



The Well Watchers

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

Well Name: WICKED WITCH #1
Location: Section 6 - Township 20 South - Range 23 West
Licence Number: 15 - 135 - 25,693 - 00.00 Region: Ness County, Kansas
Spud Date: 12 November 2013 Drilling Completed: 20 November 2013
Surface Coordinates: 2,310' FSL & 1,650' FWL
(NW NE SW)

Bottom Hole
Coordinates:
Ground Elevation (ft): 2,309' K.B. Elevation (ft): 2,314'
Logged Interval (ft): 3,600' To: 4,535' Total Depth (ft): 4,535'
Formation: Oread -----> Mississippi (Osage)
Type of Drilling Fluid: Chemical; Low Solids (dispersed) --> Polymer Compliment

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

OPERATOR

Company: D & J Oil Company, Inc.
Address: 4720 West Garriott
Enid, Oklahoma 73703
(580) 242-3636

POC Geologist:
Craig Roberts

GEOLOGIST

Name: Curtis Covey
Company: COVEY - The Well Watchers
Address: 6548 Bedford Circle
Derby, Kansas 67037
Office: (316) 776 - 0367 Cell: (316) 217-4679

KB: 2,314'

FORMATION TOPS

GL: 2,309'

Formation	Rotary Sample Depth (Datum)	E-log Depth (Datum)
AnHydrite	1,578' (+736')	1,575' (+739')
B / AnHydrite	1,626' (+688')	1,615' (+699')
Heebner Shale	3,752' (-1,438')	3,752' (-1,438')
Lanisng	3,798' (-1,484')	3,800' (-1,486')
B / KC	4,148' (-1,834')	4,151' (-1,837')
Pawnee Ls	4,236' (-1,922')	4,238' (-1,924')
Ft. Scott Ls	4,315' (-2,001')	4,316' (-2,002')
Cherokee Shale	4,342' (-2,028')	4,340' (-2,026')
Conglomerate	4,381' (-2,067')	4,386' (-2,072')
Erosional Mississippi	4,410' (-2,096')	4,420' (-2,106')
Lithologic Mississippi	4,435' (-2,124')	4,432' (-2,118')

RTD: 4,535' LTD: 4,547' ATD: 4,547' E-log is 1' high - 2' low to rotary sample depth.

E - Loggers:
Nabors (Superior) - Hays, Kansas

2013

DAILY DRILLING STATUS --- NOVEMBER

2013

12-1/4" Hole

7-7/8" Hole

12 Nov --- Spud @ 4pm. Drill to 218'.
 Ran 8.5/8" (24#) casing.
 Set @ 217'. 160sx Class A.
 [Consolidated]
 Cement did circulate.
 Plug Down @ 10pm.
 WOC.

13 Nov --- Under surface casing @ 6am.
 7am @ 275'.
 14 --- 7am @ 1,970'.
 15 --- 7am @ 2,770'.
 16 --- Displace Mud @ 3,433'.
 7am @ 3,580'.
 17 --- 7am @ 3,935'.
 18 --- 7am @ 4,235'.
 Start and

19 Nov --- Finish DST #1: Ft. Scott
 (4,300' - 4,338').
 Resumed Drilling @ 6:30am.
 7am @ 4,345'.
 Start and
 20 --- Finish DST #2: Miss
 (4,360' - 4,453').
 Resumed Drilling @ 6:50am.
 7am @ 4,455'.
 RTD (4,535') @ 10:45am.
 E-LOG. [Nabors].

DST #1 - FT. SCOTT LIMESTONE

Rotary Depth: 4,300' - 4,338'
 Logger' Depth: 4,302' - 4,340'

Recovery: 90' Mud

Total Fluid: 90'

Recovery Water: (5,000 ppm)
 System Water: NA

Recovery Water (Engineer): NA

Reported Rw = NA

Tool Sample: NA

SuperiorTesting - Great Bend, KS.

IFP: 48# - 68# / 30"

ISIP: 1,0237# / 45"

FFP: 70# - 89# / 60"

FSIP: 980# / 60"

117 deg F

MH: 2,167# - 2,118#

IF: Weak Surface Blow built to 2.5 inches.

ISI: No Blow Back.

FFI: Weak Surface Blow built to 3 inches

FSI: No Blow Back.

DST #2 MISS

Rotary Depth: 4,360' - 4,453'
 Logger' Depth: 4,362' - 4,455'

Recovery: 203' Very Slightly OIL Spotted Mud

Total Fluid: 203'

Recovery Water: (5,000 ppm)
 System Water: NA

Recovery Water (Engineer): NA

Reported Rw = NA

Tool Sample: NA

SuperiorTesting - Great Bend, KS.

IFP: 82# - 150# / 30"

ISIP: 1,055# / 45"

FFP: 130# - 175# / 60"

FSIP: 907# / 60"

118 deg F

MH: 2,258# - 2,142#

IF: Weak Surface Blow built to 7.5 inches.

ISI: No Blow Back.

FFI: Weak Surface Blow built to 7 inches

FSI: No Blow Back.

HOLE DEVIATION (218' - 4,535")

DEPTH / TVD	---	INCLINATION	AZIMUTH	NORTH	SOUTH	EAST	WEST	DOGLEG deg/100'
218' /	---	0.25 (Surface)						
1,970' /	---	0.75						
4,338' /	---	0.25 (DST #1)						
4,535' /	---	0.25 (RTD)						

STRAP @ 4,338' (DST #1)
 Strap: 4,314.04'
 Board: 4,313.52'
 Diff: 0.52'

CONTRACTOR

Murfin Drilling --- Rig #16

250 North Water, Suite 300
Wichita, Kansas 67202
Office: (316) 267-3241

Rig 16 - (785) 443-1677

Toolpusher: Andy Dinkel (785) 443-2377

Pump: EMSCO D-375
6" x 14" @ 60 SPM.
800 psi @ Standpipe.

After Mudup / Main Hole:
WOB 32M @ 80 RPM.

