

McElvain Energy
 1050 17th St Ste 2500 Denver
 Colorado 80265

Well & No. Pargin Ranch #11 Lateral #1 Sidetrack #2
 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'



Contractor : Aztec Well Service #507
 Directional: Scientific

Whipstock Horizontal

Horizontal Mudlog @ Scale of 5" = 100'

RO

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

Logged Dates Log

On site Loggers

ROCK TYPES

	Anhy
	Bent
	Brec
	Cht
	Clyst
	Bright coal
	Dull coal
	Congl
	Dol
	Ign
	Marlstone
	Lmst
	Meta
	Siderite
	Salt
	Shale

Legend

	Mica
	Minxl
	Nodule
	Phos
	Pyr
	Salt
	Sandy
	Silt
	Sill
	Vitrinite
	Tuff

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POROSITY

	Earthly
	Fenest
	Fracture
	Inter
	Moldic
	Cleat
	Organic
	Pinpoint
	Uncons
	Vuggy

Legend

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

MINERAL

	Anhy
	Bent
	Breccfrag
	Calc
	Carb
	Chtdk
	Chttt
	Dol
	Feldspar
	Ferrpel
	Ferr
	Fusinite
	Glau
	Gyp
	Hvyrmin
	Kaol
	Marl

Legend

	Mica
	Minxl
	Nodule
	Phos
	Pyr
	Salt
	Sandy
	Silt
	Sill
	Vitrinite
	Tuff

STRINGER

	Anhy
	Arg
	Bent
	Coal
	Dol

FOSSIL

	Algae
	Amph
	Belm
	Bioclst
	Branch

Legend

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

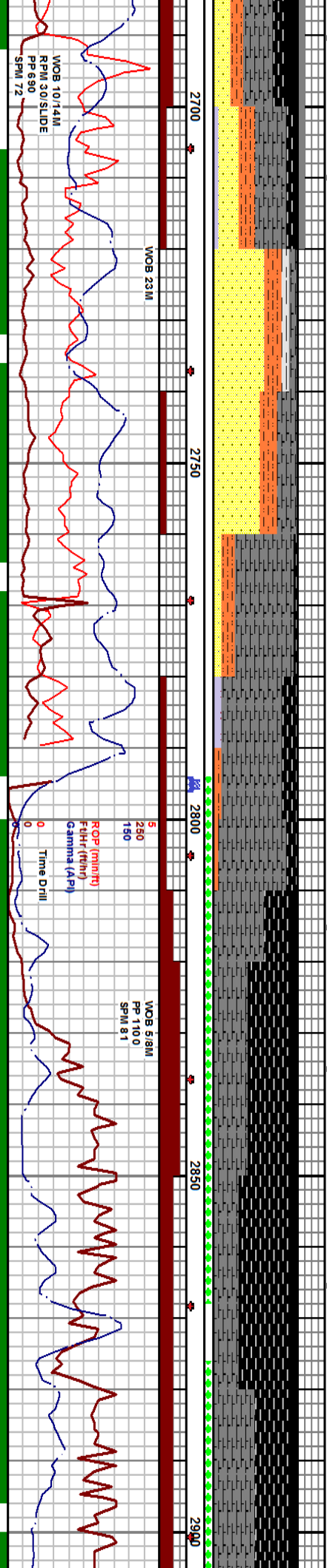
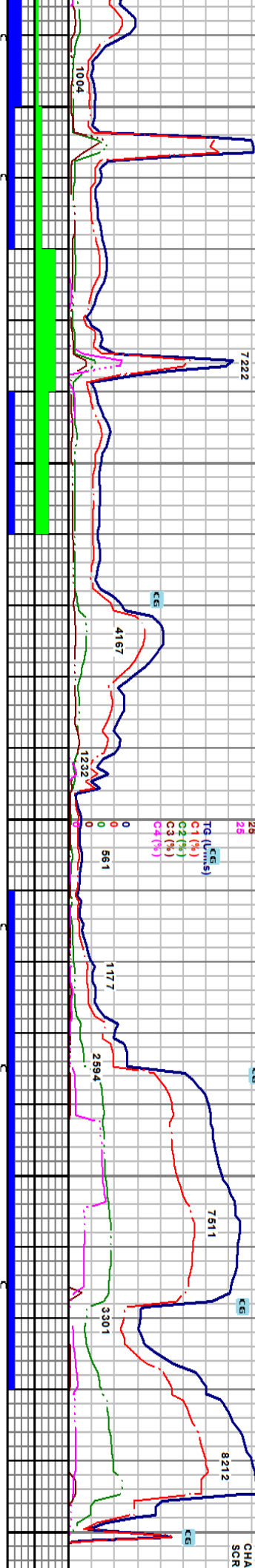
Legend

