

Surface Data Logging
 5" MD Formation Evaluation Log

1 : 240

Country : USA	
Field : Exploration	
Location : Lat: 69° 59' 26.11" North Long: 148° 40' 40.99" West	
Well : Alcor 1	
Company : Great Bear Petroleum, LLC	
Rig : Nabors 105E	
LOCATION	Latitude : 69° 59' 26.11" North Longitude : 148° 40' 40.99" West
	Other Services
	UTM Easting = 665,672.48 ft UTM Northing = 5,847,838.30 ft
Permanent Datum : Mean Sea Level	Elevation : 0.00 ft
Log Measured From : Drill Floor	186.00 ft Above Permanent Datum
Drilling Measured From : Drill Floor	
MD LOG	

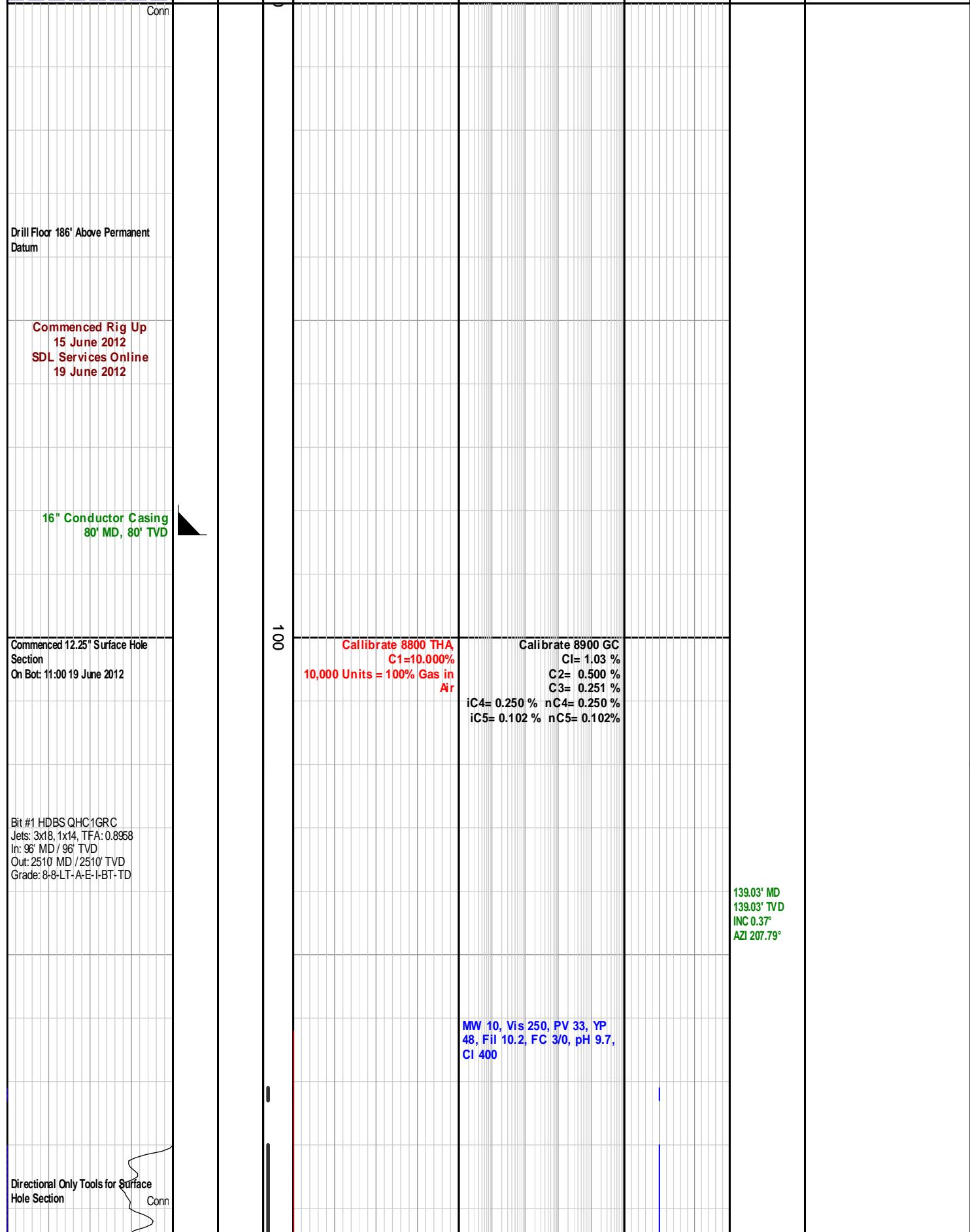
Depth Logged : 102.00 ft To 10,812.00 ft	Unit No. : 117	Job No. : AK-AM-0009285348
Date Logged : 16-Jun-12 To 09-Aug-12		
Total Depth MD : 10,812.00 ft TVD: 10,802.05 ft	Plot Type : Final	
Spud Date : 16-Jun-12	Plot Date : 28-Aug-12	

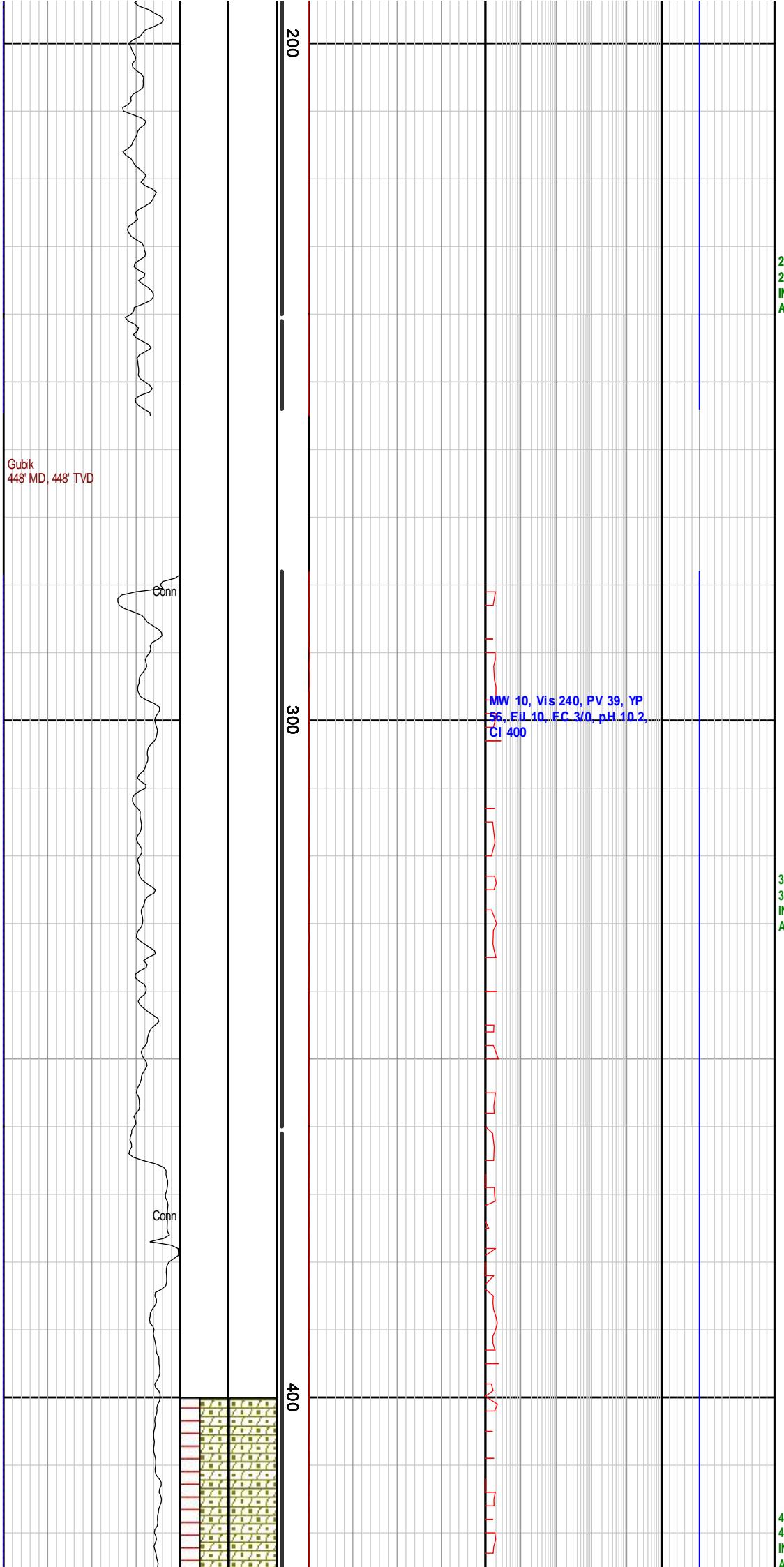
Run No.	Borehole Record (MD)			Run No.	Borehole Record (MD)		
	Size	From	To		Size	From	To
100	12.250 in	102.00 ft	2,510.00 ft	1300	6.125 in	10,662.00 ft	10,812.00 ft
200	8.500 in	2,510.00 ft	6,364.00 ft	1400	6.125 in	10,812.00 ft	10,812.00 ft
300	8.500 in	6,364.00 ft	8,320.00 ft				
400	6.125 in	8,320.00 ft	8,348.00 ft				
500	6.125 in	8,348.00 ft	8,640.00 ft				
600	6.125 in	8,640.00 ft	8,676.00 ft	16.000 in	52.40 lbpf	SURFACE	80.00 ft
800	6.125 in	8,676.00 ft	10,015.00 ft	9.562 in	46.20 lbpf	SURFACE	2,491.00 ft
900	6.125 in	10,015.00 ft	10,103.00 ft	7.000 in	28.70 lbpf	SURFACE	8,311.00 ft
1000	6.125 in	10,103.00 ft	10,574.00 ft	4.500 in	11.60 lbpf	8,311.00 ft	10,750.00 ft
1100	6.125 in	10,574.00 ft	10,604.00 ft				
1200	6.125 in	10,604.00 ft	10,662.00 ft				

LEGEND
Abbreviations and Symbols

Drilling Data	Mud Data	Lithology Symbols
BG	Chloride Ion Conc	Dolomite
BHT	FC Filter Cake	Marl
C	FL Filtrate Loss	Mudstone
C	G Gels	Gumbo
CB	pH Hydrogen Ion Content	Chalk
CG	PV Plastic Viscosity	Chert
CKF	Check For Flow	Halite
CO	Circulate Out	Anhydrite
DB	Diamond Bit	Gypsum
DC	Depth Correction	Coal
DS	Direction Survey	Limestone
DST	Dillstem Test	Gravel
FLT	Flowline Temp.	
LAT	Logged After Trip	
NB	New Bit	
NR	No Returns	
PDC	Polycrystalline Diamond	
PR	Compound Bit	
RPM	Partial Returns	
RRB	Revs Per Minute	
STG	Rerun Bit	
TB	Short Trip Gas	
TG	Turbo Drill	
U	Trip Gas	
WOB	Gas Units	
	Weight On Bit	
	Oil Traces	
	E-LOG Wireline Log Run	
	LOT Leakoff Test	
	PT Pressure Integrity	
	Bitumen	

ROP ft/hr		0	Gas Max units		2K	Chromatograph Gas Analysis (ppm)		MW In ppg	12	Deviation Surveys	Lithologic Descriptions
0	Gamma api	150	Gas Avg units		2K	Methane	Ethane	Propane	Total Butane	Total Pentane	
0	WOB lbs	40	Resistivity ohms		50	ECD		9	ppg	12	
0	RPM rpm	200	Density 1 g/cc	3	10 100 1K 10K 100KM						





Gubik
448' MD, 448' TVD

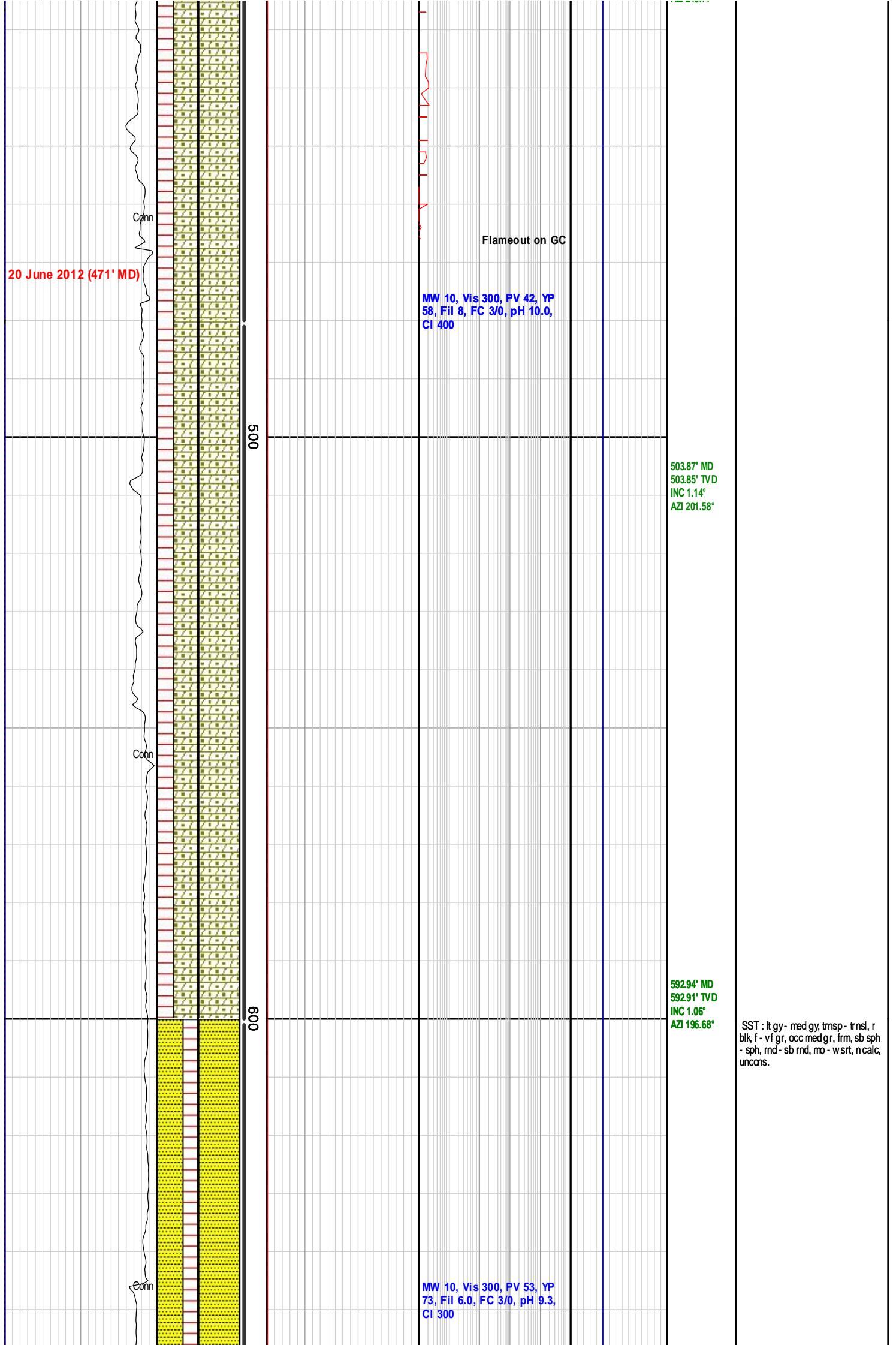
231.15' MD
231.15' TVD
INC 0.19°
AZI 271.35°

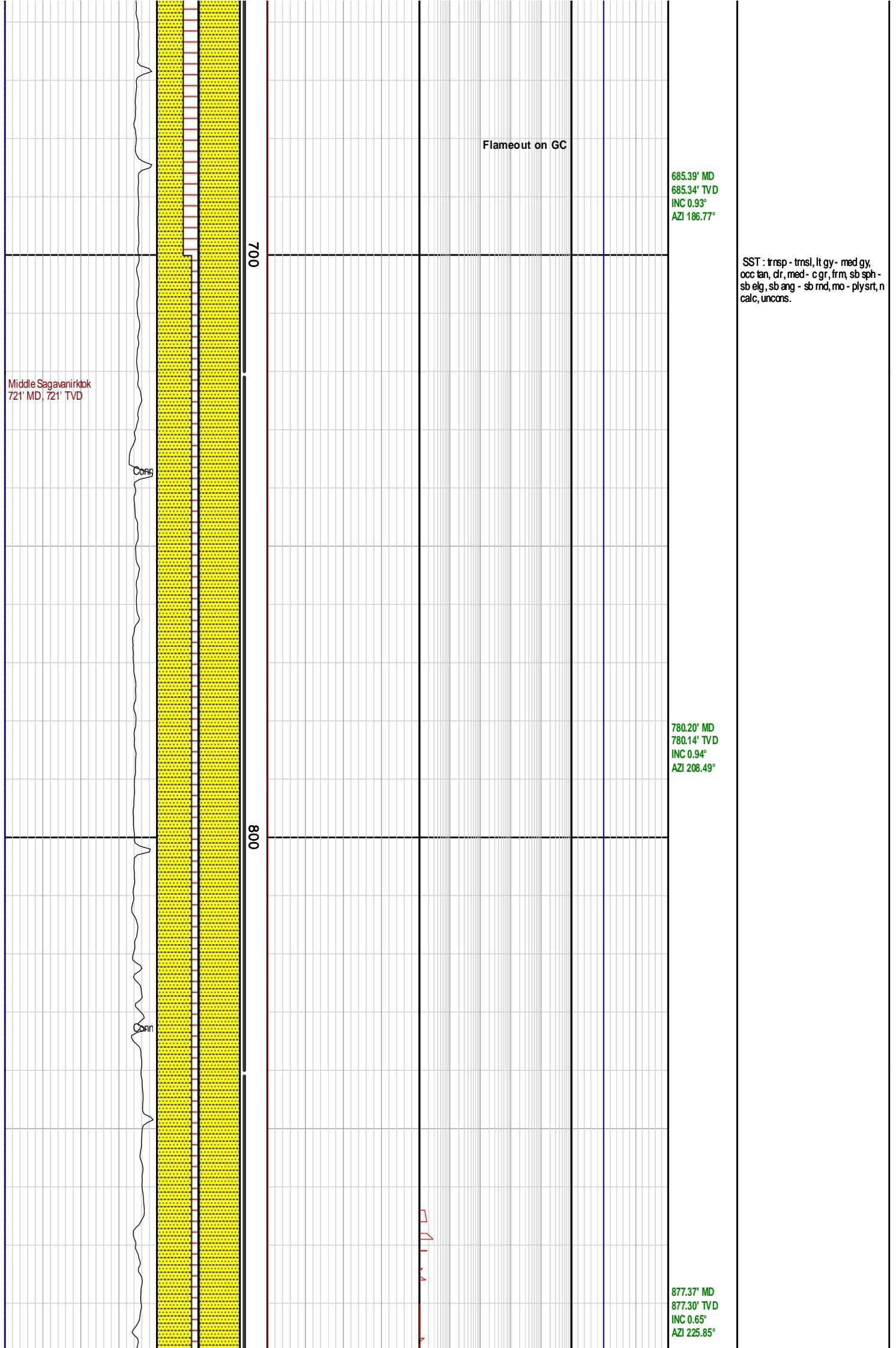
MW 10, Vis 240, PV 39, YP
56, Fil 10, EC 3/0, pH 10.2
CI 400

