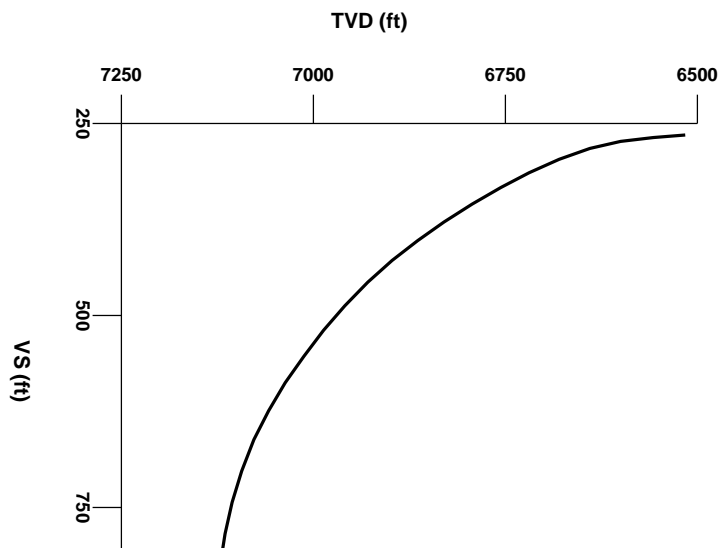


LOG created using LPLOT VH Version 3.0, August 06, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

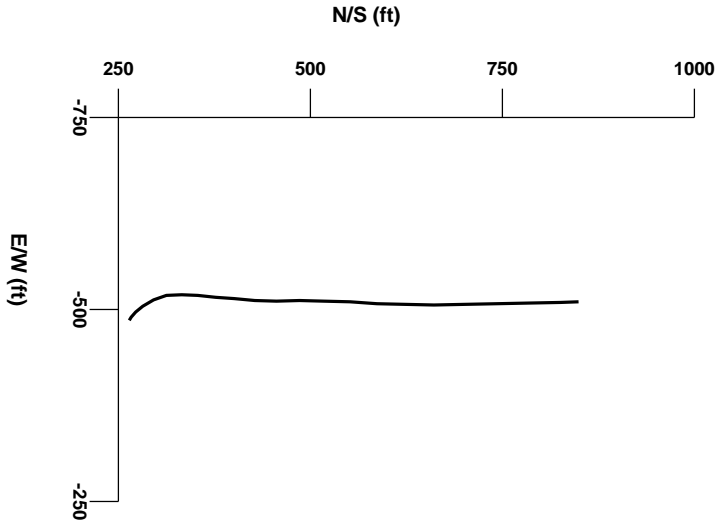
OPERATOR: Kerr McGee Oil & Gas Onshore, LP
WELL: Harris Federal 36N-E18HZ
LOCATION: Section 19, T3N, R66W
COUNTY: Weld
STATE: Colorado
SPOT: 249' FSL x 1271' FEL
ELEVATION: 4,832'
FIELD: Wattenberg
SPUD DATE: 8/2/2013
TD DATE: 8/6/2013
DATES LOGGED: 8/5/2013 - 8/6/2013
DEPTHS LOGGED: 6584' - 7518'
LOGGERS: Eli Smith, Ryan Nicholas
DRILLING FLUID: FW LSND
DRILLING RIG: Xtreme 8
API: 051233776200
LOG TYPE: Curve
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: Wellsite Geological Services provided by Columbine Logging, Inc.

