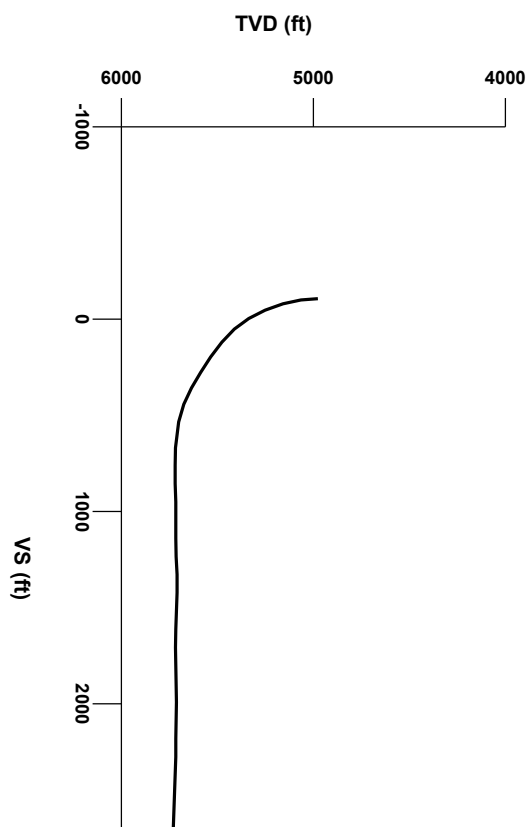


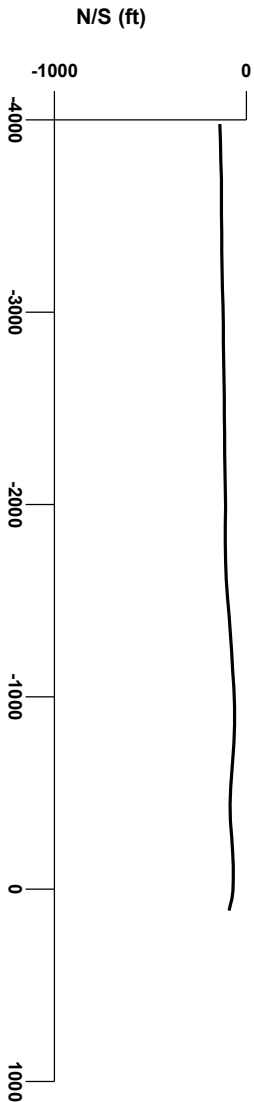
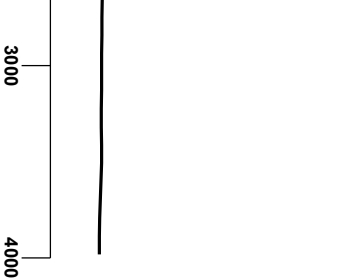
LOG created using Lplot VH Version 3.0, September 13, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

**OPERATOR:** NOBLE ENERGY INC  
**WELL:** ROHN STATE LD04-62HN  
**LOCATION:** SEC 4 T9N R58W  
**COUNTY:** WELD  
**STATE:** COLORADO  
**SPOT:** 737' FSL; 480' FEL  
**ELEVATION:** 4711' GL; 4735' KB  
**FIELD:** WILDCAT  
**SPUD DATE:** 09/07/2013  
**TD DATE:**  
**DATES LOGGED:** 09/08/2013 -  
**DEPTHS LOGGED:** 4930' - \_\_\_\_' MD  
**LOGGERS:** LAURA KELLOGG; CONOR PESICKA  
**DRILLING FLUID:** LSND  
**DRILLING RIG:** H&P 273  
**API:** 05-123-37461  
**LOG TYPE:** VERTICAL  
**SCALE:** 1:240 (5 inches per 100 feet)  
**REMARKS:** WELLSITE GEOLOGICAL SERVICES  
 PROVIDED BY COLUMBINE LOGGING INC.

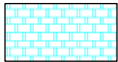


Survey Elevation

Survey Plan



LITHOLOGIES



Chalk



Marl



Silty Shale

ENGINEERING SYMBOLS



Casing



Casing



Connection



Connection Gas



Midnight Depth



Oil To Surface

SAMPLE PHOTOS

OIL SHOWS

TVD		GAMMA RAY	
7000	ft	40	API 300

Acetone was used as the cutting agent with the dimple filled to the rim

The ratings are based on 7 descriptors: None, Slight trace, Trace,Fair, Moderate, Good, and Excellent.The descriptor used is based on the loggers observations and best judgment of brilliance, color and longevity of the cut.

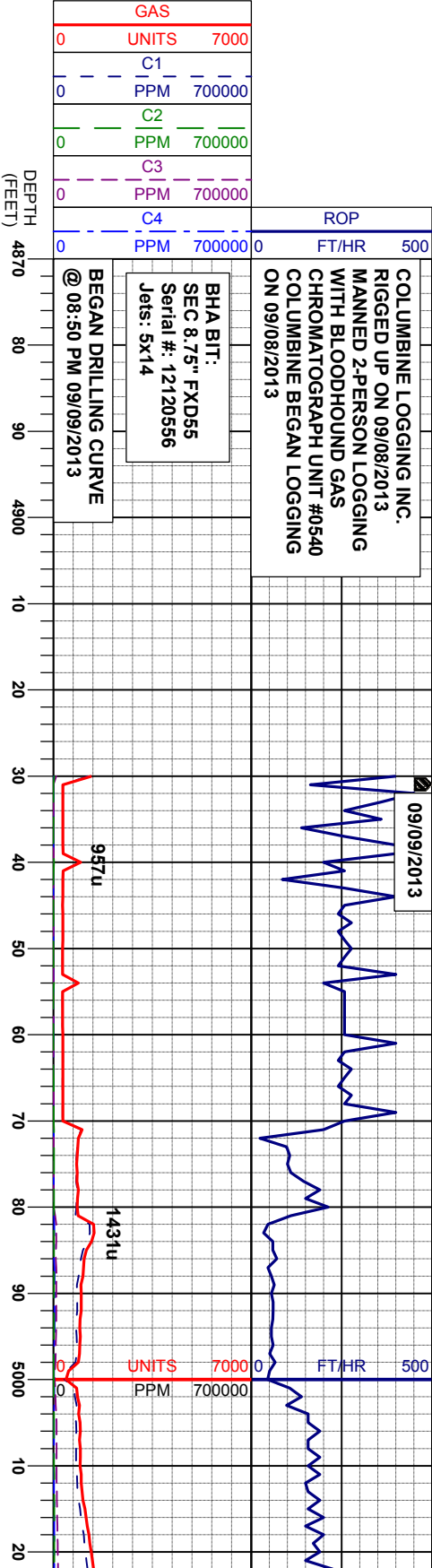
WT IN 9.90/ OUT 9.80  
VIS IN 56/ OUT 65

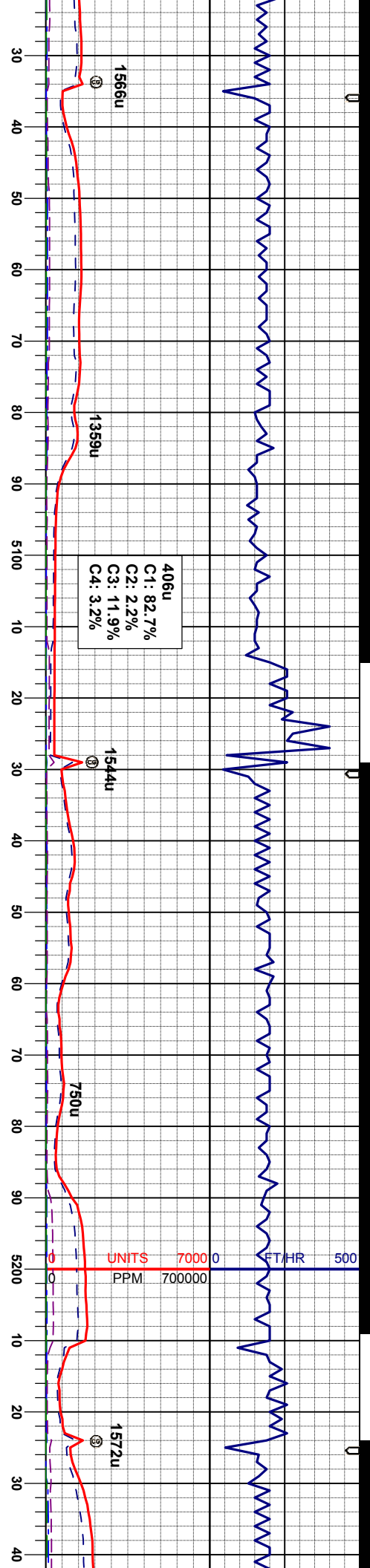
MD 4985'  
INC 1.2°  
AZM 201.6°  
TVD 4977.62'

