



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

Well Name: MJW 10C
Well Id: #1
Location: 856' FSL, 1938' FWL, Sec 10-T16S-R38W, Wichita County, Kansas
License Number: API: 15-203-20360 **Region:** Wichita County
Spud Date: 06/27/2019 **Drilling Completed:** 07/08/2019
Surface Coordinates: Lat: 38.6721429
Long: -101.5069009
Bottom Hole Coordinates: Vertical hole
Ground Elevation (ft): 3449' **K.B. Elevation (ft):** 3457'
Logged Interval (ft): 3800' **To:** RTD **Total Depth (ft):** 5100'
Formation: Mississippian at RTD
Type of Drilling Fluid: Chemical

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

OPERATOR

Company: Ritchie Exploration, Inc.
Address: 8100 E. 22nd Street N., Bldg 700
Wichita, KS 67226
316-691-9500

GEOLOGIST

Name: Kent R. Matson
Company: Matson Geological Services, LLC
Address: 33300 W. 15th Street S.
Garden Plain, Kansas 67050
316-644-1975; kent4m@hotmail.com



COMMENTS

Ritchie Exploration Company Geologist: John Goldsmith, 316-640-0236 (cell).

Contractor: WW Drilling Company, Rig #12.

Tool Pusher: Calvin Pfannenstiel, 785-743-8120 (cell).

Surface Casing: 8 5/8" set at 268' (KB) w/220sx cement.

Production Casing: Based on field observations of drill cuttings, DST results and electric log evaluation, production casing was not installed.

Mud by: Mud-Co/Service Mud, Inc., Tony Maestas, 316-772-6679 (cell).

DST's by: Trilobite Testing, Chris Hagman, 785-656-3947 (cell).

Logs by: Pioneer (DI w/GR, CND, Micro, and Sonic), Justin Herrickson, 785-625-3858 (office).

RTD= 5100'

LTD= 5096'

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Stotler	3692'	-235	3692'	-235
Heebner Shale	4068'	-611	4064'	-607
Lansing	4120'	-663	4116'	-659
Muncie Creek Shale	4306'	-849	4302'	-845
Stark Shale	4396'	-939	4394'	-937
Hushpuckney Shale	4452'	-995	4450'	-993
Base of KC	4496'	-1039	4493'	-1036
Marmaton	4536'	-1079	4534'	-1077
Altamont	4550'	-1093	4547'	-1090
Pawnee	4636'	-1179	4634'	-1177
Myrick Station	4680'	-1223	4678'	-1221
Fort Scott	4696'	-1239	4694'	-1237
Cherokee Shale	4726'	-1269	4722'	-1265
Johnson	4818'	-1361	4814'	-1357
Morrow	4891'	-1434	4887'	-1430
Mississippian	5014'	-1557	5010'	-1553
RTD	5100'	-1643		
LTD			5096'	-1639

ROCK TYPES

LITHOLOGY

	Anhy
	Cht
	Coal
	Congl
	Dol
	Gyp
	Lmst
	Salt
	Shale
	Shcol
	Shgy
	Sltst
	Ss
	Carb sh
	Dol
	Dtd
	Gry sh
	Sandy lms
	Shale
	Sltstn
	Shlyslts

	Sitysh
	Sdy dolo
	Silty dolo
	Shy dolo
	Shaly ls

FOSSIL

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

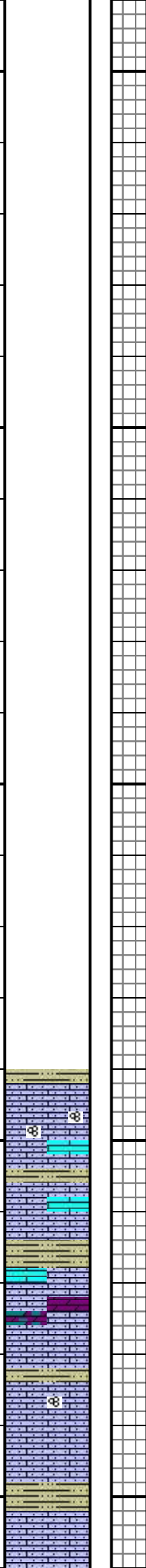
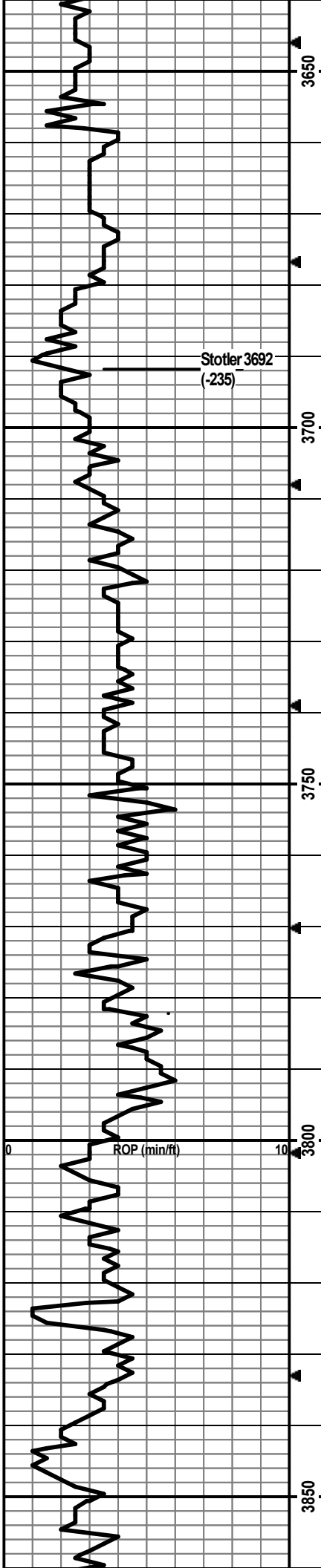
MINERAL

	Ostra
	Pelec
	Pellet
	Pisolite
	Plant
	Strom
	Fuss
	Oomold
	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
	Chlorite
	Dol
	Sand
	Silty