	Mica
	Minxl
	Nodule
	Phos
	Pyr
	Salt
	Sandy
	Silt
	Sill
	Vitrinite
	Tuff

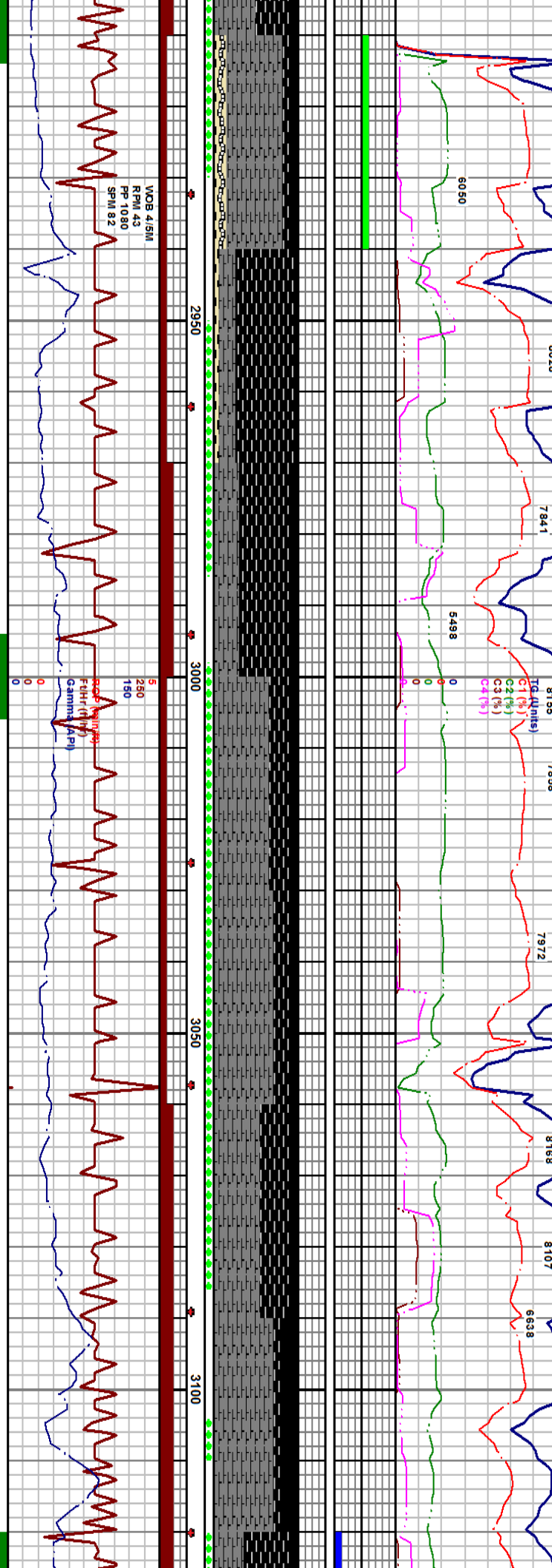
Legend

	Mica
	Minxl
	Nodule
	Phos
	Pyr
	Salt
	Sandy
	Silt
	Sill
	Vitrinite
	Tuff

OIL



2700-2720 S.S.: off wh to gy to brn sl fri to fri occ frm pred vfr sbang to ang w srt w cmt calc cmt w/ mod to mas cly fill mtr intrfc w/ sst 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 vfr gr to lvf gr sbang to ang w srt w to vw cmt calc cmt grdgd to sdy ls drms tt to no vis por mod intrst deb pred carb flks tr sply carb shn gd dull gid flr no cut acid or crush	2740-2760 S.S.: brn to gry to mof to wh to off wh tr sft to fri to pred hd occ sily rdd to sbrrd to occ shang lvfg to vfg to fg fr srt w cmt lmy carb incl tr dk shn occ tr vis por pred no 30% dull to occ bri gid flr tr mlky gs cut no oil cut	2760-2780 SH: dk gy to brn gy to dk brn sft to brit sply smth to sily tx sl to mod calc v carb occ grdgd to durtle wi tr free dull to bri coal	2780-2790 COAL: blk sft to sl brit sply to sply pred shly tx rr float coal dns pred durtle no vis cleat or bldg gs w/ v fnt slow gs cut	2820-2850 COAL: blk sft to v sft pred vfr cigs pred float cigs occ bri pred dull to grry just sply to thin ply rr vis cleat pr vis bldg gs w/ tr slow mlky gs & o cut	2850-2880 COAL: blk sft to v sft pred vfr float cigs pred dull l occ bri sply to sply pred haddled shly tx ip pr vis bldg gs & o cut frothy	2880-2910 CSH: dk choc br carb grdgd to durtle wi pr v
2696 = 2642.99 DEG 54.53 AZM 94.4 VS 137.03	2728 = 2660.36 DEG 59.73 AZM 90.41 VS 163.88	2760 = 2674.82 DEG 66.5 AZM 88.71 VS 192.39	2791 = 2685.51 DEG 73.16 AZM 88.4 VS 221.45	2827 = 2697.4 DEG 68.26 AZM 93.56 VS 225.35	2859 = 2707.86 DEG 75.54 AZM 91.88 VS 256.56	2890 = 2714.98 DEG 79.91 AZM 87.83 VS 315.7	