SLTYSH: lly-gy, r dkgy, sbdkly-sbply, sft, gt-sdy tex, arg cmt, spar ip, tr pyr

SLTYSH: lly-gy, r dkgy, sbdkly-sbply, sft, gt-sdy tex, arg cmt, spar ip, tr pyr

CUTTINGS LITHOLOGY

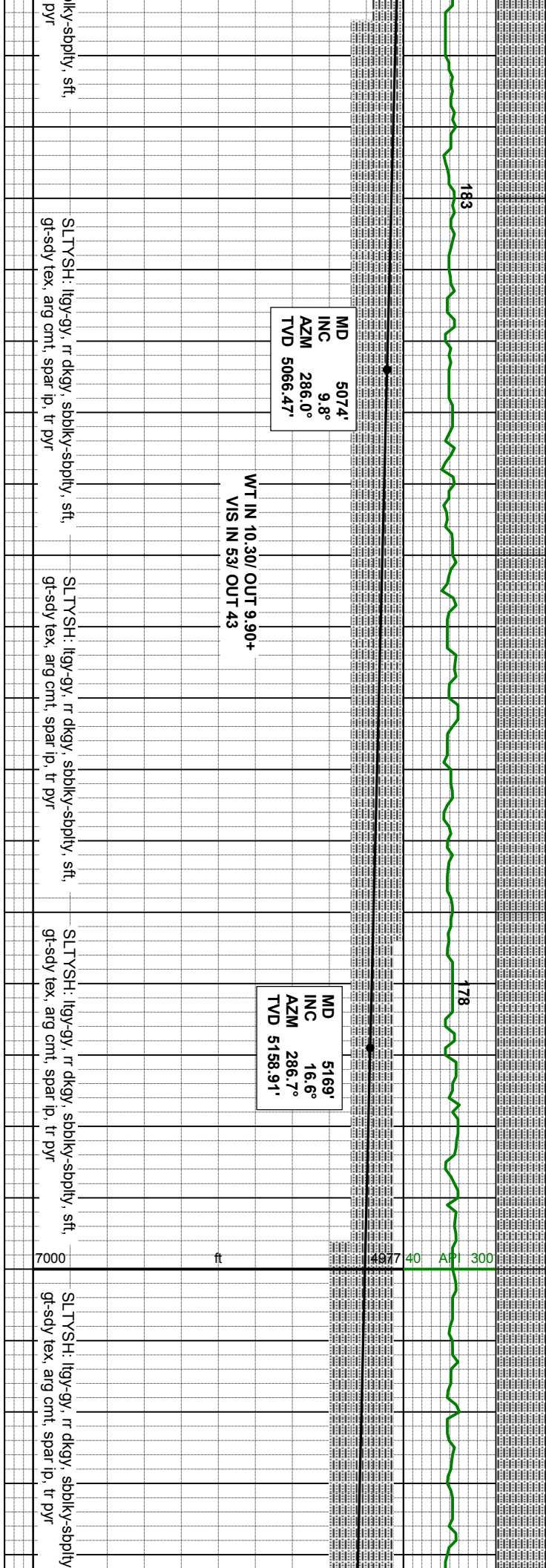


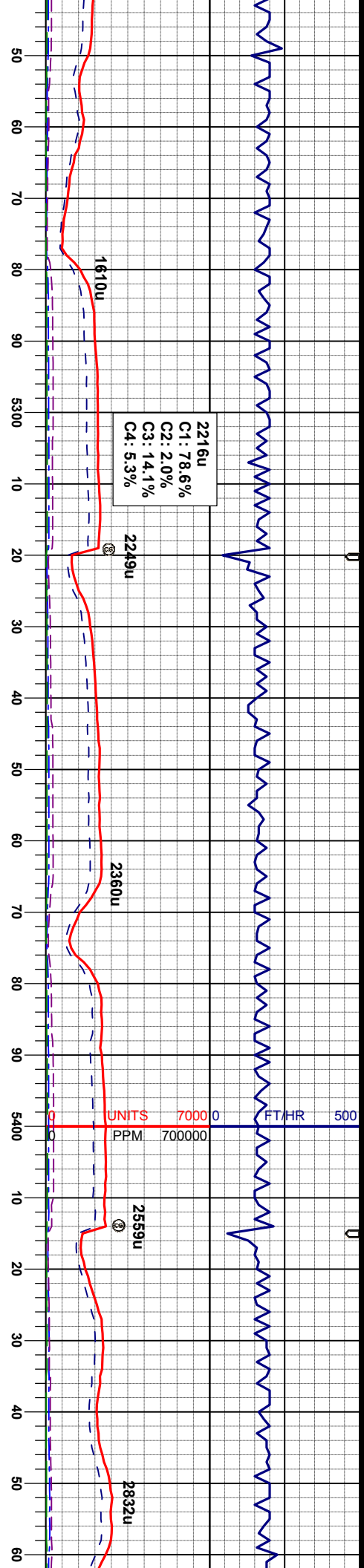


MD 5074'  
INC 9.8°  
AZM 286.0°  
TVD 5066.47'

WT IN 10.30/ OUT 9.90+  
VIS IN 53/ OUT 43

MD 5169'  
INC 16.6°  
AZM 286.7°  
TVD 5158.91'





MD 5269'  
INC 23.6°  
AZM 280.0°  
TVD 5252.77'

MD 5364'  
INC 31.7°  
AZM 274.4°  
TVD 5337.15'

MD 54  
INC 41  
AZM 271  
TVD 5412.2

sft, SLTYSH: lly-gy, rr dkgv, sbblky-sbply, sft, gt-sdy tex, arg cnt, spar ip, tr pyr

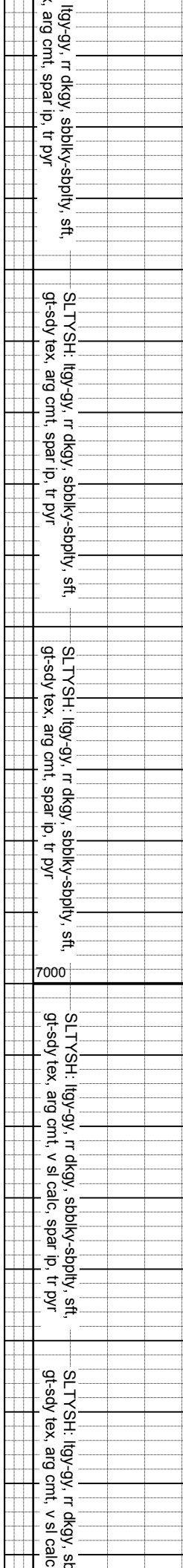
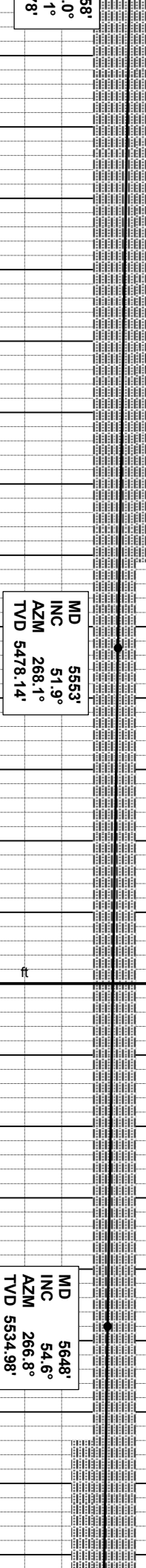
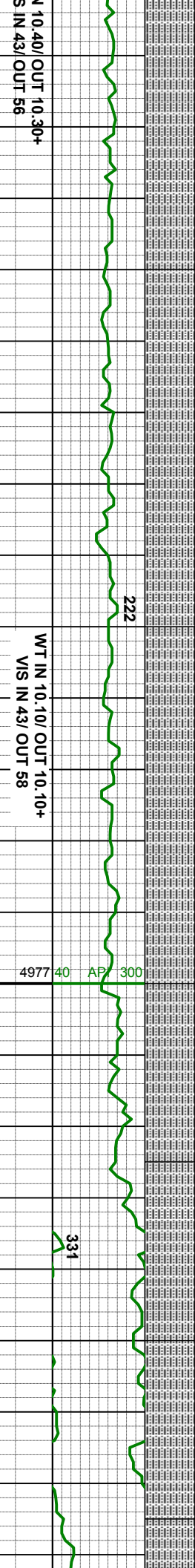
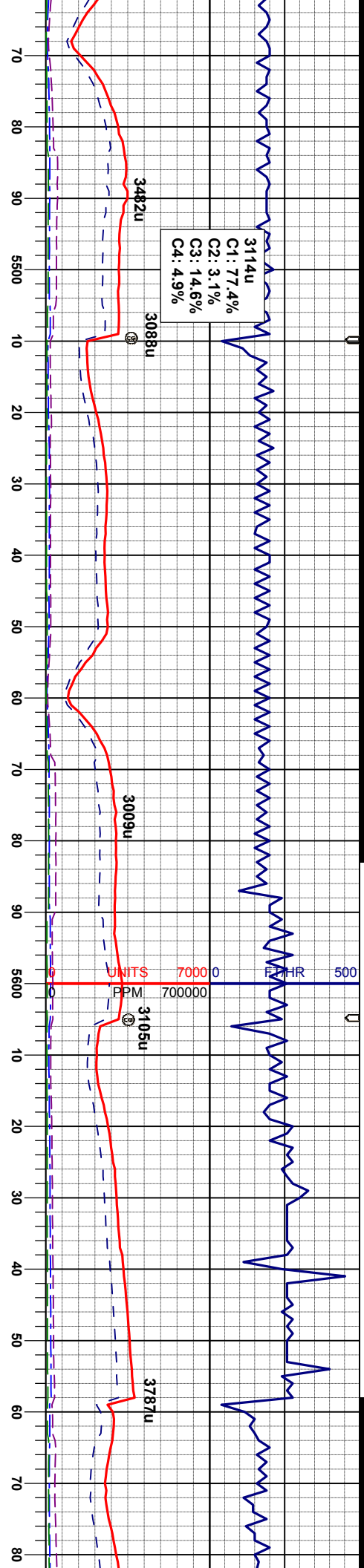
sft, SLTYSH: lly-gy, rr dkgv, sbblky-sbply, sft, gt-sdy tex, arg cnt, spar ip, tr pyr