Rate of Penetration (ROP) ROP (min/ft)	Depth	Lithology	CFS Point	Oil Shows	Geological Descriptions	Remarks
	<p>34</p> <p>3500</p> <p>3550</p> <p>3600</p>				<p>Morning Report Depth/Activity (7:00 am) 06/27/2019, Finished MIRU/Spud; set surface casing @268'KB. 06/28, waiting on cement @268'. 06/29, drilling @2077'. 06/30, drilling @3020'. 07/01, drilling @3552'. 07/02, wiper trip @3988'. 07/03, CFS @4225'. 07/04, bit trip @4473'. 07/05, DST#1 @4570'. 07/06, DST#2 @4600'. 07/07, drilling @4773'. 07/08, drilling @5023'; TD @5100'; electric logged.</p> <p>Anhydrite: Top @2652', Base @2674' (based on drill time).</p> <p>Oil Shows indicator: Left Block 0-10 tray pcs w/show, Middle Block 10-20 tray pcs w/show, Right Block 20+ tray pcs w/show</p> <p>Formation tops and lithologies have been adjusted to correlate to the electric log.</p> <p>ROP Data begins @3600' on 07/01/2019</p>	<p>Displaced drilling mud @3426'-3445'; 600 bbls.</p> <p>Mud-Co/Service Mud Inc. Check #1 @0' 06/26/19, predrilling instructions.</p> <p>Mud-Co/Service Mud Inc. Check #2 @2099' 06/29/19 07:30am wt vis pH chl 9.5 28 7 37000 Filt LCM n/c tr</p> <p>Mud-Co/Service Mud Inc. Check #3 @3071' 06/30/19 07:00am wt vis pH chl 9.6 30 7 40000 Filt LCM n/c 1</p> <p>Mud-Co/Service Mud Inc. Check #4 @3574' 07/01/19 07:00am wt vis pH chl 8.6 55 11.5 3500 Filt LCM 7.2 1</p> <p>Mud-Co/Service Mud Inc. Check #5 @3988' 07/02/19 07:00am wt vis pH chl 9.0 65 10.5 4000 Filt LCM 7.2 1</p> <p>Mud-Co/Service Mud Inc. Check #6 @4236' 07/03/19 08:30am wt vis pH chl 9.2 55 9.0 5000 Filt LCM 8.0 2</p> <p>Mud-Co/Service Mud Inc. Check #7 @4473' 07/04/19 08:00am wt vis pH chl 9.2 50 10.5 5400 Filt LCM 8.0 1</p> <p>Mud-Co/Service Mud Inc. Check #8 @4570' 07/05/19 09:45am wt vis pH chl 9.1 48 10.5 5600 Filt LCM 8.0 3</p> <p>Mud-Co/Service Mud Inc. Check #9 @4600' 07/06/19 08:50am wt vis pH chl 9.1 48 10.0 6000 Filt LCM 8.8 2</p> <p>Mud-Co/Service Mud Inc. Check #10 @4790' 07/07/19 08:50am wt vis pH chl 9.2 59 10.5 6400 Filt LCM 8.0 2</p> <p>Mud-Co/Service Mud Inc. Check #11 @5135' 07/08/19 09:00am wt vis pH chl 9.4 57 10.5 7200</p>

Survey Record
Deg @ Ft
0.5 @ 268'
0.75 @ 4570'
0.5 @ 5100'



Drill cutting samples at 10' intervals start at 3810'.

SH: lt-m gry/dk gry-bm, vry silty, carb, soft-firm, no odor, ns.

LS: cm/lt gry/lt-m bm, micro-med xtal, some vry silty/sndy, some chalky, foss frags/fusin, no vis por, no odor, ns

LS: cm/lt-m bm/med gry, micro-med xtal, some silty/sndy, some chalky, foss frags, no vis por, no odor, ns.

LS: cm/lt bm/lt-m gry, micro-m xtal, chalky, foss frags, no vis por, no odor, ns.

LS: cm/lt bm/lt gry, micro-m xtal, vry silty, some chalky, foss frags/fn ool, no vis por, no odor, ns. Some lt bm Dolo.

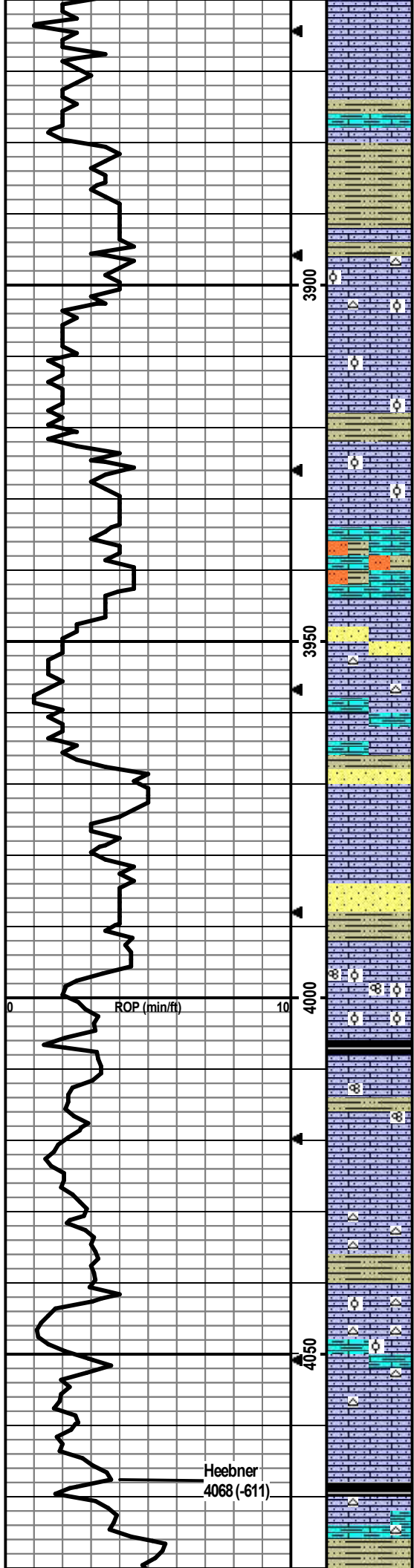
SH: lt-dk gry, vry silty, carb, soft-firm, no odor, ns.

LS: cm/lt bm/dk gry, micro-m xtal, silty/sndy, chalky, foss frags/fusin/grainy, no vis por, no odor, ns.

LS: cm/lt bm, micro-m xtal, vry silty/sndy, foss frags/grainy, min ppt-f in-xtal por, no odor, ns.

