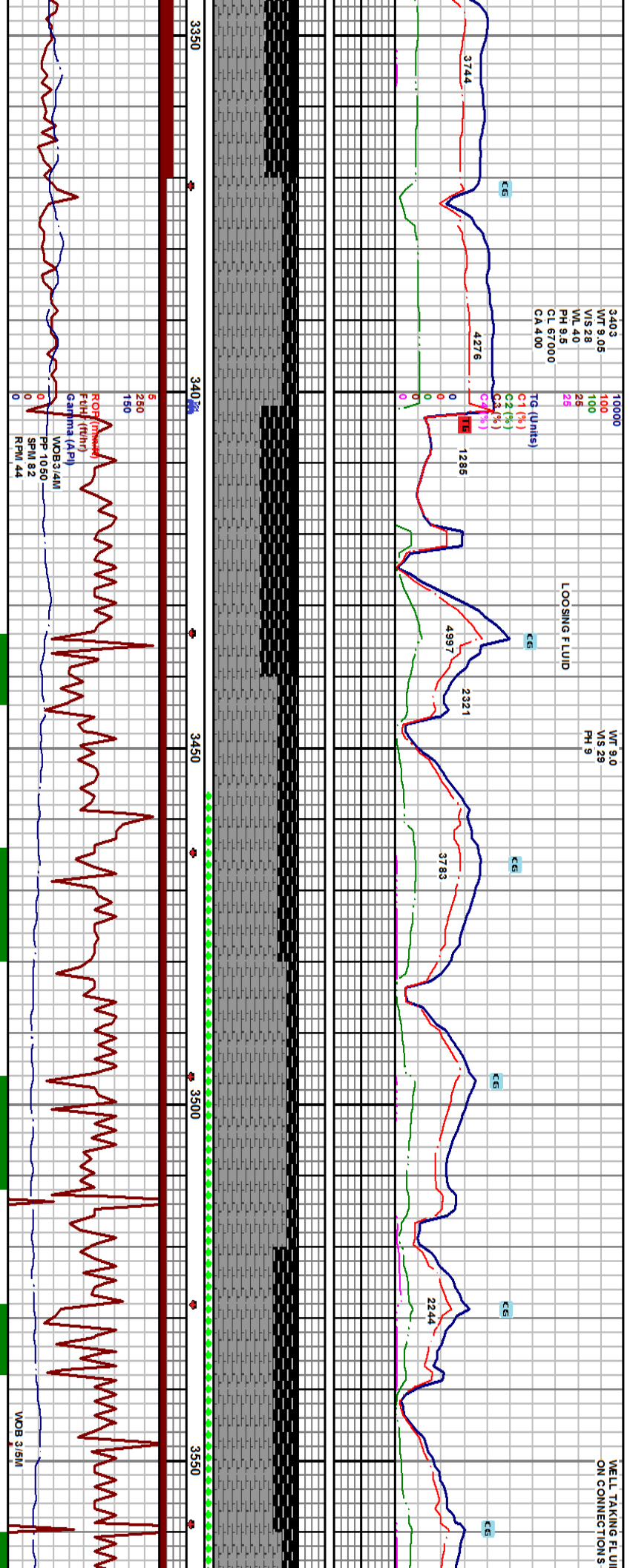
2696 = 2642.99	2728 = 2660.36	2760 = 2674.82	2791 = 2685.51	2827 = 2697.4	2859 = 2707.96	2890 = 2714.98
DEG 54.53	DEG 59.73	DEG 66.5	DEG 73.16	DEG 68.26	DEG 75.54	DEG 79.91
AZM 94.4	AZM 90.41	AZM 88.71	AZM 88.4	AZM 93.56	AZM 91.88	AZM 87.83
VS 137.03	VS 163.88	VS 192.39	VS 221.45	VS 225.35	VS 256.56	VS 315.7