Drill Collars: 6" x 2-3/8" --- 502' (81#/ft)
Collar Weight in Air: 40,662#
Collar Weight in MUD: 35,335#
(@ 8.6 ppg / Buoyancy Factor 0.869)
Design Factor: 15%, therefore:
available WOB is 30,035#
Drill Pipe: 4-1/2"XH. (16#/ft - used)

BIT RECORD

DATE	SIZE	TYPE	JET SIZE	DEPTH IN / OUT	CUM. FT.	HOURS	Ft/Hr ROP
12 Nov 2013	12-1/4"	VAREL L-117	16 - 18 - 16	0' / 302'	302'	29.75	10.2
13 Nov 2013	7-7/8"	HUGHES GX-20C	16 - 18 - 16	218' / 1,970'	1,723'	69.00	25.0
14 Nov 2013	7-7/8"	HUGHES GX-20C	16 - 18 - 16	1,970' / 3,743'	1,773'	45.00	39.4
16 Nov 2013	7-7/8"	HUGHES GX-20C	16 - 18 - 16	3,743' / 4,535'	792'	40.75	19.4

ROCK TYPES

POROSITY

	Earthy
	Fenest
	Fracture
	Inter
	Moldic
	Organic
	Pinpoint
	Vuggy

LITHOLOGY

	Anhy
	Bent
	Brec
	Cht
	Clyst
	Coal
	Granite wash
	Congl
	Dol lmst
	Silty dol
	Calc dol

	Dol 2
	Dol
	Gyp
	Igne
	Argil lmst
	Lmst 2
	Lmst
	Meta
	Mrlst
	Salt
	Shale 3
	Shale 3
	Shcol
	Shgy
	Sltst
	Ss
	Till
	Ss 2

MINERAL

	Mica
--	------



Anhy

Arggrn

Arg

Bent

Bit

Brecfrag

Calc

Carb

Chtdk

Chtlt

Dol

Feldspar

Ferrpel

Ferr

Glau

Gyp

Hvymin

Kaol

Marl

Minxl

Nodule

Phos



Pyr

Salt

Sandy

Silt

Sil

Sulphur

Tuff

Copper

Ooliticastic

Ooloid

Oolite

Sucrosic

Dark specks

Calc dol

Silty dol

Anhy

Arg

Bent

Coal

Dol

Gyp

Dol ls

Ls

Mrst

Calc dol

Sltstrg

Ssstrg

Chalk

New symbol

SHOW



Oil

Spotted

Ques

Dead

Gas

Oil/gas

Bed contact

STRINGER



Calc dol

Silty dol

Anhy

Arg

Bent

Coal

Dol

ACCESSORIES

FOSSIL

Algae
Amph
Belm
Bioclst
Brach
Bryozoa
Cephal
Coral
Spore
Crin
Echin
Fish
Foram
Fossil
Gastro

Oolite
Ostra
Pelec
Pellet
Pisolite
Plant
Strom

MINERAL

Mica
Anhy
Arggrn
Arg
Bent
Bit
Brecfrag

Calc
Carb
Chtdk
Chtlit
Dol
Feldspar
Ferrpel
Ferr
Glau
Gyp
Hvymin
Kaol
Marl
Minxl
Nodule
Phos

Pyr
Salt
Sandy
Silt
Sil
Sulphur
Tuff
Copper
Ooliticastic
Ooloid
Oolite
Sucrosic
Dark specks

STRINGER

Calc dol

Silty dol
Anhy
Arg
Bent
Coal
Dol
Gyp
Dol ls
Ls
Mrst
Calc dol
Sltstrg
Ssstrg
Chalk
New symbol