322.39' MD
322.39' TVD
INC 0.46°
AZI 261.45°

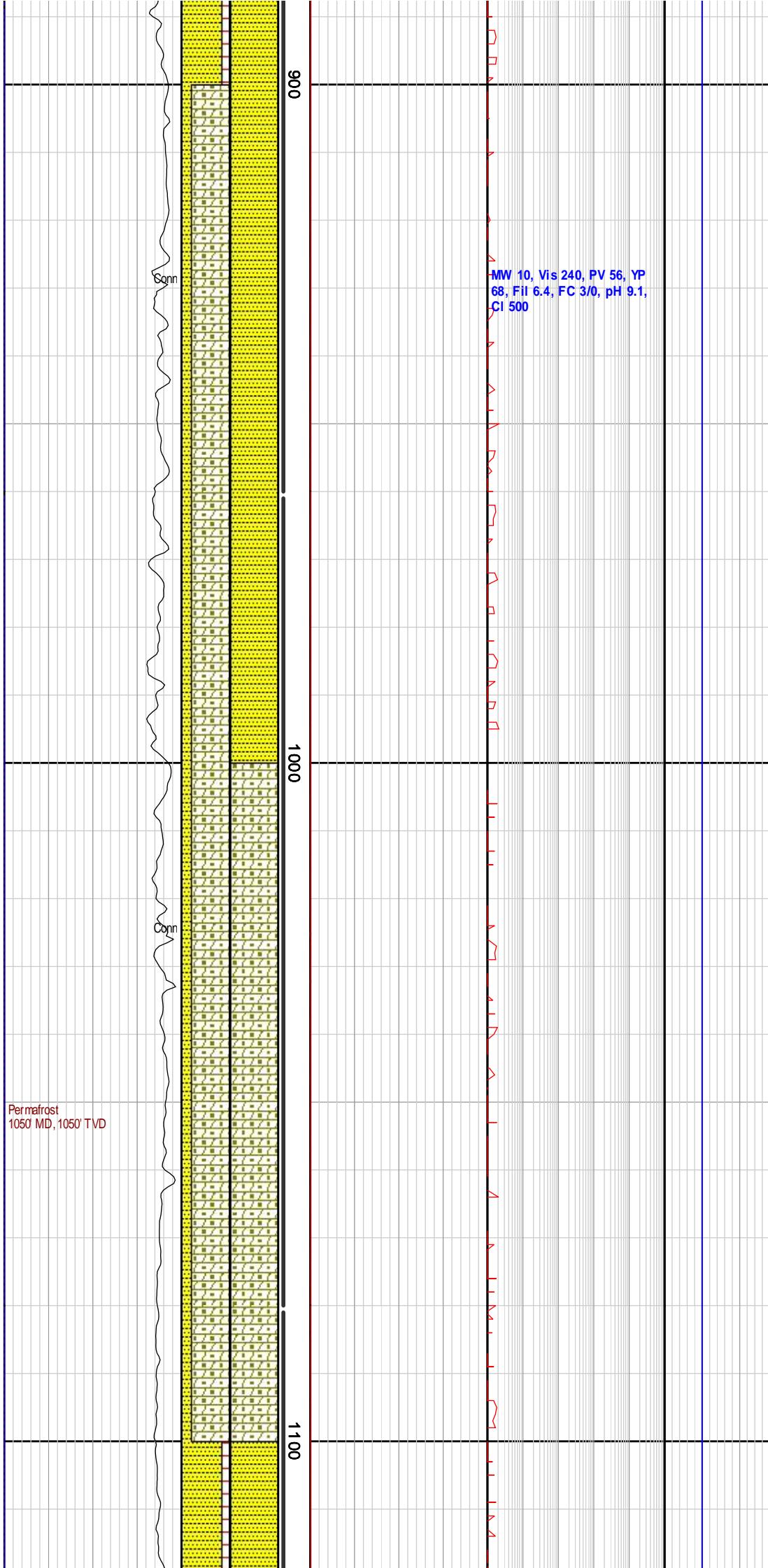
GRAV: dkgy - med gy, occ blk, vc -
c gr, plysrt, tr clyst.

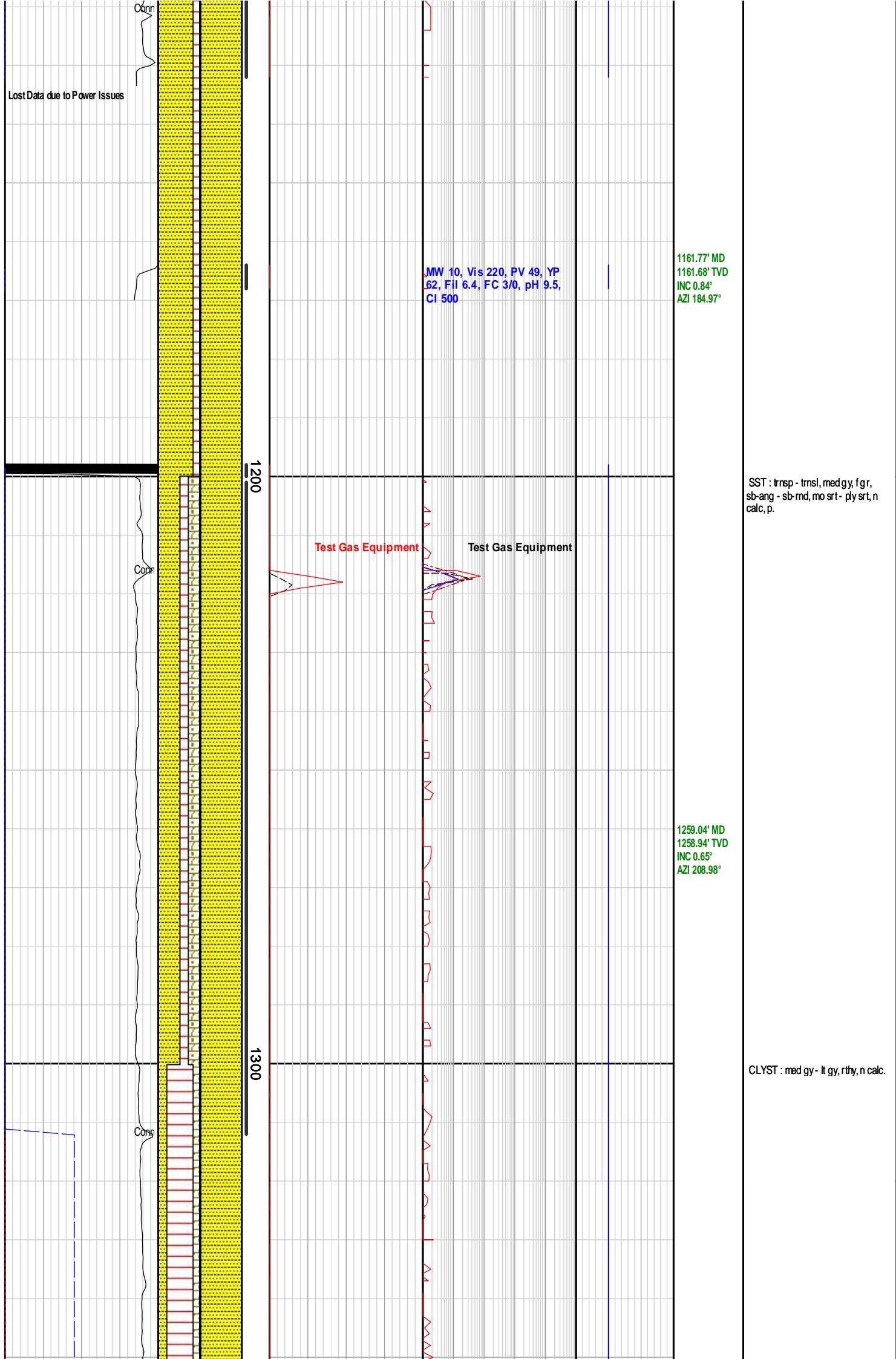
416.62' MD
416.61' TVD
INC 0.80°
AZI 219.77°





GRAV: dkgy, trnsl - trnspl, vc gr, ply
srt, tr sst.





1355.56' MD
1355.45' TVD
INC 0.78°
AZI 205.42°

MW 10.1, Vis 280, PV 53, YP
72, Fil 6.4, FC 3/0, pH 9.6,
Cl 300

1451.70' MD
1451.58' TVD
INC 0.70°
AZI 209.13°

CLYST : dkgy - lt gy, rhy, n calc.

1547.61' MD
1547.48' TVD
INC 0.87°
AZI 214.97°

Conn

140

150

Conn

Conn
21 June 2012 (1598' MD)

1600

1642.98' MD
1642.84' TVD
INC 0.86°
AZI 205.66°

Conn

1700

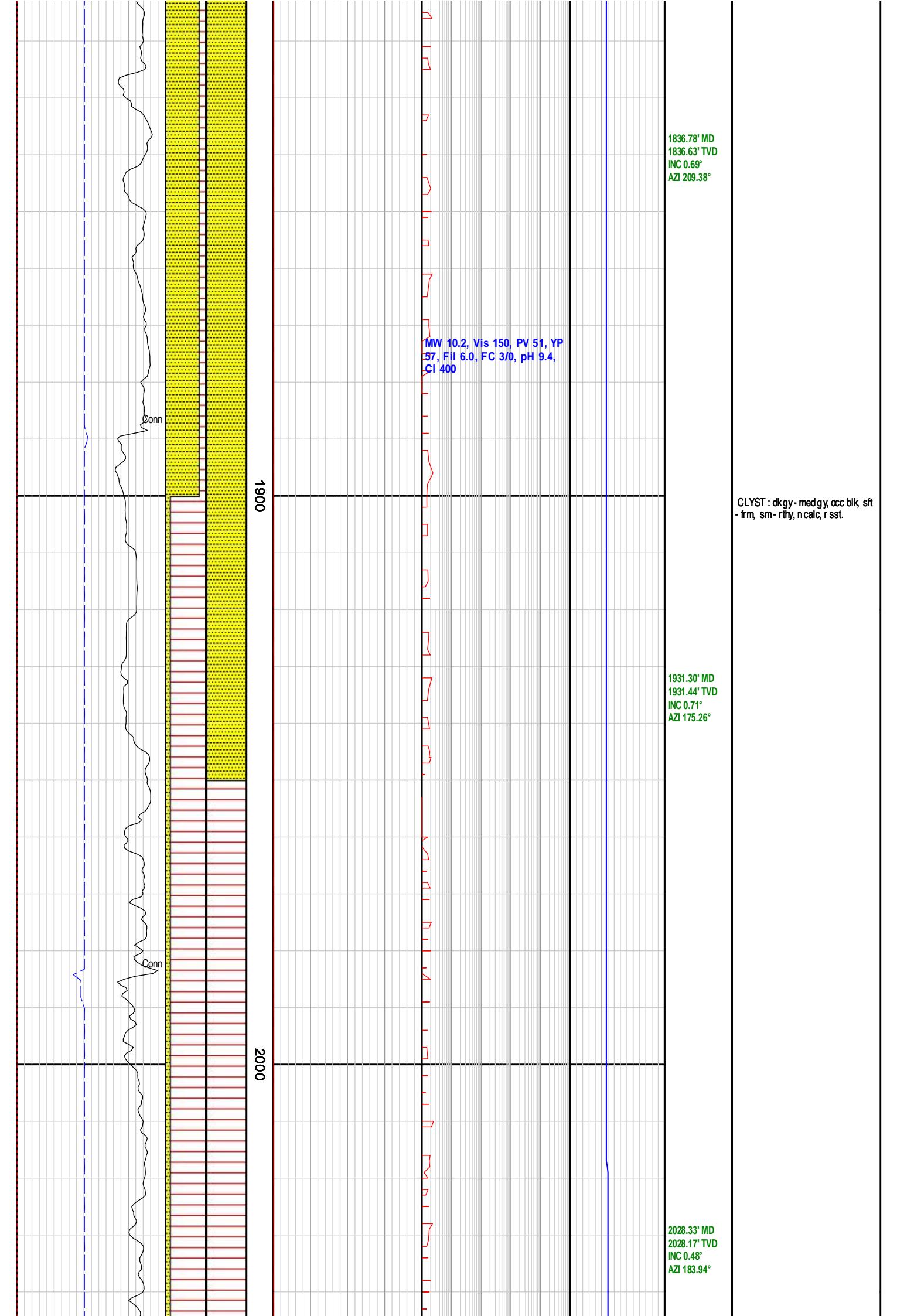
CLYST : dkgy - med gy, rhy - sm, n
calc, tr sst.

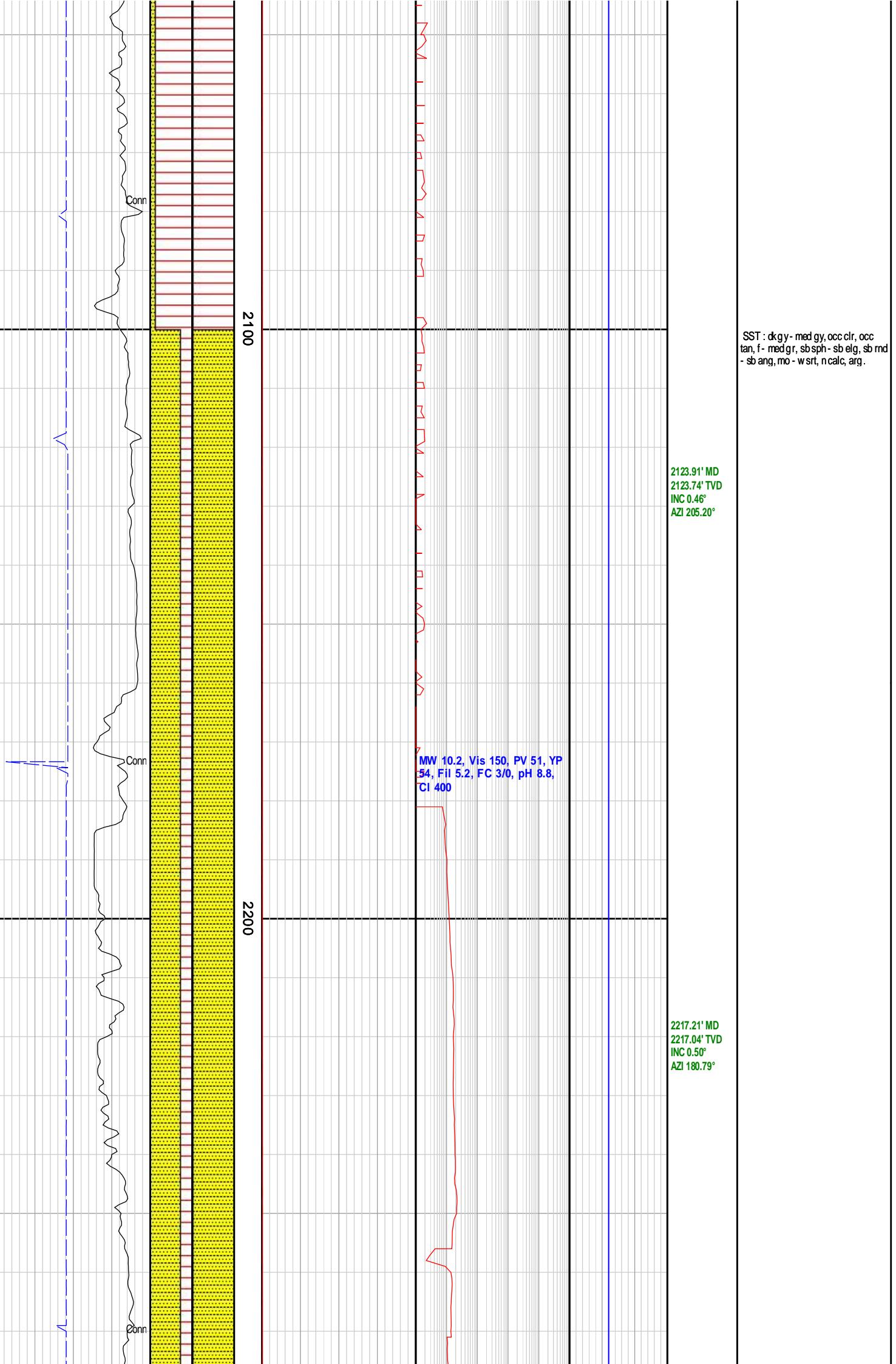
Conn

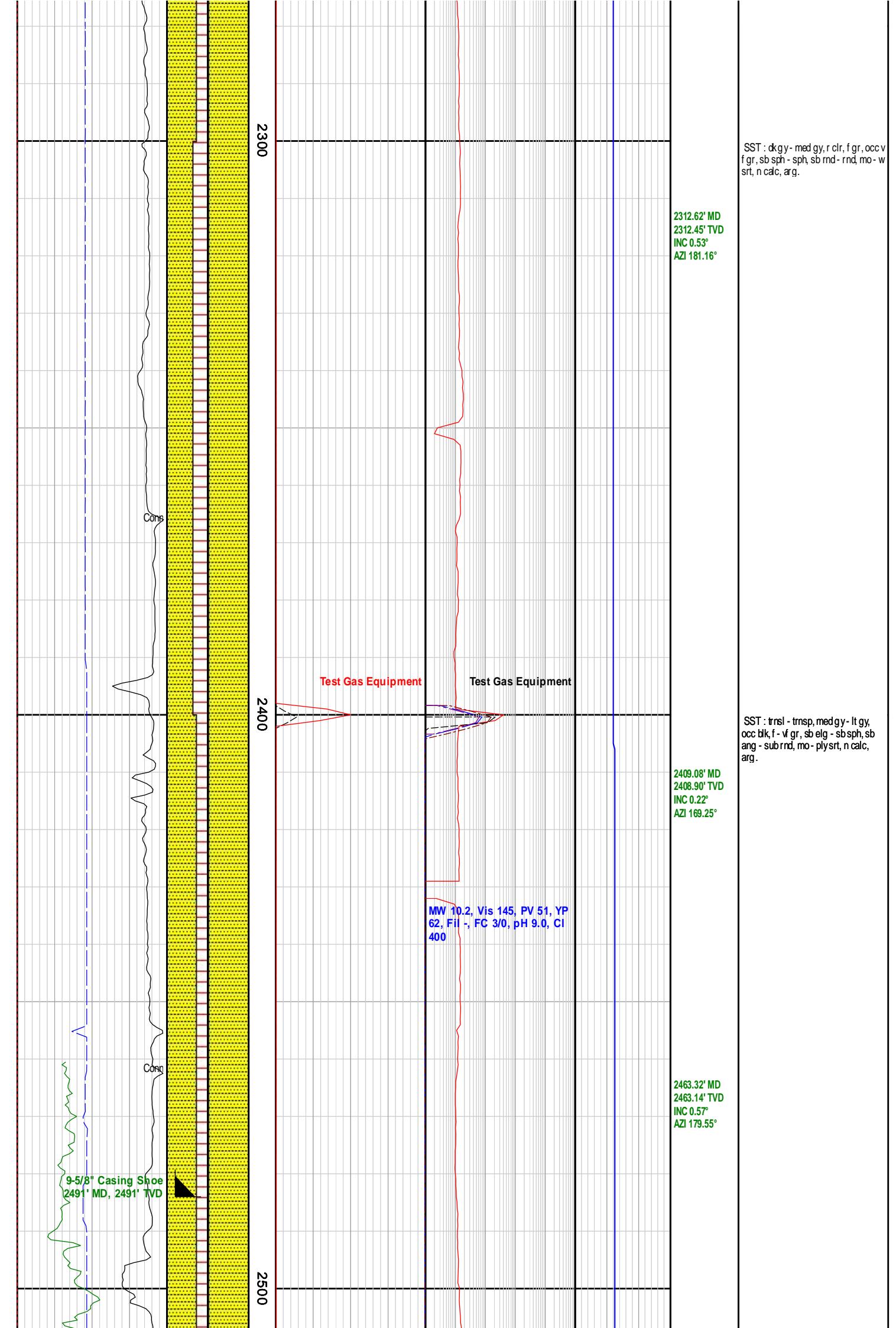
1800

1739.38' MD
1739.23' TVD
INC 0.64°
AZI 193.71°

SST : trnspl - trnspl, dkgy - med gy,
occ tan, f - med gr, sb sph - sb elg,
sb ang - sb rnd, mo - wsrt, n calc, r
glauc, tr cyst.