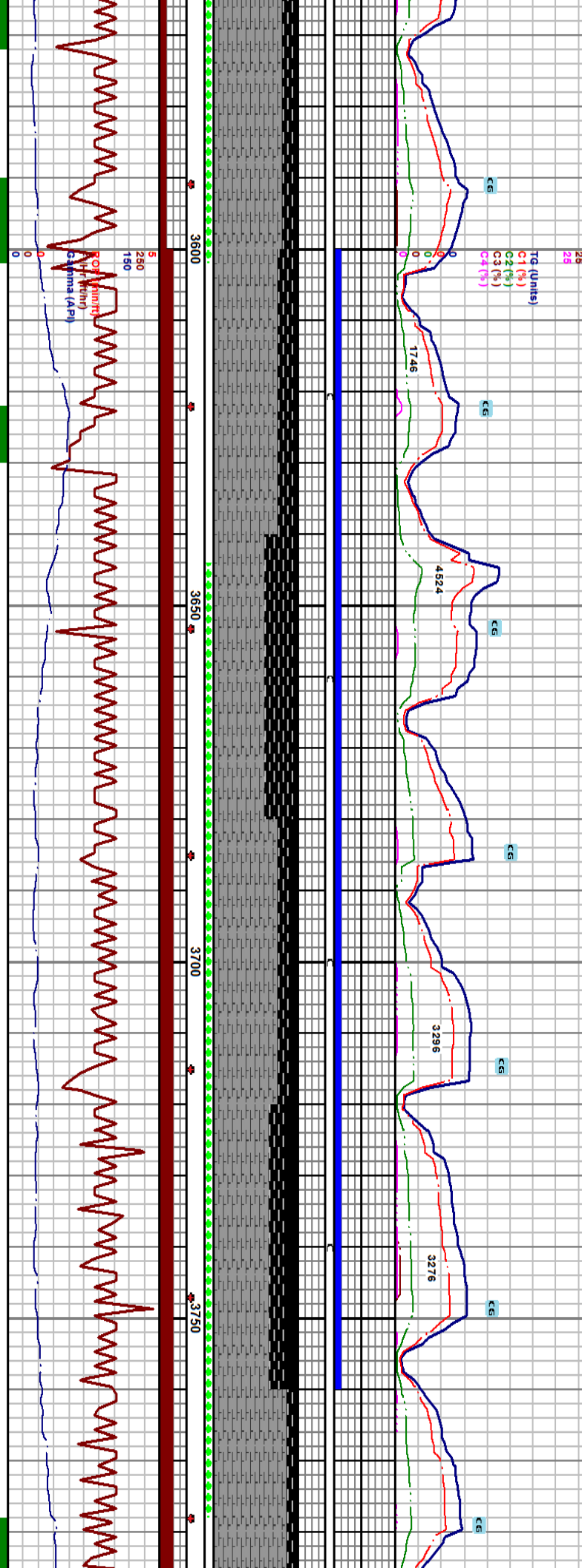
2910-2920 COAL: blk pred sft to sl frm tr grsy tr face cleat occ brt to pred dull conch mltc bnd tr vis bldg gas tr mky gas cut w/ sl tr yel w/ oil cut	2920-2940 NO SAMPLE RETURNS	2940-2960 NO SAMPLE RETURNS	2960-2980 COAL: blk sft pred v/ cigs grgd to pred float dust dull grsy to wxy rr vis face cleat tr vis bldg gs w/ int mky gs & slow pr o cut tr bent: dk brn sft wxy thin ply w/ dull org floor	2980-3010 CSH: blk to brn blk sft to sl brt sply to sbply sl sily tx v carb grdgd to durite ip w/ pr to fr bldg gs w/ pr mky gs & o cut	3010-3040 CSH: pred blk occ brn blk sft to v sl brt sply to sbply occ lam pred v carb grdgd to durite pr vis bldg gs w/ slow mky gs & pr o cut	3040-3070 COAL: blk sft to v sft sply to sbply pred dull wxy to shly tx w/ brt float to vit dust tr vis face cleat pr vis bldg gs w/ pr mky gs & o cut	3070-3100 CSH: brn blk to blk sft to v sl brt pred sbply sily ilgc in app to grdgd to durite pr vis bldg gs slow frnt mky gs cut	3100-3130 COAL: blk sft to occ shly tx w/ incr brt face cleat pr mky gs & pr
2921 = 2719.49 DEG 83.34 AZM 86.92 VS 348.31	2953 = 2729.52 DEG 72.25 AZM 89.57 VS 339.97	2985 = 2737.71 DEG 78.1 AZM 95.73 VS 387.05	3016 = 2742.42 DEG 84.39 AZM 99.72 VS 395.08	3048 = 2744.59 DEG 87.85 AZM 102.07 VS 424.96	3079 = 2744.84 DEG 91.24 AZM 101.46 VS 454.13	3111 = 2743.9 DEG 92.11 AZM 101.82 VS 484.22		