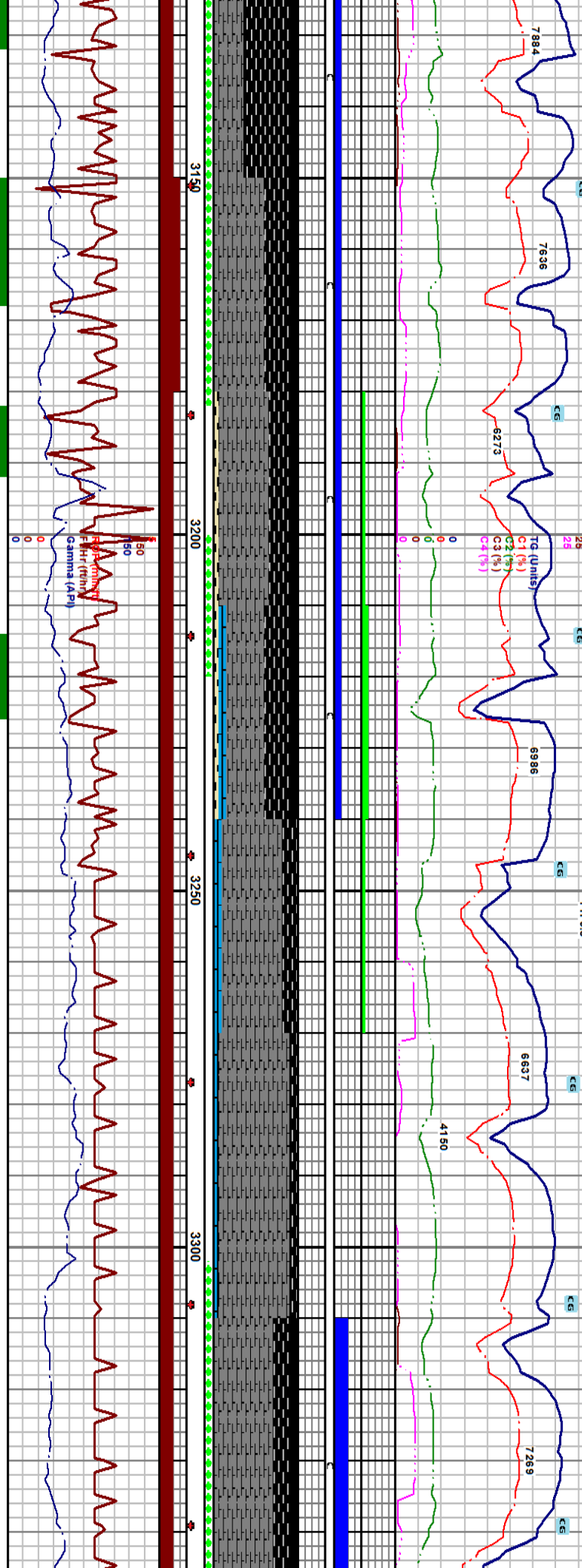


2910-2940 BENT: dk brn to crm mot ip st f cigs sply wxy wi dull gid flor & free cal: off w/ thn ply cleat fill in app	2940-2970 COAL: blk sft to sl brit sply to sbply 10% float cigs pred dull shly bx occ grdg to sh rr vis cleat pr vis bldg gs w/ v fnt mlky gs & o cut	2970-3000 CSH: dk choc brn to blk sft sply to sbply v carb pred grdg to durite n calc pr vis bldg gs w/ v fnt mlky gs pr & sl o cut	3016-2728.43 DEG 86.03 AZM 88.06 VS 440.71
2921 = 2719.49 DEG 83.34 AZM 86.92 VS 348.31	2963 = 2722.97 DEG 84.2 AZM 86.42 VS 378.04	2985 = 2725.99 DEG 84.96 AZM 88.34 VS 409.84	2910 VS 440.71
3030-3060 COAL: blk sft to v sft sply to thn ply to sbply bri float cigs to pred dull shly bx pr vis bldg gs w/ fnt mlky gs & o cut	3060-3090 CSH: blk to brn blk to dk brn sft to sl brit sply to sbply sl shly ip v carb occ iligc in app to durite pr v v bldg gs w/ v fnt gs pr wh yel o cut	3090-3120 COAL: blk sft to fri to v fri s shly bx hacked to occ conch frac rr vi v fnt mlky gs & o cut	3048 = 2730.48 DEG 86.6 AZM 87.84 VS 472.6
3079 = 2732.06 DEG 87.88 AZM 87.27 VS 503.51	3110 = 2733.05 DEG 88.76 AZM 91.58 VS 534.48	3120 thn bldg	2737.5 (+3722.5)

10000

WRT 9.1+
VS 3.1
PH 9.5

WELL TAKING FLUID



2665 TVD
Sub Sea (+3795)

3150-3180 COAL: blk fri to v fri sply to sbply bri to pred dull lult to grsy lult rr vis float dqs pred hacked frac rr vis face cleat pr vis bldg gs w/ fr m lky gs & o cut

3180-3210 BENT: orng brn sft wxy sply w/ dull orng flor

3210-3240 L.S: yel brn fri to brit thn ply pred clast tx grly rthy frac fill in app dns w/ dull orng yel flor poss contain Ination

3240-3270 CSH: brn blk to blk sft to sl birt sply to sbply sl sily tx lp pred grdg to durite rr vis cleat pr vis bldg gs w/ pr slow gs & o cut

3270-3310 CSH: dk choc brn to brn blk to blk sft to brit sply sl sily tx occ lam w/ thn carb pfgs occ intric w/ ls poss lam fill to frac fill tr to pr vis bldg gs w/ m lky yel gs & o cut

3310-3350 COAL: blk fri to v fri occ fr wxy to dull wxy to shly tx pr vis cleat gs & o cut

sbply pred bri occ dull s face cleat fr vis bldg

3150 CSH: blk to brn blk sft to brit sply to sbply occ am pred sm th tx v carb pred grdg to durite pr vis gs w/ frt m lky gs & o cut