sft, SLTYSH: lly-gy, rr dkgv, sbblky-sbply, sft, gt-sdy tex, arg cnt, spar ip, tr pyr

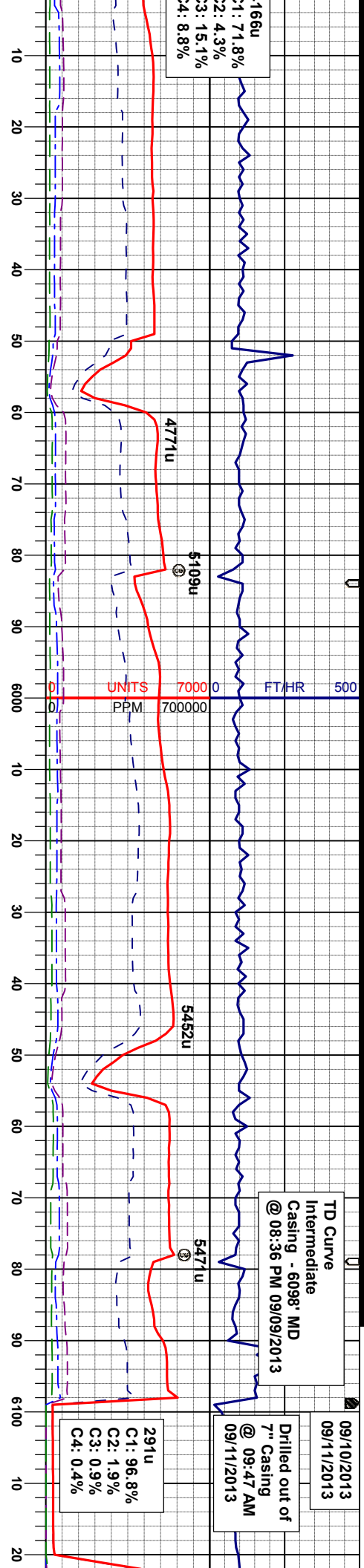
sft, SLTYSH: lly-gy, rr dkgv, sbblky-sbply, sft, gt-sdy tex, arg cnt, spar ip, tr pyr

sft, SLTYSH: lly-gy, rr dkgv, sbblky-sbply, sft, gt-sdy tex, arg cnt, spar ip, tr pyr









TD Curve  
Intermediate  
Casing - 6098' MD  
@ 08:36 PM 09/09/2013

09/10/2013  
09/11/2013  
Drilled out of  
7" Casing  
@ 09:47 AM  
09/11/2013

WT IN 10.50/ OUT 10.50  
VIS IN 45/ OUT 45

NIO B CHALK @  
5995' MD / 5693' TVD

MD 5933'  
INC 68.9°  
AZM 270.9°  
TVD 5676.25'

MD 6028'  
INC 79.3°  
AZM 273.5°  
TVD 5702.24'

WT IN 10.20/ OUT 10.00+  
VIS IN 36/ OUT 39

CHK: lgy-crm, sbblky, sft- firm, wxy tex, v  
calc  
MRL: dky-gybrn, sbblky-sbply, sft, gt tex,  
v calc

MRL: dky-gybrn, sbblky-sbply, sft, gt tex,  
v calc  
CHK: lgy-crm, sbblky, sft- firm, wxy tex, v  
calc

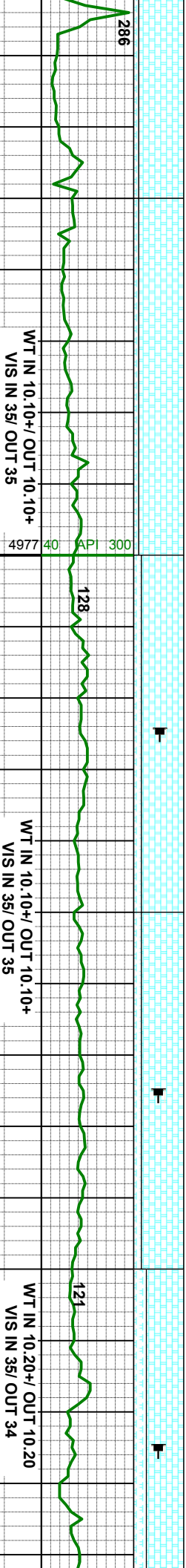
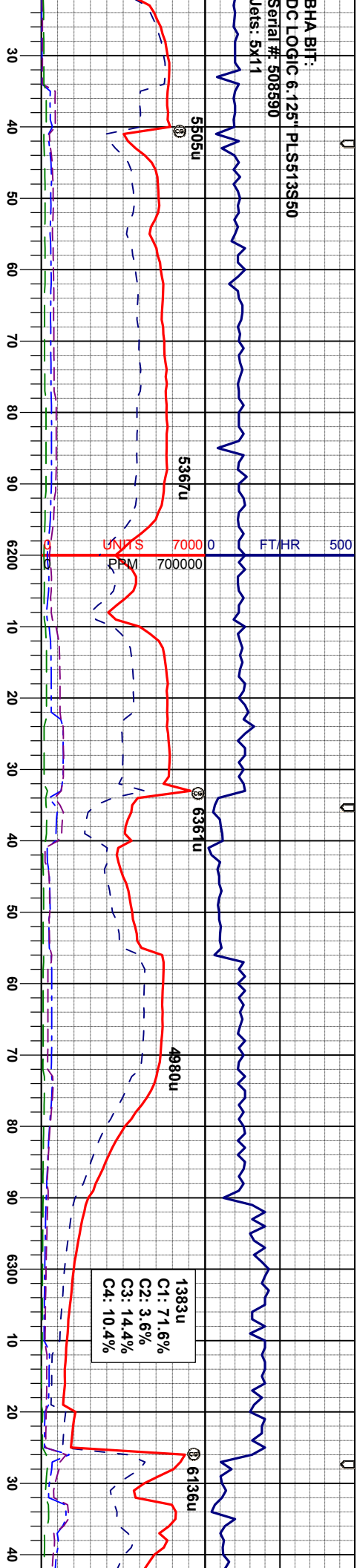
CHK: lgy-crm, sbblky, sft- firm, wxy tex, v  
calc  
MRL: dky-gybrn, sbblky-sbply, sft, gt tex,  
v calc

CHK: lgy-crm, sbblky, sft- firm, wxy tex, v  
calc  
MRL: dky-gybrn, sbblky-sbply, sft, gt tex,  
v calc