OTHER SYMBOLS

ACTIVITY

Lost circluation
Circulate for same



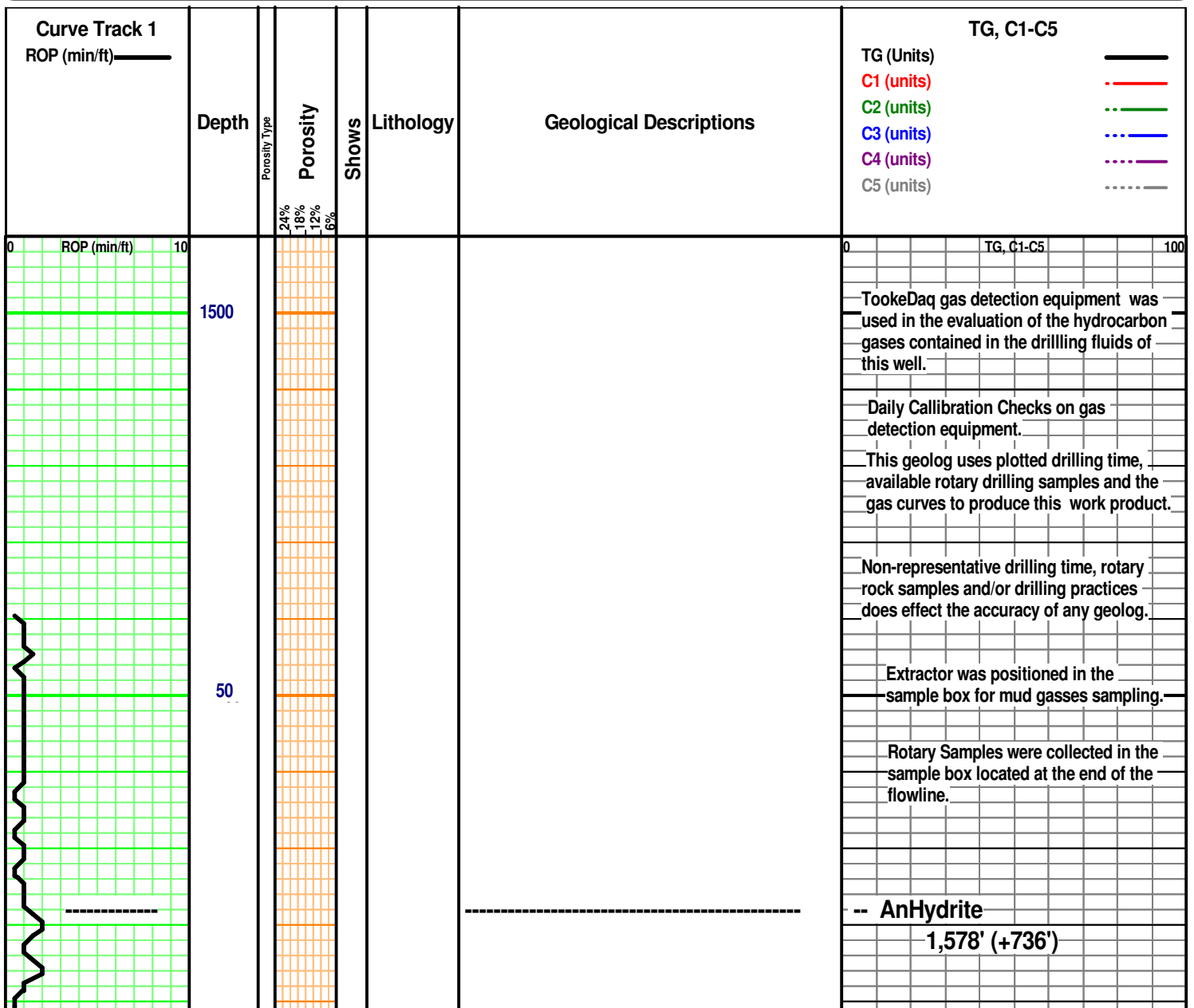
Circulate for same

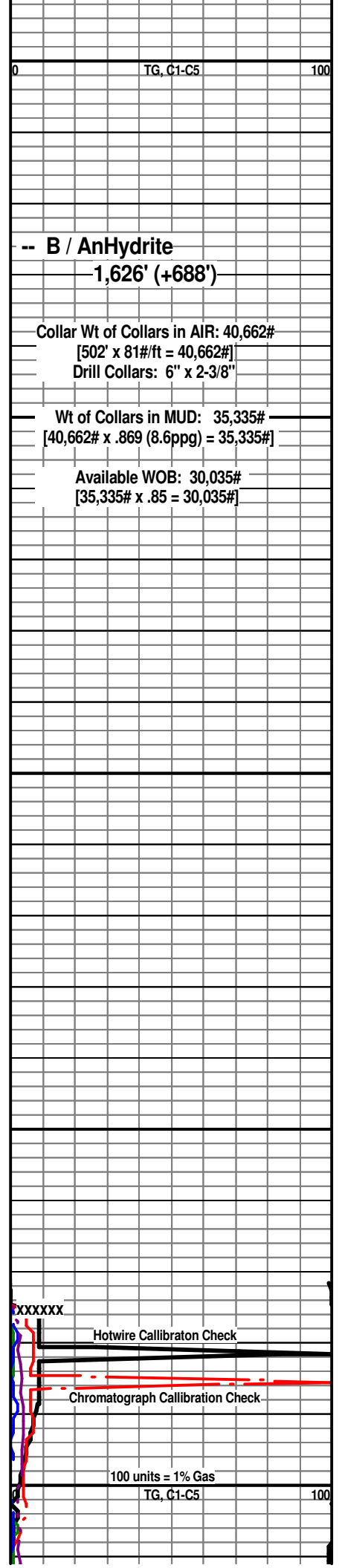
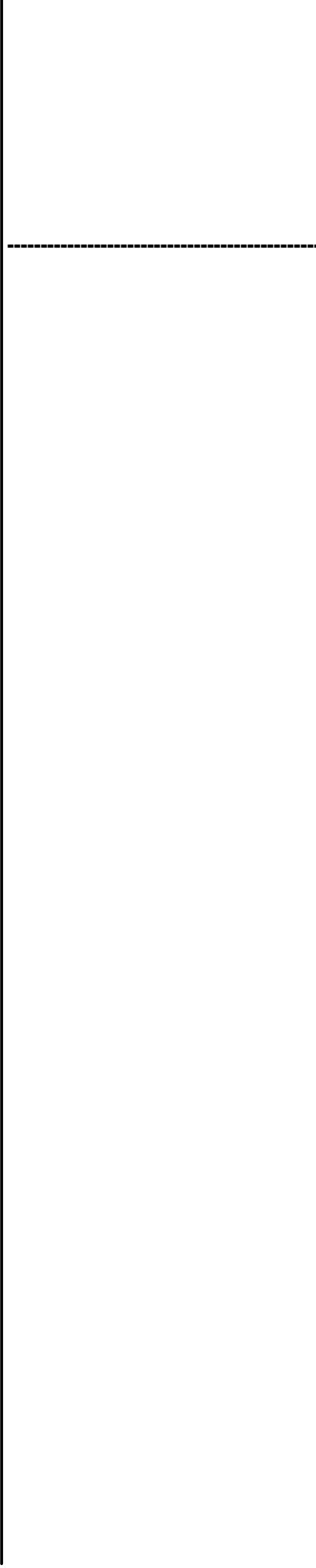
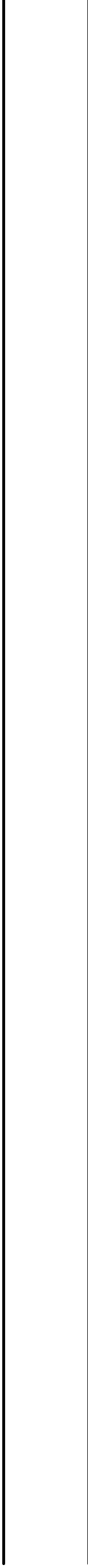
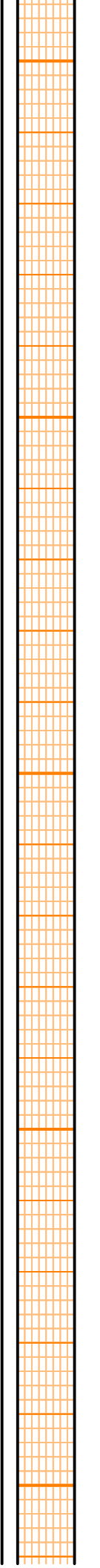
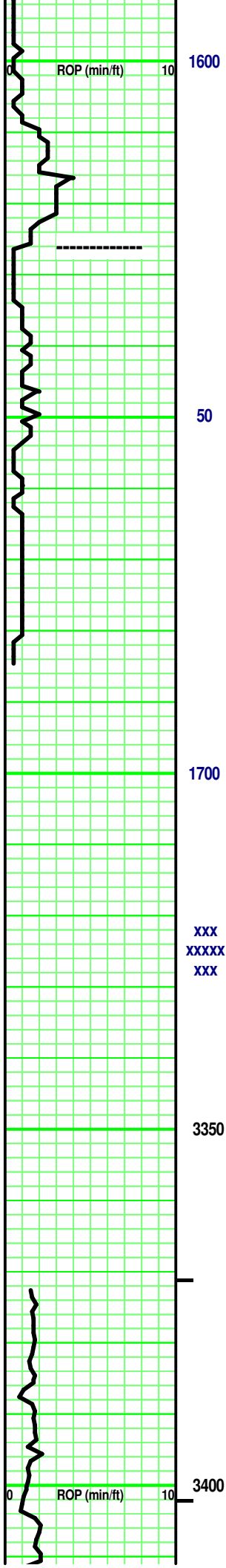
Rtd
Trip