3142 = 2733.61
DEG 89.6
AZM 91.72
VS 566.47

3173 = 2734.66
DEG 86.16
AZM 92.29
VS 597.24

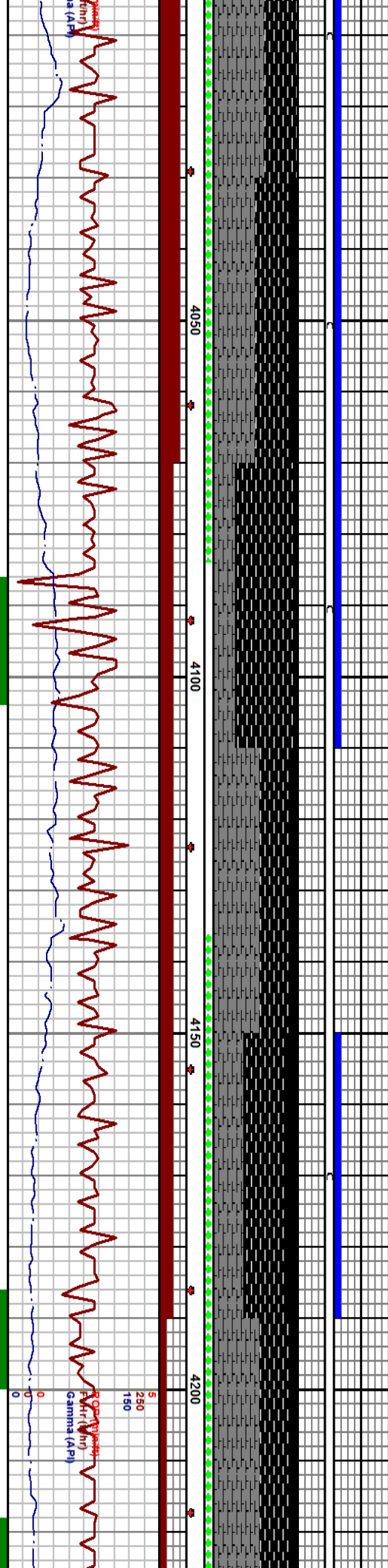
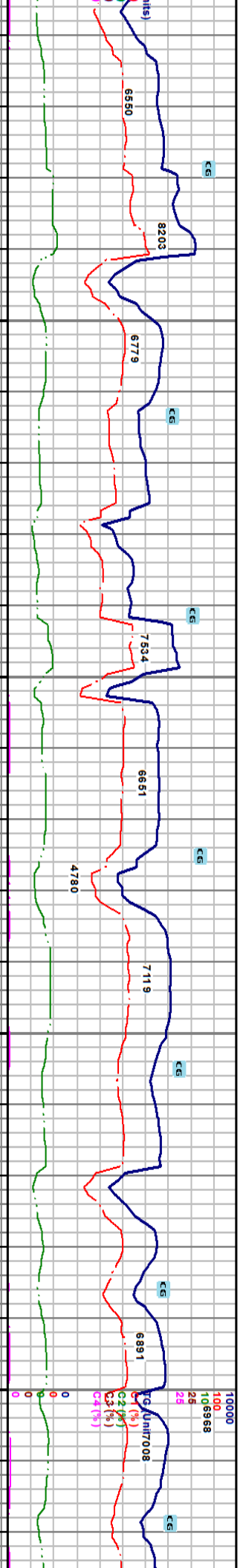