CHK: lgy-crm, sb  
calc  
MRL: dky-gybrn,  
rthy tex, v calc



BHA BIT:  
DC LOGIC 6:125" PLS513S50  
Serial #: 508590  
lets: 5x11



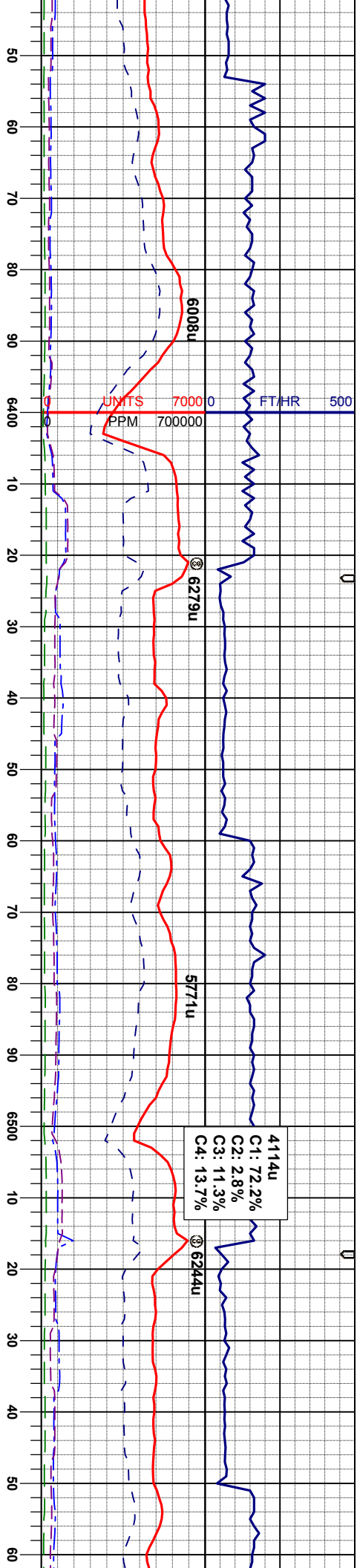
MD 6164'  
INC 87.1°  
AZM 274.6°  
TVD 5718.33'

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, mot-  
rthy tex, v calc

MD 6257'  
INC 89.1°  
AZM 273.2°  
TVD 5721.41'

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, mot-  
rthy tex, v calc

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, m  
rthy tex, v calc, calc incl



WT IN 10.20+ OUT 10.30  
VIS IN 34/ OUT 34

WT IN 10.20+ OUT 10.20+  
VIS IN 33/ OUT 33

MD 6352'  
INC 91.8°  
AZM 270.7°  
TVD 5720.67'

MD 6446'  
INC 91.2°  
AZM 269.3°  
TVD 5718.21'

MD 6541'  
INC 89.4°  
AZM 266.3°  
TVD 5717.71'

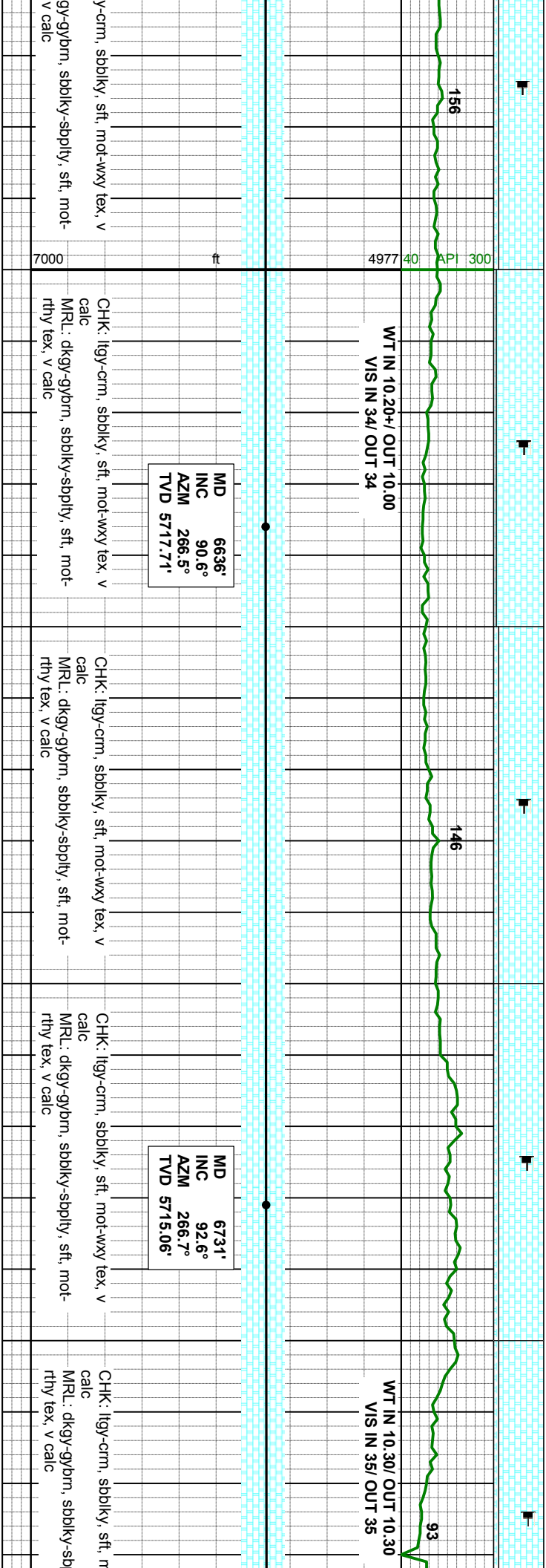
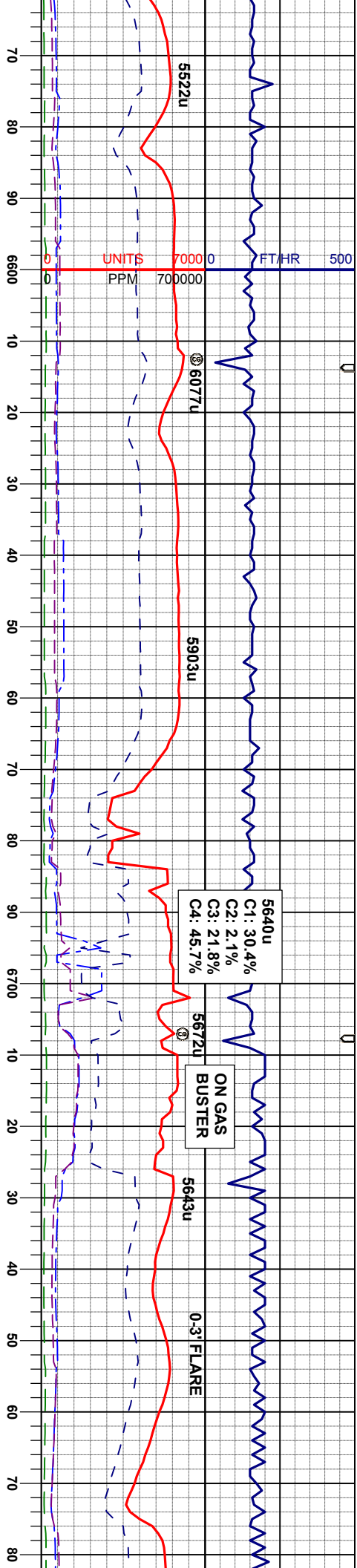
CHK: lgy-crm, sblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sblky-sply, sft, mot-  
rthy tex, v calc

CHK: lgy-crm, sblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sblky-sply, sft, mot-  
rthy tex, v calc

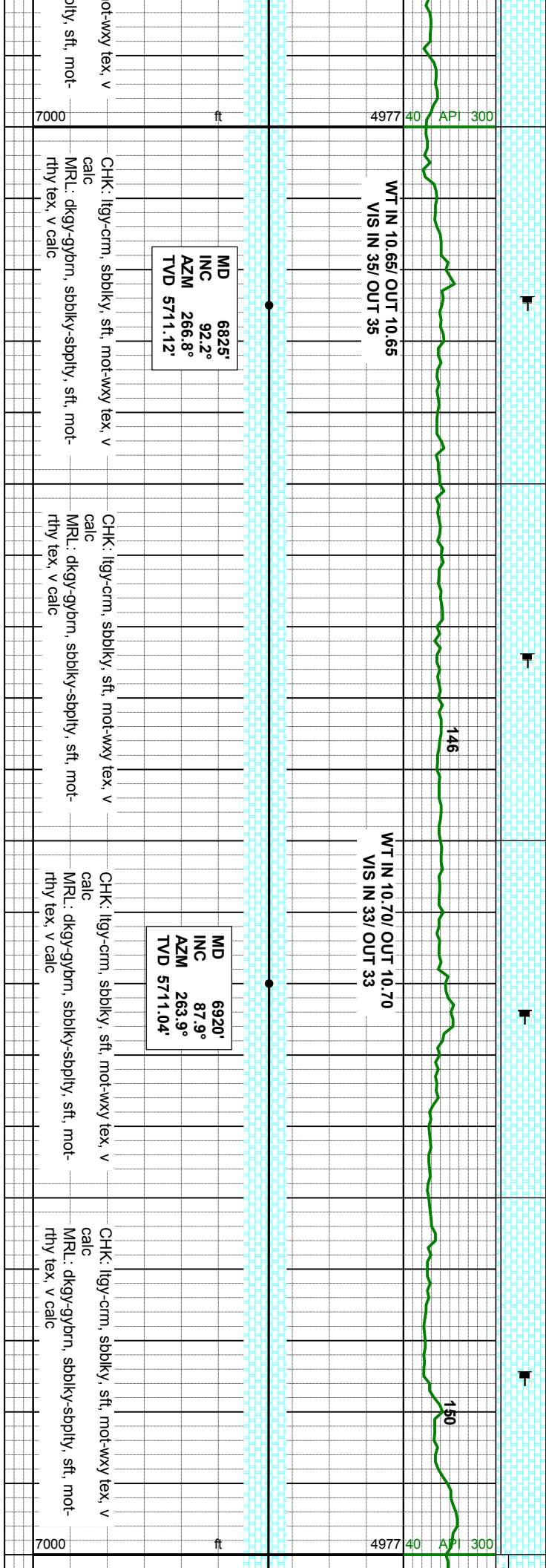
CHK: lgy-crm, sblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sblky-sply, sft, mot-  
rthy tex, v calc