 Logging began at KOP



Survey Elevation

Survey Plan



1
1000

LITHOLOGIES

Chalk

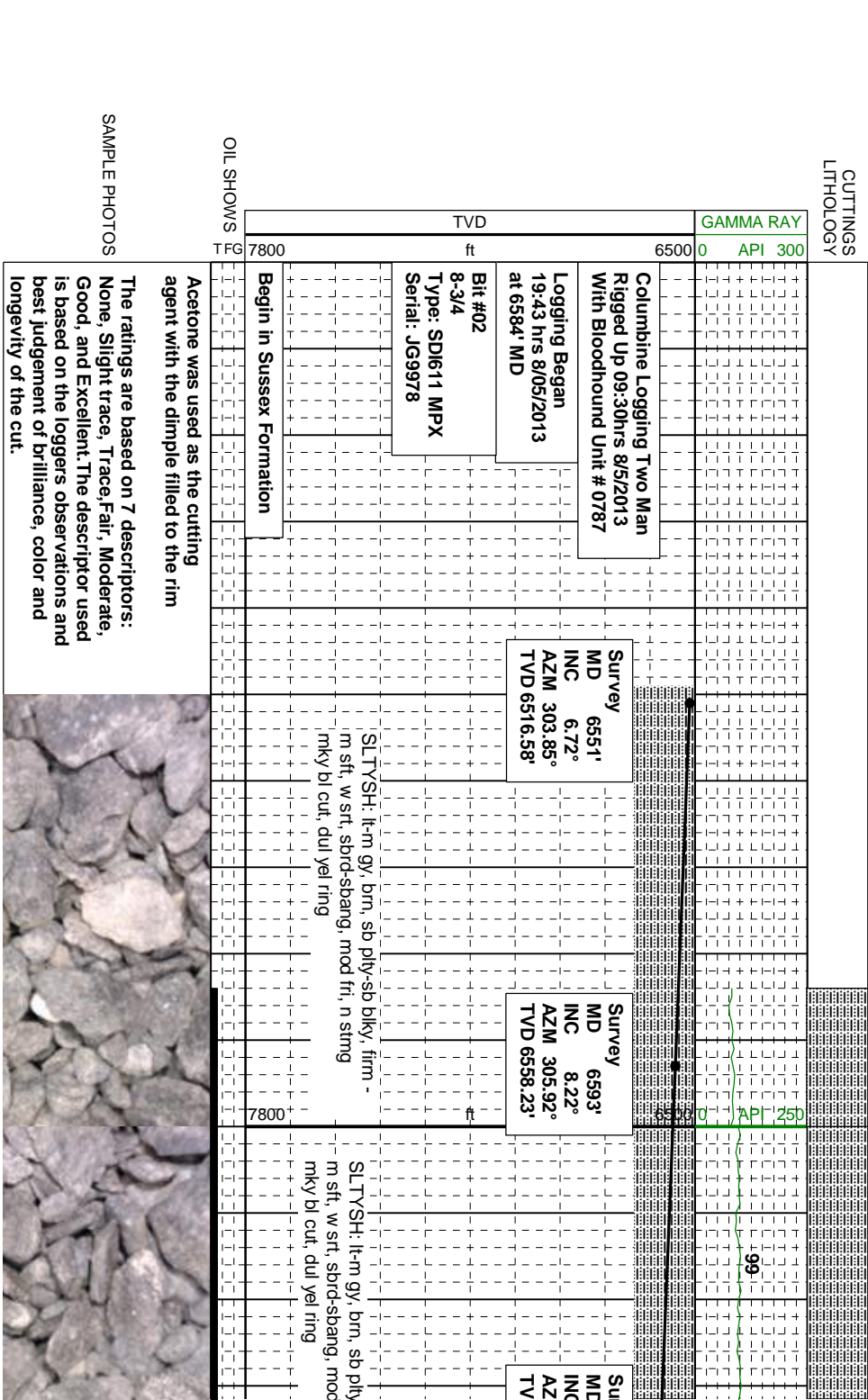
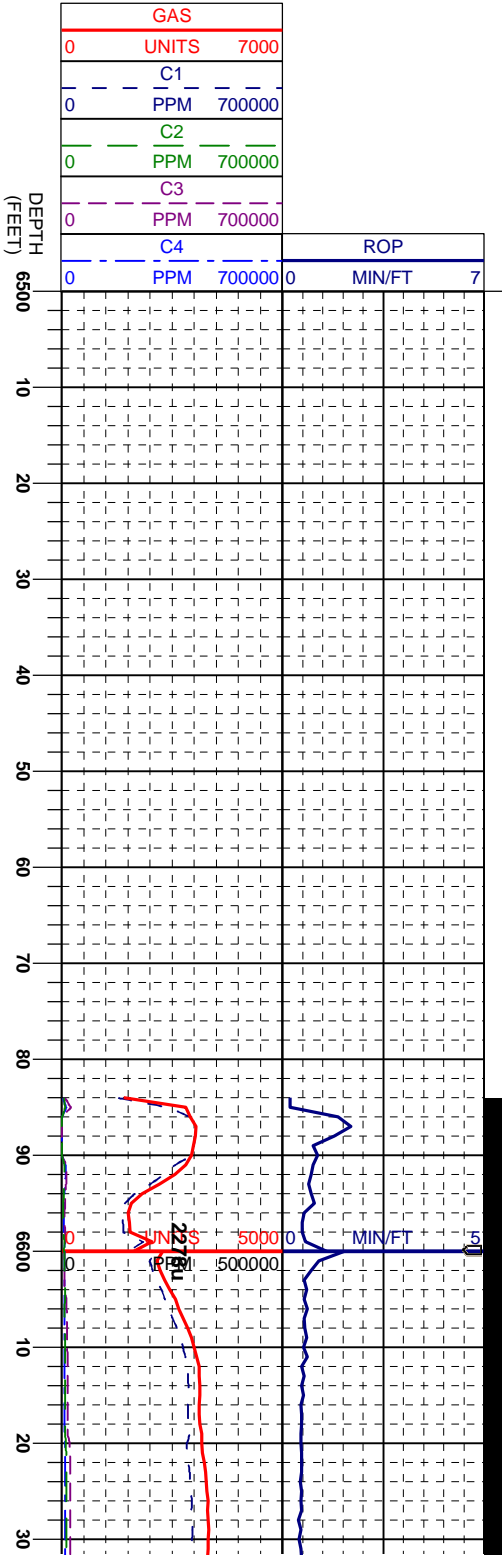
Marl

