



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

Well Name: EATON ENTERPRISES
Well Id: #1
Location: 1118' FNL, 736' FWL, Sec 30-T16S-R31W, Scott County, Kansas
License Number: API: 15-171-21226 **Region:** Scott County
Spud Date: 06/30/2018 **Drilling Completed:** 07/11/2018
Surface Coordinates: Lat: 38.6395885
Long: -100.7942446
Bottom Hole Vertical hole
Coordinates:
Ground Elevation (ft): 2956' **K.B. Elevation (ft):** 2967'
Logged Interval (ft): 3700' **To:** RTD **Total Depth (ft):** 4730'
Formation: Mississippian at RTD
Type of Drilling Fluid: Chemical

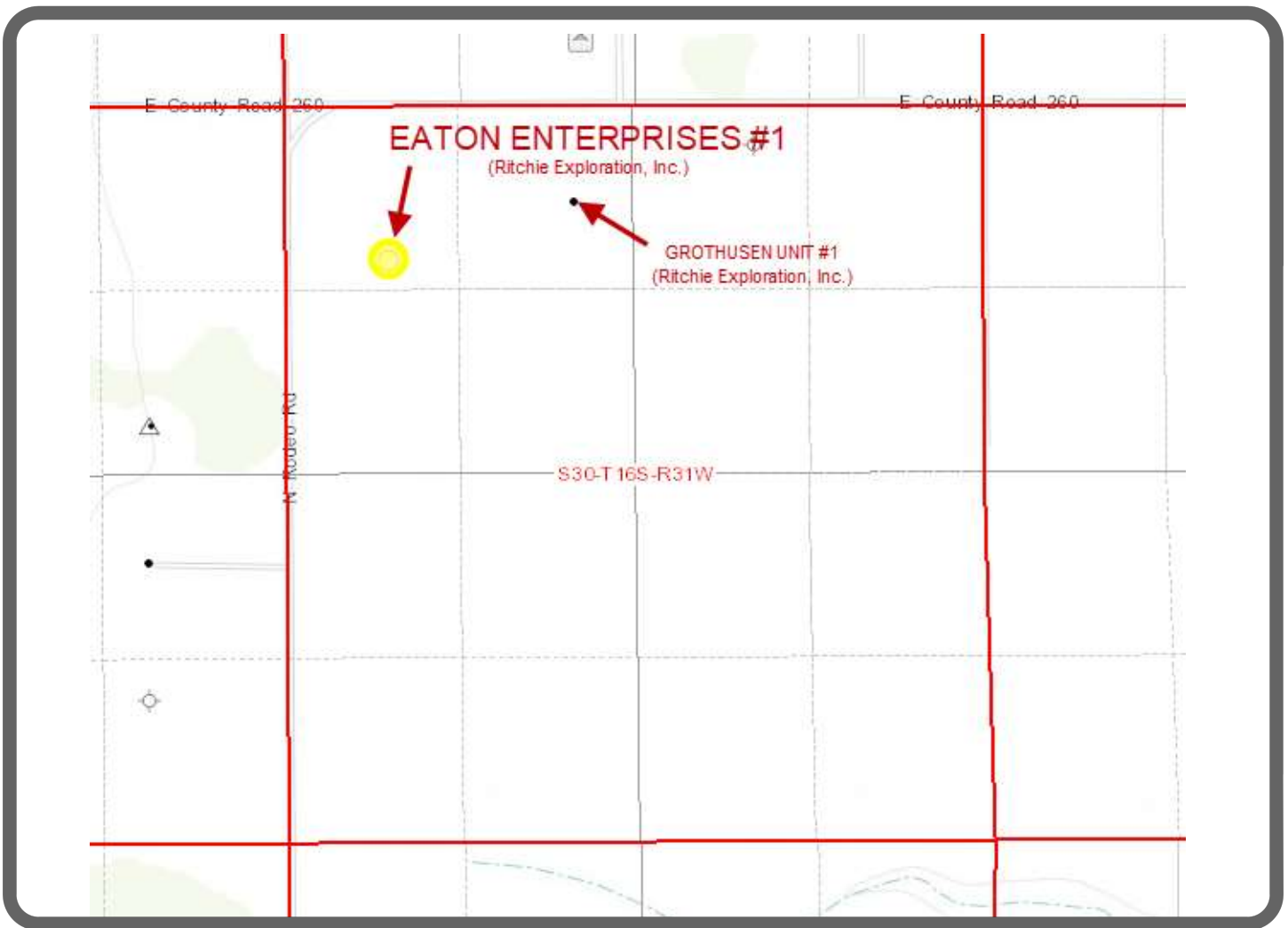
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OPERATOR

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: Murfin Drilling Company, Rig #21.