CHK: lgy-crm, sblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sblky-sply, sft, mot-  
rthy tex, v calc

CHK: lgy-crm, sblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sblky-sply, sft, mot-  
rthy tex, v calc

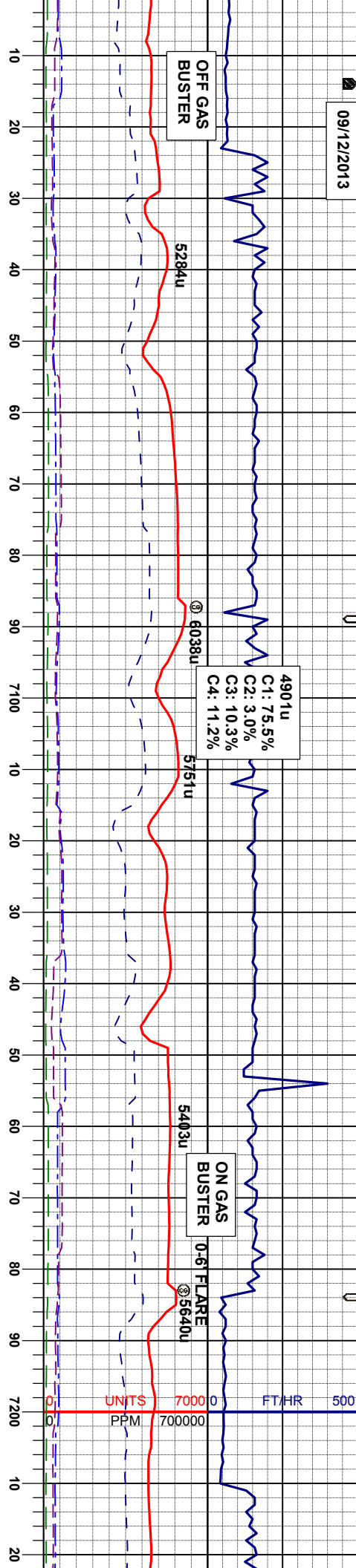








09/12/2013



WT IN 10.60/ OUT 10.60  
VIS IN 35/ OUT 35

119

WT IN 10.70/ OUT 10.70  
VIS IN 34/ OUT 34

119

4977 40 API 300

MD 70.15'  
INC 87.4°  
AZM 266.1°  
TVD 5714.93'

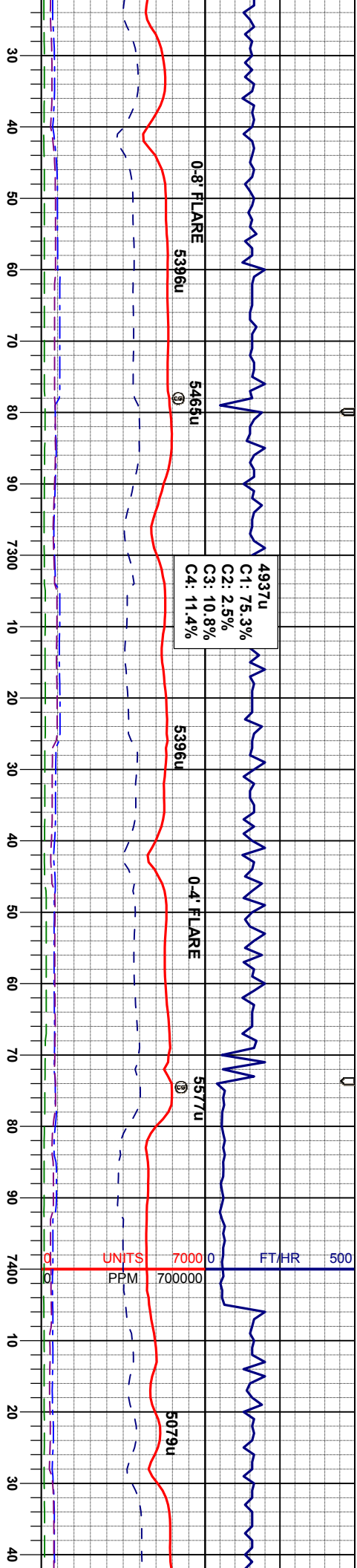
CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dkgy-gybrn, sbblky-sbpity, sft, mot-  
rthy tex, v calc

MD 71.10'  
INC 89.3°  
AZM 266.8°  
TVD 5717.67'

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dkgy-gybrn, sbblky-sbpity, sft, mot-  
rthy tex, v calc

MD 72.04'  
INC 89.5°  
AZM 266.8°  
TVD 5718.65'

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dkgy-gybrn, sbblky-sbpity, sft, mot-  
rthy tex, v calc



WT IN 10.70/ OUT 10.70  
VIS IN 36/ OUT 36

MD	7299'
INC	91.7°
AZM	269.1°
TVD	5717.66'

CHK: lgy-crm, sbply, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sbply-sbply, sft, mot-  
rthy tex, v calc

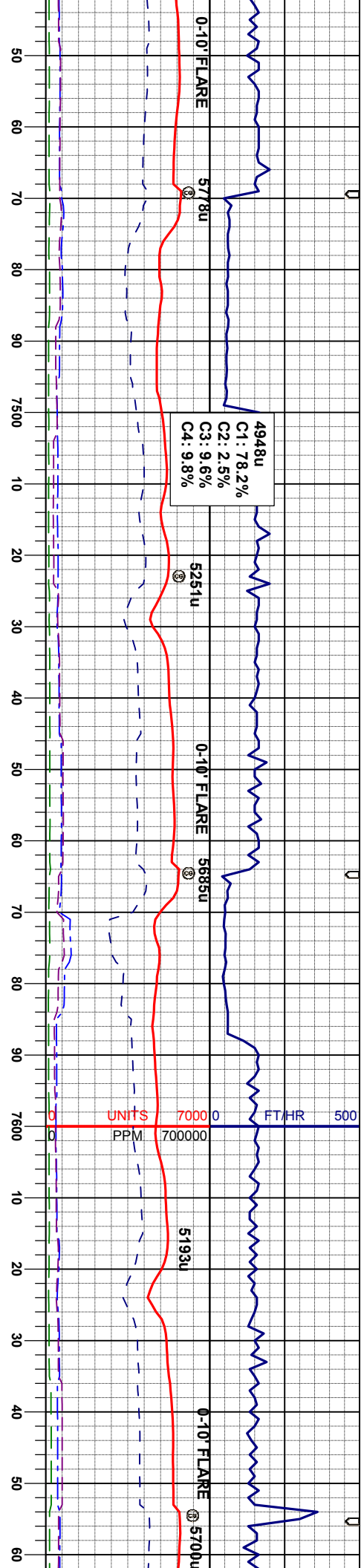
CHK: lgy-crm, sbply, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sbply-sbply, sft, mot-  
rthy tex, v calc

WT IN 10.75/ OUT 10.75  
VIS IN 36/ OUT 36

MD	7394'
INC	91.0°
AZM	270.5°
TVD	5715.42'

CHK: lgy-crm, sbply, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sbply-sbply, sft, mot-  
rthy tex, v calc

CHK: lgy-crm, sbply, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sbply-sbply, sft, m-  
rthy tex, v calc



MD 7489'  
INC 89.8°  
AZM 270.7°  
TVD 5714.76'

CHK: lly-crm, sblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sblky-sply, sft, mot-  
rthy tex, v calc

MD 7584'  
INC 88.7°  
AZM 269.1°  
TVD 5716.00'

CHK: lly-crm, sblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sblky-sply, sft, mot-  
rthy tex, v calc