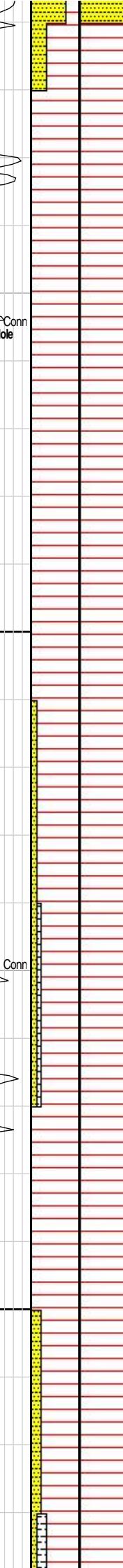
TD Surface Hole Section
2510' MD, 2510' TVD
Off Bot 17:20 21 June 2012

Bit #2 HDBS FX56
Jets: 5x16, TFA: 0.9817
In: 2510' MD / 2510' TVD
Out: 6365' MD / 6365' TVD
Grade: 24-CT-A-X-2-WT-HP

Commenced 8.5" Intermediate Hole
Section
On Bot: 14:40 27 June 2012

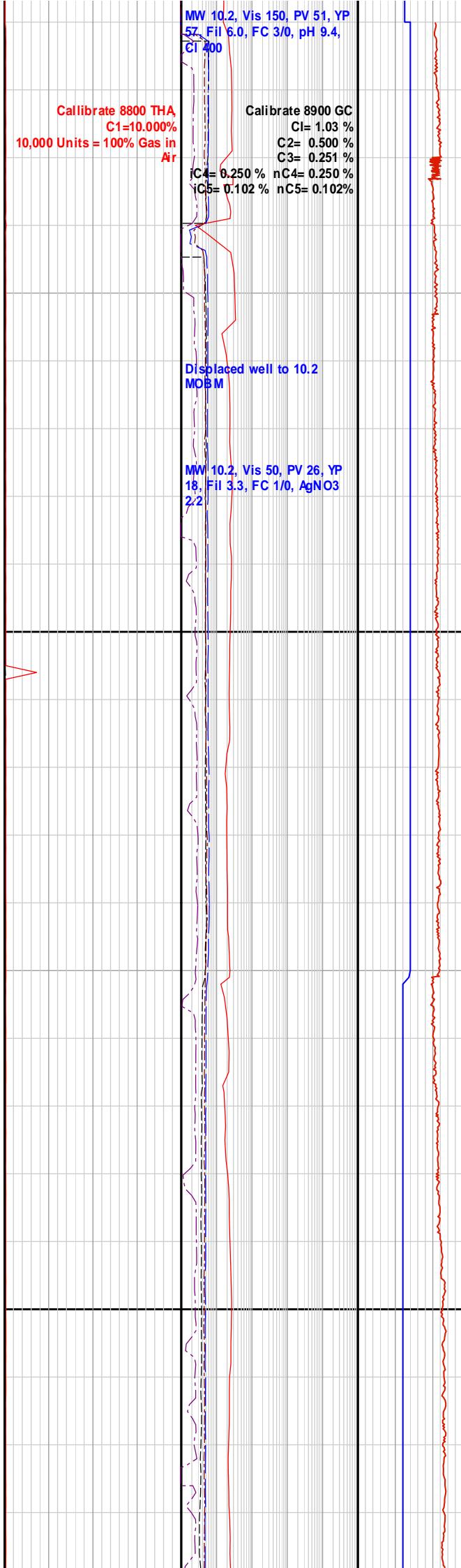
Perform FIT to 14.0 ppg

Upper Canning
2596' MD, 2596' TVD



2600

2700



MW 10.2, Vis 150, PV 51, YP
57, Fil 6.0, FC 3/0, pH 9.4,
Cl 400

Callibrate 8800 THA
C1=10.000%
10,000 Units = 100% Gas in
Air

Calibrate 8900 GC
Cl = 1.03 %
C2 = 0.500 %
C3 = 0.251 %
C4 = 0.250 % nC4 = 0.250 %
C5 = 0.102 % nC5 = 0.102 %

Displaced well to 10.2
MOB M

MW 10.2, Vis 50, PV 26, YP
18, Fil 3.3, FC 1/0, AgNO3
2.2

2606.45' MD
2606.26' TVD
INC 1.05°
AZI 112.70°

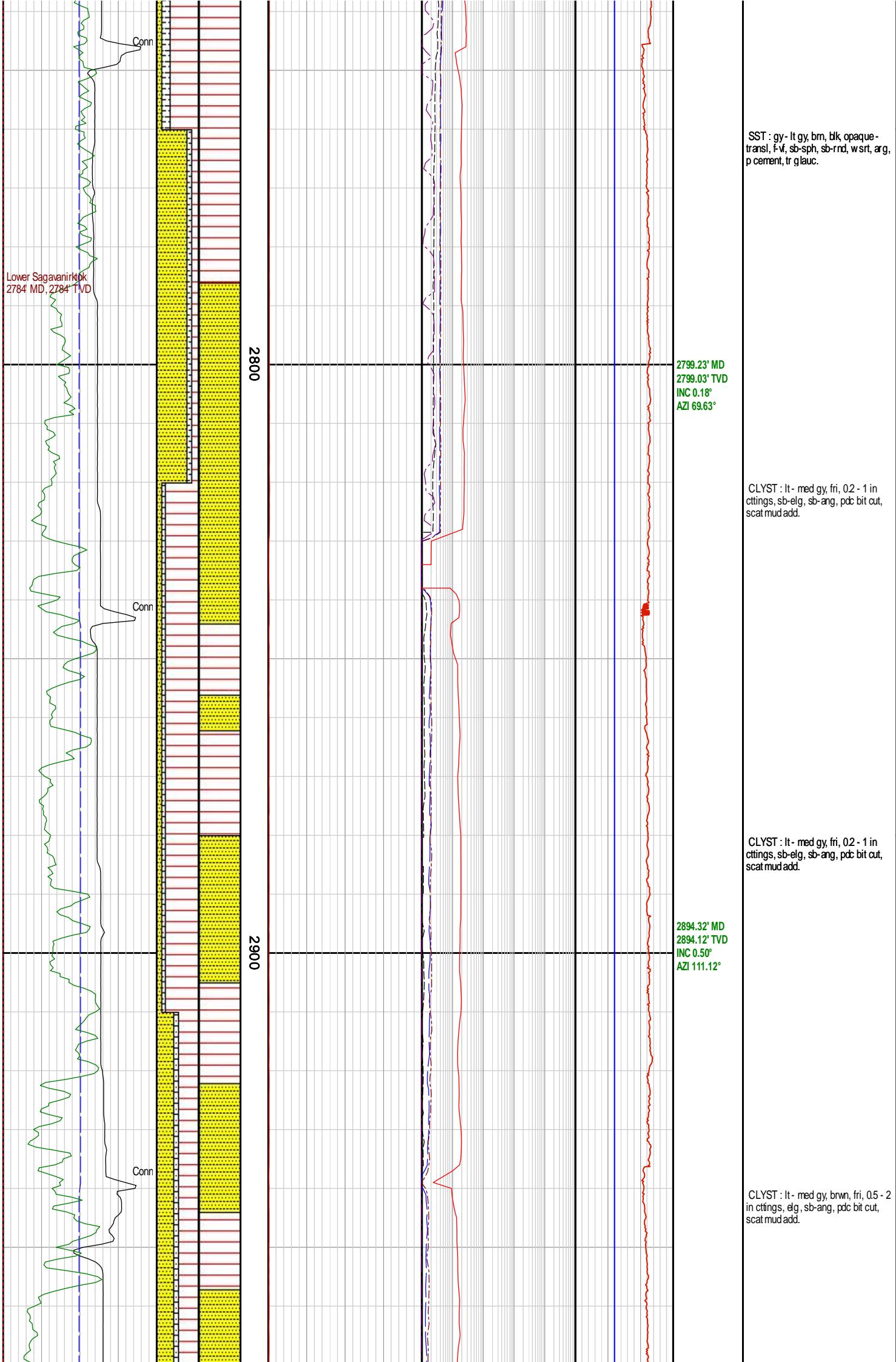
CLYST : It gybrn, lt - med gy, sft -
frm, mo comp, amor - blk, n calc, tr
sst, tr cmnt, scat mud add.

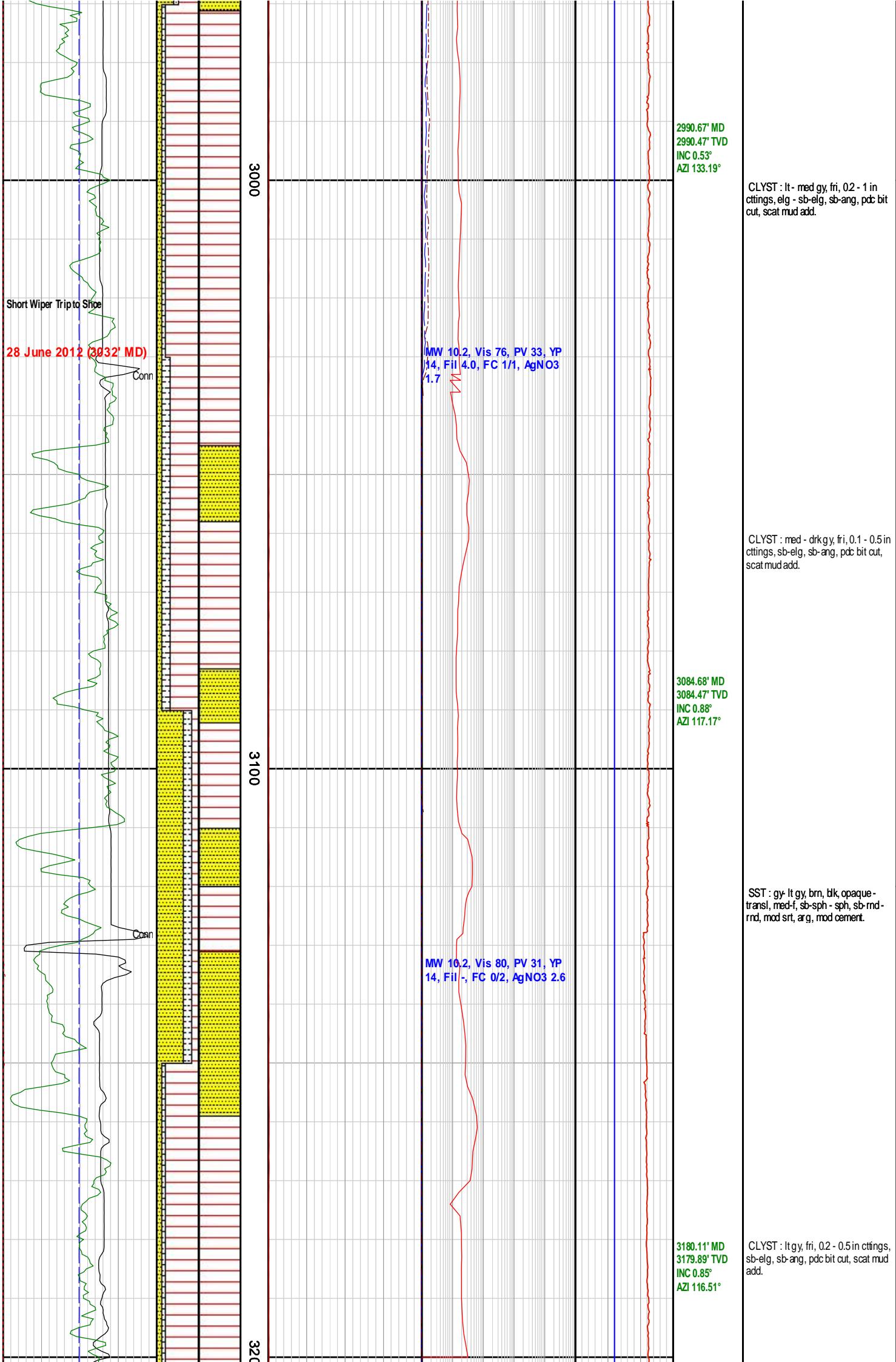
CLYST : It- med gy, lt brngy, frm -
hd, mo - w comp, 1 - 3 in cttings, ln -
blk, n calc, scat mud add.

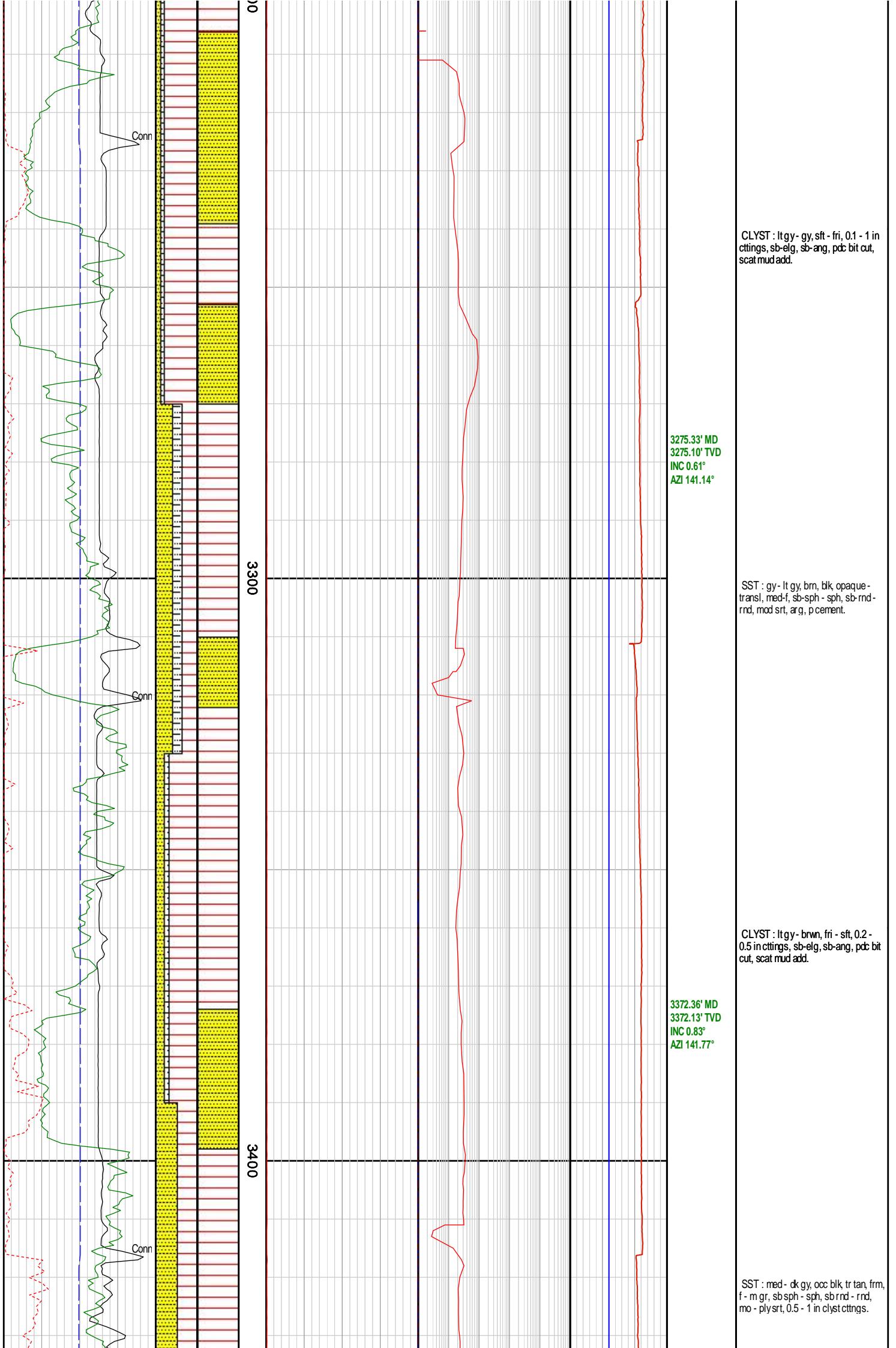
CLYST : It- med gy, frm, 0.5 - 1 in
cttings, elg, pdc bit imprint, scat mud
add.

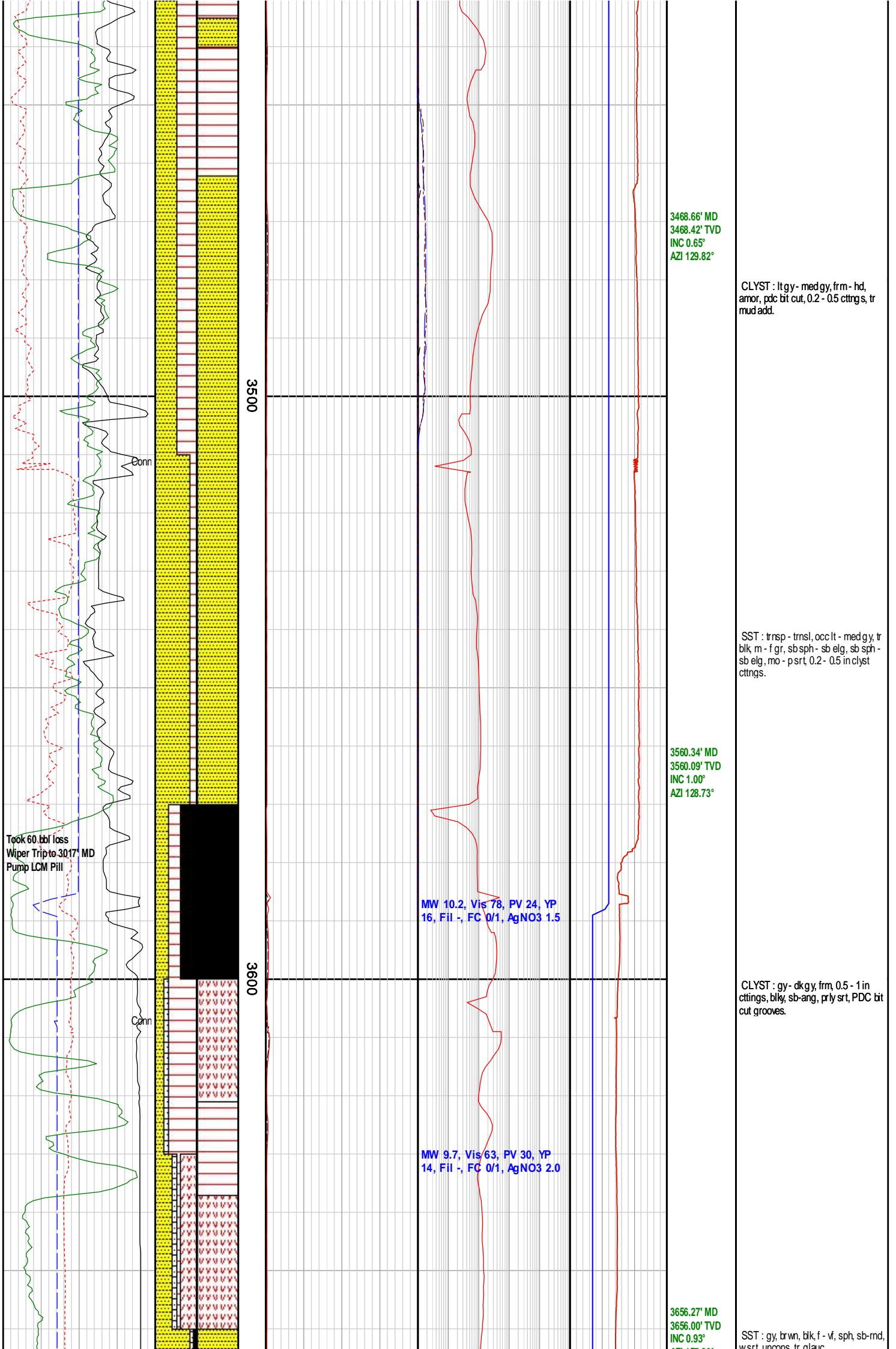
2700.00' MD
2699.80' TVD
INC 0.12°
AZI 96.30°