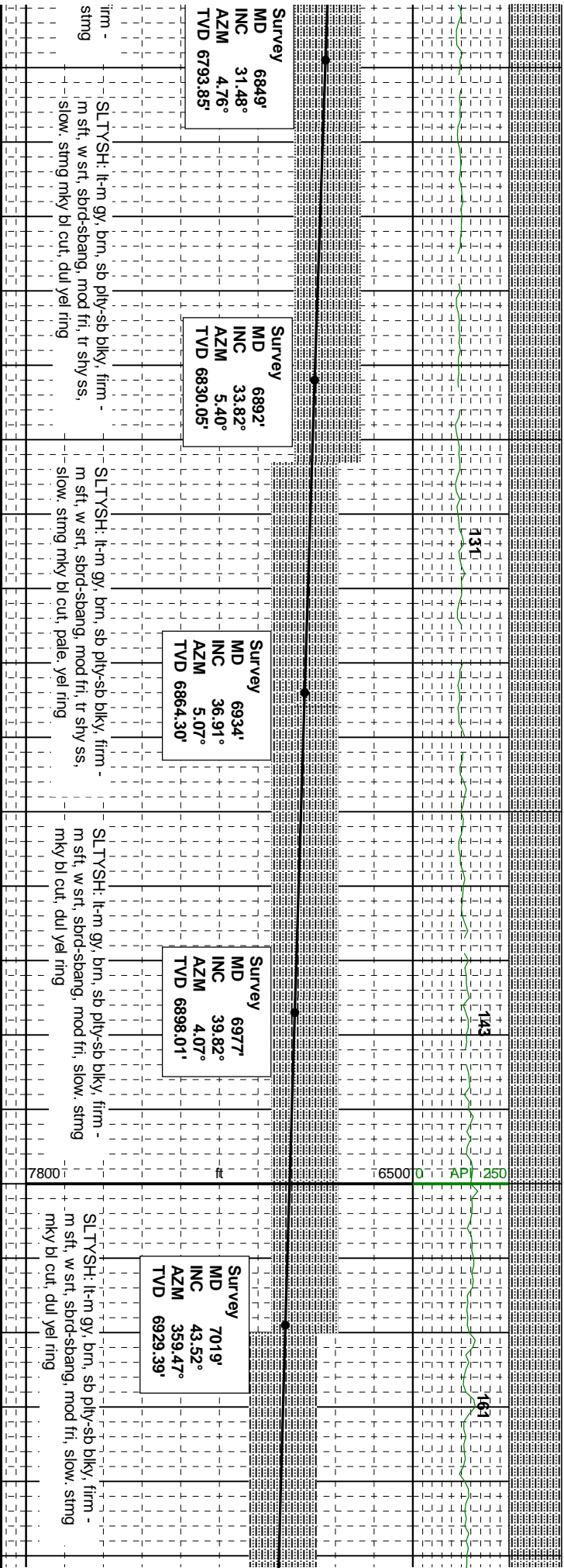
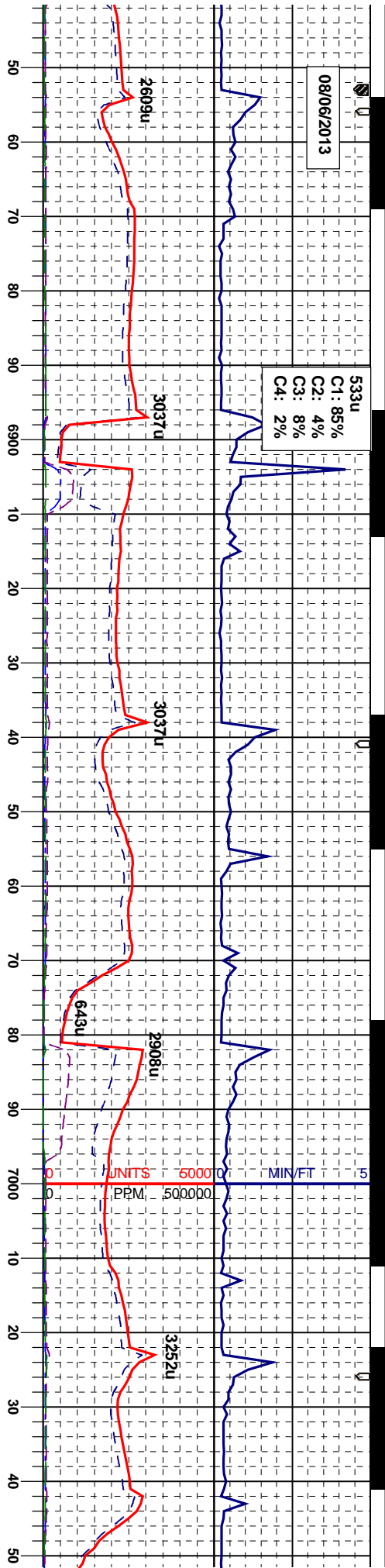
Silty Shale