3130-3160 COAL: blk sft to sl brit sply to sbply pred dull to shly tx grddg to sh tr vis face cleat pred hacked frac pr vis bldg gs wi v fnt gs & o cut	3160-3190 CSH: brn blk to blk to dk choc brn sft to v sft to sl brit sply to sbply occ sily tx ilgc in app to grddg to durrite mod bldg gs wi fnt gs & o cut	3190-3220 CSH: dk brn to brn blk occ blk sft to v sft sbply to sply sily ilgc in app n to sl calc to grddg to durrite pr vis bldg gs v fnt gs & o cut	3220-3250 COAL: blk sft to v sl fri sply to sbply to sply bri to dull lust rr vit pred hacked to conch frac rr vis face cleat pr vis bldg gs wi fnt m lky gs & o cut mod FRO THY	3250-3280 CSH: brn blk to dk brn to blk sft to v sft sbply to sply pred sily ilgc in app sl calc ip occ grddg to durrite tr vis bldg gs abnt free hus dust v fnt m lky gs & pr sl o cut FRO THY	3280-3310 COAL: blk sft to v sft sply to sbply bri wxy to wx to dull shly pred hacked frac no vis face cleat rr vis conch frac pr vis bldg gs fnt m lky gs & sl o cut FRO THY	3310-3340 CSH: dk brn to choc brn rr sily tx rthy ilgc in app n to v sl calc o bldg gs wi v fnt m lky gs & pr o cut fr	3340 lust gs &
2665 TVD sub sea (+3795)	2737.5 (+3722.5)	2737.5 (+3722.5)					
3142 = 2743.42 DEG 89.66 AZM 103.29 VS 513.53	3173 = 2744.26 DEG 87.21 AZM 102.45 VS 542.9	3205 = 2745.94 DEG 86.79 AZM 104.89 VS 573.32	3236 = 2747.69 DEG 86.73 AZM 107.0 VS 603.13	3268 = 2749.61 DEG 86.4 AZM 107.09 VS 634.04	3298 = 2751.35 DEG 86.93 AZM 106.72 VS 663.04	3330 = 2752.26 DEG 89.83 AZM 108.53 VS 694.1	



3370-3402 CS-H: pred dk choc brn occ blk sft to v sft mas silty tx ligc in app occ splly sl brit grdy pr vis bldg gs fnt m lky gs & sl o cut	3362 = 2752.3 DEG 89.9 AZM 108.64 VS 725.29	3393 = 2753.14 DEG 88.56 AZM 107.96.10 VS 755.41 (+3850)	3424 = 2753.45 DEG 89.06 AZM 108.5 VS 785.5	3485 = 2753.58 DEG 90.47 AZM 108.53 VS 815.6	3487 = 2753.20 DEG 90.58 AZM 112.65 VS 847.03	3518 = 2753.24 DEG 88.99 AZM 113.6 VS 877.7	3550 = 2753.75 DEG 89.16 AZM 115.42 VS 903.46
3370 COAL: blk sft to v sft pred brit float cngs bri to wxy occ dull to shly tx rr vis cleat pr vis bldg gs w/ v hnt m lky o cut frothy	2737.5 (+3722.5)						
3372-3403 coal		2665 TVD Sub Sea (+3795) NB #4 4.75 DBI DF513					
3403-3440 COAL: blk sl frm to splty to occ brit tr bri to pred shly no vis cleat to dull luster hackled frac mic hnd sl tr vis bldg gas tr m lky gas cut w/ sl tr yel oil cut							
3440-3080 CS-H: brn blk to gry blk to brn to dk brn sft to sl frm grdy to durite w/ tr free coal dust sbldly to sbply tr m lky gas cut sl tr yel wh silo oil cut FROTHY							
3480-3520 COAL: blk sft to sl frm shly tr floating coal hackled frac dull tr bldg gas no vis cleat fnt yel gas cut no oil cut							
3520-3560 COAL: blk sft to occ sl frm tr bri to pl float coal hackled frac no vis cleat tr vis bldg gas w/ tr yel wh silo oil cut							
3560: sft to gas							



2665 TVD Sub Sea (+3795)	3600-3640 COAL: blk sft to sl frm tr bri to pred dull tr grsy hacked frac tr vis bldg gas tr face cleat fr vis bldg gas w/ tr yel oil cut	3640-3680 COAL: blk sft to sl frm to tr brit tr face cleat tr bri conch to hacked trac 5% floating coal mic bnd tr gas cut w/ tr yel oil cut	3680-3720 CSH: brn to brn blk to gry blk sl frm to frm to sply grdg to durite 5% floating coal dust tr vis bldg gas sbply to sply w/ fr mlky gas cut w/ tr yel wh oil cut frothy	3720-3760 COAL: blk sl frm to sply to occ brit bri conch to dull to shly hacked frac fr vis bldg gas tr face cleat fr mlky gas cut w/ tr yel oil cut	3760-3800 CSH: gry blk ch sft tr vis bldg gas sbply tr oil cut FROTHY
2737.5 (+3722.5)					
3681 = 2754.15 DEG 89.36 AZM 17.83 VS 9040.34		3644 = 2755.41 DEG 88.52 AZM 124.06 VS 1003.3	3675 = 2756.22 DEG 88.49 AZM 124.01 VS 1034.26	3706 = 2756.9 DEG 88.99 AZM 123.33 VS 1065.23	3738 = 2757.38 DEG 89.29 AZM 122.83 VS 1097.21
2810 (+3850)					
3613 = 2754.68 DEG 88.76 AZM 121.72 VS 972.32					
3769 = 2757.49 DEG 90.3 AZM 122.87 VS 1123.2					

