

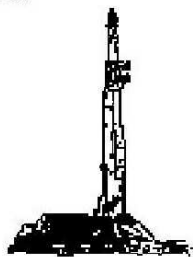
GOOLSBY BROTHERS and associates, inc.

575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2860 Office



Geological Wellsite
Supervision

www.goolsbybrothers.com



Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Henrickson Federal 35N-18HZ (Vertical Hole Section)

Location: Section 7, T3N, R66W, Weld County, CO.

License Number: API: 05-123-37672

Region: Wattenberg, DJ Basin

Spud Date: August 28, 2013

Drilling Completed: September 4, 2013

Surface Coordinates: NESW Sec 7 T3N R66W; 1825' FSL & 2078' FWL

Lat N 40.236828 Long W -104.822441

Bottom Hole Coordinates: SESW Sec 18 T3N R66W; 470' FSL; 2333' FWL

Ground Elevation (ft): 4794'

K.B. Elevation (ft): 4810'

Logged Interval (ft): 6598' **To:** 14,050' **Total Depth (ft):** 14,050' DMTD

Formation: Pierre Sands/Shales, Niobrara, Niobrara B Target

Type of Drilling Fluid: Water & Poly to 6598', LSND 6598'-14,050'

Printed by STRIP.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Kerr-McGee Oil & Gas Onshore LP

Address: Granite Tower - 1099 18th St, Ste 1800

Denver, CO 80202

CO Geologist, John Morgan

GEOLOGIST

Name: Ian Harris & Andrew Krueger

Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)

Address: 575 Union Blvd.

Suite 208,

Lakewood CO. 80228

E-Logs

MWD GR 1028' - 14,001'

Comments

- 1) Drilling Contractor: Xtreme Drilling, Rig #20
Toolpusher: Tyler Humphrey & Brad Henderson
- 2) Company Man: Ricky Carrol & Marvin Hackworth
- 3) Mud Comapny : Imperial Drilling Fluids
Engineer: Jeremy Smith
- 4) Directional Drilling: Baker Hughes
Pulse Tool
Drillers: Barry Combs, Scott Stanford
MWD: Robert Dix, Matt Yule
- 5) Gas Equipment: Mudlogging Systems Inc.
by Terra Services
Redbox # ML-317 & Ratcliff Agitator

ROCK TYPES

	Anhy		Dol		Shale		Arg ss
	Bent		Gyp		Shcol		Fracture
	Brec		Igne		Shgy		Chalk
	Cht		Lmst		Sltst		Carb sh
	Clyst		Meta		Ss		Arg lmy ss
	Coal		Mrlst		Till		Cmt
	Congl		Salt		Sltly sh		