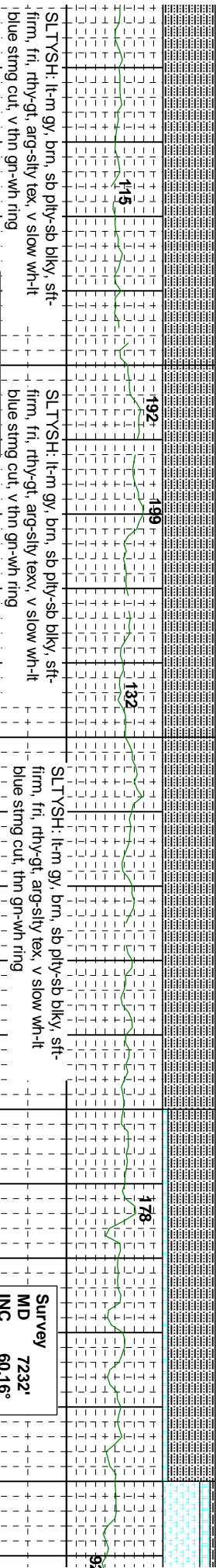
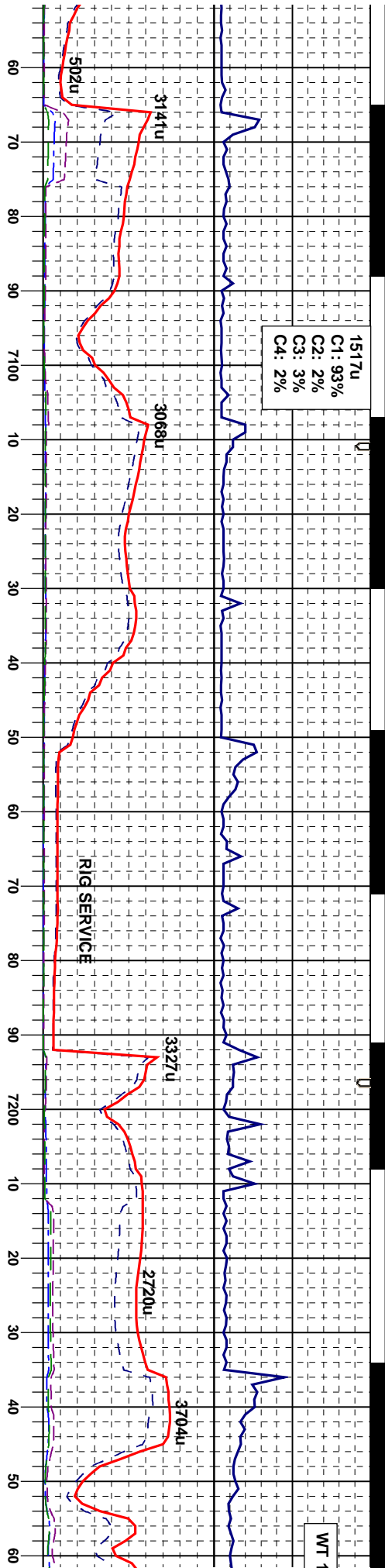
ENGINEERING SYMBOLS