3600 CSH: brn to gry blk to gry brn to choc brn
sl frm occ grdg to durite tr vis bldg gas tr mlky
cut no oil cut

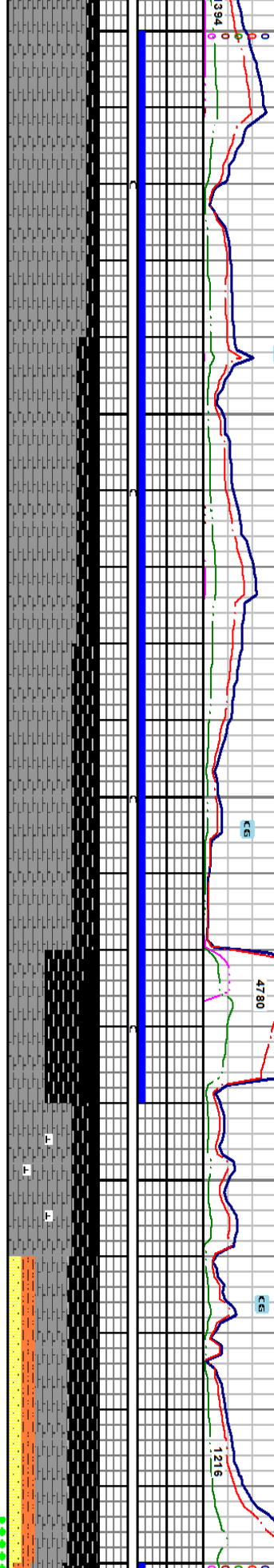
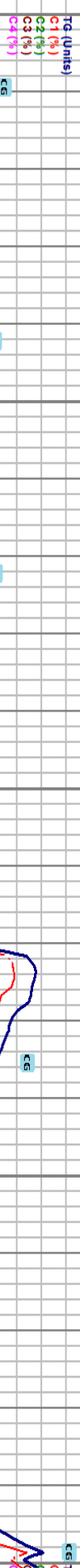
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 3897 MIDNIGHT DEPTH
 11092014