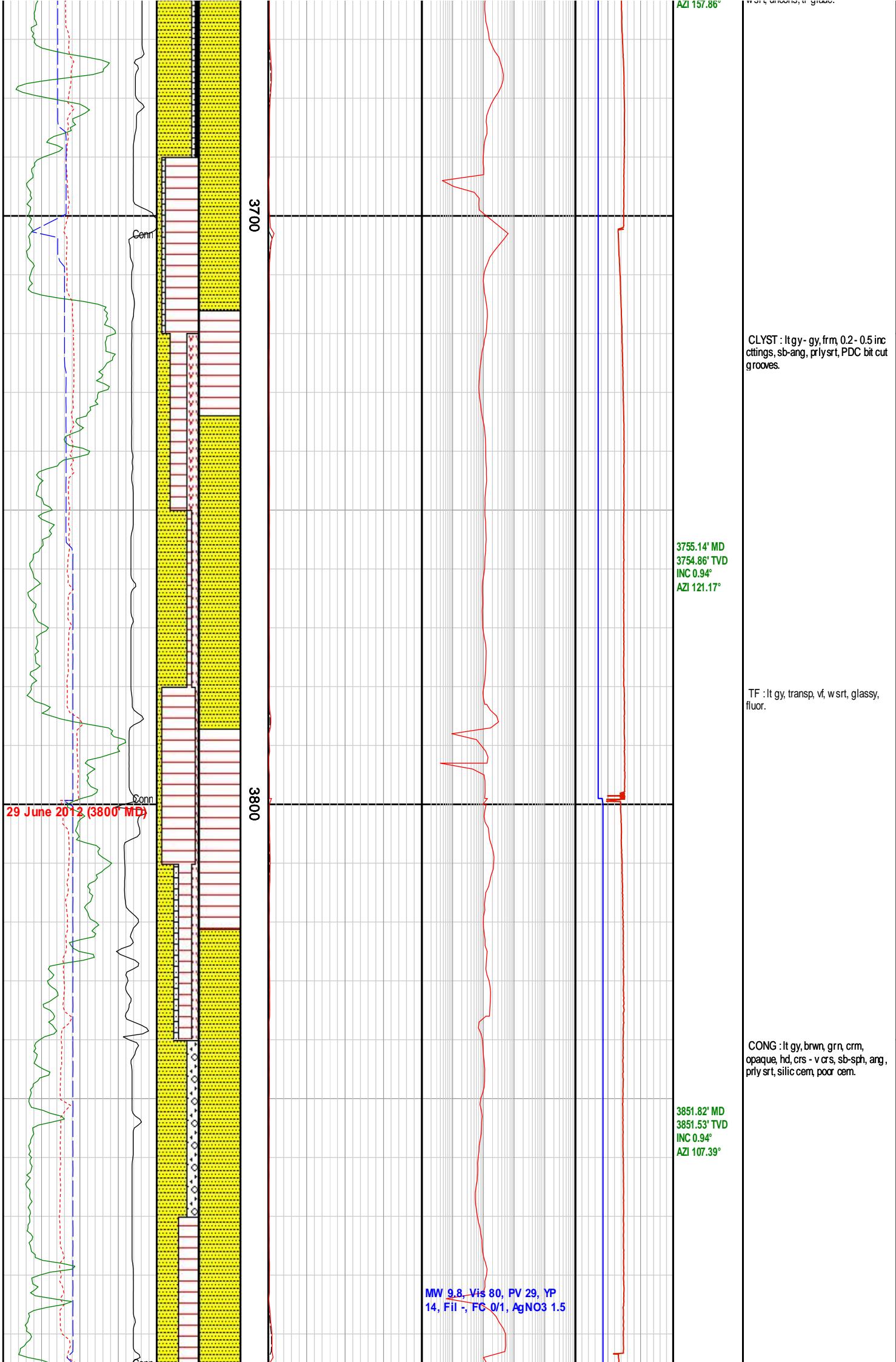
CLYST : It- med gy, sft, fn - 1 in
cttings, elg - sb-sph, pdc bit imprint,
scat mud add.











SST : lt gy, gy, brwn, blk, transl -
opaque, f - vf, sph, sb-md, wsrt, dy
cement, poorly cemented.

3984.95' MD
3948.65' TVD
INC 0.63°
AZI 109.99°

SST : trnspr - trnsl, lt gy, lt brn gy, tr
wh, frm - hd, m - f gr, ang - sb ang,
mo - wsrt, silic cment, tr coal.

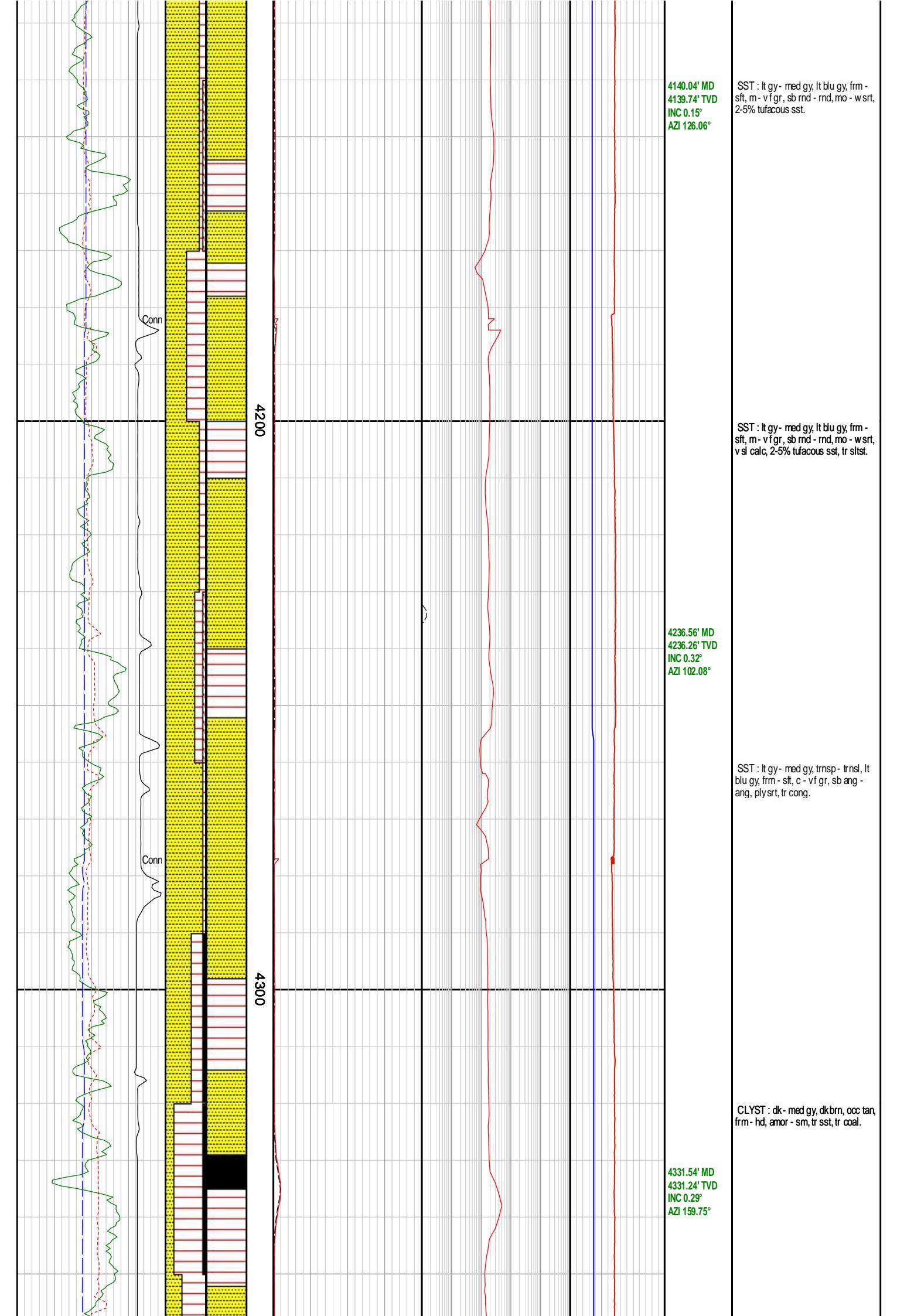
COAL: blk brn blk, hd - brit, blky -
peaty, shny - slky, abun ssst.

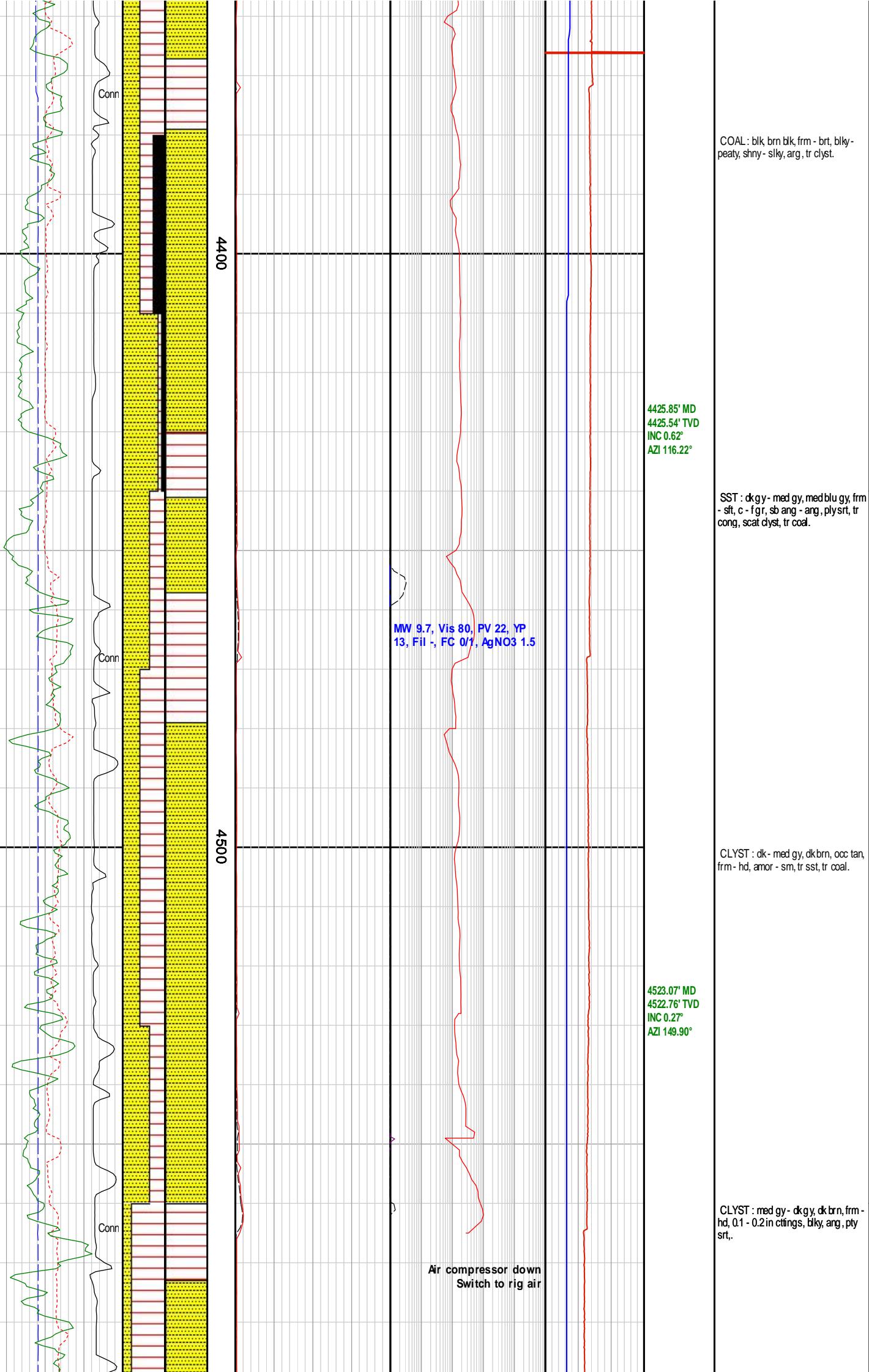
4043.92' MD
4043.62' TVD
INC 0.19°
AZI 103.09°

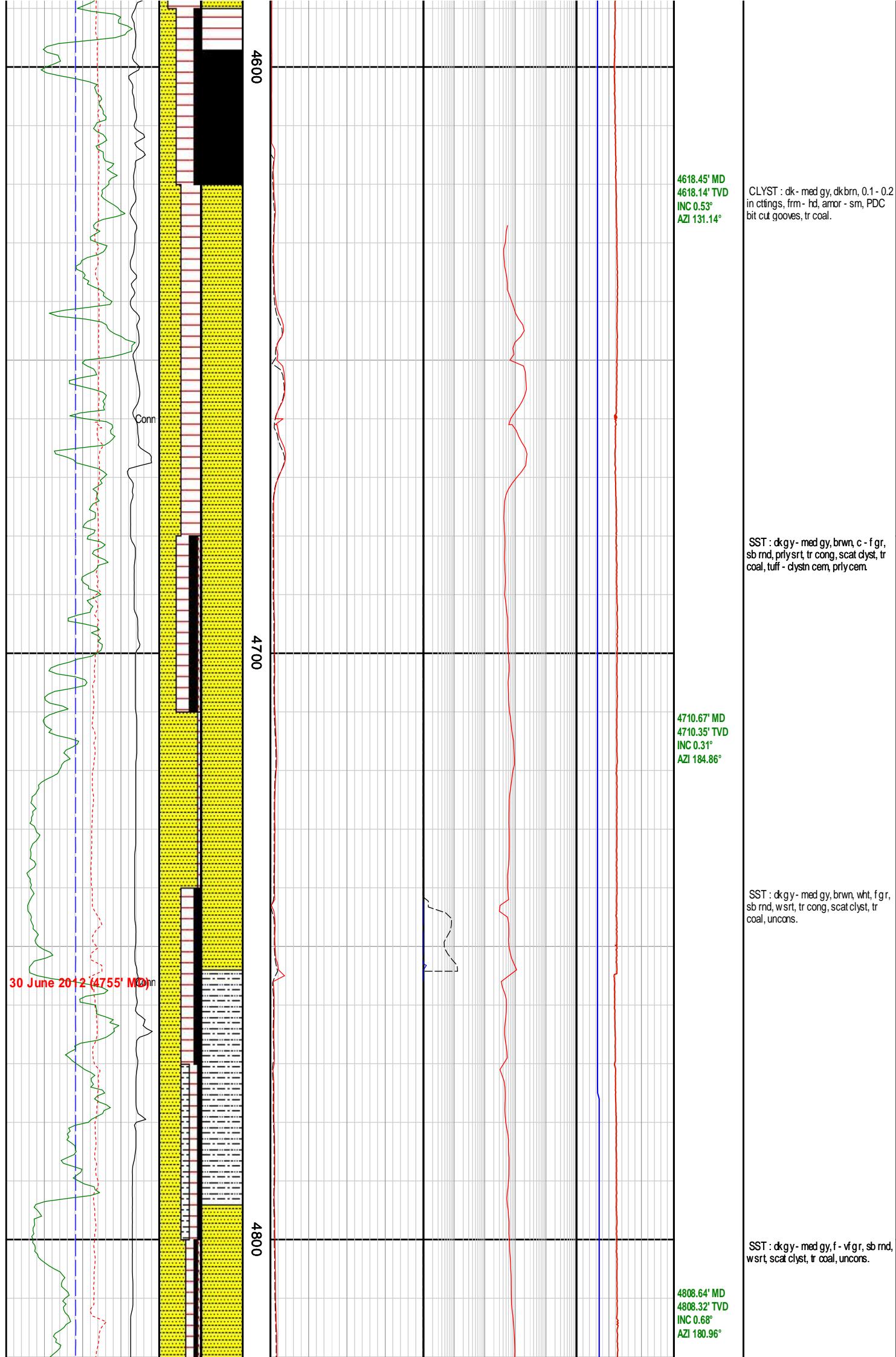
SST : lt gy - med gy, lt blu gy, frm -
sft, m - vf gr, sb rnd - rnd, mo - wsrt,
r coal.

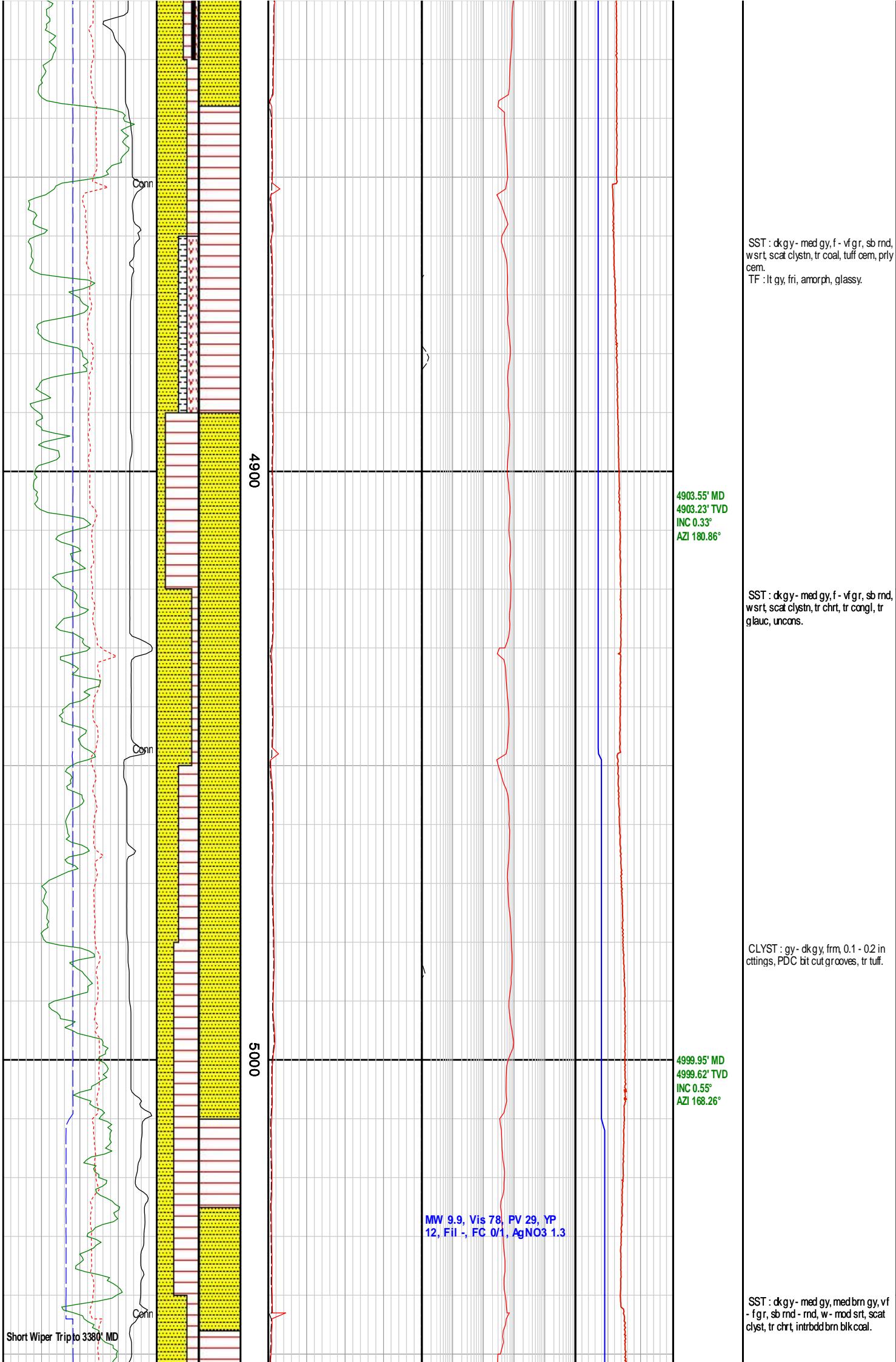
Staines Tongue
4059 MD, 4059 TVD

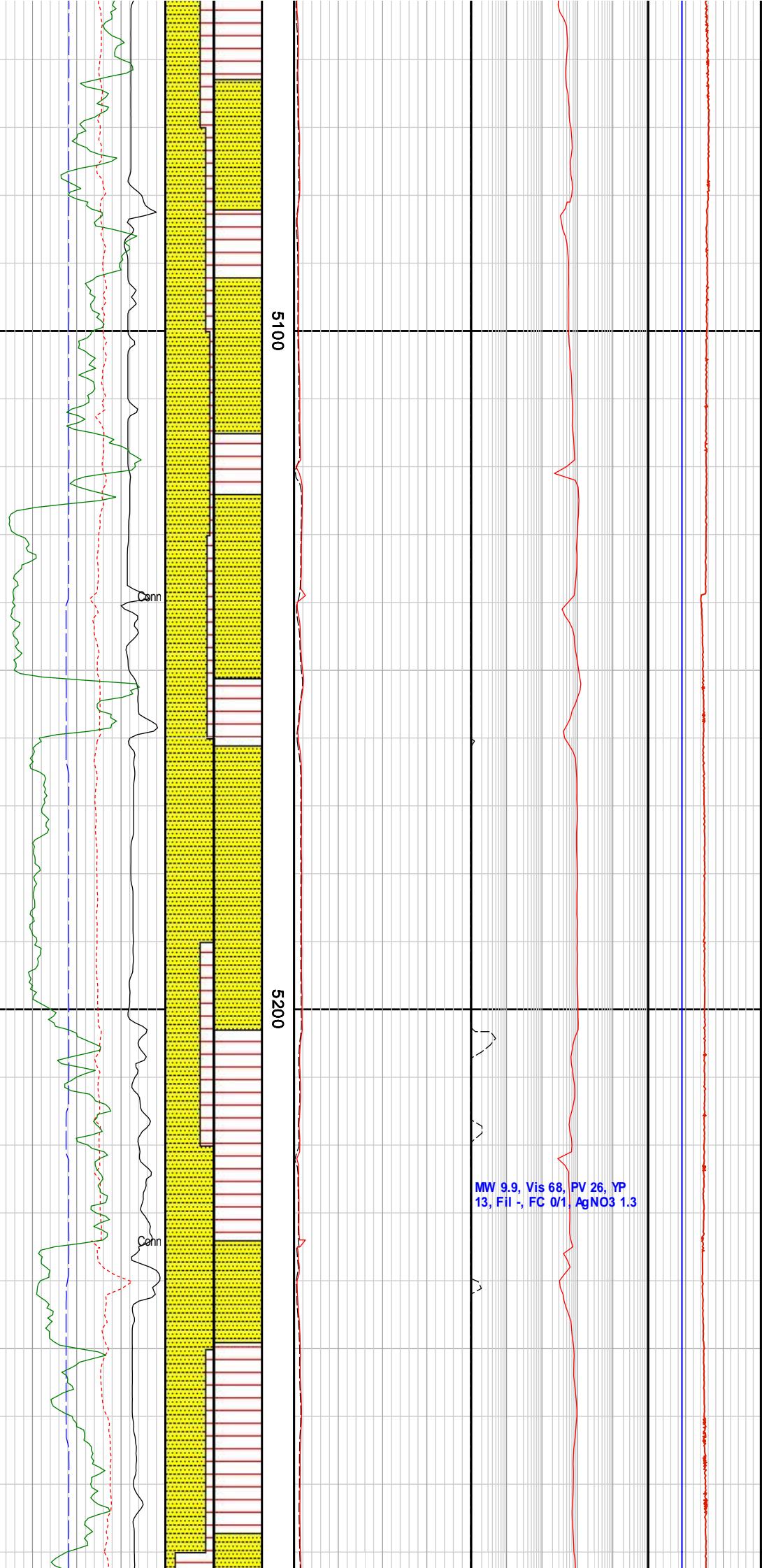
Conn











5286.20' MD
5285.86' TVD
INC 0.26°
AZI 183.07°

nd - trm, 0.1 - 0.2 in ctngs, bit grvs,
tr sst.