Connection

Midnight Depth







Sharon Springs Top
7100' MD / 6985' TVD

Survey
MD 7232'
INC 60.16°
AZM 1.40°
TVD 7058.89'

Survey
MD 7062'
INC 47.01°
AZM 359.13°
TVD 6959.65'

Survey
MD 7104'
INC 50.82°
AZM 1.35°
TVD 6987.25'

Survey
MD 7147'
INC 54.64°
AZM 3.54°
TVD 7013.28'

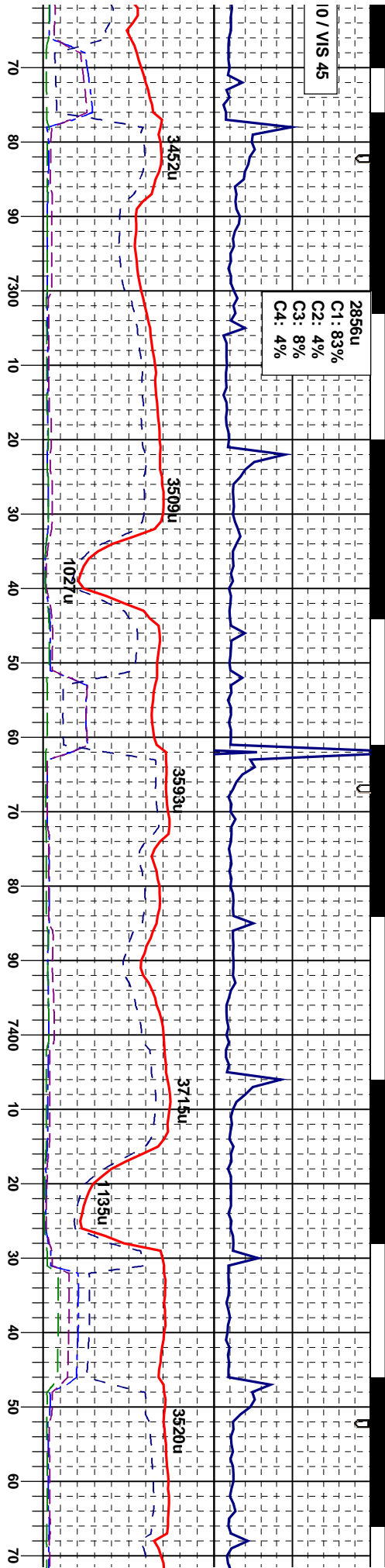
Survey
MD 7189'
INC 57.64°
AZM 2.74°
TVD 7036.68'