WELL TAKING FLUID SLOW RETURNS ON CONNECTIONS

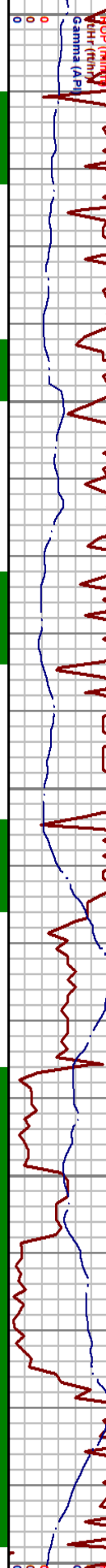
WT 9.1
 VS 30
 PH 9

FLUID RETURNS SLOWED SWITCH ALL FLUID TO ONE SHAKER

WT 9.0+
 VS 30
 PH 9.0



WOB 20/25M
 RPM 49 SLIDE
 PP 117.0
 SPM 82



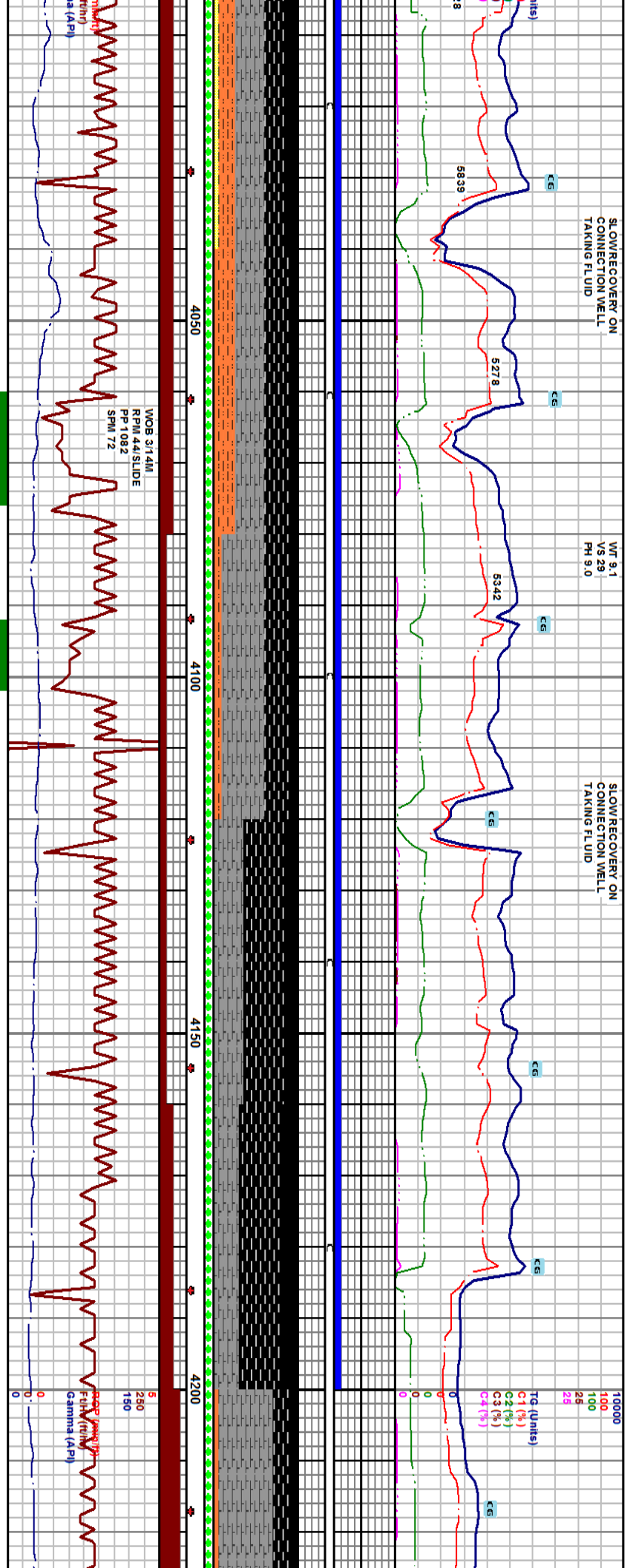
2665 TVD sub sea (+3795)	3800-3940 COAL: blk sft to sl frm tr bri conch tr face cleat tr vis bldg gas hackle frac tr mic bnd tr face cleat tr milky gas cut wi tr slo oil cut FROTHY	3840-3880 COAL: blk sft to v sl fri sply to sbply pred hackled frac rr vis face cleat dull shly to silky lustr rr conch occ bri wi tr vit pr vis bldg gs wi pr milky gs & o cut FROTHY	3880-3920 CSH: blk to brn blk sft to brt sply to sbply v carb pred grdg to durite pr to tr vis bldg gs wi v mt milky gs cut & o cut MOD FROTHY	3920-3940 COAL: blk sl frm to brt sply to pily to sbply conch ip pred silky to bri gray to dull shly pred hackled rr vis face cleat pr vis bldg gs wi fnt milky gs & sl o cut FROTHY	3940-3960 CSH: brn blk to blk sft to brt sply to pily to sbply conch ip pred silky durite wi pr vis bldg gs wi v fnt milky gs & sl o cut NOTE about free th pily cal poss cleat fill to lam fill	3960-4000 S.S.: clr to brn pred use gr to uncons f srt pr cnt pred wi m as sit m bk grdg to silst rthy dk brn carb stn no cut	2665 TVD sub sea (+3795)	4000 carb fill n
2737.5 (+3722.5)								
3801 = 2757.53 DEG 89.56 2846 ZM 126.82 (+3)VS 1160.16	3832 = 2758.58 DEG 86.54 AZM 126.09 VS 1191.04	3863 = 2760.59 DEG 86.06 AZM 127.55 VS 1221.84	3895 = 2762.42 DEG 87.38 AZM 127.93 VS 1253.60	3926 = 2763.71 DEG 87.85 AZM 131.95 VS 1284.23	3957 = 2764.27 DEG 90.1 AZM 134.21 VS 1314.58	3989 = 2763.26 DEG 93.5 AZM 134.9 VS 1345.73 (+3)856		

oc brn to gry blk sl frm to
o pily fr vis gas cut tr yel

SLOW RECOVERY ON CONNECTION WELL TAKING FLUID

WT 9.1 VS 29 PH 9.0

SLOW RECOVERY ON CONNECTION WELL TAKING FLUID



WOB 3714M
RPM 44 SLIDE
PP 1082
SPM 72

VD

2665 TVD
Sub sea (+3795)

4040 SLTST: dk brn sft to sl fri vfr dgs thn pily sdy carb w/ vfr
fiks mod free cal: off wh sft chiky thn pily lam fill to poss cleat
o floor abnt free thn pily cal poss cleat fill to lam fill in app

4040-4080 COAL: blk sft to sl fri to v fri spily to sbply to hckled frac rr vis face cleat bri wxy to silky ljust to dull shly tx pr vis bldg gs
frt mky gs & pr o cut

4080-4120 CSH: blk to brn blk sft to v sl brit spily to sbply rr lam
sl sily tx ip pred grdng to durthe tr vis bldg gs v frt gs & o cut

4120-4160 COAL: blk sft to sl fri to v fri spily to sbply to pily pred grsy
to wxy occ bri wxy to dull shly tr vis cleat pred hckled occ conch pr
vis bldg gs w/ vfr gs & o cut