SST : trnsl - trnspl, lt gy, vf - f gr, sb
rnd - rnd, w - mod srt, r tufaceous sst, r
intrbddd coal, tr coal.

5382.80' MD
5382.46' TVD
INC 0.32°
AZI 212.82°

SST : lt gy - med gy, occ tan, f - m
gr, sb rnd - rnd, occ sb ang, sb sph -
sph, silic cmnt, mod - w srt, r coal, r
cyst.

CLYST : dkgy, frm, 0.1 - 0.2 in
ctngs, scat bit grvs, scat arg sst
with mod cm.

5476.87' MD
5476.53' TVD
INC 0.51°
AZI 208.96°

CLYST : Itgy- dkgy, frm, 0.1 - 0.5 in
cttngs, scat bit grvs, scat arg sst
with mod cem.

5573.78' MD
5573.43' TVD
INC 0.60°
AZI 174.46°

CLYST : Itgy- dkgy, frm, 0.1 - 0.5 in
cttngs, scat bit grvs, scat arg sst
with mod cem, scat cttngs wth slstn
banding.

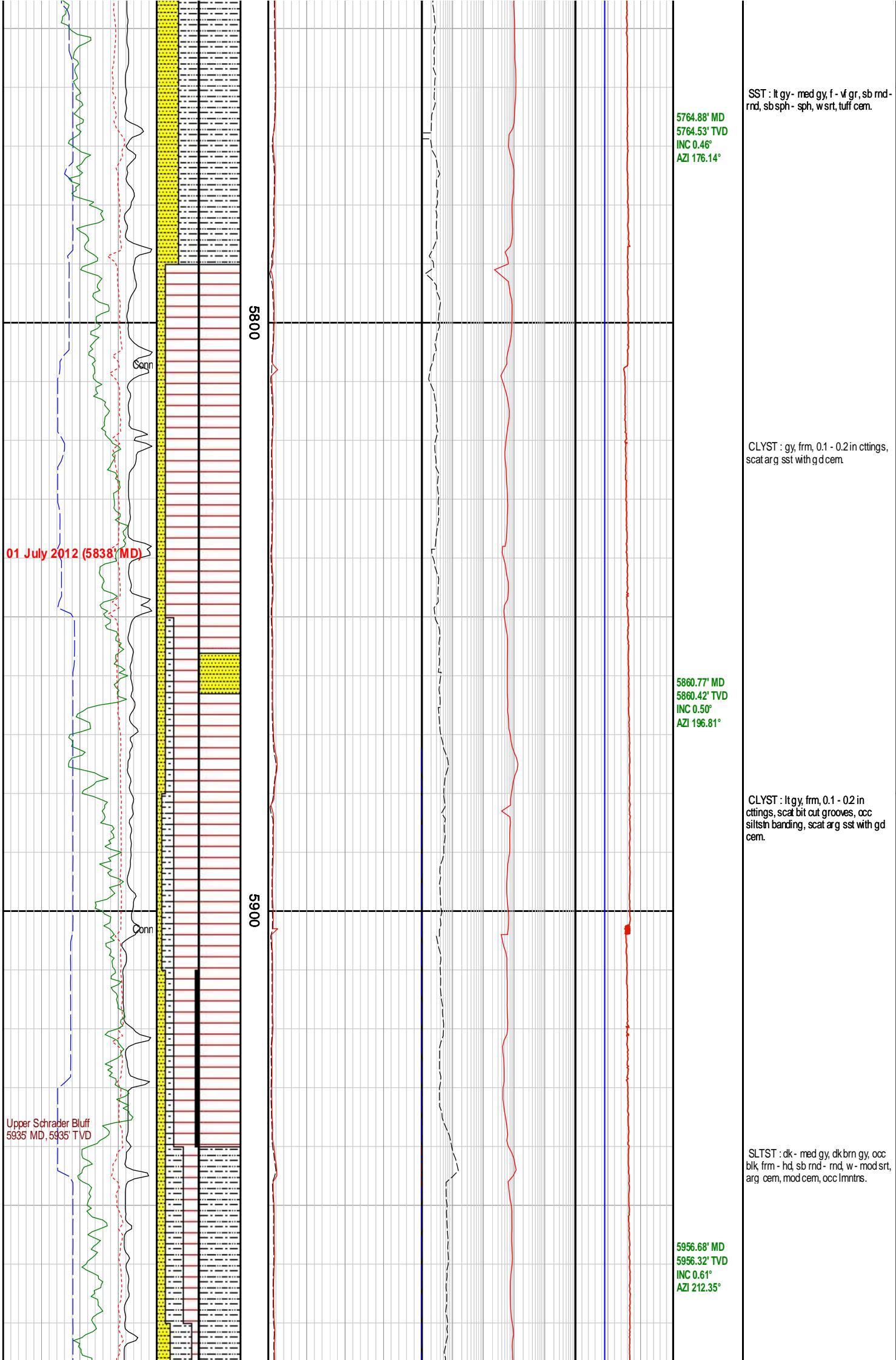
Prince Creek
5644 MD, 5644' TVD

MW 9.9, Vis 77, PV 26, YP
12, Fil -, FC 0/1, AgNO3 1.4

5669.61' MD
5669.26' TVD
INC 0.39°
AZI 169.03°

CLYST : Itgy- gy, frm, 0.1 - 0.5 in
cttngs, scat bit grvs, scat arg sst
with mod cem.

CLYST : Itgy- gy, frm, 0.1 - 0.2 in
cttngs, scat bit grvs, scat arg sst
with gd cem.



Short Wiper Tripto 4926' MD

Conn

6000

MW 10.0, Vis 78, PV 29, YP
12, Fil -, FC 0/1, AgNO3 1.3

SLTST : dk - med gy, dk brn gy, occ
blk, frm - hd, sb rnd - rnd, w - mod srt,
arg cem, mod cem, occ lmntrs, bit cut
grns, scat v gr sst, r clyst.

Conn

6100

MW 10.0, Vis 75, PV 26, YP
13, Fil -, FC 0/1, AgNO3 1.3

SLTST : dk - med gy, occ blk, frm -
hd, sb rnd - rnd, w - mod srt, arg cem,
mod cem, n calc, occ bit cut grns,
scat v gr sst, scat mud add.

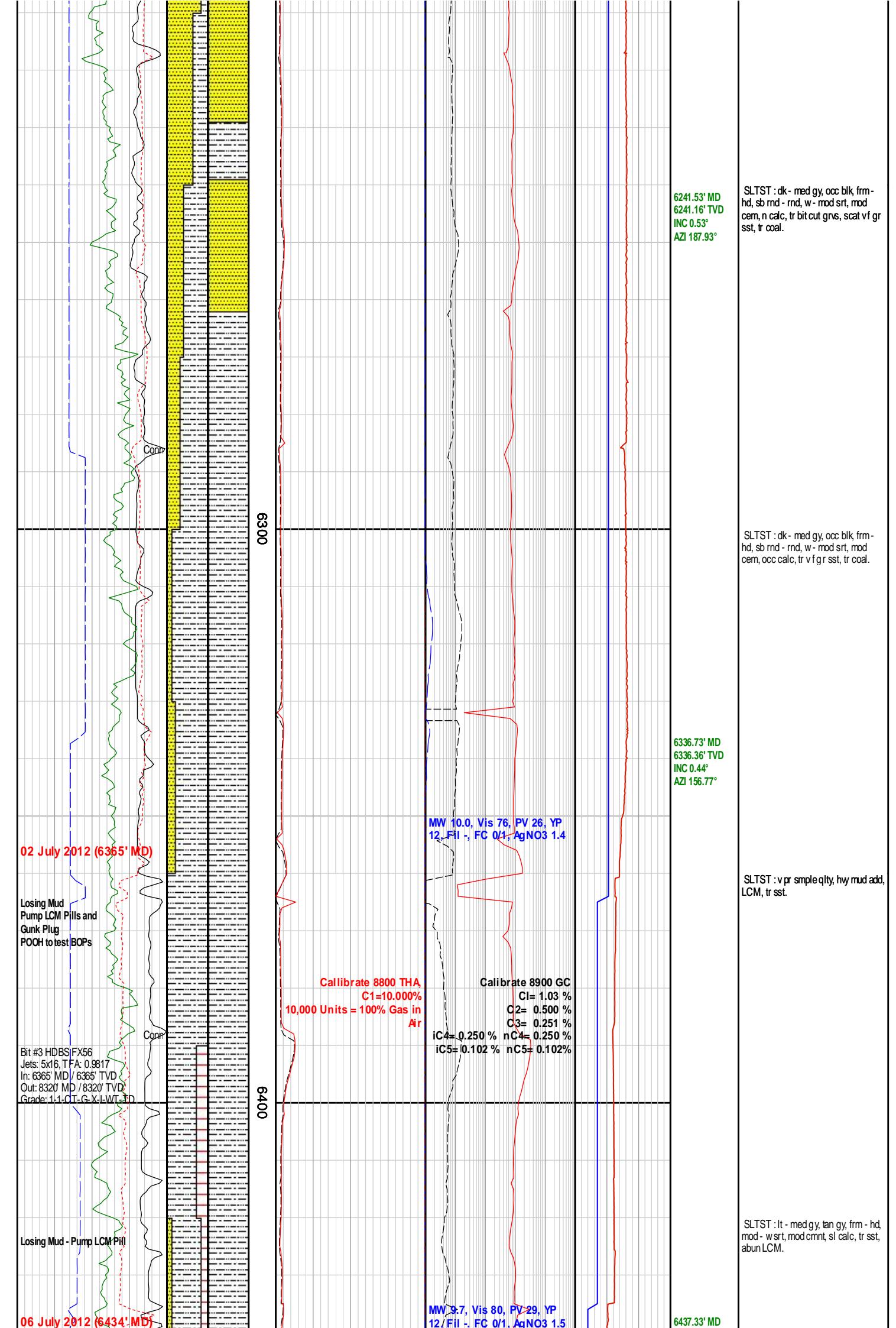
Conn

6200

6149.17' MD
6148.80' TVD
INC 0.43°
AZI 229.35°

SLTST : dk - med gy, occ blk, frm -
hd, sb rnd - rnd, w - mod srt, mod
cem, n calc, tr bit cut grns, tr v gr
sst, tr mud add, tr pyr.

SST : trnsl - trnspl, lt gy, tr tan, vf - f,
sb rnd - rnd, sb sph - sph, mo - wsrt,
tr pyr, scat gy - tan slst.



6436.95' TVD
INC 0.65°
AZI 159.50°

SLTST : med - dk gy, lt tan gy, med
brn gy, frm - hd, mod - wsrt, mod
cmnt, sl calc, tr cyst, tr sst, scat
LCM.

6534.86' MD
6534.48' TVD
INC 0.49°
AZI 172.94°

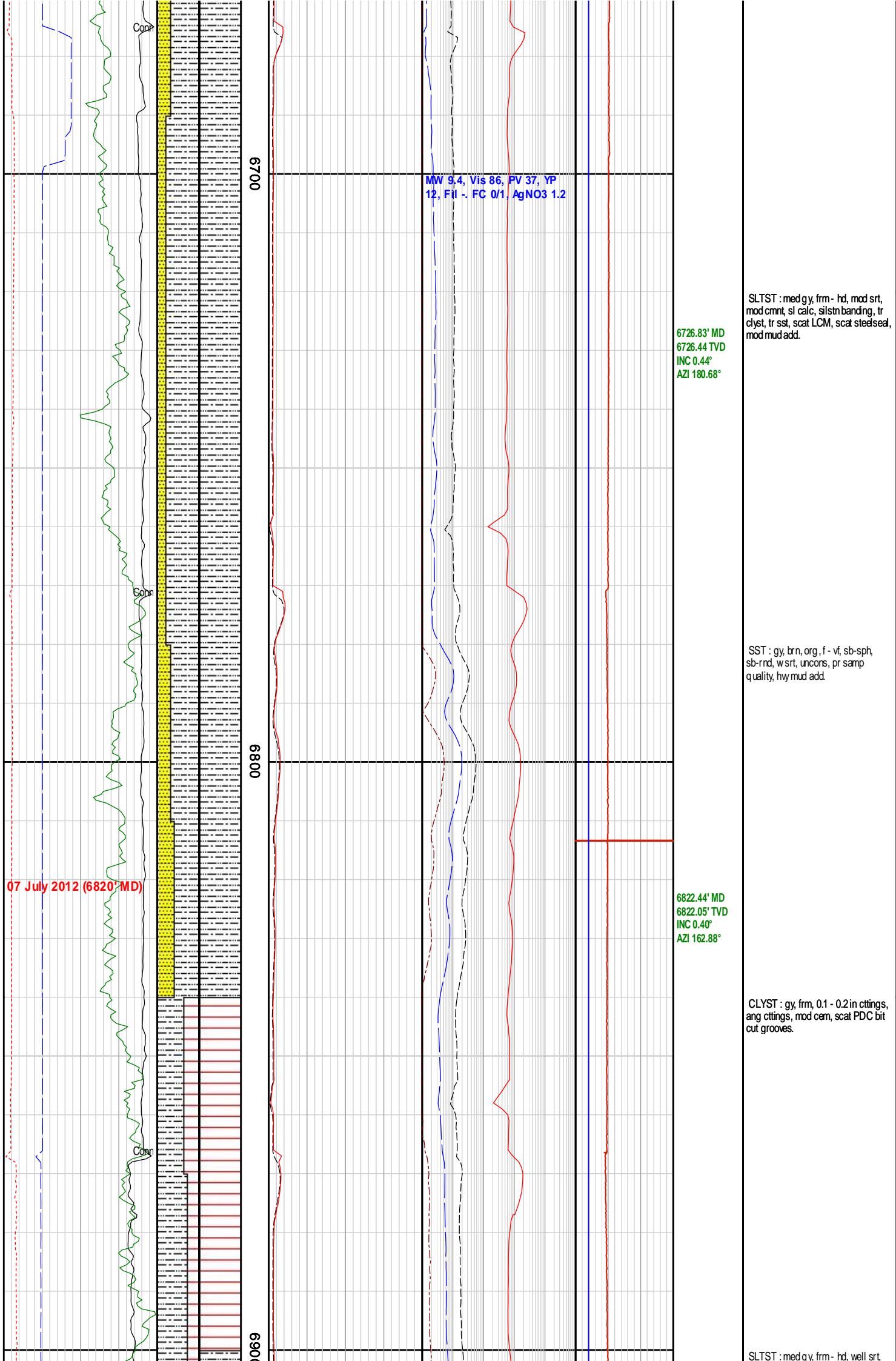
SLTST : med - dk gy, frm - hd, mod -
wsrt, mod cmnt, sl calc, silstn
banding, tr cyst, tr sst, scat LCM,
scat barafibre.

Lower Canning
6601' MD, 6601' TVD

CLYST : ltgy - gy, frm, 0.1 - 0.5 in
cttngs, sb-ang cttngs, mod cem,
PDC bit cut grooves .

6630.89' MD
6630.50' TVD
INC 0.45°
AZI 184.45°

SST : gy, brn, org, f - vf, sb-sph,
sb-rnd, wsrt, uncons, pr samp
quality, hy mud add.



mod cmnt, sl calc, silstn banding, tr
clyst, tr sst, scat LCM, scat steelseal,
scat mud add.

6918.13' MD
6917.73' TVD
INC 0.56°
AZI 174.04°

TF : It gy, sft, glassy, amorph, seen
as sharp boundary from silstn on bit
cut grooved ctng.

MW 9.4, Vis 78, PV 34, YP
10, Fil 1, FC 0/1, AgNO3 1.2

7011.46' MD
7011.06' TVD
INC 0.32°
AZI 185.63°

SLTST : med gy - drkgy, frm - hd,
well srt, mod cmnt, sl calc, silstn
banding.

SLTST : med gy - drkgy, med brn gy,
frm - hd, w - mod srt, mod cmnt, sl
calc, silstn banding, tr sst, tr qtz, r mud
add.

7109.41' MD
7109.01' TVD
INC 0.54°
AZI 204.95°

SLTST : med gy - drkgy, frm - hd,
mod srt, mod cmnt, sl calc, slst
bndng, tr lt blugysh, r mud add.

7200

MW 9.4, Vis 80, PV 29, YP
12, Fil r, FC 0/1, AgNO₃ 1.3

7205.30' MD
7204.89' TVD
INC 0.45°
AZI 211.55°

SLTST : dk - med gy, dkblu gy, frm-
hd, mod srt, mod cmnt, vsl calc, tr lt
blugysh, r f gr sst.

7300

GP 386 U

7301.43' MD
7301.02' TVD
INC 0.57°
AZI 216.27°

SST : lt - med gy, lt tan gy, brn gy, vf
gr, sb sph to sph, sb md - rnd, mod
srt, sl calc, tr slst, SHOW: dull pitchy
yel flour, slow strng dull yel cut.