SH: lt-dk gry/red-bm, some vry silty, slt carb, soft-firm.

LS: cm/lt bm, micro-m xtal, silty/sndy, chalky, some foss frags, no vis por, no odor, ns.



LS: cm, micro-f xtal, silty/sndy, chalky, min foss frags, no vis por, no odor, ns.

LS: cm/lt bm, micro-m xtal, vry silty/sndy, vry chalky, some arg, foss frags, no vis por, no odor, ns.

SH: lt-dk gry, some vry silty/sndy, carb, firm.

LS: cm/lt bm/lt gry, micro-m xtal, silty/sndy, chalky, min wht chert, foss frags/grainy/min dense ool, no vis por, no odor, ns.

LS: wht/cm/lt bm/lt gry, micro-m xtal, vry silty/sndy, vry chalky, foss frags/grainy/dense ool, some ppt-f in-xtal por, no odor, ns.

SH: lt-dk gry, vry silty/sndy, carb, firm-hard.

LS: cm, micro-m xtal, vry silty/sndy, vry chalky, foss frags/dense ool, min ppt-f in-xtal por, no odor, ns.

LS: wht/cm/lt-m gry, micro-m xtal, vry silty/sndy, chalky, arg, min foss frags, no vis por, no odor, ns.

LS: cm/lt-m bm, micro-m xtal, vry silty/sndy, some chalky, some arg, foss frags, no por, no odor, ns.

LS: cm/lt bm, micro-f xtal, vry silty/sndy, chalky, min wht chert, min foss frags, no por, no odor, ns. Min SS: lt gry, pred qtz, arg, friable, no odor, ns.

LS: lt bm/lt-m gry, micro-m xtal, vry silty/sndy, vry chalky, arg, foss frags, no por, no odor, ns.

SH: lt-dk gry, vry silty/sndy, carb. SS: lt gry, vf-f, arg, friable, no odor, ns.

LS: cm/lt bm, micro-m xtal, vry silty/sndy, chalky, foss frags, no por, no odor, ns.

SH: lt-m gry, vry silty/sndy, carb, firm. SS: lt gry, vf-f, friable, no odor, ns.

LS: cm/lt-m gry/lt-m bm, micro-med xtal, silty/sndy, foss frags/fusln/dense ool, no vis por, no odor, ns.

LS: cm/lt bm/lt gry, micro-med xtal, some silty/sndy, some chalky, foss frags/ool, 13 pcs w/show blk tar oil, ppt-vf in-xtal por, dul yel flor, stream cut, slit crush odor, sfo.

SH: m-dk gry/blk/dk bm, some vry silty, slit carb, firm, ns.

LS: cm/lt bm/lt gry, micro-f xtal, some silty/sndy, some chalky, foss frags/fusln, 7 pcs w/blk tar oil, ppt-vf in-xtal por, slit crush odor, dul yel flor/cut, sfo.

LS: cm/lt bm, micro-med xtal, some silty/sndy, some chalky, foss frags, no vis por, no odor, ns.

LS: cm/lt bm, micro-f xtal, silty/sndy, some chalky, foss frags, abund wht/cm chert, no vis por, no odor, ns.

LS: cm/lt gry/lt bm, micro-med xtal, some vry sndy, some chalky, abund wht/cm chert, foss frags/min ool, no vis por, no odor, ns.

LS: cm/lt bm/lt gry, micro-med xtal, silty/sndy, some chalky, some arg, wht/cm chert, foss frags, no vis por, no odor, ns.

LS: cm/lt bm/lt gry, micro-med xtal, silty/sndy, some chalky, foss frags, few pcs w/m-crs in-xtal por, no odor, ns.

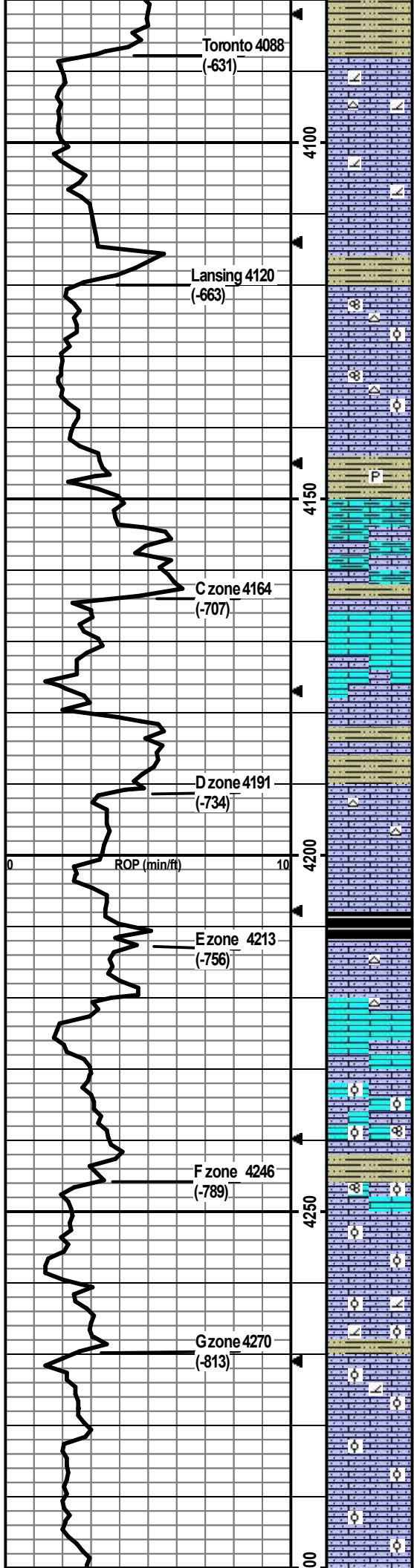
SH: dk gry/blk some silty, slit carb, firm, fissile, no odor, ns.

LS: cm/lt bm/lt gry, micro-med xtal, silty/sndy, some chalky, some arg, lt gry chert, foss frags, no vis por, no odor, ns.

Made wiper/short trip at the 3988' connection; 33 stds.

CFS @ 3988'
Stop/30"/60"

Heebner
4068 (-611)



SH: lt-m gry/min blk, some vry silty, silt carb, firm, fissile.