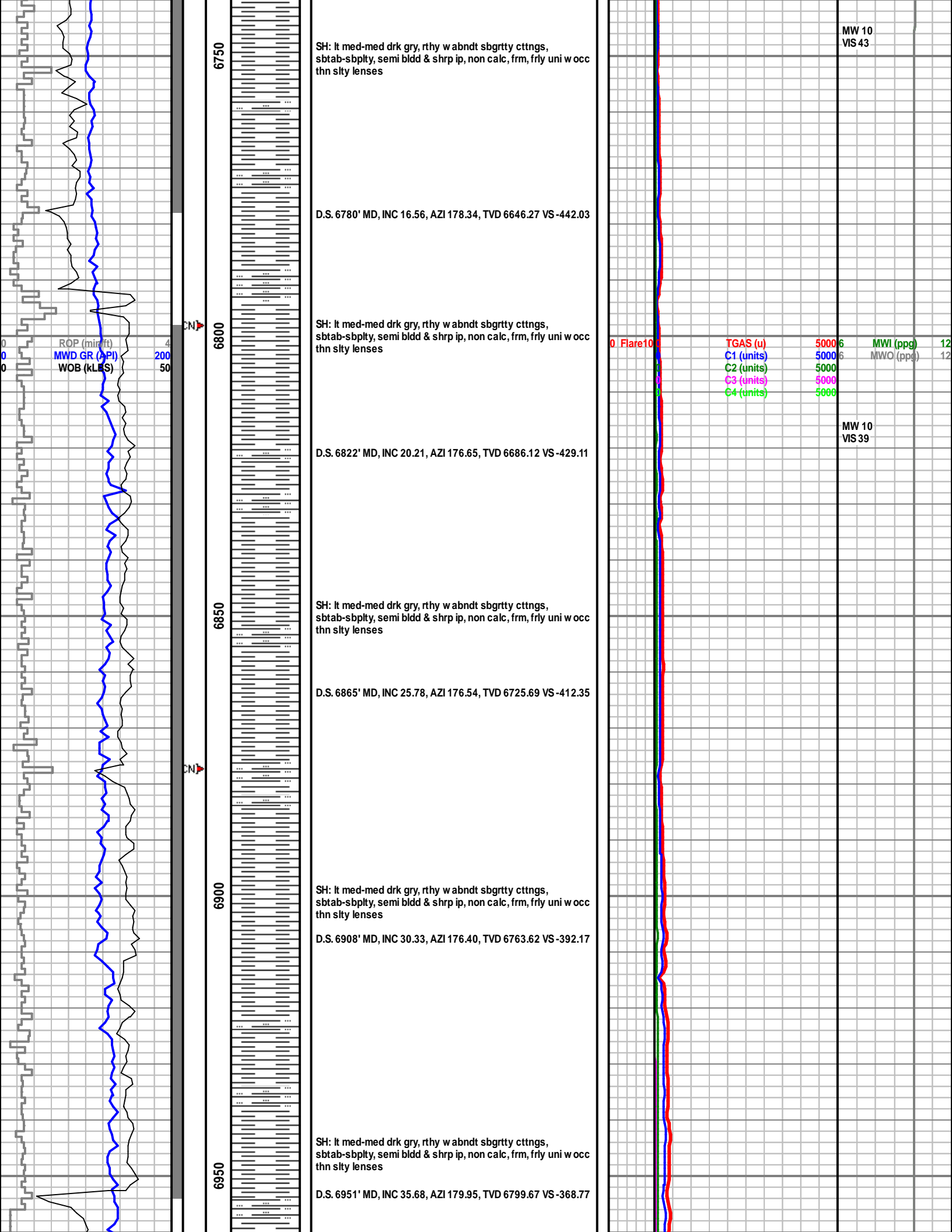
ACCESSORIES

MINERAL							
	Anhy		Minxl		Crin		Gyp
	Arggrn		Nodule		Echin		Ls
	Arg		Phos		Fish		Mrst
	Bent		Pyr		Foram		Sltstrg
	Bit		Salt		Fossil		Ssstrg
	Brecfrag		Sandy		Gastro	TEXTURE	
	Calc		Silt		Oolite		Boundst
	Chtdk		Sil		Ostra		Chalky
	Chtlt		Sulphur		Pelec		Cryxln
	Dol		Tuff		Pellet		Earthy
	Feldspar	FOSSIL			Pisolite		Finexln
	Ferrpel		Algae		Plant		Grainst
	Ferr		Amph		Strom		Lithogr
	Glau		Belm	STRINGER			Microxln
	Gyp		Bioclst		Anhy		Mudst
	Hvymin		Brach		Bent		Packst
	Kaol		Bryozoa		Coal		Wackest
	Marl		Cephal		Dol		
			Coral				

OTHER SYMBOLS

POROSITY							
	Earthy		Well		Even		New bit
	Fenest		Moderate		Spotted		Rft
	Fracture		Poor		Ques		Off btm
	Inter	ROUNDING			Dead		Conn
	Moldic		Rounded	INTERVAL			Casing
	Organic		Subrnd		Core		Casing_right
	Pinpoint		Subang		Dst		
	Vuggy		Angular				