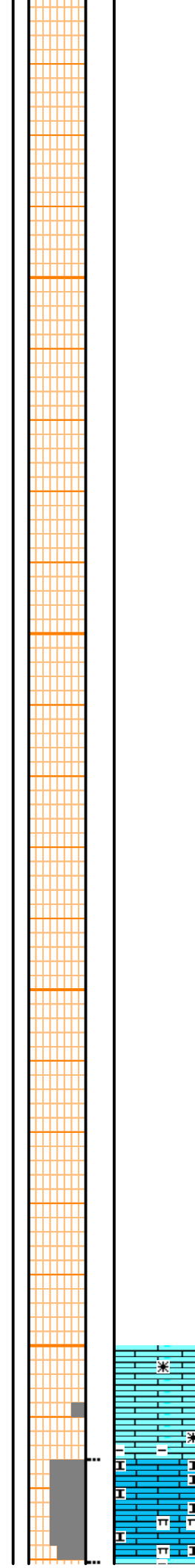
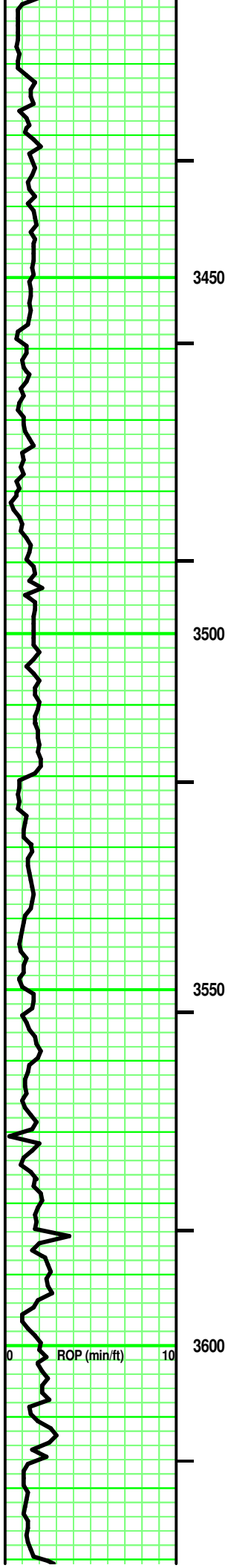
Connection
Rft



Sidewall

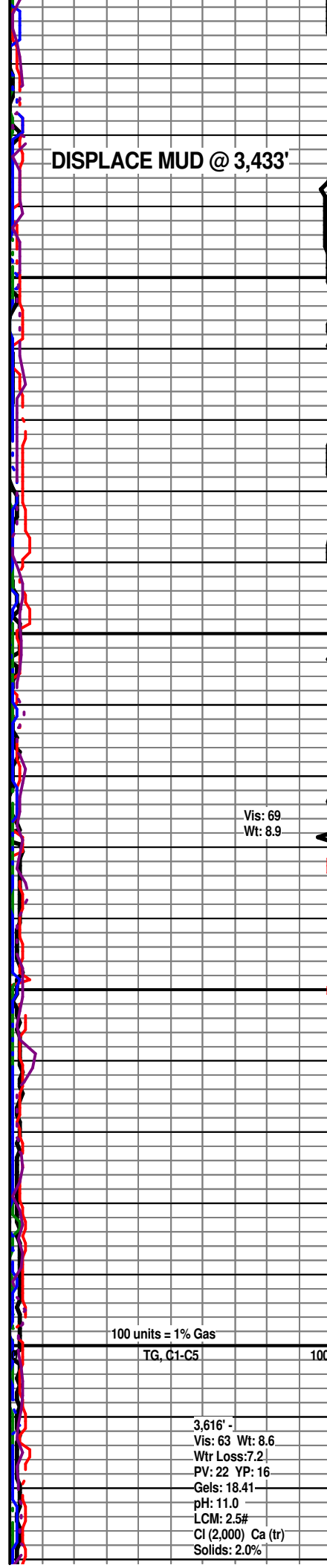


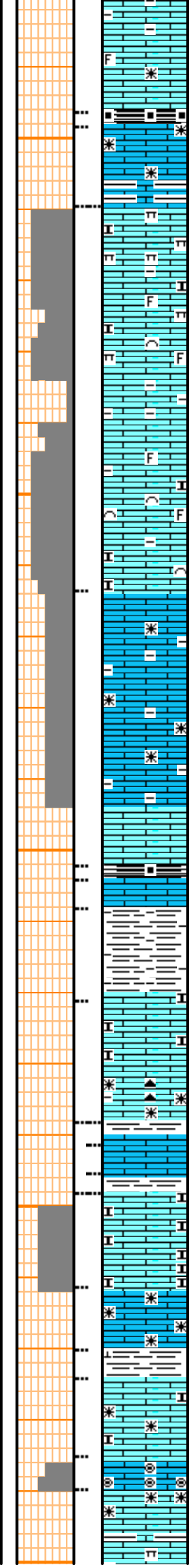
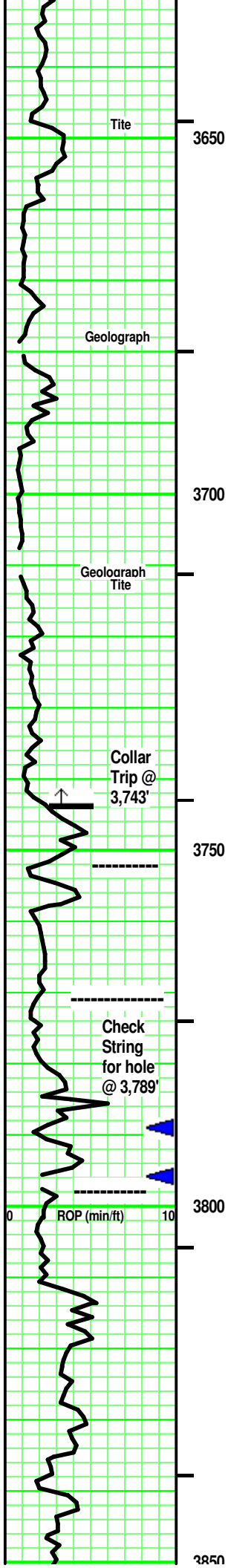




LS - Lt/ tr Med Tan. Sing. tr VF-/ mostly XF-xln. xln por. mostly No/ tr Re-xln. No/ tr argil in part. No/ tr vis por.

LS - Tans. Sing/ tr Mot. XF-/Micro-xln. xln por. subchalky to marly in part. Friable. tr vis por.





LS - Lt & Med Tan/ tr Off White. Sing. tr VF-/ mostly
XF-xln. xln por. mostly No/ tr Re-xln. No/ tr argil
in part. tr fossil frag. No/ tr vis por.

SH - Black. Sing. carb. soft.

LS - Pale Lt Gray/ mostly Med Tan to Grayish Tan.
tr XF-/ mostly Micro-xln. xln por. tr Re-xln. some
argil in part.

Interbedded LS

LS - Tans. Mot/ Mixed. XF-/ tr XF-xln. xln por. No/
rare fossil frag. subchalky to marly. Thin, flatten
brown organics. Friable. tr vis por.