LS: cm/lt bm/min lt gry, micro-med xtal, some vry sndy, some dolomitic, some chalky, min gry chert, foss frags, min ppt-vf in-xtal por, no odor, ns.

LS: cm/lt bm, vf-f xtal, silty/sndy, vry chalky, dolomitic, min ppt-vf in-xtal por, 1 pce in 30min 1 pce in 60min w/sfo w/ppt-f in-xtal por, thk dk bm fluid oil w/blk tar, dul yel flor/cut, no odor, ssfo.

CFS @ 4110'
Stop/30"/60"

LS: cm/min lt gry, vf-med xtal, silty/sndy, some vry chalky, foss frags, no vis por, no odor, ns.

SH: lt-m gry, vry silty, carb, firm, no odor, ns.

LS: wht/cm/lt bm, vf-med xtal, silty/sndy, some chalky, some wht/crm chert, foss frags/fusln/dense ool, ppt-f in-xtal por, no odor, ns.

LS: cm/lt bm, micro-f xtal, some sndy, chalky, wht chert, foss frags/fusln/ool, some f-m in-xtal por, no odor, ns.

CFS @ 4140'
Stop/30"/60"

LS: cm/lt bm, micro-m xtal w/some 2ndry xtals, some chalky, some silty, foss frags, no vis por, no odor, ns.

SH: lt-dk gry, silty, silt carb, min pyritic, firm, fissile, no odor, ns.

LS: lt-m gry, vf-f xtal, vry silty almost siltstn, friable, vry arg, foss frags, no vis por, no odor: 1 pcs w/blk tar oil, sticky, yel cut.

SH: lt-m gry/lt gry-green, silty, silt carb, firm.

LS: cm/lt bm, micro-f xtal, some silty/sndy, some chalky, min foss frags, no vis por, no odor, ns.

LS: cm/lt bm, micro-f xtal, some silty, some chalky, foss frags/grainy, no vis por, no odor, ns.

CFS @ 4177'
Stop/30"/60"

LS: wht/crm, micro-f xtal, silty/sndy, some chalky, foss frags, no vis, no odor, ns.

SH: lt-dk gry, some silty, silt carb, soft-firm, fissile.

LS: wht/crm, micro-m xtal, silty/sndy, some wht/crm chert, foss frags, no vis por, no odor. 30min smpl: 1 pce w/blk tar oil on rx chip edge, sticky, yel cut. 60min: 1 pce w/ppt in-xtal por w/blk tar oil, yel cut on break.

CFS @ 4200'
Stop/30"/60"

LS: cm/lt bm, micro-med xtal, some chalky, some silty/sndy, foss frags/some dense ool, min f-m xtal por, no odor, ns.

SH: lt-dk gry/min green-gry, some silty, silt carb, soft-firm, no odor, ns.

LS: cm/lt bm, micro-med xtal, some silty/sndy, some chalky, foss frags, min wht/crm chert, no vis por, no odor, ns.

LS: cm/lt bm, micro-med xtal, some silty/sndy, some chalky, min crm chert, foss frags, no vis por, no odor, ns.

CFS @ 4225'
Stop/30"/60"

LS: cm/lt bm/lt gry, micro-med xtal, some silty/sndy, some chalky, foss frags/grainy, no vis por, no odor, ns.

LS: cm/lt bm, micro-med, some silty/sndy, some chalky, foss frags/dense ool, no vis por, no odor, ns.

SH: m-dk gry, vry silty, silt carb, soft-firm.

LS: cm/lt-m bm, micro-med xtal, some silty/sndy, some chalky, foss frags/fusln/dense ool, min ppt-f in-xtal por, no odor, ns.

CFS @ 4250'
Stop/30"/60"

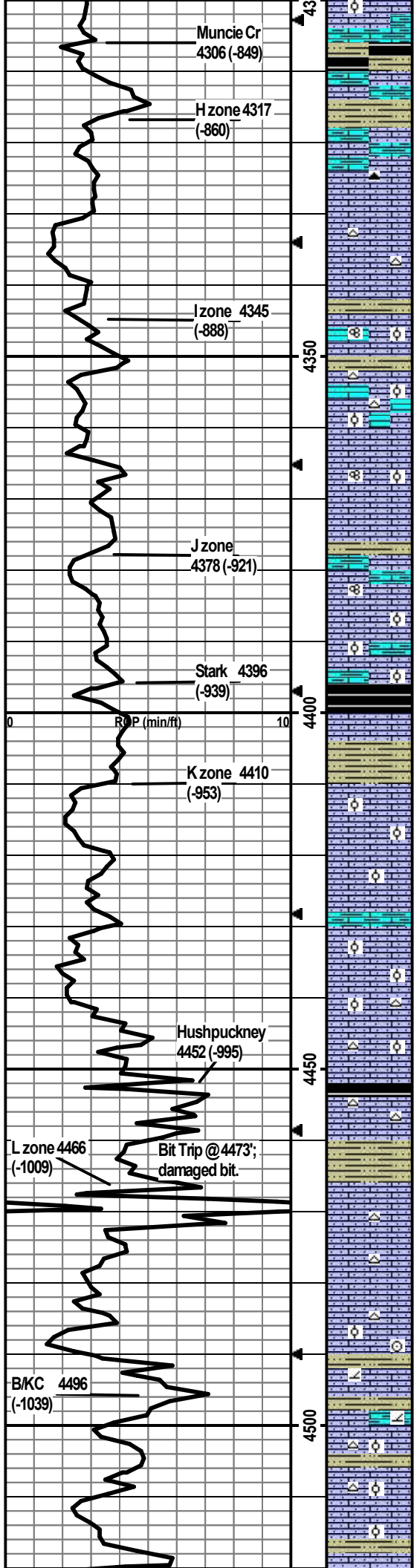
LS: cm/lt-bm, micro-f xtal, silty/sndy, chalky, foss frags/dense ool, 6 pcs w/bm staining, yel cut, 1 oil sat chalky ball, silt odor, ppt in-xtal por, sfo.

LS: wht/cm/lt bm, micro-med xtal, some silty/sndy, vry chalky, dolomitic, foss frags/dense ool, 2 pcs w/sfo thk dk bm oil w/f-m in-xtal por, 2 soft oil sat chalk balls, crush odor, sfo.