WT IN 10.70/ OUT 10.60  
VIS IN 36/ OUT 37  
40 API 300  
4977

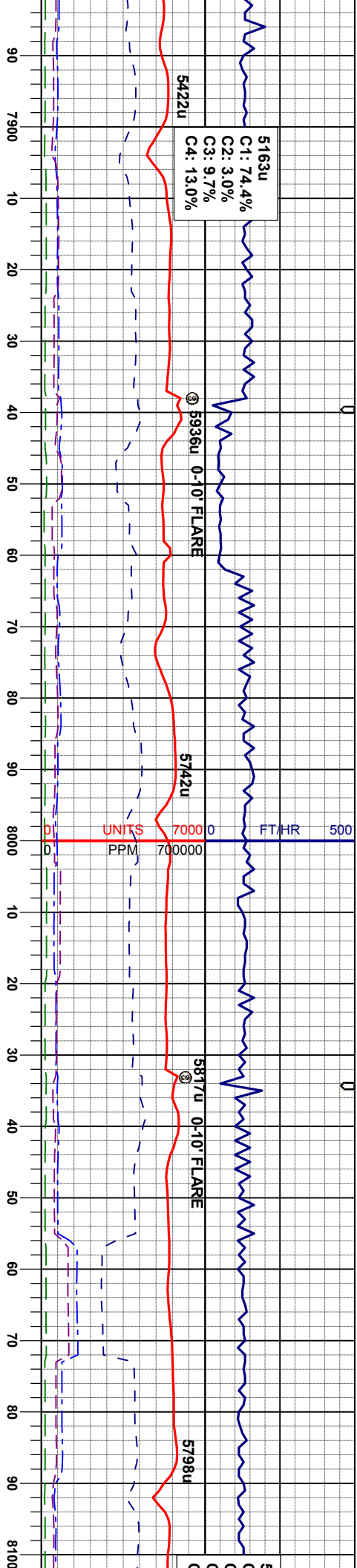
CHK: lly-crm, sblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sblky-sply, sft, mot-  
rthy tex, v calc

CHK: lly-crm, sblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sblky-sply, sft, mot-  
rthy tex, v calc







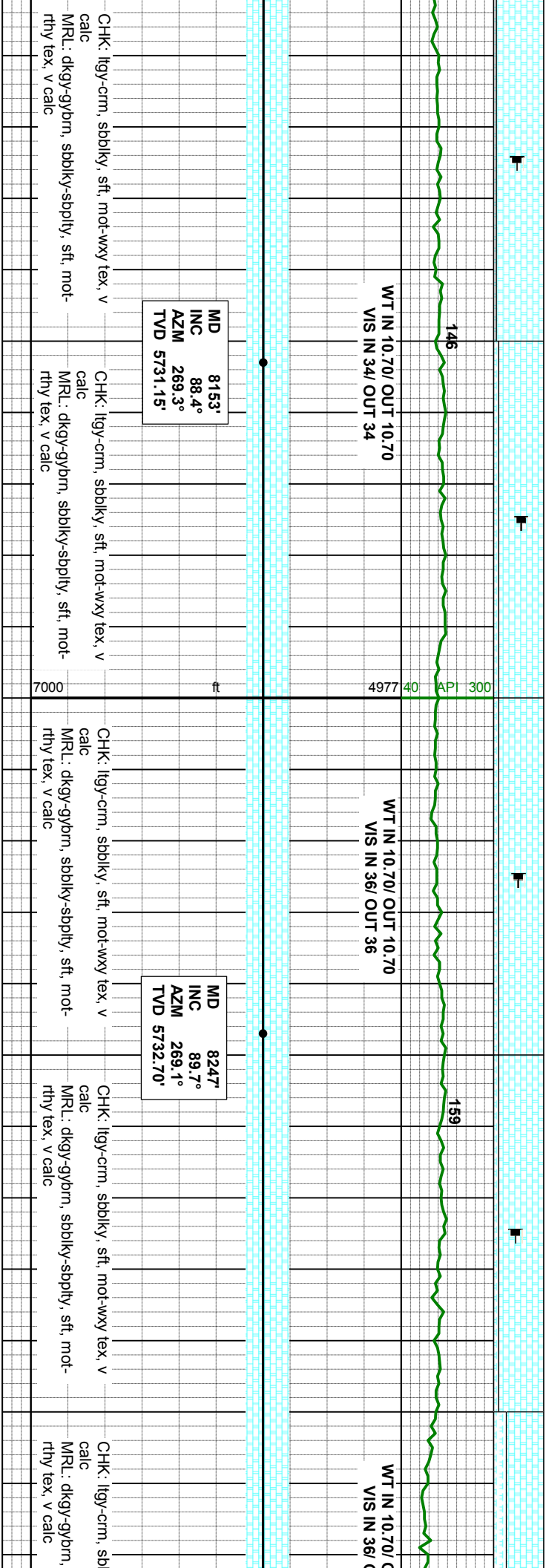
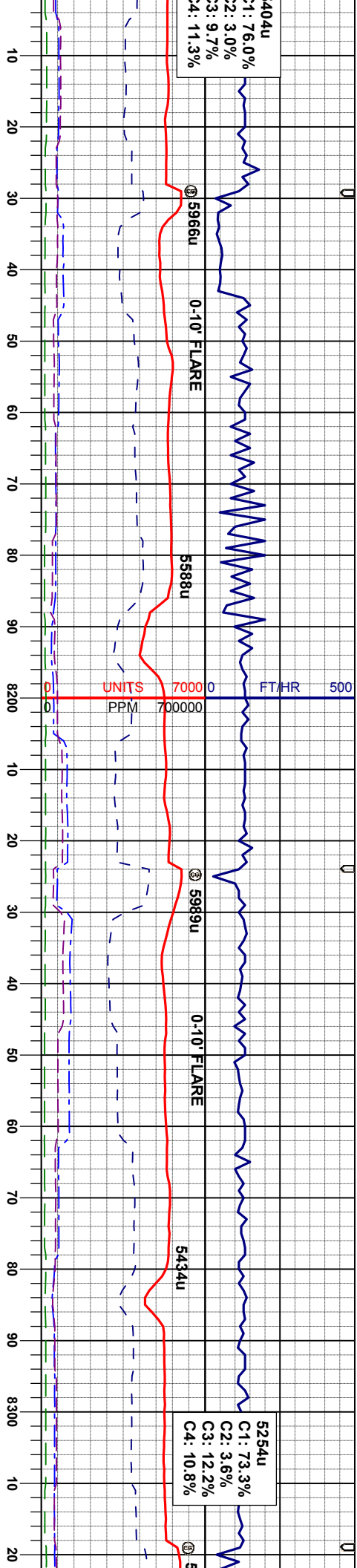


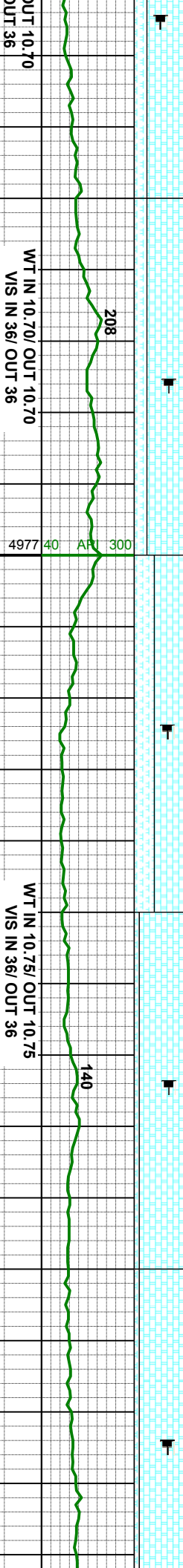
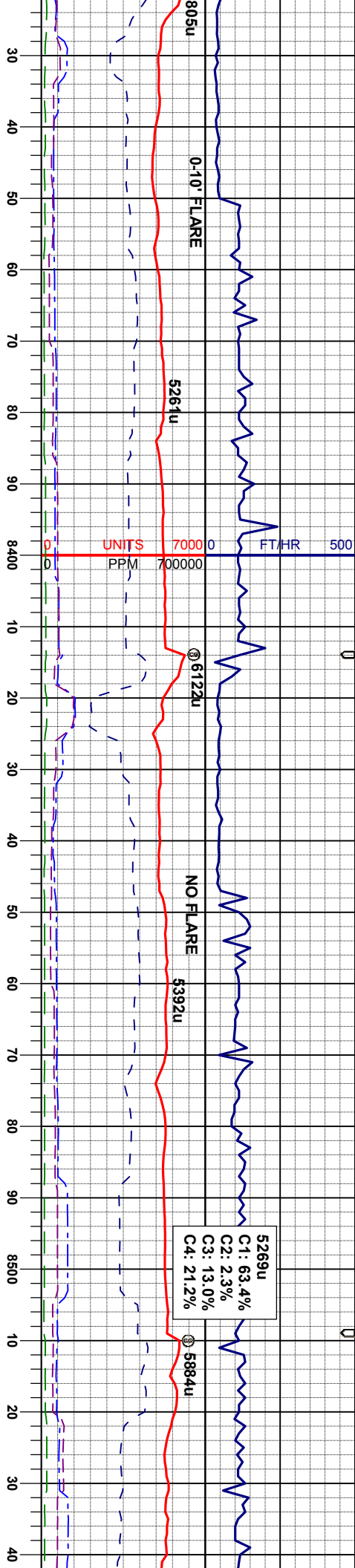
MD 7963'  
INC 87.3°  
AZM 269.5°  
TVD 5724.10'