LS - Lt Grayish Tan/ Med Tan. Sing/ some Mot.
Xf-/ Micro-xln. xln por. No/ tr argil. partly Firm. No/
tr vis por.

LS - Tans/ Grayish Off White. Sing/ Mixed. XF-/ tr
Micro-xln. xln por. No/ rare Re-xln. No/ rare argil
in part. partly Firm. No/ tr vis por.

LS - Lt Grayish Tan. Sing. XF-/Micro-xln. xln por. mostly No/ tr
Re-xln.

----- **HEEBNER SH 3,752' (-1,438')**

SH - Black. Sing. carb. tr plattv.
LS - Pale Grayish Tan. Sing. Micro-xln. Firm. No/ tr vis por.

SH - Med Gray/ tr Greenish Gray. Sing. partly Firm.

----- **TORONTO LS 3,771' (-1,457')**

LS - Tans/ some Off White. Mot/ Mixed. XF-/ some Micro-xln at
depth. No/ rare Re-xln at depth. [few pcs: CHERT -
White/Gray/ tr Tan. Opaque. hi fossil frags. No tripolitic.]
subchalky in part. tr/ some fair vis por.

Interbedded SH & LS

SH - Lt/ Med Gray, Lt Olive Gray. Sing. tr blocky.
LS - Lt Tan. Sing. XF-xln. xln por. partly Firm. No/ tr vis por.

----- **LANSING 3,798' (-1,484')**

LS - Lt Tan, Tannish Off White. Sing. Xr-xln. xln por.
subchalky. partly Friable. No. tr vis por.

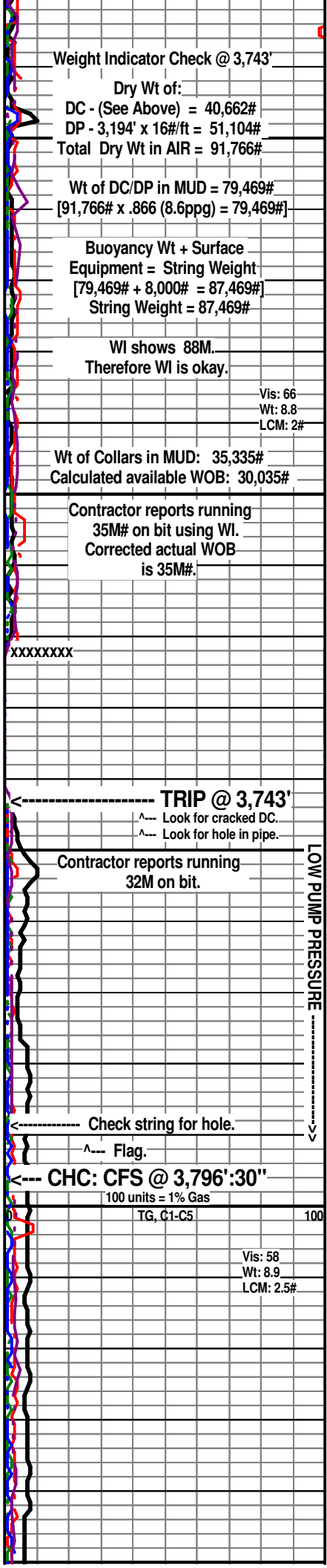
LS (1) - Lt/ Med Tan. Sing. Micro-/ rare Crypto-xln. xln por. No/
tr Re-xln. Firm. No/ tr vis por.

SH - Lt/ Med Gray. Sing. rare calc.

LS - similar to (1) above. Add: tr subchalky in part.

LS - Off White/ Lt Tan. Micro-Oolites. Lt Tan, opaque matrix.
Friable. Fair vis por.

LS - Tans/ Pale Lt Gray. Sing. XF-/Micro-xln. xln por. Re-xln at
top. tr inmixed/interbedded argil/ shaly (Lt Gray). Marly in part.
No/ tr vis por.



Weight Indicator Check @ 3,743'

Dry Wt of:
DC - (See Above) = 40,662#
DP - 3,194' x 16#/ft = 51,104#
Total Dry Wt in AIR = 91,766#

Wt of DC/DP in MUD = 79,469#
[91,766# x .866 (8.6ppg) = 79,469#]

Buoyancy Wt + Surface
Equipment = String Weight
[79,469# + 8,000# = 87,469#]
String Weight = 87,469#

WI shows 88M.
Therefore WI is okay.

Vis: 66
Wt: 8.8
LCM: 2#

Wt of Collars in MUD: 35,335#
Calculated available WOB: 30,035#

Contractor reports running
35M# on bit using WI.
Corrected actual WOB
is 35M#.

XXXXXXXXXX

TRIP @ 3,743'

^--- Look for cracked DC.
^--- Look for hole in pipe.

Contractor reports running
32M on bit.

Check string for hole.