4160-4200 COAL: blk fri to v fri spily to sbply conch to hckled frac
rr vis face cleat tr wt to bri wxy to silky w/ dull wxy to shly tx tr vis
bldg gs w/ pr mky gs & o cut

4020 = 2761.19
DEG 94.16
AZM 134.21
VS1375.86

4061 = 2758.81
DEG 94.65
AZM 133.97
VS1406.03

4083 = 2757.05
DEG 91.65
AZM 136.45
VS1437.06

4114 = 2756.49
DEG 90.44
AZM 137.50
VS1466.93

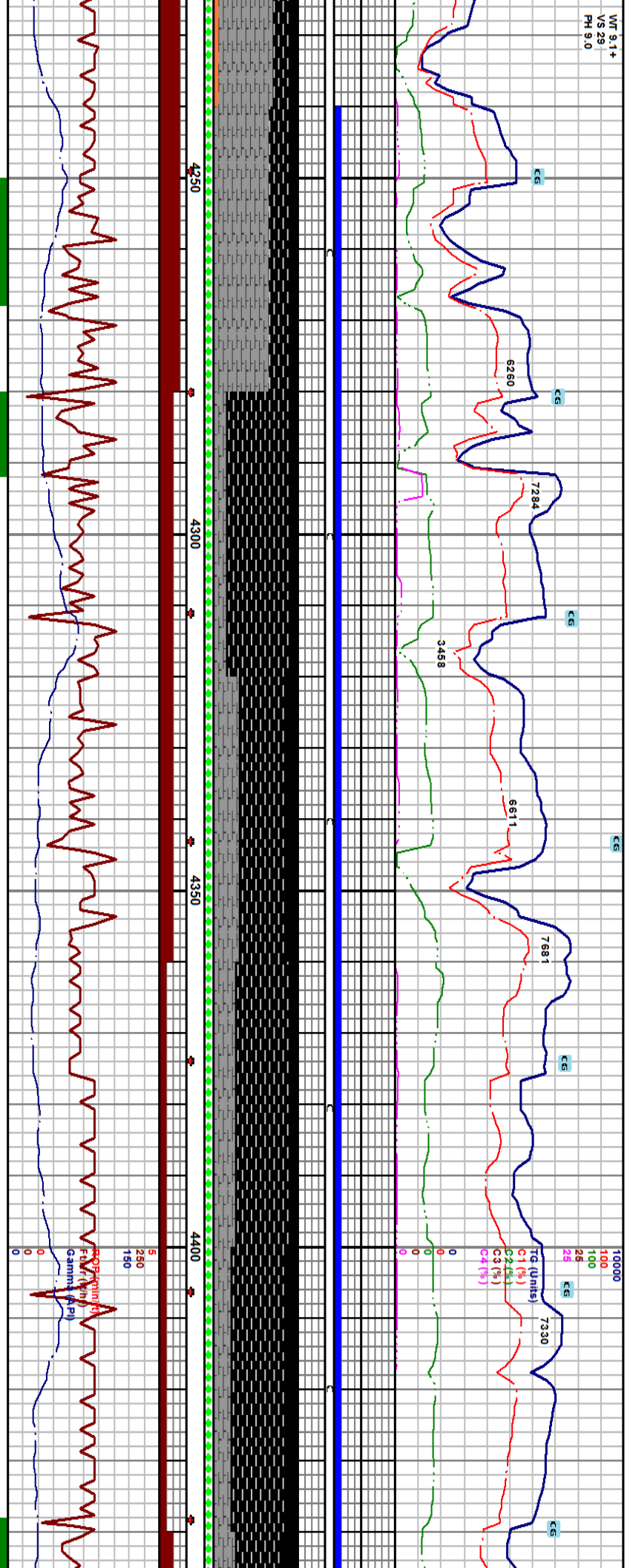
4145 = 2756.33
DEG 90.17
AZM 156.16
VS1496.68

4177 = 2756.18
DEG 90.34
AZM 137.12
VS1527.42

2737.5
(+3722.5)

4200-4240 CSH: gry blk to l
sbply to sbply to thn pily

2810
(+3850)