ROP, GR, SP			Conn	Depth	Lithology	Geological Descriptions	Flare	TG, C1-C4				Porosity	
ROP (min/ft)	MWD GR (API)	WOB (kLBS)						TGAS (u)	C1 (units)	C2 (units)	C3 (units)	C4 (units)	MWI (ppg)
0	0	0		65			0	0	0	0	0	0	0
2 man wellsite geology team on location and rigged up August 29, 2013													
Begin drilling curve F/6598' (KOP) @ 00:20hrs on 8/30/2013													
0	0	0		6600			0	0	0	0	0	0	0
NB #1, 8 3/4", Smith SDI611, #JG9980, 6x14, In @ 1028'.													
0	0	0		6650			0	0	0	0	0	0	0
Trip for new B HA.													
NB #1, 8 3/4", SEC MMD55M, #12198372, 2x16, 3x18, In @ 6643'. OB #2 drilled 5615' in 18.4hrs, avg ROP 305 ft/hr.													
SH: It med-med drk gry, rthy w abndt sbgrtty cttngs, sbtab-sbply, semi bldd & shrp ip, non calc, frm, frly uni w occ thn slty lenses													
D.S. 6652' MD, INC 5.36, AZI 187.85, TVD 6520.92 VS -467.25													
0	0	0		6700			0	0	0	0	0	0	0
D.S. 6695' MD, INC 9.78, AZI 182.27, TVD 6563.53 VS -461.61													
SH: It med-med drk gry, rthy w abndt sbgrtty cttngs, sbtab-sbply, semi bldd & shrp ip, non calc, frm, frly uni w occ thn slty lenses													
D.S. 6737' MD, INC 13.02, AZI 180.20, TVD 6604.70 VS -453.31													



MW 10
VIS 43

SH: lt med-med drk gry, rthy w abndt sbgrtty cttngs,
sbtabsbplty, semi bldd & shrp ip, non calc, frm, frly uni w occ
thn slty lenses

D.S. 6780' MD, INC 16.56, AZI 178.34, TVD 6646.27 VS -442.03

SH: lt med-med drk gry, rthy w abndt sbgrtty cttngs,
sbtabsbplty, semi bldd & shrp ip, non calc, frm, frly uni w occ
thn slty lenses

D.S. 6822' MD, INC 20.21, AZI 176.65, TVD 6686.12 VS -429.11

SH: lt med-med drk gry, rthy w abndt sbgrtty cttngs,
sbtabsbplty, semi bldd & shrp ip, non calc, frm, frly uni w occ
thn slty lenses

D.S. 6865' MD, INC 25.78, AZI 176.54, TVD 6725.69 VS -412.35

SH: lt med-med drk gry, rthy w abndt sbgrtty cttngs,
sbtabsbplty, semi bldd & shrp ip, non calc, frm, frly uni w occ
thn slty lenses

D.S. 6908' MD, INC 30.33, AZI 176.40, TVD 6763.62 VS -392.17

SH: lt med-med drk gry, rthy w abndt sbgrtty cttngs,
sbtabsbplty, semi bldd & shrp ip, non calc, frm, frly uni w occ
thn slty lenses