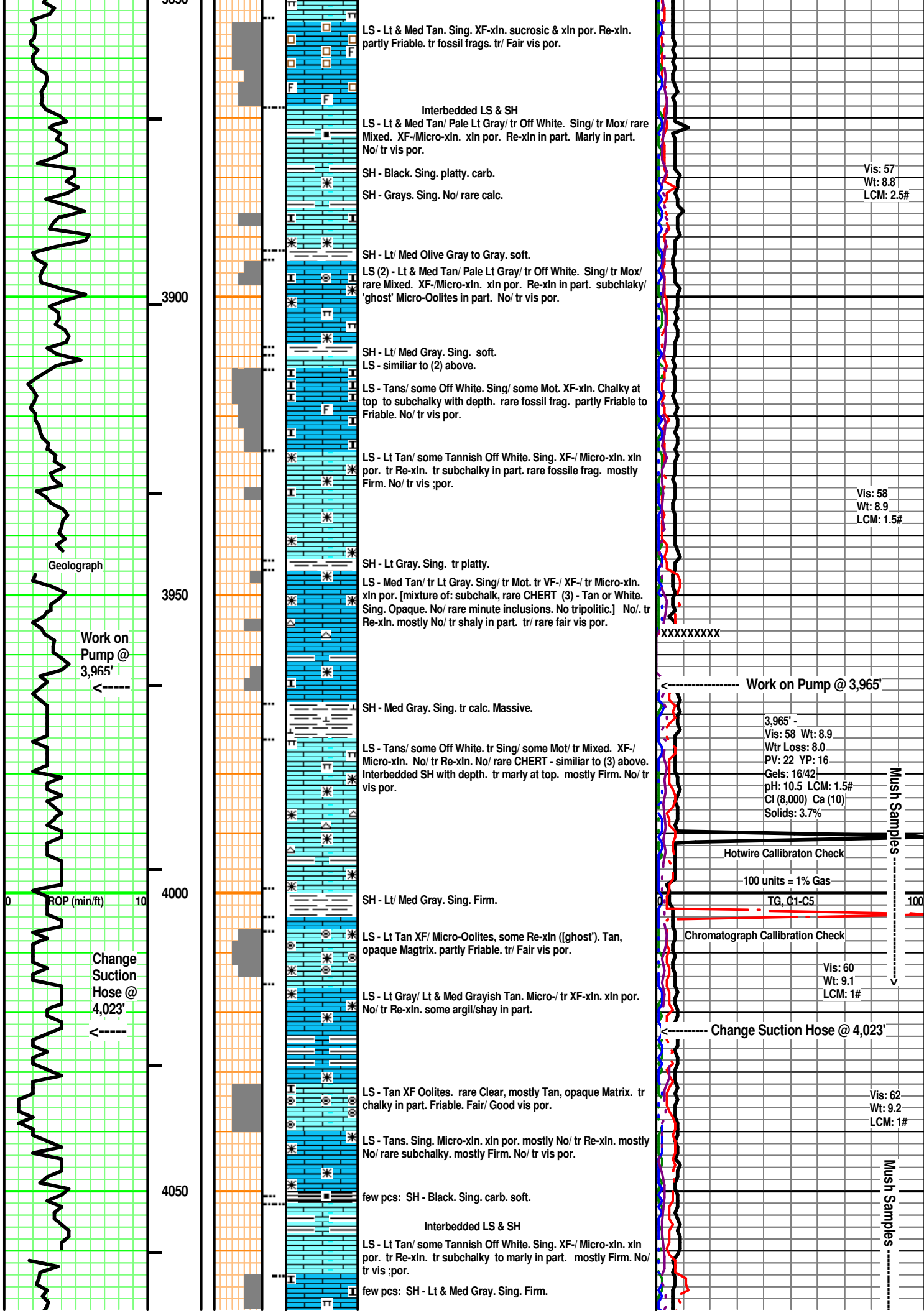
^--- Flag.

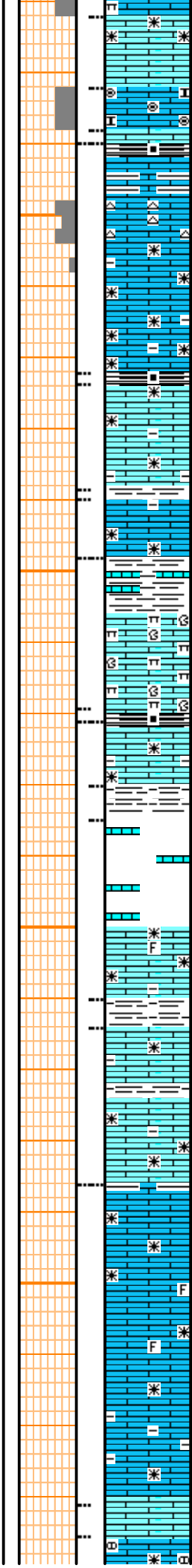
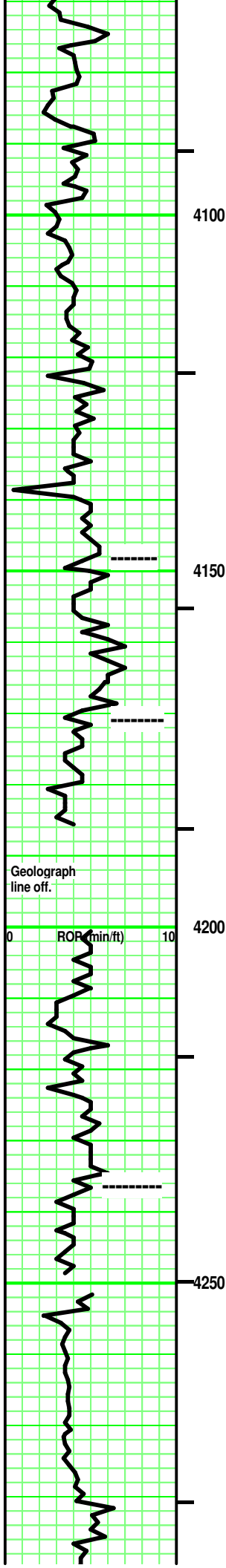
CHC: CFS @ 3,796':30"

100 units = 1% Gas
TG, C1-C5

Vis: 58
Wt: 8.9
LCM: 2.5#

LOW PUMP PRESSURE





Add: LS - Tan XF Oolites. rare Clear, mostly Tan, opaque Matrix. chalky in part. Friable. Fair/ Good vis por.

SH - Black. Sing. carb. tr fissile.

LS - Lt & Med Tan/ Pale Lt Grayish Tan at top. XF-/ Micro-xln. xln por. xln por. No/ tr Re-xln. [few pcs: CHERT - Tan. Sing. Opaque. No inclusions. No tripolitic.] argil/shaly near top. Firm. mostly No/ tr vis por.

SH - Black. Sing. carb. soft.

LS (5) - Med Tan/ Grayish Tan. Sing. Micro-xln. xln por. No/ tr Re-xln. argil in part. Firm. No/ tr vis por.

SH - Lt & Med Gray, Dark Olive Gray. Sing. Firm.

LS - similar to (5) above.

SH - Lt & Med Gray. Sing. Firm.

LS - Off White. Sing. Chalk. SR, VF Lt Gray shaly frags. Ductile.

SH - V Dark Grayish Black. Sing. fissile.

Interbedded LS & SH

LS - Med Tan/ Grayish Tan. Sing. Micro-xln. xln por. No/ tr Re-xln. argil in part. Firm. No/ tr vis por.

few pcs: LS - Med Dark Brown. Sing. Crypto-xln. xln por. Frim. No vis por.

SH - Lt & Med Gray. Sing. Firm.