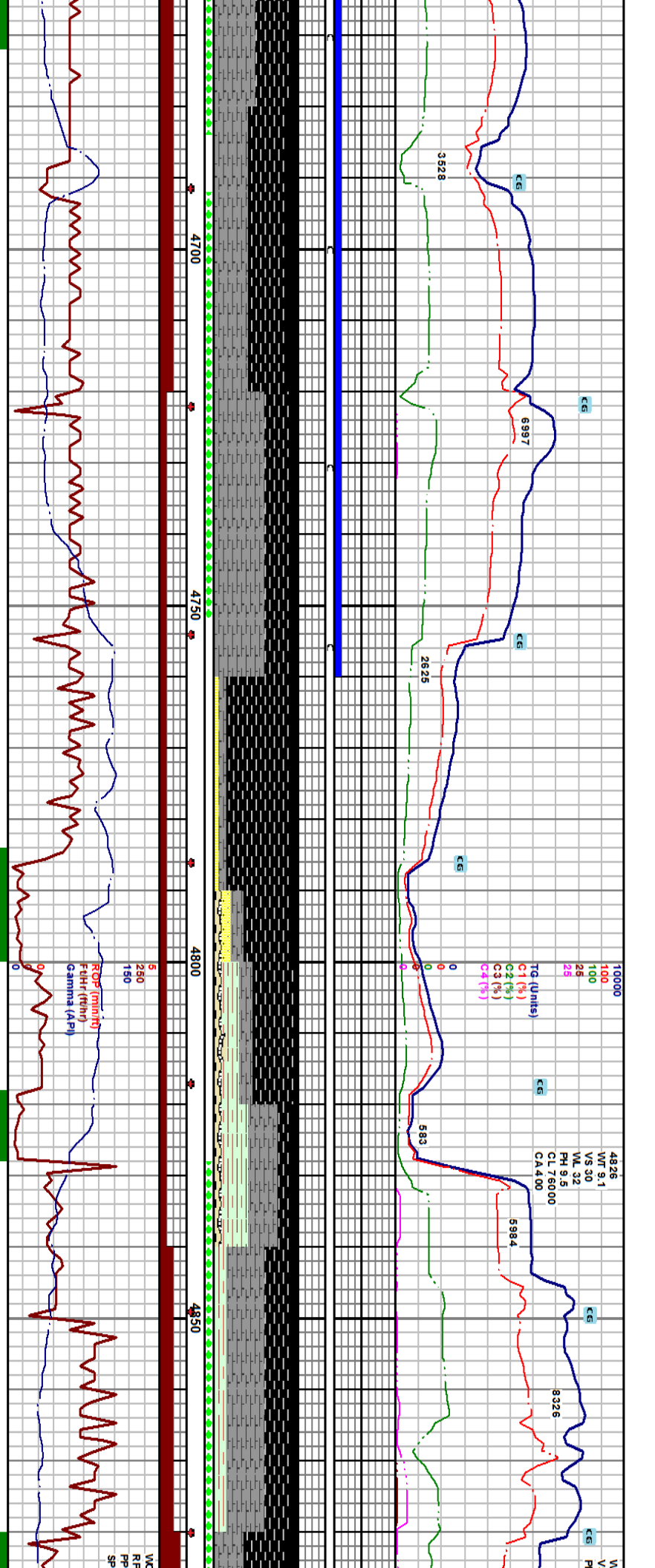


<p>4240-4280 COAL: blk sl frm to brit bri to pred dull tr face cleat 5% dust tr bidg gas hackled frac to conch fr m lky gas cut w/ tr yel oil cut</p> <p>4280-4320 COAL: blk sft to fri sply to sbblky pred dull w/ way to m lky gs & o cut FROTHY</p>	<p>4320-4360 COAL: blk fri to v fri sply to sbblky pred hackled to conch frac tr v's face cleat rr vis dust bri w/ way to sily l just to dull to shly tx pr to fr vis bidg gs v frt m lky gs & o cut FROTHY</p>	<p>4360-4400 CSH: blk to brn blk sft to sl brit sply to sbblky to lam ip pred grdg to durite pr vis bidg gs w/ slow v frt gs & o cut FROTHY</p>	<p>4400-4440 COAL: blk sft to v fri sply to sbblky to conch rr vis cleat bri vit dust pred grey to wxy w bidg gs w/ pr m lky gs & o cut FROTHY</p>	<p>4440-4480 COAL: blk sft to v fri sply to sbblky to conch rr vis cleat bri vit dust pred grey to wxy w bidg gs w/ pr m lky gs & o cut FROTHY</p>
<p>4270 = 2754.44 DEG 89.53 AZM 137.62 VS 1616.77</p>	<p>4302 = 2756.33 DEG 87.28 AZM 136.51 VS 1647.58</p>	<p>4334 = 2756.97 DEG 86.84 AZM 136.51 VS 1678.45</p>	<p>4366 = 2768.68 DEG 86.87 AZM 136.56 VS 1708.34</p>	<p>4397 = 2760.32 DEG 87.24 AZM 136.23 VS 1739.22</p>
<p>4239 = 2754.88 DEG 92.08 AZM 137.79 VS 1587.01</p>	<p>4302 = 2756.33 DEG 87.28 AZM 136.51 VS 1647.58</p>	<p>4334 = 2756.97 DEG 86.84 AZM 136.51 VS 1678.45</p>	<p>4366 = 2768.68 DEG 86.87 AZM 136.56 VS 1708.34</p>	<p>4429 = 2761.78 DEG 87.54 AZM 135.86 VS 1770.16</p>

blk to brn to choc brn sft to sl frm
carb fr m lky gas cut w/ tr yel w/ oil cut

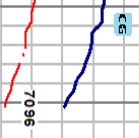
2665 TVD
Sub sea (+3795)