D.S. 6951' MD, INC 35.68, AZI 179.95, TVD 6799.67 VS -368.77

0. Flare10

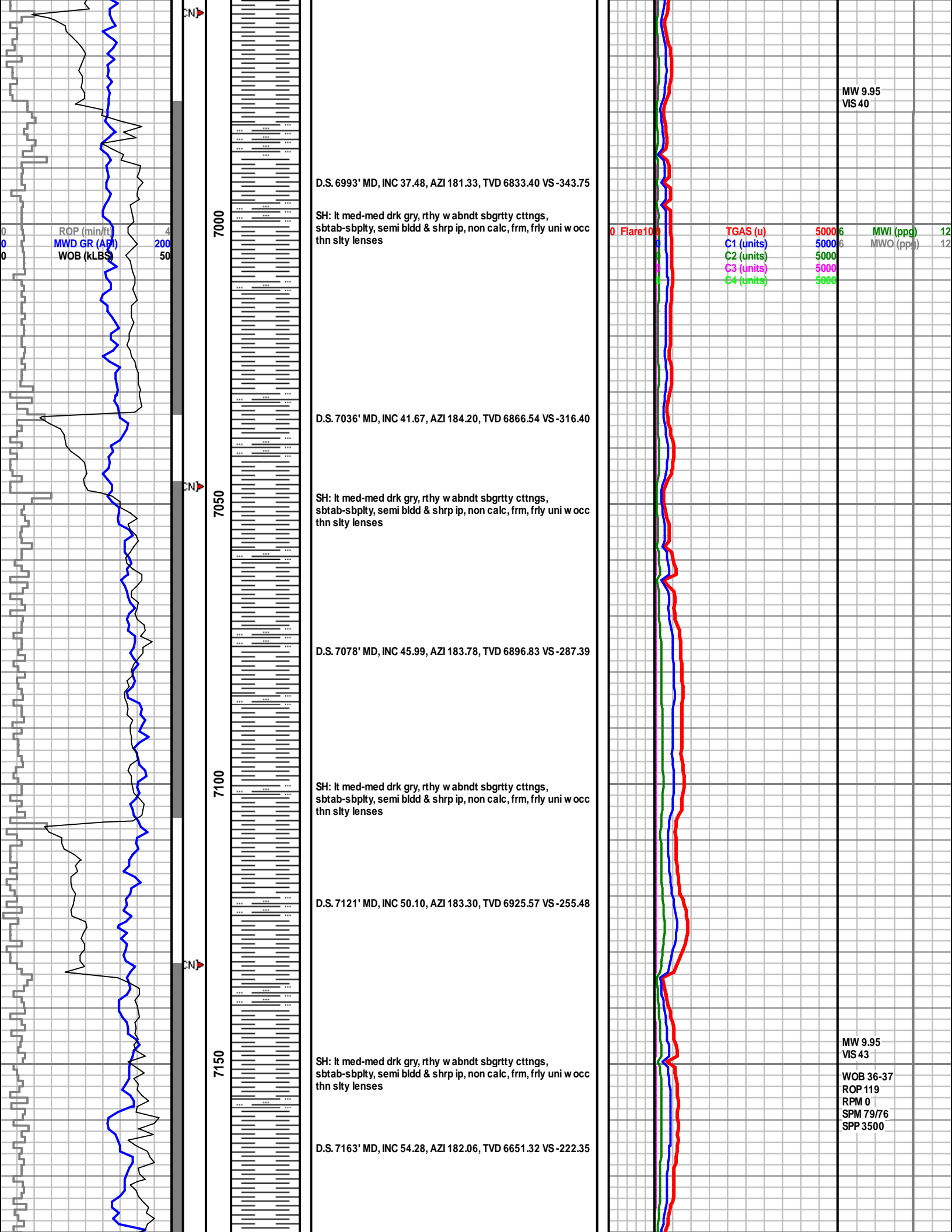
TGAS (u)
C1 (units)
C2 (units)
C3 (units)
C4 (units)