3204 = 2738.97
DEG 85.28
AZM 89.77
VS 628.35

3236 = 2739.32
DEG 86.27
AZM 89.45
VS 660.25

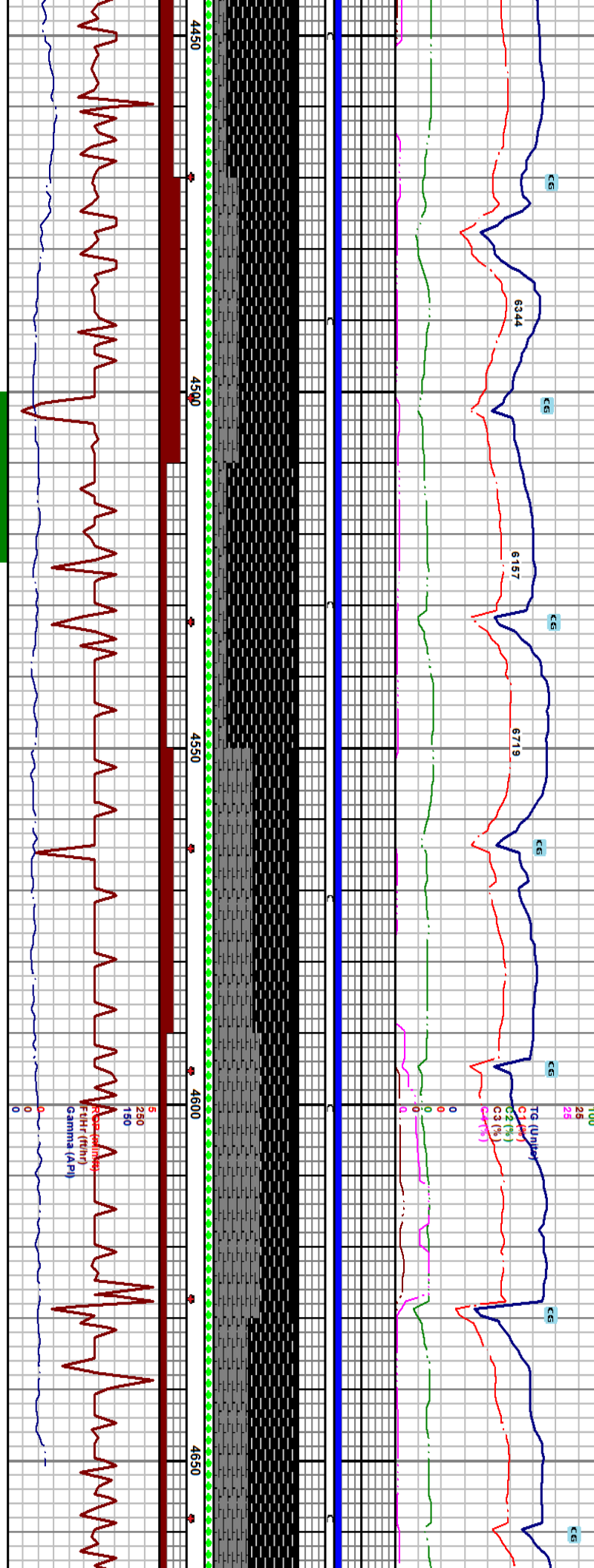
3267 = 2741.37
DEG 86.17
AZM 88.32
VS 691.17