2737.5
(+3722.5)

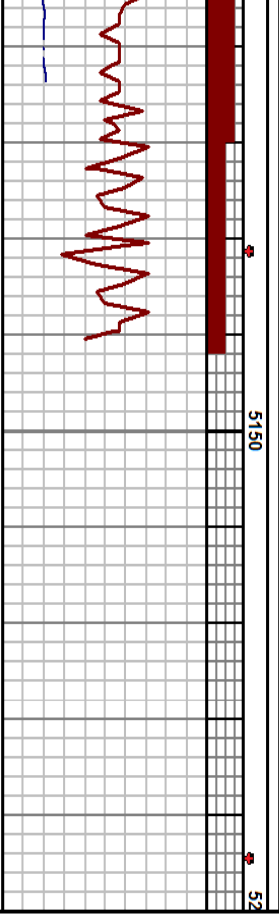
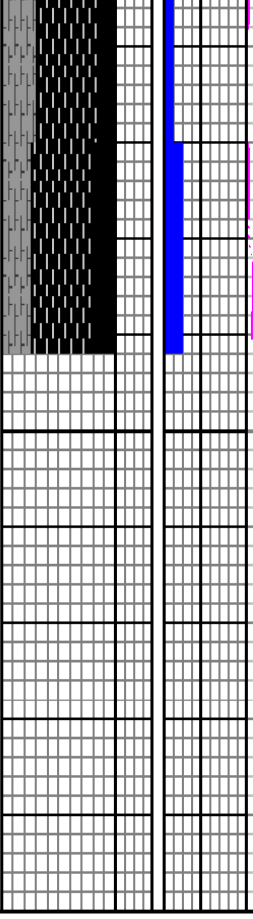


4681 = 2755.23 DEG 89.06 AZM 135.55 VS 2014.7	4713 = 2755.7 DEG 89.26 AZM 136.16 VS 2045.7	4744 = 2755.82 DEG 90.3 AZM 136.5 VS 2075.66	4776 = 2755.44 DEG 91.04 AZM 136.06 VS 2106.6	4808 = 2755.59 DEG 88.42 AZM 137.15 VS 2137.49	4839 = 2758.34 DEG 86.84 AZM 137.93 VS 2167.05	4870 = 2759.78 DEG 87.85 AZM 137.8 VS 2196.76	
to choc brn occ brn blk to blk sft to v sft occ sl pp to grdg to durtle occ lam n calc mod frothy	4680-4720 CSH: ala & bomg v sft to wtr sat in app pred choc brn to dk brn n calc pred ligc in app mod frothy	4720-4760 COAL: blk sft to fri to v fri sply to sbblly to sbply 10% vit flks to bri wxy to bri silky pred dull to wxy just sply to hackled occ conch rr vis cleat pr vis bldg gs wi v frnt gs & o cut frothy	4760-4790 COAL: blk sft to fri to v fri sply to sbblly to sbply 10% vit flks to bri mic hnd rr vis no vis face cleat occ conch frac m od free flus dust tr vis bldg gs v frnt slow gs & sl o cut SH: dk brn to brn blk brit sply to sbply ligc in app ip to v carb n calc occ lam	4790-4800 BENT: dk brn sft v f dgs thn ply to sply v dull mnrl flwr wi SS: dk brn frm v f gr ang w srt w cmt calc cmt wi mas sit & cly mtg grdg to slst no vis por abnt dk res carb stn no cut	4800-4820 SH: m to dk brn sft v f dgs occ shaved in app wxy bentic in app n calc wi tr free dk brn bent	4820-4840 SH: It to m brn sft thn ply to shaved in app sl chily to wxy bomg wtr sat in app wi tr bent: cm to tn srt wxy wi v dull flwr	4840-4880 COAL: blk sft to v sft pred v f dgs pred vis cleat gd vis bldg gs wi fr mlky gs & o cut FR

VWC
 RPP
 PP
 SP



Thank You for using
Rocky Mountain Mudlogging, Inc.



5142' Circulate out for casing 11/09/14 @
2012 HRS.

5420-5442 CSH: brn blk to blk sft to brt splly to sb lam to
splly sl sily bk n calc pred grdg to durite wl pr vis bldg gs
slow mlly gs & o cut

Projected TD:
5142 = 2769.13
DEG 90.17
AZM 132.05
V S 2460.5

= 2769.26
90.17
132.05
119.5