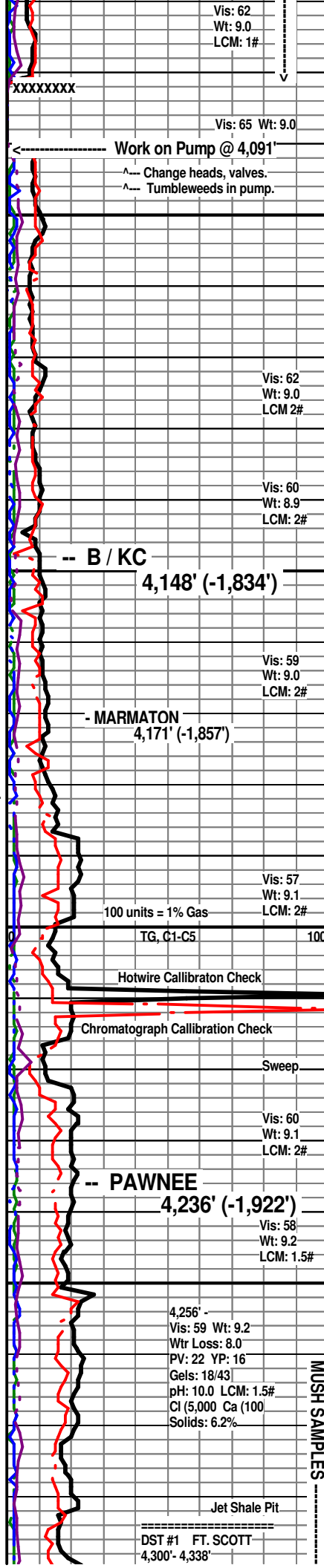
Add: LS - Lt/ Med Tan, Pale Lt/ Lt Gray. Sing/ some Mot/ some Mixed. XF-/ some Micro-xln. xln por. No/ tr Re-xln. mostly No/ rare fossil frag. argil/ rare shaly in part. Frim. No/ tr vis por.

SH - Dark Gray. Sing. platty.

LS - Lt & Med Tan. Pale Lt Gray. tr Off White. Sing/ some Mot/Mixed. XF-/ Micro-xln. xln por. No/ tr Re-xln. No/ tr argil/shaly in part. No/ tr fossil frag. Firm. No/ tr vis por.

LS - Lt Tan, Off Whitish Tan. Sing. Crypto-xln. xln por. Frim. No vis por.

LS - Lt & Med Tan. Sing. XF-xln. xln & part por. tr Re-xln. tr some calc nodules (slightly darker than matrix) mostly No



Vis: 62
Wt: 9.0
LCM: 1#

Vis: 65 Wt: 9.0

Work on Pump @ 4,091'

Change heads, valves.
Tumbleweeds in pump.

Vis: 62
Wt: 9.0
LCM: 2#

Vis: 60
Wt: 8.9
LCM: 2#

B / KC
4,148' (-1,834')

Vis: 59
Wt: 9.0
LCM: 2#

MARMATON
4,171' (-1,857')

Vis: 57
Wt: 9.1
LCM: 2#

100 units = 1% Gas

TG, C1-C5

Hotwire Callibraton Check

Chromatograph Callibraton Check

Sweep

Vis: 60
Wt: 9.1
LCM: 2#

PAWNEE
4,236' (-1,922')

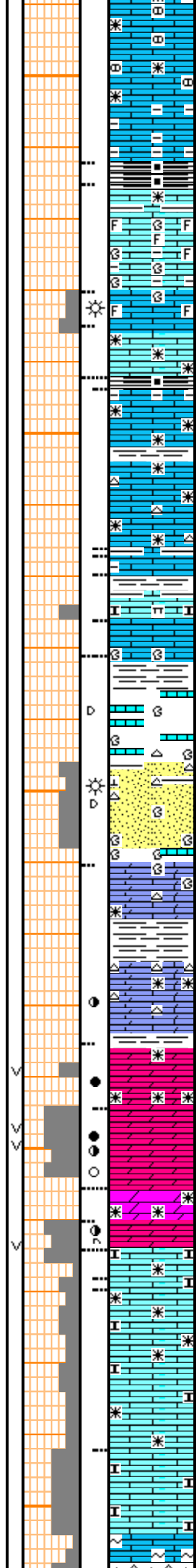
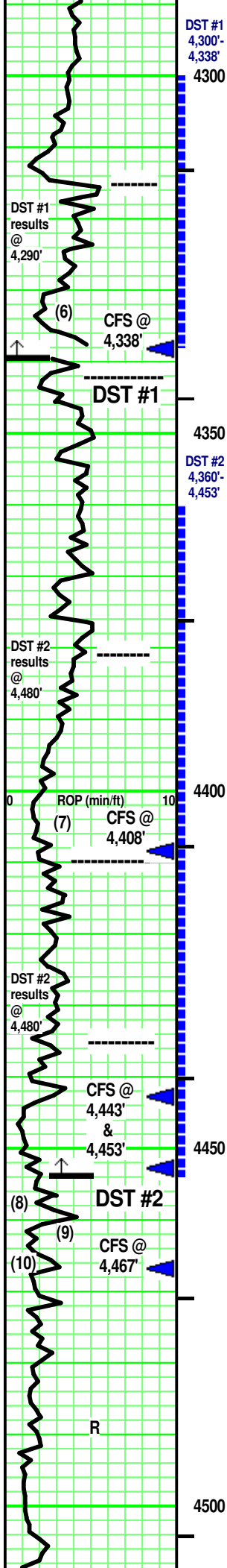
Vis: 58
Wt: 9.2
LCM: 1.5#

4,256' -
Vis: 59 Wt: 9.2
Wtr Loss: 8.0
PV: 22 YP: 16
Gels: 18/43
pH: 10.0 LCM: 1.5#
Cl (5,000 Ca (100
Solids: 6.2%

Jet Shale Pit

DST #1 FT. SCOTT
4,300' - 4,338'

MUSH SAMPLES



SH - Black. Sing. carb. tr fissile.

FT. SCOTT 4,315' (-2,001')

LS - Tans/Grays. Mot. Micro-xln. xln & part por. No/ tr Re-xln. fossil frags. argil/shaly frags in part. Firm. No/ tr vis por.

LS (6) - Tans/Grays. Mot. Micro-xln. xln & part por. No/ tr Re-xln. fossil frags. argil/shaly frags in part. Firm. No/ tr vis por. ? odor. Uniform Hi Yellow florescence. On own, minute gas bubbles clinging to rx chip. No free oil. Spotted, Lt Brown, irregular stain. Pos cut/ residual. Pos acid/ residual. (Photo)

CHEROKEE SH 4,342' (-2,028')

SH - Black. Sing. carb. tr soft.
LS (7) - Tans/ Lt Gray. rare Sing/ Mot. XF-/ Micro-xln. xln por. No/ tr Re-xln. argil/ shaly in part. Firm. No/ tr vis por.

SH - Med to Dark Gray. Sing. blocky.

Add: CHERT - Silvery Gray. Semi-transparent. No/ tr inclusions. No tripolitic.

SH - Lt to Med Gray. Sing.

Add: subchalk to marl.

LS - similar to (7). some brec pcs.

CONGLOMERATE 4,381' (-2,067')

Mixture of:

SH - Dark Greenish or Dark Bluish Gray. Adding Dark Brownish Gray, Grayish Dark Red, Green Blue, rare Yellow with depth.