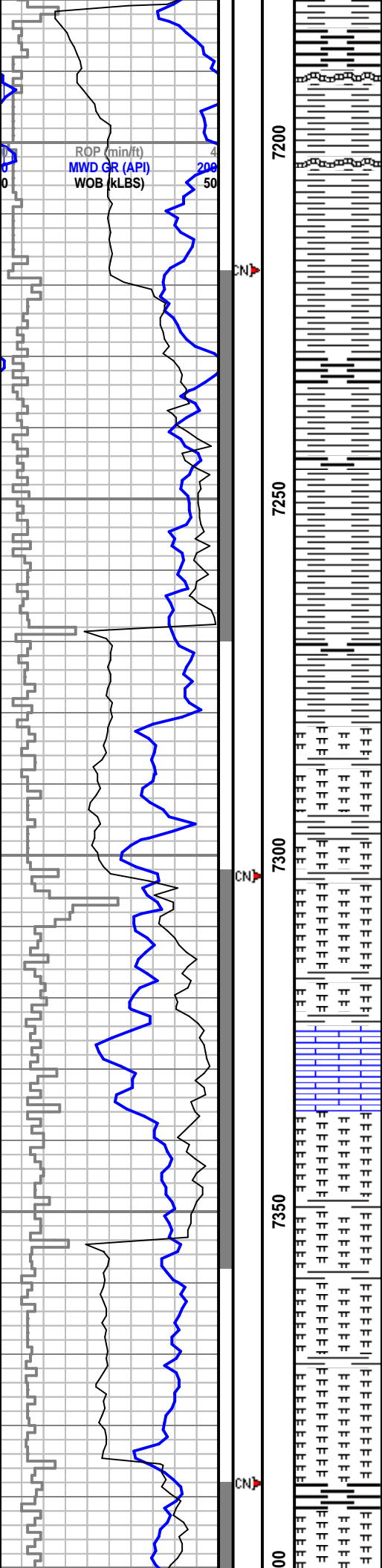
50006
50006
50006
50006
50006

MWI (ppg)
MWO (ppg)

12
12

MW 10
VIS 39





Sharon Springs Top 7183' MD (6963' TVD) based on GR & samples

SH: drk gry-gryblk, dcrrng med gry, sbrthy-sbwxy, sm/slky feel, pred plty-sbblky, hghly fiss thru, frm, non-v sl calc, w cmt

D.S. 7206' MD, INC 57.01, AZI 182.27, TVD 6975.58 VS -186.88

D.S. 7248' MD, INC 60.75, AZI 180.93, TVD 6997.28 VS -150.94

SH: drk gry-gryblk, dcrrng med gry, sbrthy-sbwxy, sm/slky feel, pred plty-sbblky, hghly fiss thru, frm, non-v sl calc, w cmt

Niobrara A Top 7281' MD (7013' TVD) based on GR & samples

D.S. 7291' MD, INC 63.58, AZI 179.63, TVD 7017.36 VS -112.92

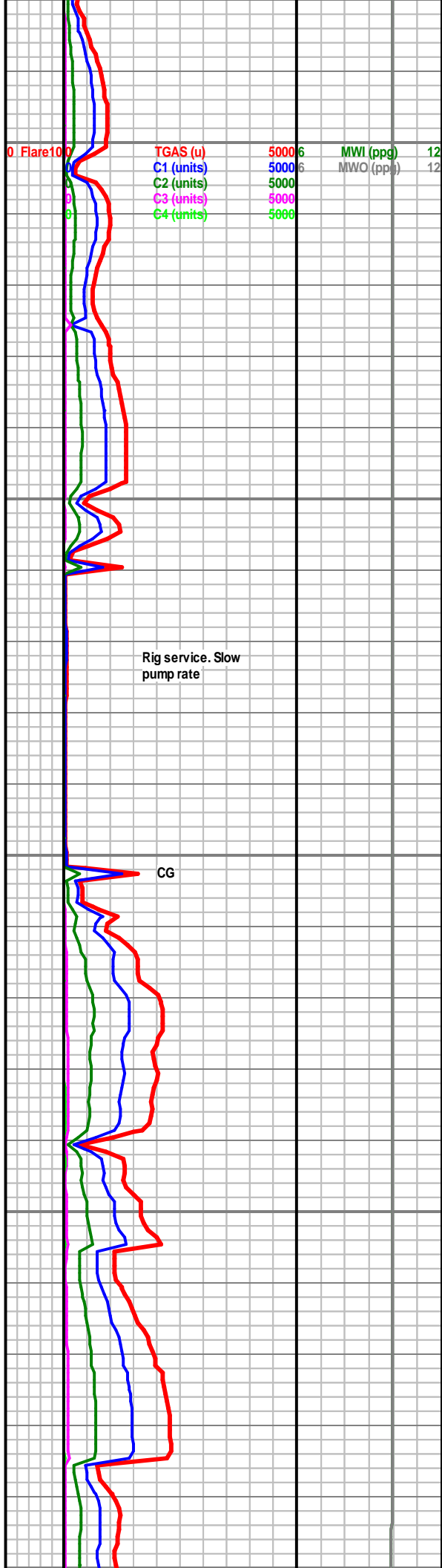
SH(85%): drk gry-gryblk, dcrrng med gry, sbrthy-sbwxy, sm/slky feel, pred plty-sbblky, hghly fiss thru, frm, non-v sl calc, w cmt. MRLSTN(15%): drk gry-sl gry blk, sbrthy-sbwxy, plty-sb plnr tab thru, jggd, rr calct frac fil, no vis por or perm, infrrd frac por, no inifl, pred wk cut s, shly ip.