LS: cm/lt bm/lt gry, micro-med xtal, some chalky, some silty/sndy, min dolo, foss frags/ool, 2 pcs w/thk dk brn oil w/f-crs in-xtal por, mostly dense w/2 pcs w/f-crs oo-castic por, silt crush odor, ssfo.

LS: wht/cm/min lt bm, micro-med xtal, silty/sndy, some chalky, foss frag/ool, min f-crs oo-castic por, no odor, ns.

LS: wht/cm/min lt bm, micro-f xtal, some silty/sndy, chalky, foss frags/few ool pcs, mostly dense w/few f-m oo-castic por, no odor, ns.



LS: wht/crm/lt-m brn/lt-m gry, micro-med xtal, some chalky, some silty/sndy, some arg, foss frags/ool, min fm oo-castic por, no odor, ns.

SH: med-dk gry/blk, some vry silty, slt carb, firm, fissile.

LS: crm/lt-m brn/lt gry, micro-med xtal, chalky, some silty/sndy, some arg, foss frags, no vis por, no odor, ns.

SH: med-dk gry/blk/lt green-gry, silty, slt carb, soft-firm, fissile.

LS: wht/crm/lt brn/lt gry, micro-m xtal, some silty, some chalky, some arg, min dk gry chert, foss frags, min ppt-f in-xtal por, no odor, ns.

LS: crm/lt brn/lt-m gry, micro-med w/min crs xtal, some silty/sndy, some chalky, some crm/lt gry chert, min foss frags, some f-m in-xtal por, no odor, ns.

SH: m-dk gry/lt gry-brn/maroon-brn, some vry silty, slt carb, soft-firm, no odor, ns.

LS: crm/lt-m brn/lt gry, micro-med xtal, silty/sndy, some chalky, foss frags/fusln/dense ool, no vis por, no odor, ns.

LS: crm/lt brn/lt gry, micro-med xtal, some silty/sndy, some chalky, wht/crm chert, foss frags/min ool, min oo-castic por, no odor, ns.

LS: crm/lt-m brn/min lt gry, micro-m xtal, vry silty/sndy, some chalky, foss frags/fusln/min dense ool, no vis por, no odor, ns.

SH: lt-dk gry/bm/mustard yel, some vry silty, slt carb, firm, no odor, ns.

LS: crm/lt brn, micro-m xtal, vry silty/sndy, arg, chalky, foss frags/fusln/dense ool, no vis por, no odor, ns.

LS: crm/lt brn/min lt gry, micro-med xtal, some vry silty/sndy, some arg, chalky, foss frags/dense ool, no vis por, no odor, ns.

SH: m-dk gry/blk, some silty, slt carb, firm.

LS: crm/lt gry mottling, micro-m xtal, some vry silty/sndy, chalky, foss frags, no vis por, no odor, ns.

SH: lt-dk gry/brn, vry silty, carb, soft-firm, fissile.

LS: crm/lt-m gry-brn, micro-m w/some crs xtal, some vry silty/sndy, smpl vry chalky, foss frags/dense ool, no vis por, no odor, ns.

LS: crm/m gry-brn, micro-m xtal, some vry silty/sndy, some arg, vry chalky, foss frags/dense ool (gry) less than above, no vis por, no odor, ns.

LS: crm/lt gry/min brn/gry mottling, micro-med xtal, smpl vry chalky, silty/sndy, min arg, foss frags/some oval ool, min vf-m in-xtal por, no odor, ns.

LS: crm/lt gry/min brn/gry mottling, micro-f w/min med xtal, smpl vry chalky, silty/sndy, wht/crm chert, foss frags/some oval ool, no vis por, no odor, ns.

SH: dk gry/blk, carb, firm, fissile.

LS: crm/lt brn/lt gry-brn, micro-med xtal, silty/sndy, some chalky, wht/lt gry chert, foss frags, no odor, ns.

SH: lt-dk gry/lt green-gry/dk brn, some vry silty, carb, firm, fissile, no odor, ns.

LS: crm/lt brn/lt gry-brn, micro-med xtal, some vry silty/sndy, slt pyritic, min wht chert, min foss frags, no vis por, no odor, ns.

LS: crm/lt-m brn/lt-m gry, micro-m xtal, min wht chert, foss frags, min ppt-f in-xtal por, no odor, ns.

LS: 60min smpl has crin/ool foss.

LS: crm/lt-m brn/lt-m gry, micro-m xtal, some vry silty/sndy, some arg, dolomitic, chalky, foss frags/dense ool, no vis por, no odor, ns.

SH: lt-dk gry/lt green-gry, some vry silty, slt carb, firm.

LS: lt-m brn/lt-m gry, micro-f xtal, vry silty/sndy, some chalky, some wht chert, foss frags/min dense ool, no vis por, no odor, ns.

SH: lt-dk gry/blk, silty, slt carb, soft-firm, no odor, ns.

LS: crm/lt brn/lt gry, micro-m xtal, vry silty/sndy, some chalky, foss frags/min dense ool, min ppt-f in-xtal por, no odor, ns.

SH: lt-dk gry/brn, some vry silty, soft-firm, fissile.

CFS @ 4342'
Stop/30"/60"

CFS @ 4370'
Stop/30"/60"

CFS @ 4400'
Stop/30"/60"