Niobrara A Top
7214' MD / 7050' TVD

SLTYSH: lt-m gy, brn, sb ply-sb blk, sft-
firm, fri, rthy-gt, arg-sily tex CHK: lt gy, gy
brn, mot, str, sb blk-bkly, sft-sl firm, fri,
calc, v slow wh-it blue sting cut, thn gn-wh

MRL: dk
firm-nd,
gy, gy br
fri, rthy t
sb ply-sl
tex, v slo



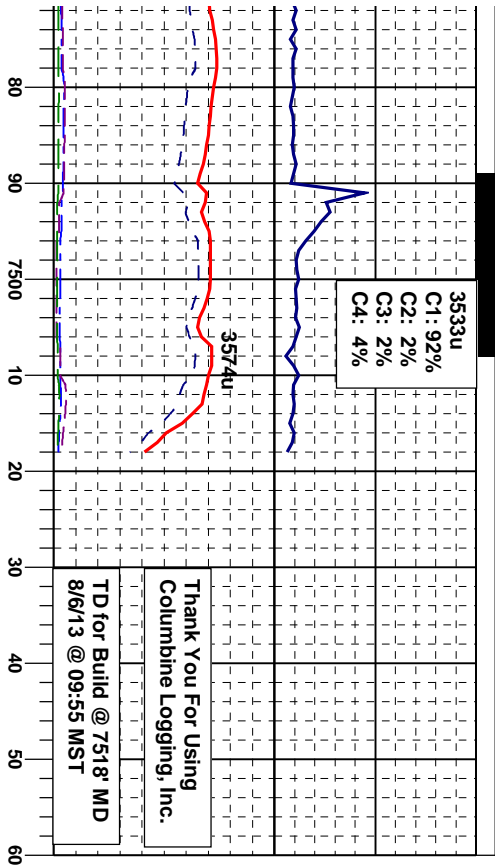


233	96	122	121	11
Survey				
MD	727.4'	731.7'	736.0'	740.2'
INC	66.27°	71.05°	75.02°	78.90°
AZM	359.83°	358.44°	358.87°	358.92°
TVD	7077.81'	7093.46'	7106.00'	7115.47'
Survey				
MD	744.5'	74	74	74
INC	83.40°	86.	86.	86.
AZM	359.04°	358	358	358
TVD	7122.09'	7124	7124	7124

gy, dk gy brn, blk, supply-blky, sl fri-brt, silv-arg tex, calc mix CHK: it n, mot, stri, sb blk-ylky, sft-sl firm, ex, wxy, calc SLTYSH: it-n gy, brn, b blk, sft-firm, fri, rthy-gt, arg-sly w wh-it blue sting cut, thn gn-wh	MRL: dk gy, dk gy brn, blk, supply-blky, sl firm-hd, fri-brt, silv-arg tex, calc mix CHK: it gy, gy brn, mot, stri, sb blk-ylky, sft-sl firm, fri, rthy tex, wxy, calc, tr inoc frag, slow wh- it blue sting cut, mod thn gn-wh ring	CHK: it gy, gy brn, mot, stri, sb blk-ylky, sft-sl firm, fri, rthy tex, wxy, calc MRL: dk gy, dk gy brn, blk, supply-blky, sl firm-hd, fri- brt, silv-arg tex, calc mix, tr inoc frag, r bent, slow wh-it blue sting cut, mod thn gn- wh ring	MRL: dk gy, dk gy brn, blk, supply-blky, sl firm-hd, fri-brt, silv-arg tex, calc mix CHK: it gy, gy brn, mot, stri, sb blk-ylky, sft-sl firm, fri, rthy tex, wxy, calc, tr inoc frag, mod wh- it blue sting cut, mod thn gn-wh ring	MRL: dk firm-hd, gy, gy br fri, rthy t wh-it blu
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Niobrara B Chalk Top
7362' MD / 7107' TVD





169'		Projection to Bit	
.05°		MD 7518'	
.95°		INC 89.25°	
1.29'		AZM 358.95°	
		TVD 7126.95'	

gy, dk gy brn, blk, sbply-bkly, sl
fri-bit, silty-arg tex, calc mtx CHK. It
n, mot, str, sb bkly-bkly, sft-sl firm,
ex, wxy, calc, tr inoc frag, mod-fast
e sting cut, mod gn-wh ring