Middle Schrader Bluff
7248' MD, 7248' TVD

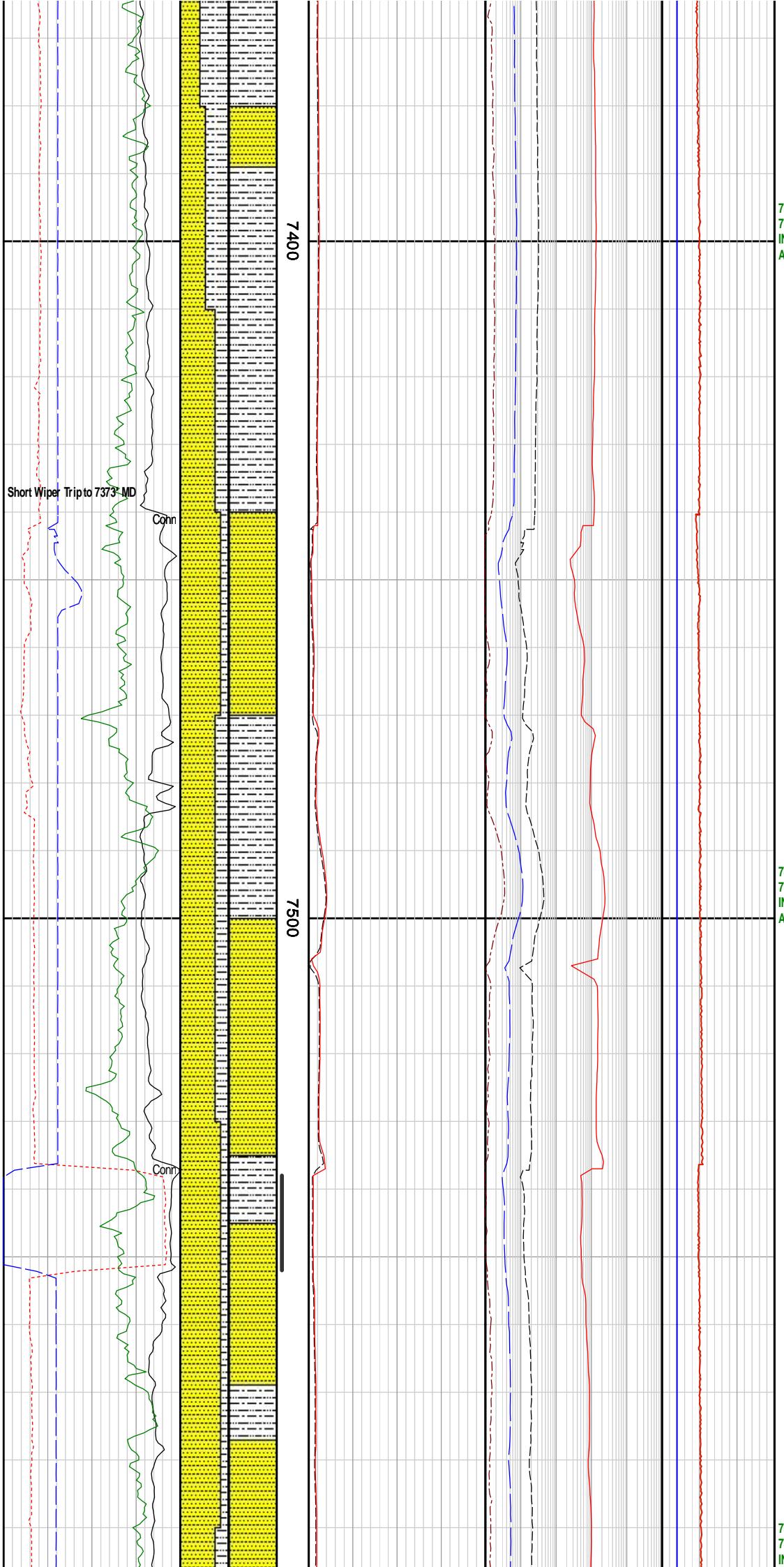
Lower Canning
7335' MD, 7335' TVD

Corn

Corn

Corn

SLTST : med - dk gy, dkbrn gy, hd-
frm, w - mod srt, mod cmnt, vsl calc,
sh lmnns, tr intrbd lt gy - tan, vf gr
sst.



SST : lt - med gy, lt tan gy, brn gy, vf gr, sb sph to sph, sb rnd - rnd, mod srt, sl calc, tr srt, SHOW: dull pitchy yel w/ pnt brt fluor, slow strng pnt yel cut.

SST : brn, lt - med gy, lt tan gy, pred vf - scat mgr, sb ang to sph, sb rnd - rnd, mod srt, sl calc, tr srt, SHOW: dull pitchyel w/ pnt brt fluor, imm dull yell cut.

SST : brn, org, lt - med gy, lt tan gy, vf gr, sb ang to sph, sb rnd - rnd, mod srt, sl calc, tr tuff, SHOW: scat dull yll fluor, no cut fluor, no cut residue.

SST : lt - med gy, lt tangy, opaque, vf gr, sb ang - sph, sb rnd - rnd, mod srt, sl calc, mod cem SHOW: scat dull yll fluor, no cut fluor, no cut residue.

AZI 283.13°

SST : lt - med gy, lt tangy, opaque, vf gr, sb ang - sph, sb rnd - rnd, mod srt, sl calc, mod cem SHOW: no fluor, no cut fluor, no cut residue.

MW 9.4, Vis 80, PV 37, YP
13, Fil⁻, FC 0/l, AgNO₃ 1.2

7684.78' MD
7684.33' TVD
INC 0.72°
AZI 280.36°

SST : lt - med gy, lt tangy, opaque, vf gr, sb ang - sph, sb rnd - rnd, mod srt, sl calc, mod cem SHOW: no fluor, no cut fluor, no cut residue.

Conn

7600

7700

7800

Conn

08 July 2012 (7760' MD)

TF : lt gy, sft, glassy, amorph, vsl calc, mtrxforsst.

7779.85' MD
7779.40' TVD
INC 0.64°
AZI 297.13°

SST : lt - med gy, lt tangy, opaque, hd, vf gr, sb ang - sph, sb rnd - rnd, mod srt, sl calc, mod cem SHOW: dull yell fluor, imm wht fluor cut, ambr cut residue.

Conn

SLTST : med - dk gy, dk brn gy, frm - hd, w srt, mod - w cmnt, v sl calc, occ intrbd lt gy - tan vf gr sst.

7877.15' MD
7876.69' TVD
INC 0.79°
AZI 282.23°

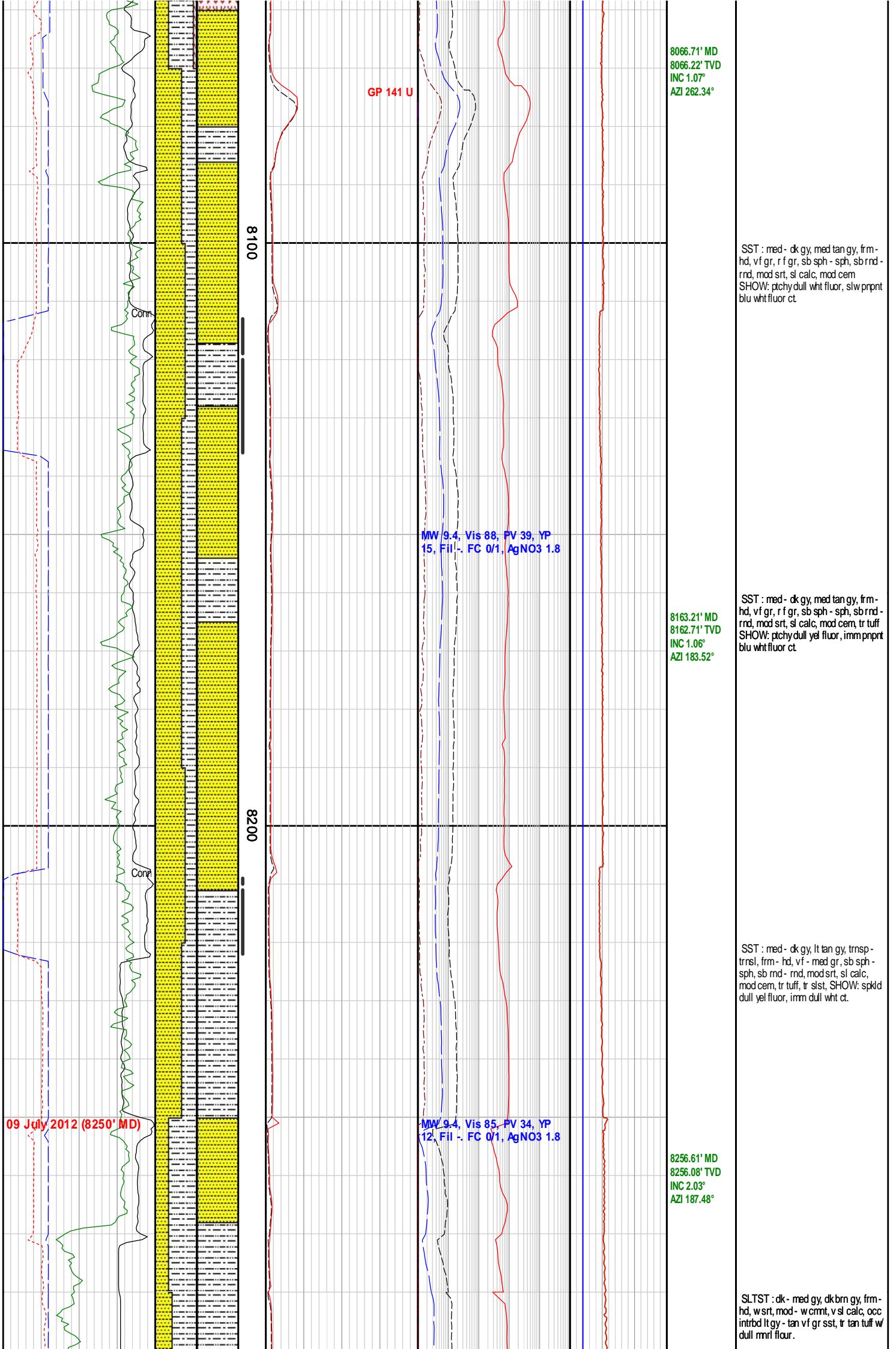
SST : lt - med gy, lt tangy, opaque, frm - hd, vf gr, sbang - sph, sb rnd - rnd, mod srt, sl calc, mod cem SHOW: pchly dull wht fluor, imm wht fluor ct, lt straw cut residue.

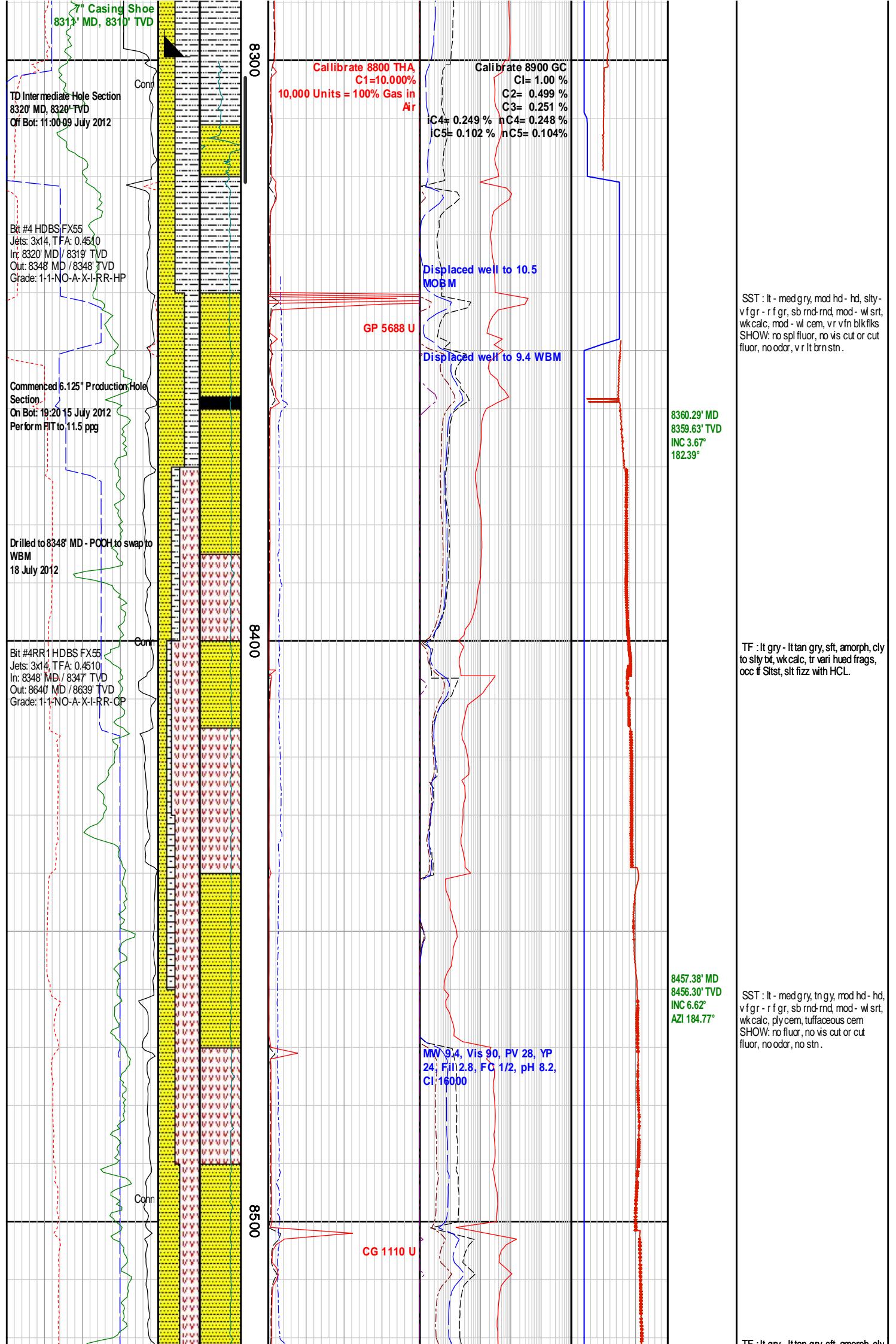
MW 9.4, Vis 85, PV 38, YP
13, Fil -, FC 0/1, AgNO3 1.2

7973.13' MD
7972.66' TVD
INC 0.91°
AZI 268.39°

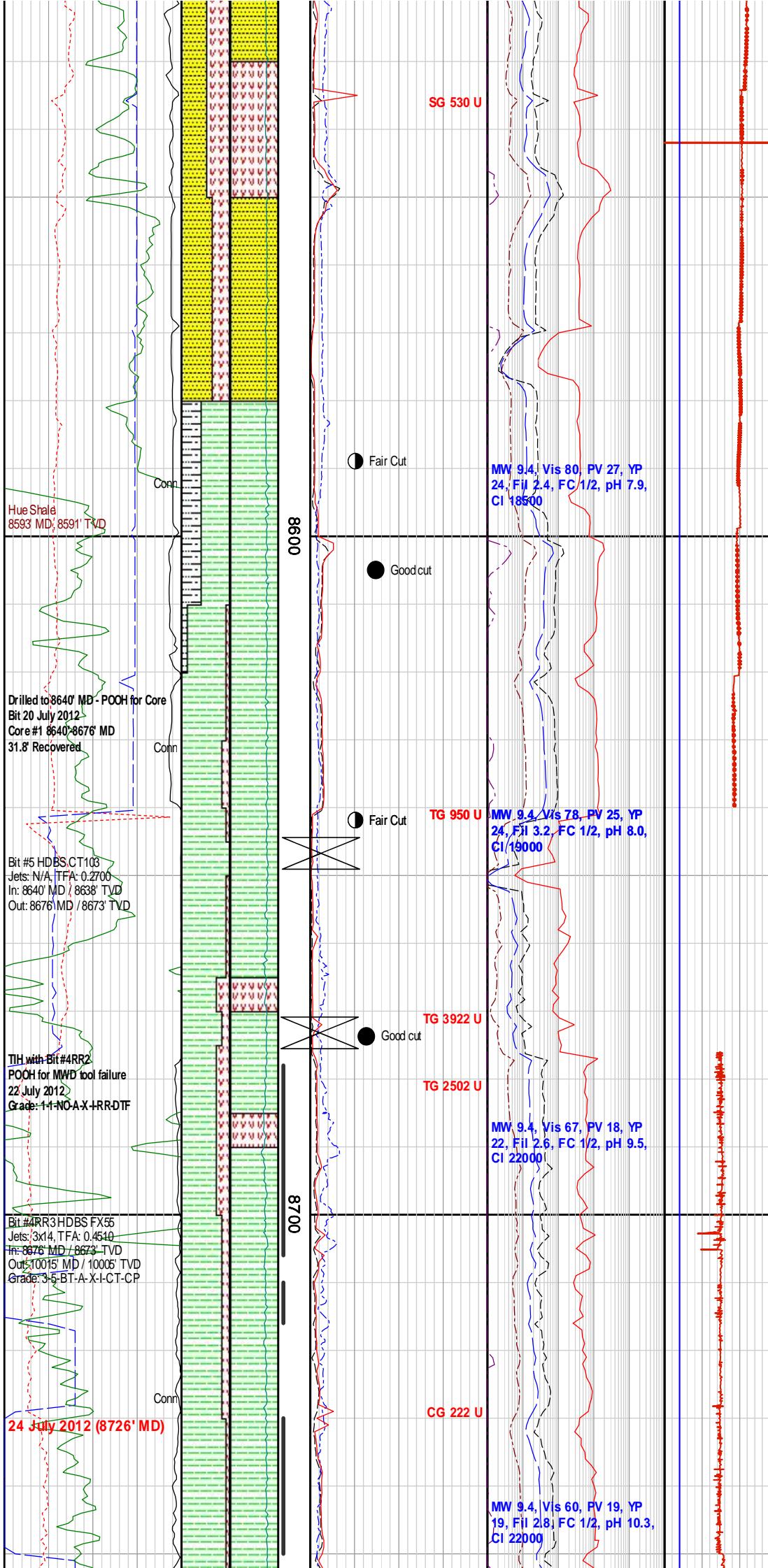
SST : lt - med gy, lt tangy, frm - hd, vf gr, sb sph - sph, sb rnd - rnd, mod srt, sl calc, mod cem SHOW: pchly dull wht fluor, imm blu wht fluor ct.

SLTST : dk - med gy, dk brn gy, frm - hd, w srt, mod - w cmnt, v sl calc, occ intrbd lt gy - tan vf gr sst, tr tan tuff w dull mmrl fluor.





TF : lt gray - lt tan gray, Slt, amorph, vly
tx, wk calc, silt fritz with HCL.



SH : It gy - It brn gy, opaque, sb-eg - eg, sb ang - ang, sft - brittle, wavy laminations, wxy, scat tuff SHOW: very slight oil odor, trace oil stain, spotty brt yellow fluor with dull yellow overall fluor, slow brt yellow transp oil cut fluor, strong residue UV intensity, very pale straw res .

SH : SHOW: dull yellow overall fluor, immediate bright white oil cut fluor, strong residue UV intensity, It amber res .

TF : lt gray-of wht, sft-amor occ frm-fria, vari opq - trnsl, wxy, occ sl expsns, thn intrbd w/ Sh SHOW: brt yel-grn mmrl fluor, no strn, nil vis cut, slw watry-frt wht cut fluor.

8756.25' MD
8751.44' TVD
INC 9.65°
AZI 180.09°

SH : med gr- lt brwn gr, frm - mod
hd, pty- flky, abun thn lams,
com intrbd w wh tuff, SHOW: No
odor or sin, sct fluor f/tuff, no petro
fluor, nil vis cut, slw wht ct fluor, r
opq wht fluor strmr, dull wht - yel res
fluor, nil vis res.