LS - Lt Tan, Off White, Pale Gray White. Mot/ Mixed. XF-/Micro-xln. xln por. brec frags. partly Friable. tr/ rare Fair vis por.

CHERT - Yellow, Lt Gray, Off White, Tan. Mot/Mixed. Semi-transparent to Opaque. No/ tr Tripolitic (spotted or uniform). mostly No/. rare inclusion. -->

EROSIONAL MISS 4,410' (- 2,096')

LS (Dol) - Tans/ some Off White/ tr Lt Gray. Sing/ some Mot. XF-/Micro-xln. xln. No/ tr Re-xln. [some CHERT - Tans/ Clear/ Silvery Gray. Mot/Mixed. Semi-transparent to Opaque. some No/ tr inclusions. No/ some tripolitic (& rare vuggy). Show in chert: No/? odor. Spotted dull Yellow florescence. No free oil or gas. Dark Brown/ Black asphaltic infill. some pcs have 'copper' hue in vuggy por. No/ tr cut & residual. No/ tr acid & ---->

MISS 4,435' (- 2,124')

DOL - Tan/ Tannish Lt Gray. Sing. mostly subeuhedral, rare euhedral xtalx. mixture of Re-xln & vuggy por. partly Friable. mostly Tr/ some Fair to Good vis por.

Fair/Good odor. spotted/ some uniform Yellow florescence. On own, rare free V Dark Brown/Black oil blebs floating on wash water and minutes semi-transparent schreen on wash water. spotted Lt/ Med Brown stain rimming vuggy por. Pos cut & residual. Pos acid & residual.

<--- DOL (9) - tr Tannish Lt Gray/ mostly Lt Gray. Sing. mostly subeuhedral, rare euhedral xtalx. mixture of Re-xln & vuggy por. partly Friable. mostly Tr/ some Fair to Good vis por. Show similar to above, adding asphaltic flecks. and no free oil. v rare 'oil wet' fact on rx chip.

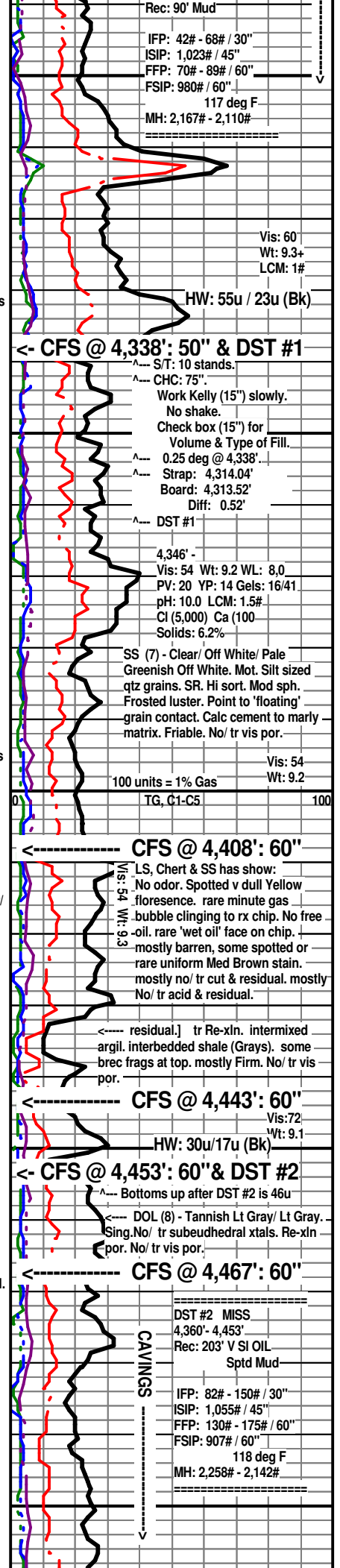
Interbedded LS

LS (10) - White. Sing. Micro-xln. xln por. chalky. No/ tr vis por.

LS - Tans/ Pale Lt Gray. Sing/ tr Mot. XR-/Micro-xln. xln por. No/ tr Re-xln. partly Firm. No/ tr/ some Fair vis por.

few pcs CHERT - similar to below.

Add: LS - Lt Tan. Sing. XF-xln. xln por. minute, irregular, VF, SA gluc grains. partly Firm. No/ tr vis por.



IFP: 42# - 68# / 30"
ISIP: 1,023# / 45"
FFP: 70# - 89# / 60"
FSIP: 980# / 60"

117 deg F
MH: 2,167# - 2,110#

Vis: 60
Wt: 9.3+
LCM: 1#

HW: 55u / 23u (Bk)

CFS @ 4,338': 50" & DST #1

S/T: 10 stands.

CHC: 75".

Work Kelly (15") slowly.

No shake.

Check box (15") for

Volume & Type of Fill.

0.25 deg @ 4,338'.

Strap: 4,314.04'

Board: 4,313.52'

Diff: 0.52'

DST #1

4,346' -

Vis: 54 Wt: 9.2 WL: 8.0

PV: 20 YP: 14 Gels: 16/41

pH: 10.0 LCM: 1.5#

Cl (5,000) Ca (100

Solids: 6.2%

SS (7) - Clear/ Off White/ Pale Greenish Off White. Mot. Silt sized qtz grains. SR. Hi sort. Mod sph. Frosted luster. Point to 'floating' grain contact. Calc cement to marly matrix. Friable. No/ tr vis por.

Vis: 54

Wt: 9.2

100 units = 1% Gas

TG, C1-C5

CFS @ 4,408': 60"

LS, Chert & SS has show:
No odor. Spotted v dull Yellow florescence. rare minute gas bubble clinging to rx chip. No free oil. rare 'wet oil' face on chip. mostly barren, some spotted or rare uniform Med Brown stain. mostly no/ tr cut & residual. mostly No/ tr acid & residual.

<--- residual.] tr Re-xln. intermixed argil. interbedded shale (Grays). some brec frags at top. mostly Firm. No/ tr vis por.

CFS @ 4,443': 60"

Vis: 72

Wt: 9.1

HW: 30u/17u (Bk)

CFS @ 4,453': 60" & DST #2

Bottoms up after DST #2 is 46u

<--- DOL (8) - Tannish Lt Gray/ Lt Gray. Sing./No/ tr subeuhedral xtalx. Re-xln por. No/ tr vis por.

CFS @ 4,467': 60"

DST #2 MISS

4,360' - 4,453'

Rec: 203' V SI OIL

Sptd Mud

IFP: 82# - 150# / 30"

ISIP: 1,055# / 45"

FFP: 130# - 175# / 60"

FSIP: 907# / 60"

118 deg F

MH: 2,258# - 2,142#