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, mot-  
rthy tex, v calc

MD 8058'  
INC 87.9°  
AZM 269.3°  
TVD 5728.08'

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, mot-  
rthy tex, v calc





MD 8342'  
INC 90.1°  
AZM 269.5°  
TVD 5732.87'

CHK: lgy-crm, sbdky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sbdky-sbply, sft, mot-  
rthy tex, v calc

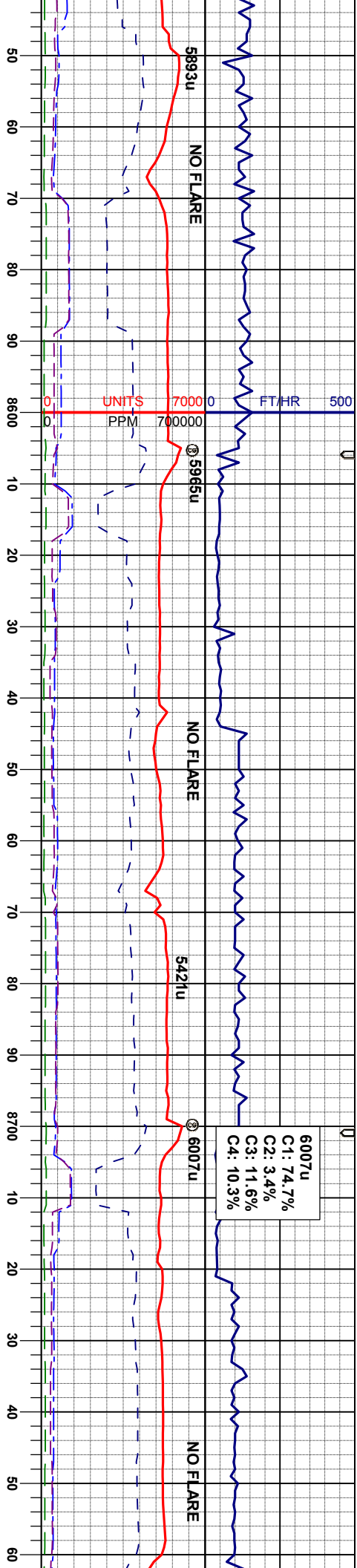
MD 8437'  
INC 88.6°  
AZM 269.0°  
TVD 5733.95'

CHK: lgy-crm, sbdky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sbdky-sbply, sft, mot-  
rthy tex, v calc

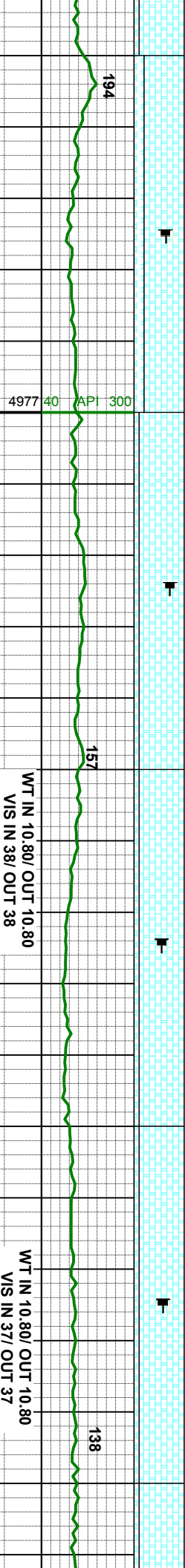
MD 8532'  
INC 90.5°  
AZM 268.8°  
TVD 5734.69'

CHK: lgy-crm, sbdky, sft, mot-wxy tex  
calc  
MRL: dky-gybrn, sbdky-sbply, sft, mot-  
rthy tex, v calc





6007u  
C1: 74.7%  
C2: 3.4%  
C3: 11.6%  
C4: 10.3%



WT IN 10.80/ OUT 10.80  
VIS IN 38/ OUT 38

WT IN 10.80/ OUT 10.80  
VIS IN 37/ OUT 37

MD 8627'  
INC 89.4°  
AZM 269.0°  
TVD 5734.78'

MD 8722'  
INC 89.0°  
AZM 268.6°  
TVD 5736.10'

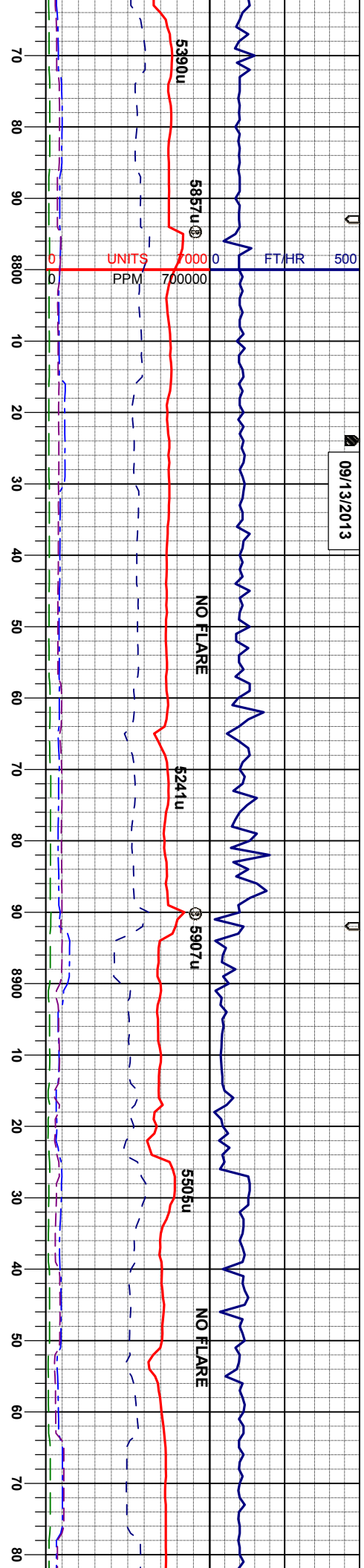
CHK: lly-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sbblky-sbply, sft, mot-  
rthy tex, v calc

CHK: lly-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sbblky-sbply, sft, mot-  
rthy tex, v calc

CHK: lly-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gybrn, sbblky-sbply, sft, mot-  
rthy tex, v calc



09/13/2013



WT IN 10.80/ OUT 10.80  
VIS IN 38/ OUT 38

FAULT:  
8839' MD  
5736' TVD  
12' THROW

WT IN 10.85/ OUT 10.85  
VIS IN 38/ OUT 38

MD 8817'  
INC 91.0°  
AZM 269.3°  
TVD 5736.10'

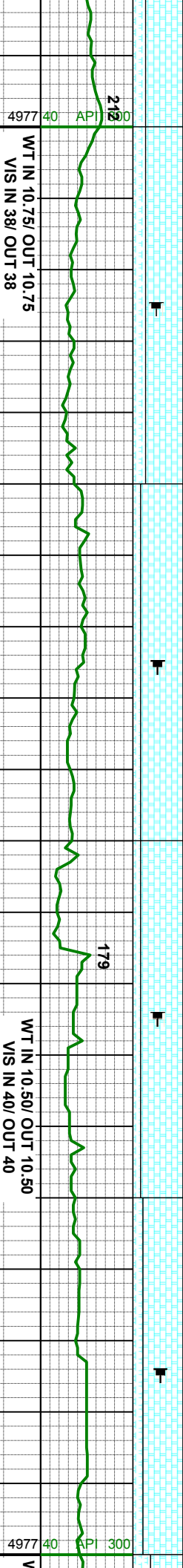
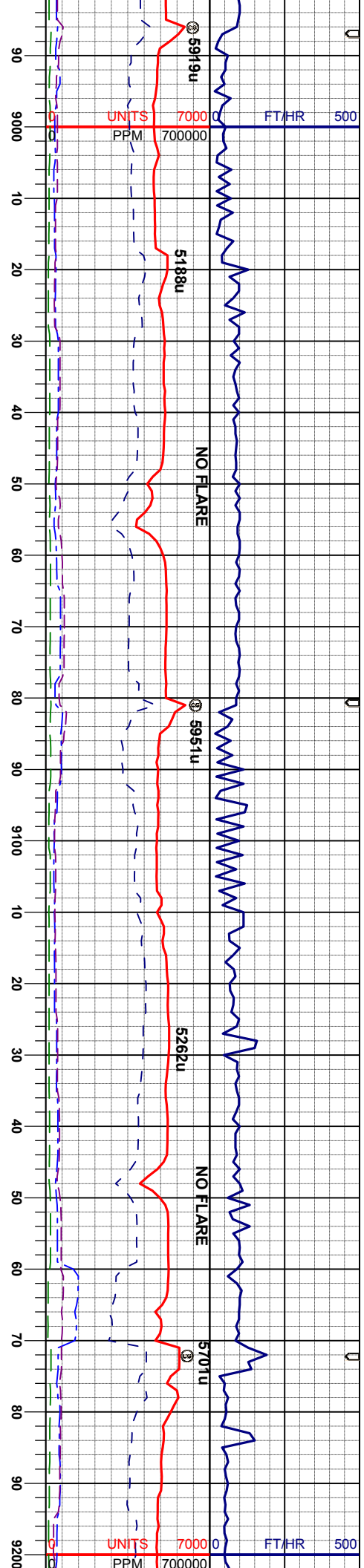
MD 8911'  
INC 90.7°  
AZM 269.5°  
TVD 5734.71'