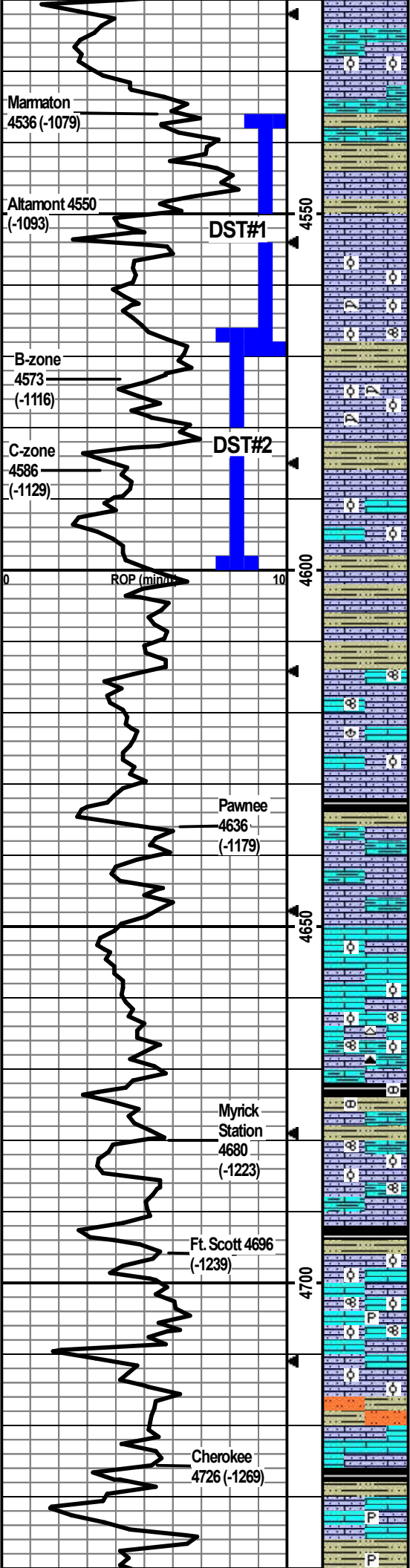
CFS @ 4450'
Stop/30"/60"

**Bit Trip @ 4473';
damaged bit.**

CFS @ 4473'
Stop/30"/60"

CFS @ 4490'
Stop/30"/60"

CFS @ 4510'
Stop/30"/60"



LS: lt-m bm/lt-m gry, vf-m xtal, vry silty/sndy, some chalky, some arg, foss frags, no vis por, no odor, ns. Dense ool in 60min smpl.

CFS @ 4530'
Stop/30"/60"

LS: lt bm/lt gry, micro-m xtal, silty/sndy, some chalky, some arg, foss frags, no vis por, no odor, ns.

DST1) 4536-4570
Altamont A-zone

30/30/30/30
1st) WSB died in 9min; no BB.
2nd) no blow, flushed tool, no blow; no BB.
IFP 13-15#
ISIP 124#
FFP 15-17#
FSIP 88#
HP 2208-2273#
Recvd: 5' oil spotted mud.

SH: lt-m gry/lt green-gry, some vry silty, firm, no odor, ns.

LS: crm/lt bm/lt-m gry, micro-med xtal, some silty/sndy, some chalky, foss frags, no vis por, no odor, ns.

SH: m-dk gry, some vry silty, carb, soft-firm.

LS: crm/lt-m brn, micro-m xtal, some silty/sndy, some chalky, foss frags/min ool, 19 pcs w/ppt-m in-xtal por w/sfo, dul yel flor/cut, gd odor, gsfo.

LS: wht/crm/lt gry, micro-med w/some crs xtal, some silty/sndy, some chalky, foss frags/fusln/ool/coral, approx 10% of tray w/sfo, fcrs in-xtal por, dul yel flor/cut, gd odor, gsfo.

CFS @ 4570'
Stop/30"/60"

Pipe strap TOH for DST #1
at 4570' was 0.27' long to the board.

SH: lt-dk gry/lt green-gry/dk gry-brn, some vry silty, slt carb, soft-firm, no odor, ns.

LS: crm/lt-m brn/lt gry, micro-m xtal, silty/sndy, some dolomitic, foss frags/min ool/min lattice coral, 4 pcs w/ppt-m in-xtal/in-ool por w/sfo, dul yel flor/cut, no odor, sfo. 2 pcs w/show in 60min smpl.

SH: lt-dk gry/lt green-gry/maroon, slt carb, some silty, firm, fissile, no odor, ns.

LS: crm/lt-m bm/lt gry/gry mottling, micro-med w/some crs, some silty/sndy, some chalky, foss frags/ool, min ppt-m in-xtal/in-ool por, no odor, ns.

CFS @ 4585'
Stop/30"/60"

LS: crm/lt bm/lt gry, micro-med, some silty/sndy, some chalky, foss frags, no vis por, no odor, ns. Flood of SH: lt-dk gry/blk, some silty, slt carb, firm.

CFS @ 4600'
Stop/30"/60"

LS: crm/m-dk gry, micro-m xtal, some silty, foss frags/fusln, no vis por, no odor, ns. Flood of SH: lt-dk gry/lt green-gry/dk brn, silty, slt carb, firm.

DST2) 4566-4600
Altamont B and C-zones

30/45/45/60
1st) WSB built to 1.2"; no BB.
2nd) WSB built to 0.75"; no BB.
IFP 21-36#
ISIP 948#
FFP 32-45#
FSIP 719#
HP 2264-2208#
Recvd: 10' oil spotted mud.

LS: crm/lt gry-brn, micro-med xtal, some vry silty/sndy, foss frags/brac/dense ool, no vis por, no odor, ns.

SH: lt-dk gry/lt green-gry/brn/blk, some vry silty/sndy, slt carb, soft-firm, no odor, ns.

LS: lt-m brn/m-dk gry/gry-brn, micro-med xtal, silty/sndy, arg, foss frags, no vis por, no odor, ns.

LS: lt-m bm/lt-m gry, micro-med xtal, some vry silty/sndy, chalky, some arg, foss frags, no vis por, no odor, ns. Smpl is flood of SH.

CFS @ 4648'
Stop/30"/60"

LS: crm/lt-m gry/lt-m brn, micro-m xtal, some silty, some chalky, foss frags/dense ool, no vis por, no odor, ns.

LS: crm/lt-m bm/lt-m gry, micro-m xtal, some silty/sndy, some chalky, some arg, min lt gry/dk brn chert, foss frags/fusln/dense ool, no vis por, no odor, ns.

SH: m-dk gry/lt green-gry/dk brn/min blk, some silty, slt carb, some LS nodules, soft-firm, fissile, no odor, ns.

LS: crm/lt-med brn/min gry, micro-m xtal, some vry silty/sndy, some chalky, some arg, foss frags/some abund foss/grainy, no vis por, no odor, ns.

LS: crm/lt-m brn/gry-brn, micro-med xtal, some vry silty, some arg, some chalky, some foss frags/some grainy/ool/fusln, no vis por, no odor, ns.

CFS @ 4690'
Stop/30"/60"

SH: lt-dk gry/lt green-gry/blk, some silty, carb, firm, no odor, ns.