008

Conn

SG 230 U

SG 183 U

GP 819 U

GP 1960 U

0068

Conn

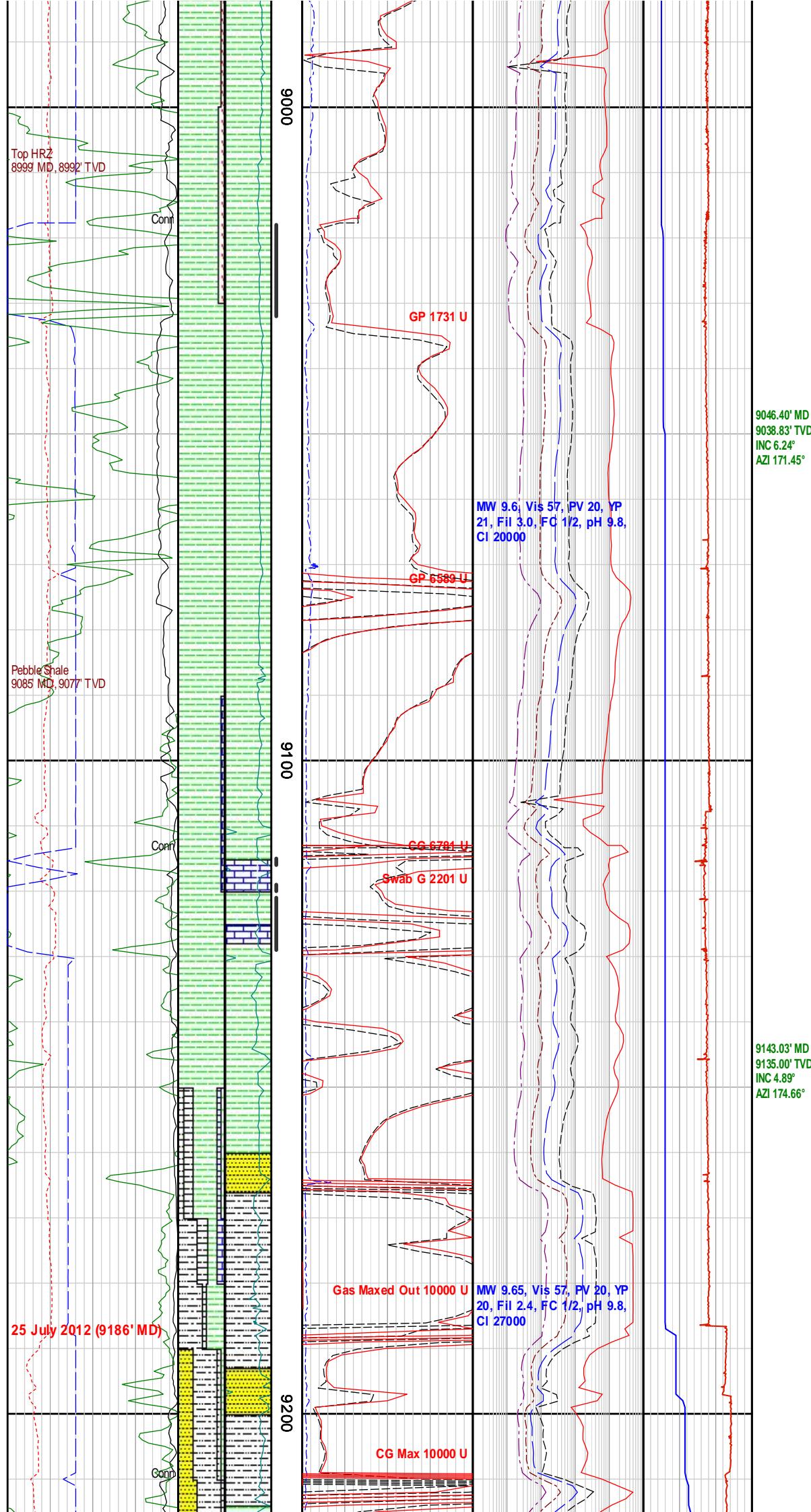
GP 182 U

8850.66' MD
8844.71' TVD
INC 8.67°
AZI 176.28°

SH : med brn gy- lt brn gy, med gy,
mod frm, pty - flky, abun thn lams, tr
intrbd w crm tuff, SHOW: No odor or
sin, sct fluor f/tuff, no petro fluor, sl
pnpt wht cut, slw wht ct fluor, r opq
wht fluor strmr, dull wht - yel res
fluor.

8950.92' MD
8911.01' TVD
INC 7.22°
AZI 181.35°

SH : lt brn gy, med gy, mod frm - med
hd, pty- flky, abun thn lams, tr intrbd
w crm - wh tuff, pyritic, SHOW: No
odor or sin, fluor f/tuff, no petro fluor,
no cut, dull wht res fluor.



SH : lt brn gy, med gy, mod frm - mod
hd, plty- flky, tr thn lams, r crm - wh
tuff, SHOW: No odor or stn, flour f/
tuff, no petro fluor, no cut, dull wht res
flour.

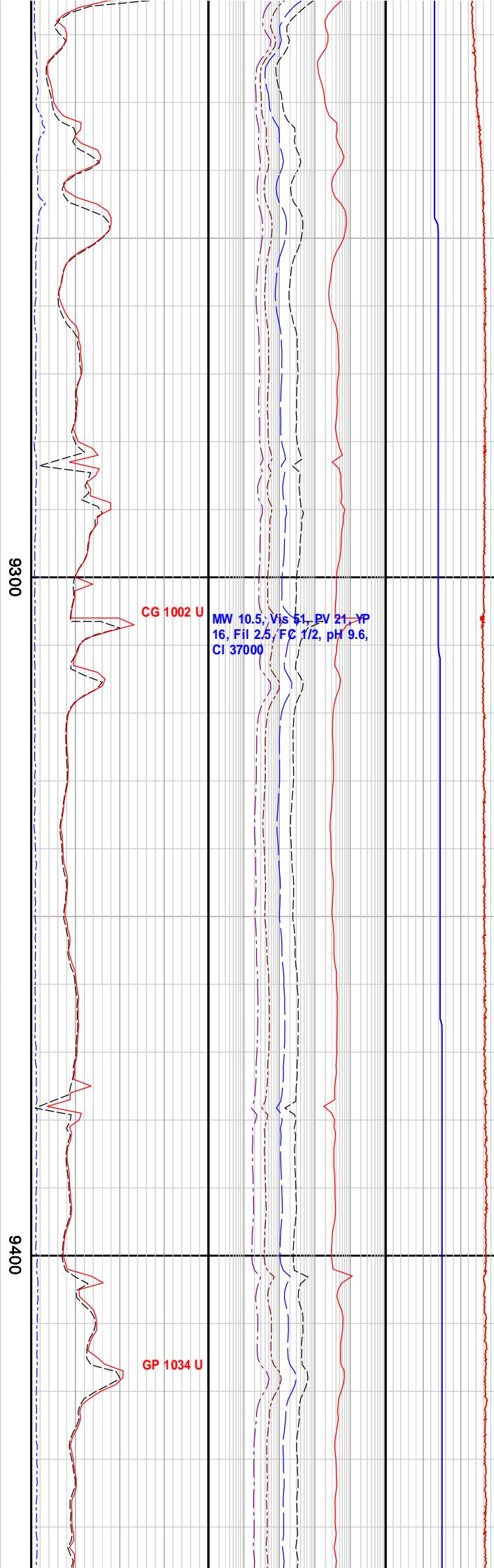
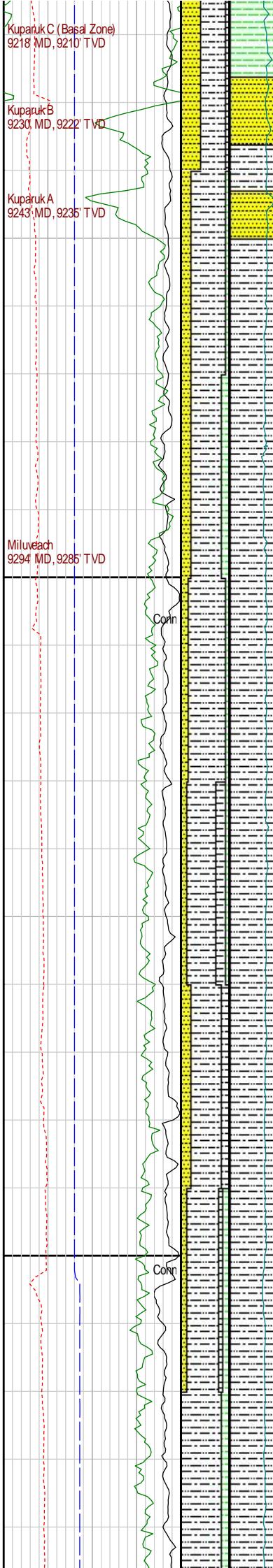
SH : lt brn gy, med gy, mod frm - med
hd, plty - flky, tr thn lams, r crm - wh
tuff, SHOW: flour f/tuff, no petro fluor,
no cut, dull wht res flour.

9046.40' MD
9038.83' TVD
INC 6.24°
AZI 171.45°

LST : yel orng, frm - hd, occ fri, silty
 w/ com chky txt, com clean orng
 calcite, slw rxn to hcl, SHOW: vr vis
 strn, wk odor, nil smpl fluor, nil vis cut,
 slw wrtry wht cut w/ slw opq wht - blu
 strmrss

9143.03' MD
9135.00' TVD
INC 4.89°
AZI 174.66°

SLTST : Shy Sh, It gry - It brn gry, firm, plty - flky, occ sub resn lstr, tr dirty slytsd and loose sd, tr glauc, tr py. SHOW: nil petro fluor, nil vis cut, slw opq wht-blu fluor strmrss, wk odor, r stn on slytsd.



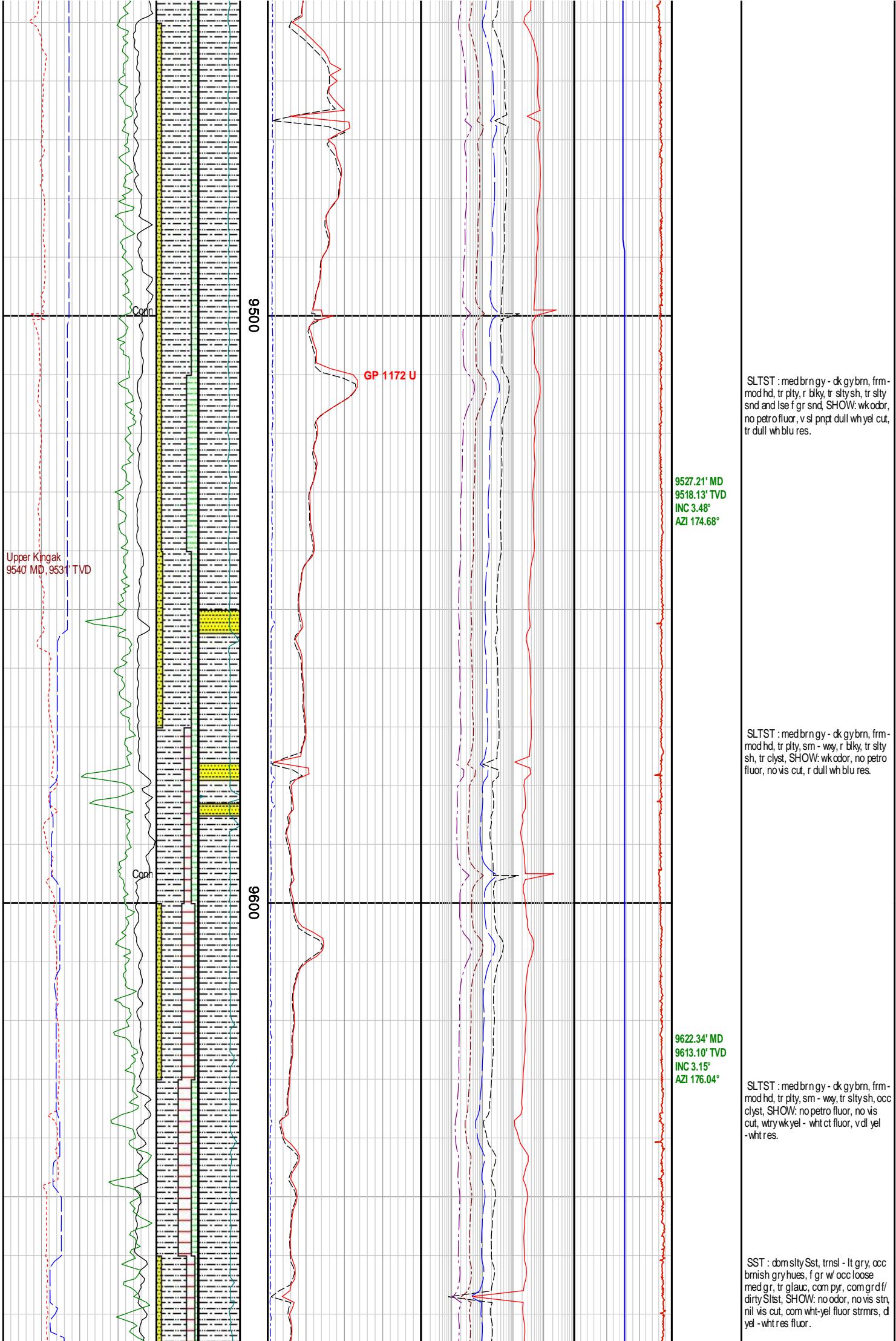
SST : trns - trns, frm - hd, f gr w tr
med gr, sb sph - sph, rnd - sb rnd, w-
mo srt, scat pyr, r glauc, abun mud
add, abun silst, r clyst, tr tuff w mmrl
flour, SHOW: wk odor, vr pnpt petro
flour, slw pnpt strmg wh yel cut, brt
wh blu res.

SLTST : med gy - med brn gy, firm -
mod sft, tr pty - fily, occ blky, tr sly sd
and loose sd, r glauc. SHOW: no
odor, no petro fluor, sl strmg cldy wh
yel cut, brt yel wh res.

9335.90' MD
9327.25' TVD
INC 4.22°
AZI 173.94°

9431.91' MD
9423.03' TVD
INC 3.88°
AZI 174.51°

SLTST : med gy - med brn gy, occ lt
brn gy, mod firm - sft, tr pty, r blky, tr
sly sh, tr tuff w mmrl flour. SHOW: no
odor, no petro fluor, vsl pnpt brt yel
cut, brt wh blures.



SST : dbm sly Sst, trnsl - lt gr, occ brnsh gr hues, f gr w/ occ loose med gr, tr glauc, com pyr, com grdf/ dirty Sltst, SHOW: no odor, no vis stn, nil vis cut, com wht-yel fluor strmr, d yel - wht res fluor.

9719.33' MD
9709.96' TVD
INC 3.03°
AZI 174.83°

SLTST : medbrn gy - lt gy brn, frm fri - mod hd, pty - fly, sly - occ wy, occ sly Sh, tr lams, sct sly Sst, com glauc + pyr, SHOW: no petro odor or fluor, nil vis cut, wtry yel - wht cut, r wht - blu fluor strmr f/ sdy smpls.

MW 10.65, Vis 54, PV 23, YP
16, Fil 2.6, FC 1/2, pH 9.9,
CI 35000

9815.52' MD
9806.02' TVD
INC 2.75°
AZI 177.03°

SLTST : med brn gy - med brn - dsly yel brn, fria-frm, rnd-pty, crmbly, sly-gritty, sb resn lstr, com pyr, incrs org nc, com sly Sh, tr lams when shly. SHOW: no vis cut, vwk slw wtry wht-yel cut fluor.

CG 8573 U

0076

Conn

0086

CG 4321 U

0066

CG 1684 U

Conn

SH : com sly Sh, yelish brn- dkbrn gr, firm - md hd, pty rnd ctgs, sly tx, com lams, com pyr, gr dg f/ Sltst SHOW: vwk sheen + obr, dl yel fluor, nil vis ct, abd yel-wht fluor strmr, r strn.

Lower Kingak
9913 MD, 9903' TVD

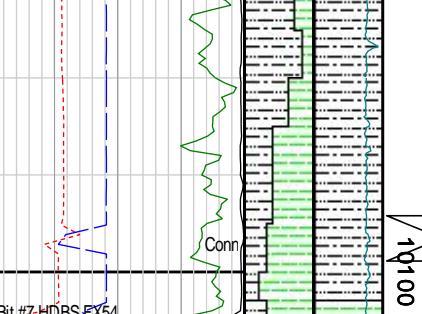
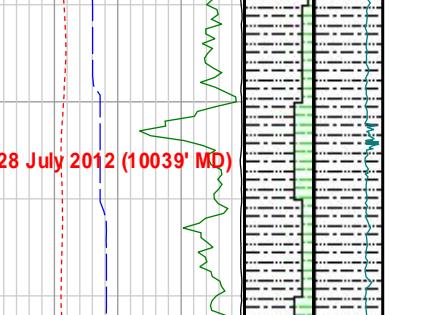
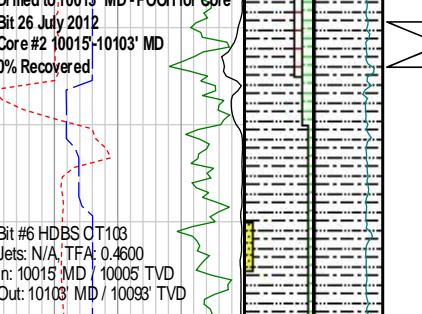
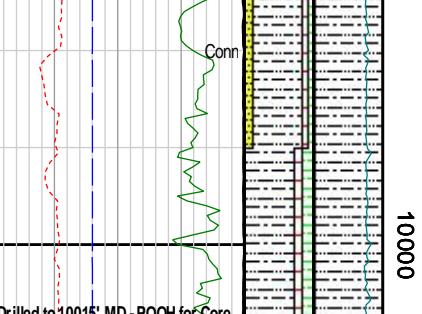
26 July 2012 (9963' MD)

Drilled to 10015' MD - POOH for Core
Bit 26 July 2012
Core #2 10015'-10103' MD
0% Recovered

Bit #6 HDBS OT103
Jets: N/A, TFA: 0.4600
In: 10015' MD / 10005' TVD
Out: 10103' MD / 10093' TVD

28 July 2012 (10039' MD)

Bit #7 HDBS FX54
Jets: 5x11, TFA: 0.4640
In: 10103' MD / 10093' TVD
Out: 10574' MD / 10564' TVD
Grade: 0-0-NO-A-X-I-RR-CP



9912.28' MD
9902.68' TVD
INC 2.48°
AZI 181.36°

SLTST : med brn gy - med brn,
fria-frm-md hd, rnd-plty, crmby-occ
fly, sly-grty, sb resn lstr, com pyr, r
glau, com grdg to slylam Sh.
SHOW: no vis cut, vfnl slw yel fluor
strmr, r stn.

SLTST : grish brn-dsk brn,
fria-frm, brit - crmby-occ fly, sly-
grty, sb resn lstr, tr pyr, com as asly
Sh, tr lams slylams, com sprks f/
mica, com Tf, poss slough. SHOW: tr
fluor f/ Tf, nil vis ct, nil to vtry wht ct
fluor, tr opq wht-blw slw fluor strmr,
dl wht resid fluor, no vis stn, no odor.

10064.19' MD
10054.46 TVD
INC 2.23°
AZI 194.12°

SH : lt gy - med gy, ooc blk, ooc lt brn
gy, frm - md hd, fria ip, plty - brit -
crmby, sly txt, tr tuff w/ mrl fluor,
SHOW: no odor, no petro fluor, nil vis
ct.

SH : slySh, pl brn-md brn, w' com dskybrn + occ grybrn hues, frm - md hd, fria, pty - brit - crmby, slytx, sbrsn-sprkly, tr Pyr, vorgnc, tr lams. SHOW: no odor, no petro fluor, nil vis ct, vdl wtry yel-wht cut fluor.

10157.05' MD
10147.26' TVD
INC 1.64°
AZI 203.99°

SH : slySh, pl brn-md brn, w' com dskybrn + occ grybrn hues, frm - md hd, fria, pty - brit - crmby, slytx, sbrsn-sprkly, tr Pyr, vorgnc, tr lams. SHOW: no odor, no petro fluor, nil vis ct, vdl wtry yel-wht cut fluor.