3298 = 2743.59
DEG 86.74
AZM 88.08
VS 722.08

3329 = 2744.89
DEG 87.31
AZM 87.06
VS



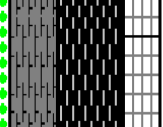
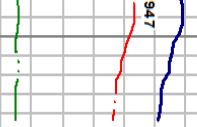
VD	2665' VD Sub sea (+3795)	4020-4070 CSH: pred blk occ brn blk sft to sl brite sply to sply sm th to sily tx v carb pred grdg to durite fr vs bldg gs wi slow pr mlky gs & o cut FROTHY	4070-4110 COAL: blk sft to v st fri sply to sbilky pred dull to dull wxy to sily tx < 5% bri ljust pr vs face cleat pred hackled frac pr vs bldg gs slow frnt gs & o cut FROTHY	4110-4150 CSH: blk to brn blk sft to sl brite sply to sbilky pred dull to dull wxy to sl sily tx v carb grdg to durite occ ligc in app pr to fr vs bldg gs wi slow mlky gs & pr v slow o cut	4150-4190 COAL: blk sft to sl frm to frm bri to dull grsy durite fr vs bldg gas hackled to concn wi pyr nod fr mlky gas cut wi tr yel oil cut	4190-4230 CSH: gry blk to brn blk to c brnd occ thin ply to sbilky occ grdg to	4200 = 2787.43 DEG 86.06 AZM 91.92 VS 1630.24
4020 = 2776.89 DEG 84.59 AZM 87.87 VS 1442.7	4051 = 2779.72 DEG 84.96 AZM 87.56 VS 1473.52	4082 = 2792.30 DEG 85.49 AZM 88.93 VS 1504.38	4114 = 2784.2 DEG 87.68 AZM 90.67 VS 1536.34	4145 = 2785.35 DEG 88.08 AZM 91.67 VS 1597.29	4176 = 2786.09 DEG 89.16 AZM 91.91 VS 1598.28	2910 (+3850)	



4470-4510 CSH: dk brn to brn blk sft to v sl fri sply to sbblity to occ brt pred float vit pr vis cleat pred hackled s bldg gs wi slow frt mlky gs	4491 = 2797.73 DEG 88.99 AZM 94.78 VS 1912.83	4510-4550 COAL: blk f cigs tr float cigs pred sft to v sl fri sply to sbblity pred dull wvy to gryy pred hackled frac rr vis face cleat gd vis bldg gs wi v frt gs & o cut frothy	4554 = 2800.96 DEG 86.34 AZM 88.32 VS 1975.70	4590-4630 CSH: dk brn to brn blk to blk v f cigs sft to sl brt sply to sbply sl sily fx n calc v carb pred grdd to durite pr vis bldg gs wi frt mlky gs & sl o cut frothy	2737.5 (+3722.5)	4630-4679 COAL: blk v f cigs grdd to d sply pred dull lust occ brt lust tr face gs & sl o cut frothy	4638 = 2805.44 DEG 87.44 AZM 89.07 VS 2059.51
4460 = 2796.9 DEG 88.35 AZM 93.72 VS	4491 = 2797.73 DEG 88.99 AZM 94.78 VS 1912.83	4523 = 2799.06 DEG 86.64 AZM 88.17 VS 1944.78	4554 = 2800.96 DEG 86.34 AZM 88.32 VS 1975.70	4586 = 2802.83 DEG 86.97 AZM 88.70 VS 2007.51	4618 = 2804.49 DEG 87.11 AZM 88.6 VS 2039.55	4638 = 2805.44 DEG 87.44 AZM 89.07 VS 2059.51	

Thank You for using
Rocky Mountain Mudlogging, Inc.

6947



4700

47



ust srt to sl fri thin ply to
cleat pr vis bldg gs w/ frnt

4679' Pick up Circulate out for casing
T.D. 11/04/2014 @ 2045 hrs.

Projected to T.D.
4679 = 2807.27
DEG 87.44
AZM 89.07
V S 2100.47