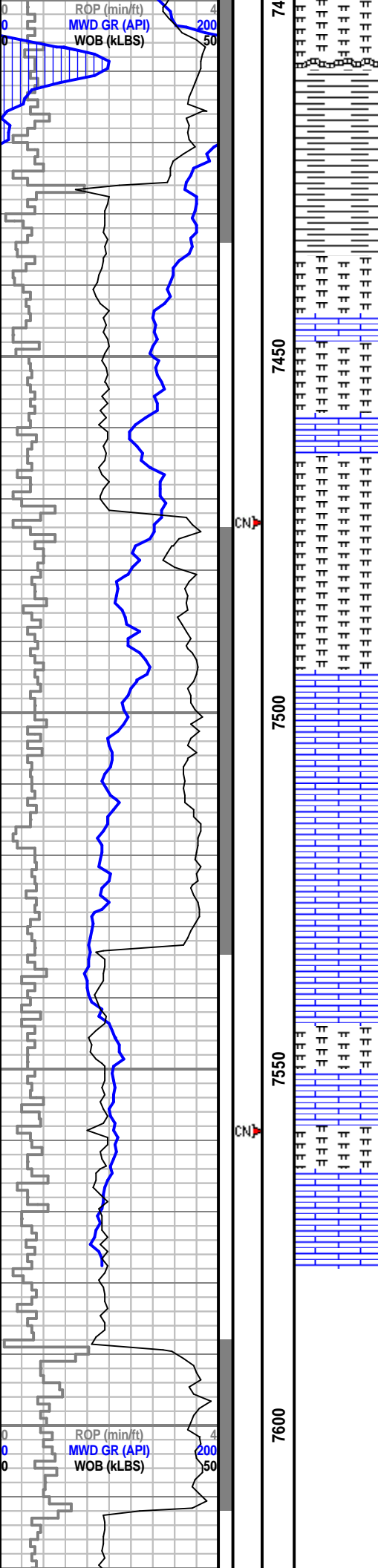
D.S. 7333' MD, INC 67.74, AZI 178.21, TVD 7034.67 VS -74.67

CARB CHALK (60%): lt med-med gry, occ drkr gry ip, abndt mttld w v smll lent tan spcks, pred sbchky, sbrthy-sm thru, sbplty-plty, abndt shrp/jggd thru, v frm-hd, micrite w 20% arg mtx, no vis perm or por, no inifl, wk hzy/dif yel cuts, drk yel o res rng, sl o odor, MARLSTN(40%)

D.S. 7376' MD, INC 71.24, AZI 178.97, TVD 7049.73 VS -34.42

MRLSTN: med drk gry-gryblk, rthy-sbwxy, sm/slky feel, pred plty, shrp/jggd ctnngs thru, frm & stff, v calc, w lime cmt, no vis por or perm, infrrd frac por, no inifl, wk hzy/dif yel cuts, drk yel o res rng, sl o odor, MARLSTN(40%)





vis por or perm, infrrd frac por, no pri luor, no vis cuts, wk v dim cld res yel cld, tr CARB CHLK

D.S. 7419' MD, INC 75.65, AZI 179.23, TVD 7061.98 VS 6.79

Niobrara B Top 7437' MD (7066' TVD) based on GR & samples

MRLSTN(60%): med drk gry-gryblk, rthy-sbwxy, sm/slky feel, pred pty, shrp/jggd cttns thru, frm & stff, v calc, w lime cmtd, no vis por or perm, infrrd frac por, no pri luor, no vis cuts, wk v dim cld res yel cld. CARB CHLK(40%)