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, mot-  
rthy tex, v calc

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, mot-  
rthy tex, v calc

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, mot-  
rthy tex, v calc

gy-gy/brn, sbblky-sbply, sft, mot-  
v calc



MD 9006'  
INC 89.3°  
AZM 269.7°  
TVD 5734.71'

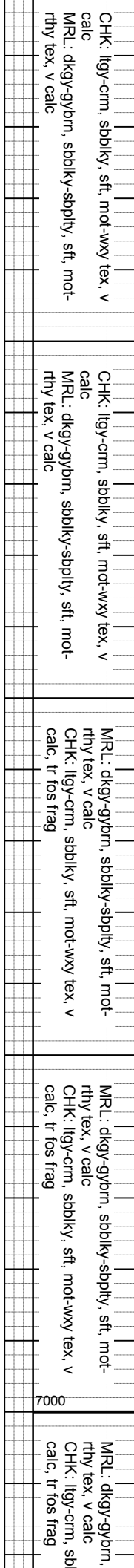
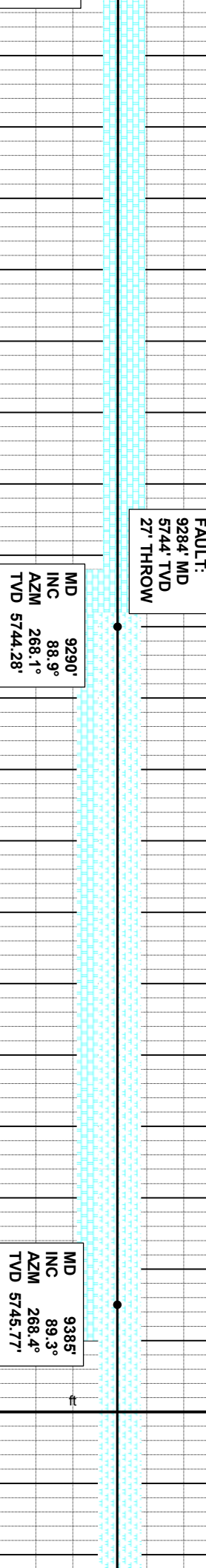
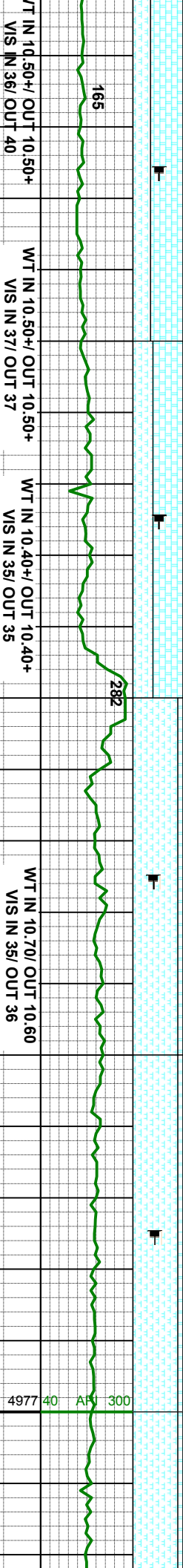
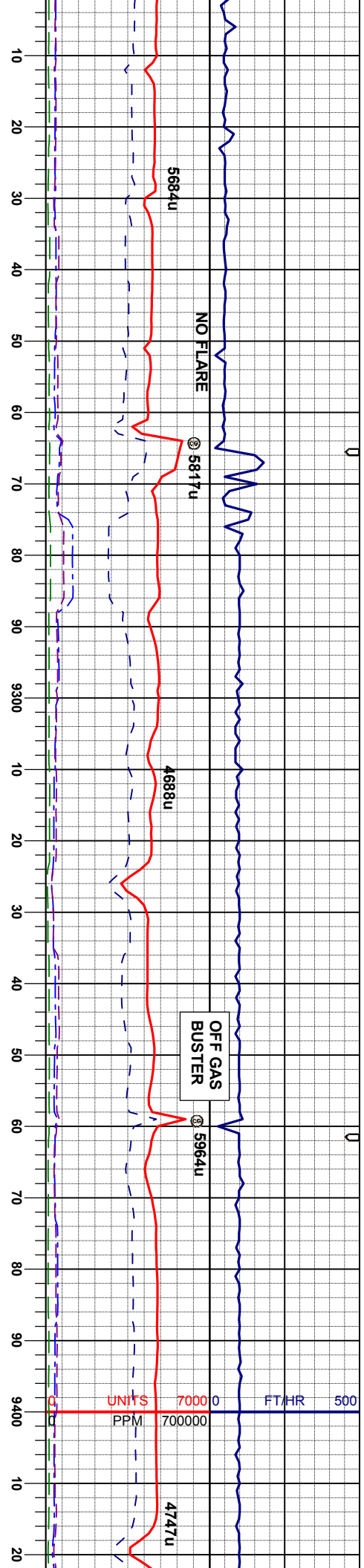
CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, mot-  
rthy tex, v calc

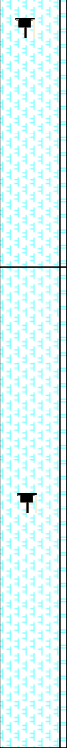
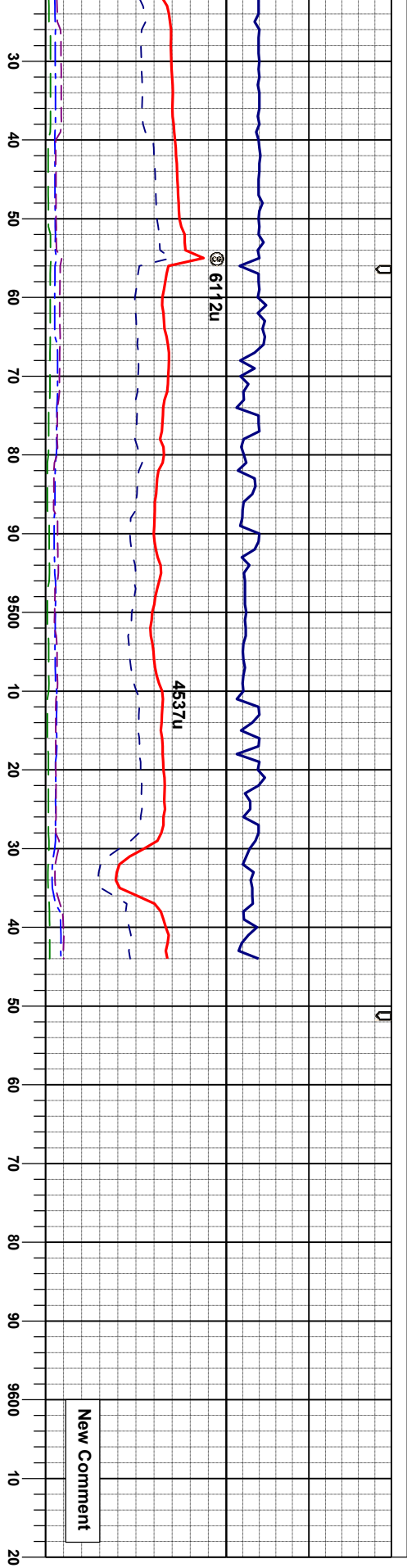
MD 9101'  
INC 87.5°  
AZM 269.7°  
TVD 5737.36'

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, mot-  
rthy tex, v calc

MD 9195'  
INC 87.6°  
AZM 269.5°  
TVD 5741.38'

CHK: lgy-crm, sbblky, sft, mot-wxy tex, v  
calc  
MRL: dky-gy/brn, sbblky-sbply, sft, mot-  
rthy tex, v calc





WT IN 10.60+ OUT 10.70+  
VIS IN 36/ OUT 35

MD	9480'
INC	90.4°
AZM	268.6°
TVD	5746.02'

sbblky-sbply, sft, mot-  
rthy tex, v calc  
CHK: lly-crm, sbblky, sft, mot-wxy tex, v  
calc, tr fos frag