LS: crm/lt-med brn, micro-m xtal, some silty/sndy, some chalky, foss frags/ool, no vis por, 1 pce w/sfo w/ppt-m in-xtal por, dul yel flor, no odor, sfo.

LS: crm/lt-m brn, micro-m xtal, some silty, some chalky, some pyritic, foss frags/fusln/dense ool/grainy, no vis por, no odor, ns.

LS: crm/lt-m brn, micro-m xtal, some silty/sndy, some chalky, some arg, foss frags/ool, no vis por, no odor, ns. Flood of SH: lt-dk gry/blk/lt-green-gry/brn/mustard yel/maroon, some vry silty, slt carb, firm. Min Sitstn, lt gry, arg, friable, soft-firm, no odor, ns.

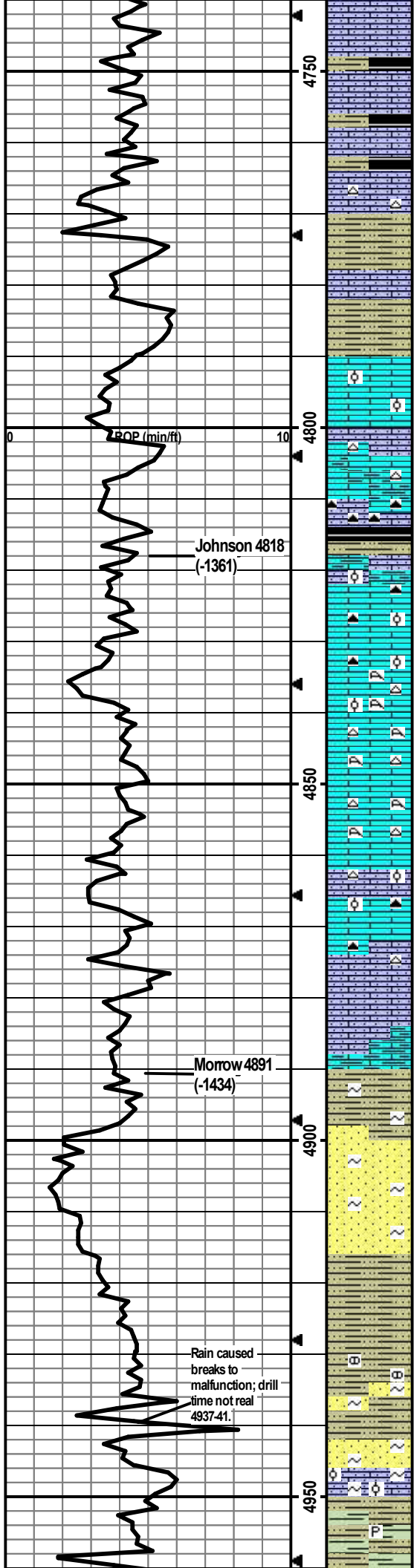
CFS @ 4720'
Stop/30"/60"

LS: crm/lt-m brn/lt gry, micro-m xtal, some silty, some chalky, foss frags, no vis por, no odor, ns.

SH: lt-dk gry/lt green-gry/blk/brn, some vry silty, slt carb, firm, no odor, ns.

LS: wht/crm/lt-m brn, micro-f w/min med xtal, some vry silty, min pyritic, foss frags, no vis por, no odor, ns.

SH: lt-dk gry/lt green-gry/blk w/brn mottling, some silty, some pyritic, firm-hard, no odor, ns.



LS: wht/cm/lt bm/lt-m gry, micro-f xtal, some vry silty, some chalky, foss frags, no vis por, no odor, ns.
 SH: lt-dk gry/blk/maroon-brn, some silty, slt carb, soft-firm, no odor, ns.

LS: crm/lt brn/lt gry-brn, micro-f, some vry silty, some chalky, foss frags, no vis por, no odor, ns.
 SH: m-dk gry/blk/brn, some vry silty, carb, firm, no odor, ns.

SH: m-dk gry, slt carb, firm, no odor, ns.
 LS: crm/lt-m brn, micro-m xtal, some vry silty/sndy, some chalky, some lt brn chert, foss frags/some grainy, no vis por, no odor, ns.

SH: m-dk gry/maroon-brn, silty, slt carb, firm, no odor, ns.

LS: lt-m brn/lt-m gry, micro-m xtal, some vry silty/sndy, some chalky, foss frags, no vis por, no odor, ns.
 SH: m-dk gry/lt green-gry/dk maroon-brn, some silty, firm, fissile, no odor, ns.

LS: crm/lt-m brn/lt-dk gry, micro-m xtal, some silty, some chalky, foss frags/dense ool, no vis por, no odor, ns.

LS: lt-m brn/lt-m gry/lt gry-brn, micro-m xtal, some vry silty, some chalky, some arg, lt brn chert, foss frags, 1 pce in 30min and 1 pce in 60min w/staining and oil on break, dul yel cut, no odor, ssfo.

LS: lt-dk brn/lt-dk gry, micro-m xtal, some silty, some chalky, lt brn/dk gry chert, foss frags, no vis por, no odor, ns.
 SH: lt-dk gry/blk, some silty, firm, fissile, no odor, ns.

LS: crm/lt-m brn/lt-dk gry, micro-m xtal, some chalky/arg/silty, some dk gry/dk brn chert, min foss frags/min dense ool, no vis por, no odor, ns.

LS: lt-dk gry/lt-m brn, micro-m xtal, wht/lt-dk brn chert, foss frags/dense ool/coral/grainy, no vis por, no odor, ns.

LS: crm/lt-m brn/lt gry, micro-m xtal, some chalky, wht/lt brn chert, foss frags/coral, no vis por, no odor, ns.

LS: same as above, no odor, ns.

LS: crm/lt brn/lt-m gry, micro-f xtal, some vry silty/sndy, some wht/dk brn/dk gry chert, foss frags/some dense ool, no vis por, no odor, ns.

LS: crm/lt-dk gry/lt-m brn, micro-m xtal, some silty/sndy, some wht/dk gry/dk brn chert, min foss frags, no vis por, no odor, ns.

LS: crm/lt-m gry/lt-m brn, micro-m, some silty/sndy/arg/chalky, foss frags, no vis por, no odor, ns.

SH: lt-dk gry/brn, some vry silty/sndy, some vry carb, glauc, no odor, ns.