D.S. 7462' MD, INC 78.38, AZI 179.96, TVD 7071.64 VS 48.68

Niobrara B Chalk Top 7495' MD (7077' TVD) based on GR & samples

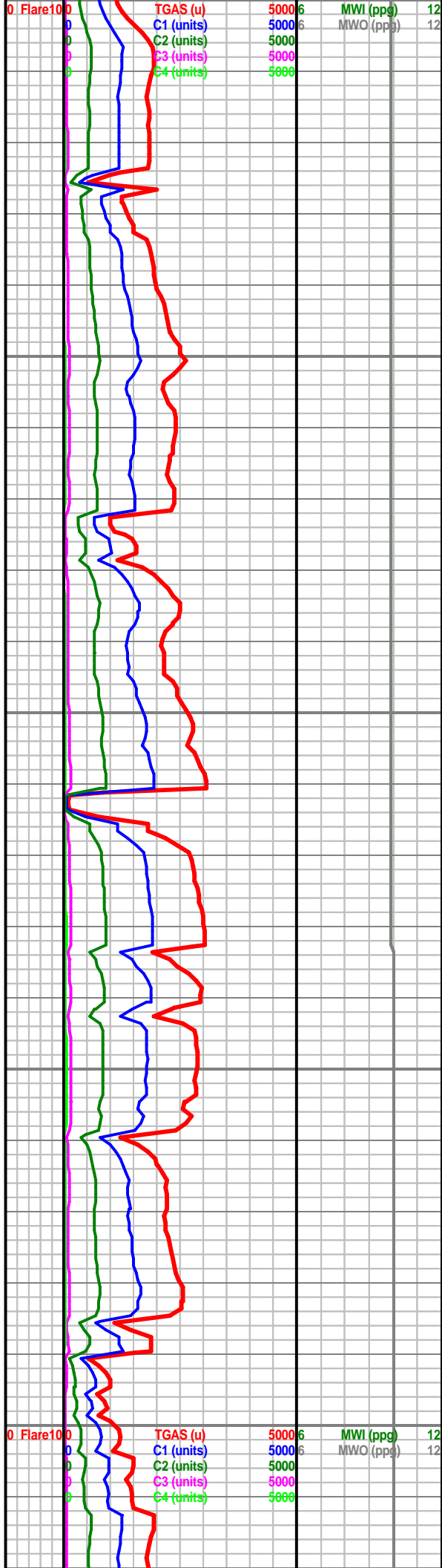
D.S. 7504' MD, INC 82.83, AZI 179.51, TVD 707 VS 48.68

CARB CHALK (70%): lt med-med gry, occ drkr gry ip, abndt mttld w v smll lent tan spcks, pred sbchlky, sbrthy-sm thru, sbppty-pty, abndt shrp/jggd thru, v frm-hd, micrite w 20% arg mtx, no vis perm or por, no inif luor, wk hzy/dif yel cuts, drk yel o res rng, sl o odor, MARLSTN(30%)

D.S. 7547' MD, INC 86.8, AZI 181, TVD 7082.38 VS 132.92

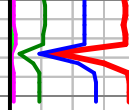
D.S. 7576' MD, INC 87.28, AZI 180.5, TVD 7083.88 VS 161.88

CARB CHALK: lt med-med gry, occ drkr gry ip, abndt mttld w v smll lent tan spcks, pred sbchlky, sbrthy-sm thru, sbppty-pty, abndt shrp/jggd thru, v frm-hd, micrite w 20% arg mtx, no vis perm or por, no inif luor, wk hzy/dif yel cuts, drk yel o res rng, sl o odor,



Proj to Bit D.S. 7631' MD, INC 90, AZI 180.5, TVD 7085.18 VS
216.86

Reached ICLP of 7,631' @ 10:40 hrs on 8/31/2013



7650

END Vertical Hole Log Section, Begin Horizontal Log Section

Geologic Tops Picked by John Morgan

Sharon Springs	6,963' (-2,153')
Niobrara A	7,013' (-2,203')
Niobrara B Top	7,066 (-2,256)
Niobrara B Chalk	7,077' (-2,267')
DMTD	14,050'
Production csg	14.040'