Lower Kingak (K-1 Top)
10220' MD, 10210' TVD

10200

GP 792 U

10254.18' MD
10244.35 TVD
INC 1.67°
AZI 200.62°

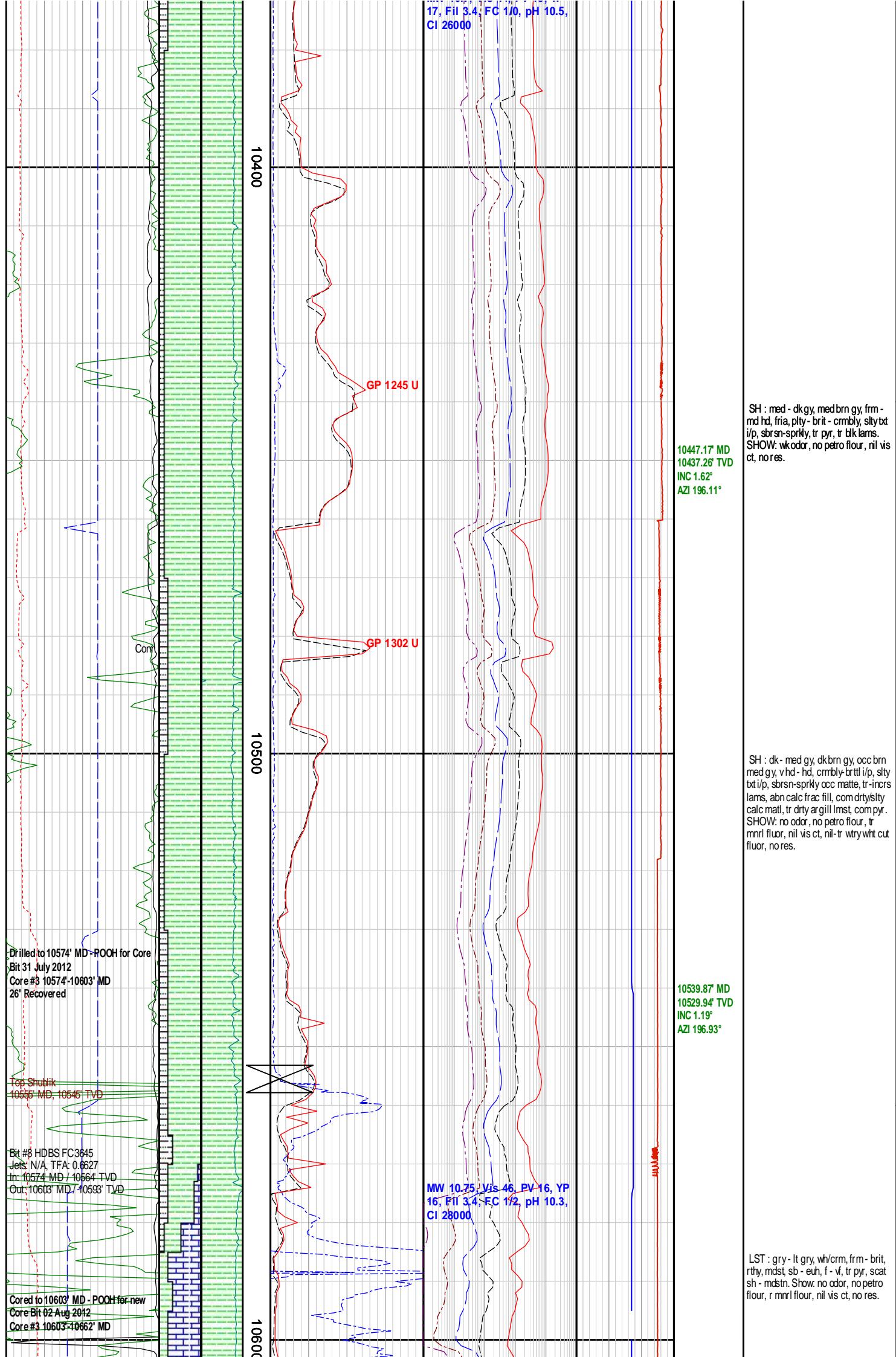
SH : slySh, pl brn-md brn, w' com dskybrn + occ grybrn hues, frm - md hd, fria, pty - brit - crmby, slytx, sbrsn-sprkly, tr Pyr, tr lams. SHOW: no odor, no petro fluor, nil vis ct, vdl wtry yel-wht cut fluor.

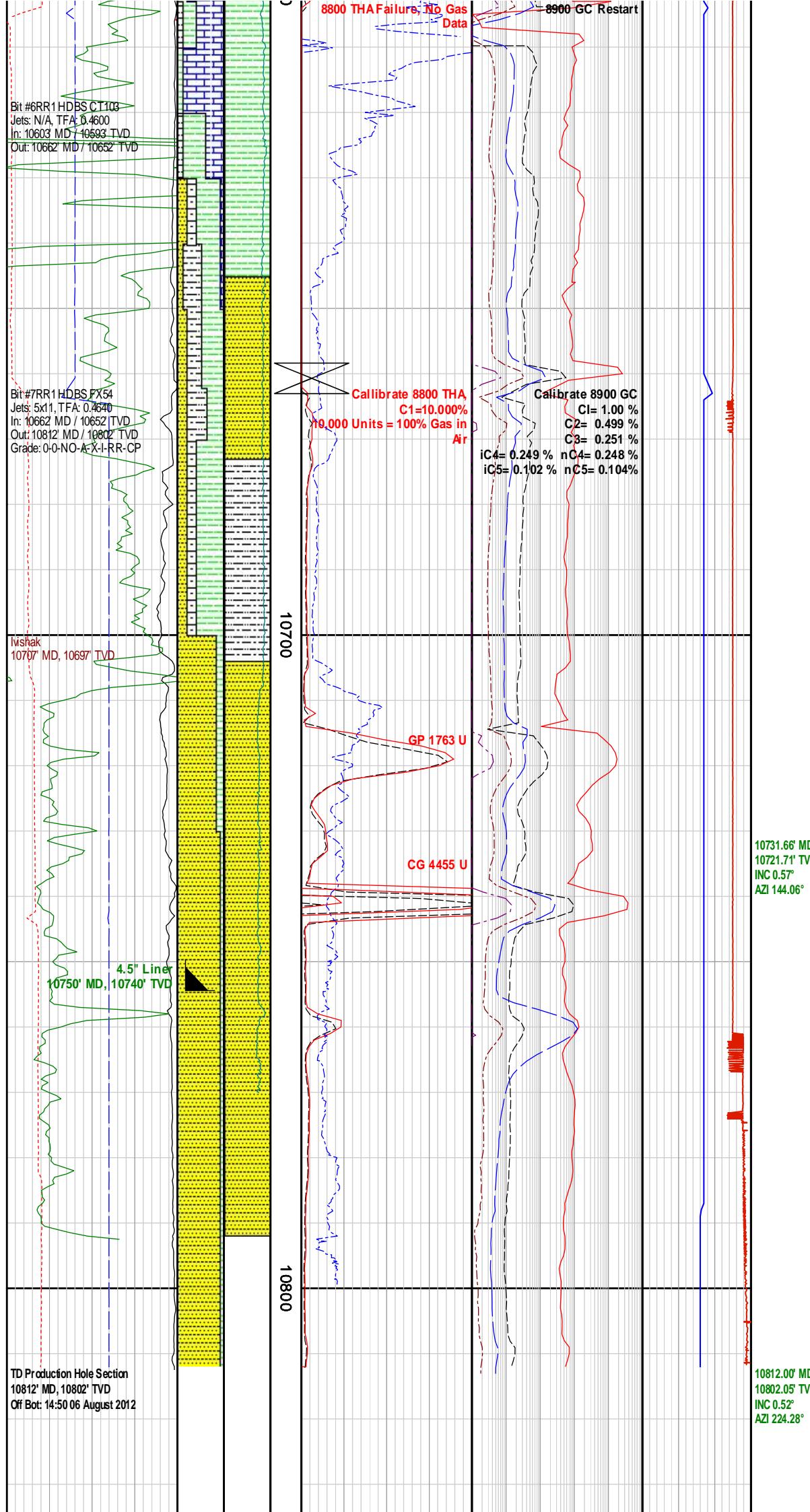
10300

GP 850 U

10349.19' MD
10339.33' TVD
INC 1.60°
AZI 196.87°

SH : brn-md brn, w' com dskybrn + occ grybrn hues, frm - md hd, fria, pty - brit - crmby, slytx, sbrsn-sprkly, tr Pyr, tr lams. SHOW: no odor, no petro fluor, nil vis ct.





500	ROP ft/hr	0	Gas Max units	2K	Chromatograph Gas Analysis (ppm)	MW In ppg	Lithologic Descriptions
0	Gamma api	150	Gas Avg units	2K	Methane Ethane Propane Total Butane Total Pentane	9 12	Deviation Surveys
0	WOB lbs	40	Resistivity ohms	50	ECD ppg	9 12	Remarks
0	RPM rpm	200	Density 1 g/cc 3	10 100 1K 10K 100KM			
	Interpretative Lithology	DEPTH MD Slide	Cuttings Lithology				

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HALLIBURTON

DIRECTIONAL SURVEY REPORT

Great Bear Petroleum, LLC

Alcor 1

Exploration

North Slope Borough Alaska

USA

AK-XX-0009285348

All depths reference the driller's pipe tally.

Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	TIE-IN
139.03	0.37	207.79	139.03	0.40 S	0.21 W	0.24	0.27
231.15	0.19	271.35	231.15	0.66 S	0.50 W	0.32	0.36
322.39	0.46	261.45	322.39	0.71 S	1.01 W	0.11	0.30
416.62	0.80	219.77	416.61	1.27 S	1.81 W	0.19	0.58
503.87	1.11	201.58	503.85	2.52 S	2.51 W	0.93	0.49
592.94	1.04	196.68	592.90	4.10 S	3.06 W	2.02	0.13
685.39	0.95	186.77	685.34	5.66 S	3.39 W	3.21	0.21
780.20	0.94	208.49	780.14	7.13 S	3.85 W	4.25	0.38
877.37	0.65	225.85	877.30	8.21 S	4.63 W	4.80	0.38
976.87	0.55	217.66	976.79	8.98 S	5.33 W	5.12	0.13
1070.52	0.84	233.02	1070.44	9.75 S	6.15 W	5.37	0.37
1161.77	0.84	184.97	1161.68	10.82 S	6.74 W	6.00	0.75
1259.04	0.65	208.98	1258.94	12.01 S	7.07 W	6.87	0.37
1355.56	0.78	205.42	1355.45	13.09 S	7.62 W	7.53	0.14
1451.70	0.70	209.13	1451.58	14.19 S	8.18 W	8.20	0.10
1547.61	0.87	214.97	1547.48	15.30 S	8.89 W	8.81	0.20
1642.98	0.86	205.66	1642.84	16.54 S	9.61 W	9.52	0.15
1739.38	0.64	193.71	1739.23	17.71 S	10.05 W	10.31	0.28
1836.78	0.69	209.38	1836.63	18.75 S	10.47 W	11.01	0.19
1931.60	0.71	175.26	1931.44	19.84 S	10.70 W	11.83	0.43

2028.33	0.48	183.94	2028.17	20.84 S	10.68 W	12.71	0.25
2123.91	0.46	205.20	2123.74	21.58 S	10.87 W	13.26	0.18
2217.21	0.50	180.79	2217.04	22.33 S	11.04 W	13.82	0.22
2312.62	0.53	181.16	2312.45	23.19 S	11.05 W	14.56	0.03
2409.08	0.22	169.25	2408.90	23.82 S	11.02 W	15.11	0.33
2463.32	0.57	179.55	2463.14	24.19 S	11.00 W	15.45	0.66
2510.66	0.67	119.99	2510.48	24.56 S	10.76 W	15.89	1.31
2606.45	1.05	112.70	2606.26	25.18 S	9.47 W	17.07	0.41
2700.00	0.12	96.30	2699.80	25.52 S	8.58 W	17.81	1.00
2799.23	0.18	69.63	2799.03	25.48 S	8.33 W	17.90	0.09
2894.32	0.50	111.12	2894.12	25.58 S	7.80 W	18.25	0.40
2990.67	0.53	133.19	2990.47	26.03 S	7.08 W	19.00	0.21
3084.68	0.88	117.17	3084.47	26.66 S	6.13 W	20.03	0.42
3180.11	0.85	116.51	3179.89	27.31 S	4.84 W	21.23	0.03
3275.33	0.61	141.14	3275.10	28.02 S	3.89 W	22.32	0.41
3372.36	0.83	141.77	3372.12	28.97 S	3.13 W	23.53	0.23
3468.66	0.65	129.82	3468.42	29.87 S	2.28 W	24.73	0.25
3560.34	1.00	128.73	3560.09	30.71 S	1.26 W	25.96	0.38
3656.27	0.94	157.86	3656.00	31.96 S	0.31 W	27.52	0.51
3755.14	0.94	121.17	3754.86	33.13 S	0.69 E	29.04	0.60
3851.82	0.94	107.39	3851.53	33.78 S	2.13 E	30.32	0.23
3948.95	0.63	109.99	3948.65	34.20 S	3.39 E	31.31	0.32
4043.92	0.19	103.09	4043.62	34.41 S	4.03 E	31.82	0.47
4140.04	0.15	126.06	4139.74	34.52 S	4.29 E	32.04	0.08
4236.56	0.32	102.08	4236.26	34.65 S	4.66 E	32.34	0.20
4331.54	0.29	159.75	4331.23	34.93 S	5.00 E	32.75	0.31
4425.85	0.62	116.22	4425.54	35.38 S	5.54 E	33.41	0.48
4523.07	0.27	149.90	4522.76	35.81 S	6.13 E	34.08	0.43
4618.45	0.53	131.14	4618.14	36.30 S	6.57 E	34.72	0.30
4710.67	0.31	184.86	4710.35	36.83 S	6.87 E	35.33	0.46
4808.64	0.68	180.96	4808.32	37.67 S	6.84 E	36.05	0.38
4903.55	0.33	180.86	4903.23	38.51 S	6.83 E	36.76	0.37
4999.95	0.55	168.26	4999.62	39.24 S	6.92 E	37.44	0.25
5095.22	0.47	204.56	5094.89	40.04 S	6.85 E	38.10	0.34
5190.87	0.69	179.59	5190.53	40.98 S	6.69 E	38.83	0.35
5286.20	0.26	183.07	5285.86	41.77 S	6.68 E	39.51	0.45
5382.80	0.32	212.82	5382.46	42.21 S	6.52 E	39.82	0.17
5476.87	0.51	208.96	5476.53	42.80 S	6.18 E	40.15	0.20
5573.78	0.60	174.46	5573.43	43.68 S	6.02 E	40.84	0.35
5669.61	0.39	169.03	5669.26	44.50 S	6.13 E	41.60	0.22
5764.88	0.46	176.14	5764.53	45.20 S	6.22 E	42.25	0.09
5860.77	0.50	196.81	5860.41	45.98 S	6.12 E	42.88	0.18
5956.68	0.61	212.35	5956.32	46.82 S	5.73 E	43.41	0.19
6054.74	0.58	217.79	6054.37	47.65 S	5.14 E	43.84	0.07
6149.17	0.43	229.35	6148.80	48.26 S	4.58 E	44.08	0.19
6241.53	0.53	187.93	6241.16	48.91 S	4.26 E	44.48	0.38
6336.73	0.44	156.77	6336.35	49.68 S	4.34 E	45.19	0.29
6388.96	0.51	174.23	6388.58	50.09 S	4.44 E	45.61	0.31
6437.33	0.65	159.50	6436.95	50.57 S	4.56 E	46.07	0.42
6534.86	0.49	172.94	6534.48	51.50 S	4.81 E	47.00	0.21
6630.89	0.45	184.45	6630.50	52.28 S	4.83 E	47.69	0.11
6726.83	0.44	180.68	6726.44	53.03 S	4.79 E	48.32	0.03
6822.44	0.40	162.88	6822.05	53.71 S	4.89 E	48.96	0.14
6918.13	0.56	174.04	6917.73	54.50 S	5.04 E	49.71	0.19
7011.46	0.32	185.63	7011.06	55.21 S	5.06 E	50.34	0.27
7109.41	0.54	204.95	7109.01	55.90 S	4.84 E	50.83	0.27
7205.30	0.45	211.55	7204.89	56.63 S	4.45 E	51.27	0.11
7301.43	0.57	216.27	7301.02	57.34 S	3.97 E	51.64	0.13
7394.03	0.88	237.89	7393.61	58.09 S	3.09 E	51.85	0.44
7492.35	1.06	248.06	7491.92	58.83 S	1.61 E	51.75	0.25
7589.06	0.64	283.13	7588.62	59.04 S	0.25 E	51.26	0.67
7684.78	0.72	280.36	7684.33	58.81 S	0.86 W	50.50	0.09
7779.85	0.64	297.13	7779.40	58.46 S	1.92 W	49.67	0.22
7877.15	0.79	282.23	7876.69	58.07 S	3.06 W	48.76	0.24
7973.13	0.91	268.39	7972.66	57.95 S	4.47 W	47.95	0.25
8066.71	1.07	262.34	8066.22	58.09 S	6.07 W	47.27	0.20
8163.21	1.06	183.52	8162.71	59.10 S	7.02 W	47.67	1.40
8256.61	2.03	187.48	8256.08	61.60 S	7.29 W	49.70	1.04
8276.71	2.22	188.14	8276.16	62.34 S	7.39 W	50.29	0.95
8360.29	3.67	182.39	8359.63	66.62 S	7.73 W	53.82	1.77
8396.65	4.99	183.01	8395.88	69.36 S	7.86 W	56.13	3.63
8428.91	5.96	184.13	8428.00	72.43 S	8.06 W	58.70	3.02
8457.38	6.62	184.77	8456.30	75.54 S	8.30 W	61.27	2.33
8491.89	7.22	186.53	8490.55	79.68 S	8.71 W	64.64	1.84
8525.32	8.06	186.68	8523.69	84.09 S	9.23 W	68.21	2.51
8554.46	8.67	185.91	8552.52	88.30 S	9.69 W	71.63	2.13

8554.46	8.07	183.51	8522.32	88.50 S	9.09 W	71.03	2.13
8598.25	9.50	184.77	8595.76	95.19 S	10.33 W	77.27	1.94
8659.65	10.12	183.80	8656.26	105.62 S	11.11 W	85.92	1.04
8693.51	9.83	182.61	8689.61	111.48 S	11.44 W	90.82	1.05
8723.57	9.80	181.00	8719.23	116.60 S	11.60 W	95.18	0.92
8756.25	9.65	180.09	8751.44	122.12 S	11.65 W	99.93	0.66
8790.22	8.91	178.99	8784.96	127.60 S	11.61 W	104.70	2.24
8825.57	8.56	177.37	8819.90	132.96 S	11.44 W	109.43	1.21
8850.66	8.67	176.28	8844.71	136.71 S	11.23 W	112.78	0.78
8950.92	7.22	181.35	8944.01	150.55 S	10.89 W	124.94	1.60
9046.40	6.24	171.45	9038.83	161.68 S	10.26 W	134.89	1.59
9143.03	4.89	174.66	9135.00	170.98 S	9.10 W	143.52	1.43
9240.11	4.61	172.51	9231.75	178.97 S	8.20 W	150.89	0.34
9335.90	4.22	173.94	9327.25	186.29 S	7.33 W	157.66	0.42
9431.91	3.88	174.51	9423.03	193.03 S	6.64 W	163.85	0.36
9527.21	3.48	174.68	9518.13	199.12 S	6.07 W	169.41	0.42
9622.34	3.07	176.04	9613.10	204.54 S	5.62 W	174.32	0.44
9719.33	3.05	174.83	9709.96	209.70 S	5.21 W	179.00	0.07
9815.52	2.76	177.03	9806.02	214.56 S	4.86 W	183.38	0.32
9912.28	2.50	181.36	9902.68	219.00 S	4.79 W	187.26	0.34
10064.19	2.23	194.12	10054.46	225.18 S	5.59 W	192.21	0.39
10157.05	1.66	203.99	10147.27	228.16 S	6.58 W	194.30	0.71
10254.18	1.66	200.62	10244.36	230.76 S	7.65 W	196.02	0.10
10349.19	1.60	196.87	10339.33	233.32 S	8.52 W	197.80	0.13
10447.17	1.59	196.11	10437.27	235.93 S	9.29 W	199.68	0.02
10539.87	1.20	196.93	10529.94	238.09 S	9.93 W	201.23	0.42
10731.66	0.57	144.06	10721.71	240.79 S	9.95 W	203.55	0.51
10778.66	0.52	224.28	10768.71	241.13 S	9.97 W	203.84	1.50
10812.00	0.52	224.28	10802.05	241.35 S	10.18 W	203.92	0.00

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 150.00 DEGREES (TRUE)
A TOTAL CORRECTION OF 20.87 DEG FROM MAGNETIC NORTH TO TRUE NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 10812.00 FEET
IS 241.56 FEET ALONG 182.41 DEGREES (TRUE)

Date Printed: 28 August 2012