SS: wht/lt gry/lt green/maroon-red/min mustard yel, f-m, sr-wr, pred qtz, glauc, some arg, opaque, friable, no odor, ns.

SS: as above, no odor, ns.

SH: m-dk gry/lt gry-green/dk brn, some silty/sndy, some vry carb, firm-hard.

SH: lt-dk gry/lt gry-green, some silty, carb, some LS nodules, firm, no odor, ns. Min SS: crm/lt green-gry, f-m, sr-wr, pred qtz, some glauc, some arg, firm, friable, no vis por, no odor, ns.

SH: lt-dk gry/green-gry, some silty, carb, firm, no odor, ns. SS: as above, no odor, ns. Some LS: wht-crm: f-m xtal, sandy, chalky, glauc, ool, no vis por, no odor, ns.

SH: lt-dk gry/blk/lt-m green-gry/brn, some silty/sndy, slt carb, min pyritic, no odor, ns.

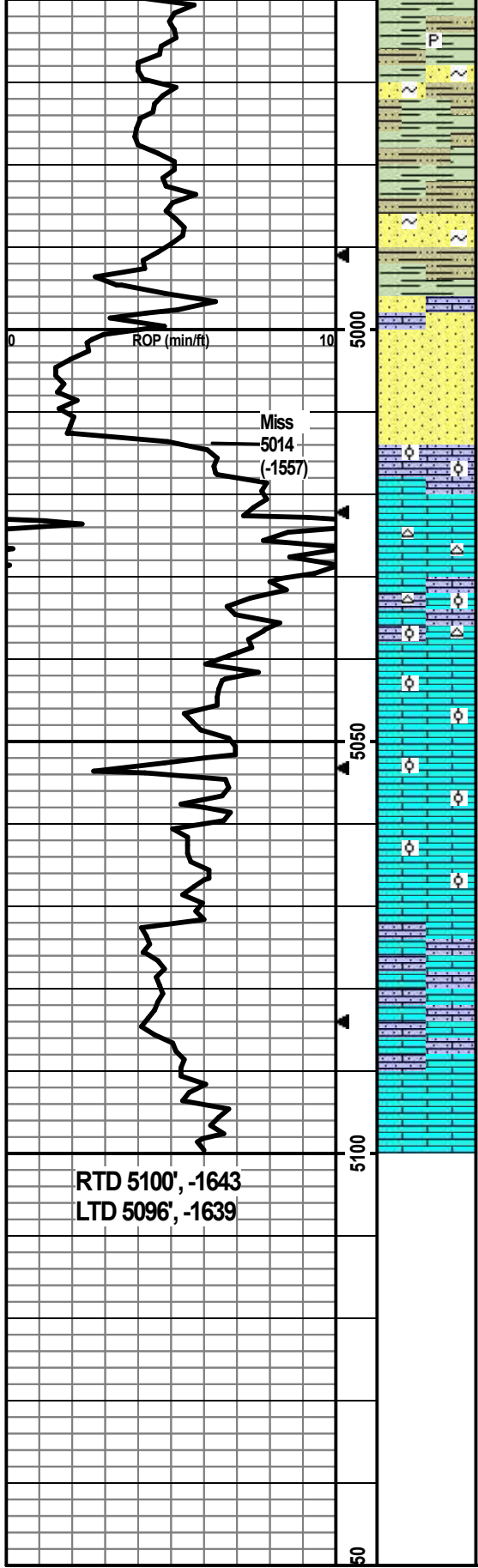
CFS @ 4750'
 Stop/30"/60"

CFS @ 4790'
 Stop/30"/60"

CFS @ 4810'
 Stop/30"/60"

CFS @ 4880'
 30"/60"

CFS @ 4920'
 30"/60"



Such, ns.

SH: lt-dk gry/lt green-gry, min silty, slt carb, min pyritic, greasy, no odor, ns.

SH: as above, no odor, ns. Min SS: lt green-gry, vf-f, sr-wr, pred qtz, arg, glauc, firm/friable, no vis por, no odor, ns.

SH: lt-dk gry/lt green-gry, some vry silty/sndy, carb. SS: lt bm/lt-m green-gry, f-m, glauc, carb, tight/no vis por, no odor, ns.

SH: lt-dk gry/lt green-gry, some vry silty/sndy, some glauc, firm. Some SS: lt-m gry-green, f-m, pred qtz, glauc, vry carb, hard, no vis por, no odor, ns.

SS: wht/lt gry-wht/lt bm-wht, f-m, sr-wr, pred qtz, slt glauc, opaque, some hard, some friable, no vis por, no odor, ns.

LS: lt bm, micro-m xtal, some vry sndy, some chalky, foss frags/few dense ool pcs, no vis por, no odor, ns. (Flood of SS from above.)

LS: cm/lt-m bm, micro-m xtal, lt bm chert, min foss frags, no vis por, no odor, ns. (Flood of SH and SS.)

LS: cm/lt-m bm, micro-m xtal, some silty/sndy, min chalky, lt bm chert, foss frags/min dense ool, no vis por, no odor, ns. (Cont flood of SH/SS from above.)

LS: cm/lt-m bm/lt gry, micro-med xtal, foss frags/dense ool, no vis por, no odor, ns. (Cont flood of SH/SS from above.)

LS: cm/lt-m bm/min lt gry-bm, micro-med xtal, some silty, foss frags/dense ool, no vis por, no odor, ns. (Cont flood of SH/SS from above.)

LS: cm/lt bm, micro-med xtal, foss frags/dense fn ool/grainy, no vis por, no odor, ns. (Cont flood of SH/SS from above.)

LS: cm/lt-m bm, micro-med xtal, some silty, min chalky, min foss frags, no vis por, no odor, ns. (Cont SH/SS flood.)

LS: cm/lt-m bm, micro-med xtal, some silty/sndy, foss frags, no vis por, no odor, ns. (Cont SH/SS flood.)

LS: cm/lt-m bm/gry, micro-m xtal, foss frags, no vis por, no odor, ns. (Cont SH/SS flood.)

CFS @ 5022'
30"60"

CFS @ 5100'
Stop/30"60"
Did 12 std short trip, cir 1.5 hr,
TOH for logging.

TD @ 5100'

RTD 5100', -1643
LTD 5096', -1639