Tool Pusher: Juan Tinoco, 785-443-0127 (cell).

Surface Casing: 8 5/8" set at 266' (KB) w/190sx cement.

Production Casing: Based on field observations of drill cuttings, DST results and electric log evaluation, production casing (5.5") was installed.

Mud by: Mud-Co/Service Mud, Inc., Reid Atkins, 785-694-3741 (cell).

DST's by: Diamond Testing, Gene Gilpin, 620-617-4866 (cell).

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

RTD= 4730'

LTD= 4730'

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Stotler	3553'	-586	3553'	-586
Heebner Shale	3934'	-967	3934'	-967
Lansing	3973'	-1006	3975'	-1008
Muncie Creek Shale	4152'	-1185	4151'	-1184
Stark Shale	4251'	-1284	4250'	-1283
Hushpuckney Shale	4296'	-1329	4296'	-1329
Base of KC	4334'	-1367	4334'	-1367
Marmaton	4366'	-1399	4365'	-1398
Altamont	4391'	-1424	4390'	-1423
Pawnee	4462'	-1495	4462'	-1495
Myrick Station	4498'	-1534	4500'	-1536
Fort Scott	4514'	-1547	4514	-1547
Cherokee Shale	4540'	-1573	4540'	-1573
Johnson	4580'	-1613	4581'	-1614
Morrow	4611'	-1644	4611'	-1644
Mississippian	4643'	-1676	4642'	-1675
RTD	4730'	-1763		
LTD			4730'	-1763

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

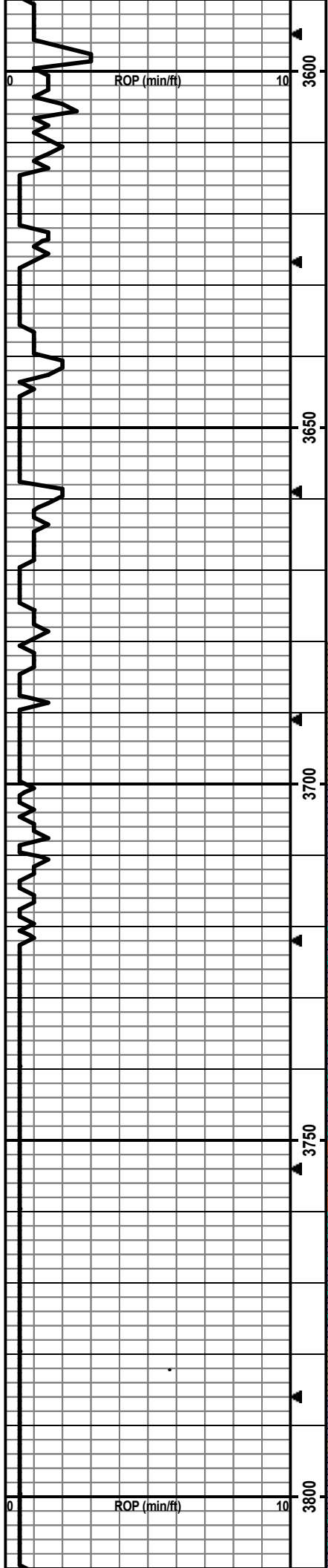
	Ferrpel
	Ferr
	Glau
	Gyp
	Hvymin
	Kaol
	Marl
	Minxl
	Nodule
	Phos
	Pyr
	Salt
	Sandy
	Silt
	Sil
	Sulphur
	Tuff
	Chlorite
	Dol
	Sand
	Sity

Rate of Penetration (ROP) ROP (min/ft)	Depth	Lithology	CFS Point	Oil Shows	Geological Descriptions	Remarks
0	34					
ROP (min/ft)	10					Note: Lost circulation at 3372'; 150 bbls of salt mud and 100 bbls of displacement mud.
					Morning Report Depth/Activity (7:00 am)	
					06/30/2018, MIRU/Spud.	
					07/01, drilling @ 390'.	
					07/02, drilling @ 2535'.	Mud-Co/Service Mud Inc. Check #1 @ 0' 06/30/18, predrilling instructions.
					07/03, drilling @ 3585'.	
					07/04, TOH DST#1 @ 3894'.	Mud-Co/Service Mud Inc. Check #2 @ 2642' 07/02/18 09:00am
					07/05, TIH after DST#2 @ 4016'.	wt vis pH chl
					07/06, drilling @ 4135'.	9.1 37 7 39000
					07/07, TOH DST#5 @ 4270'.	Filt LCM
					07/08, TOH DST#6 @ 4321'.	n/c 3
					07/09, TIH after DST#7 @ 4455'.	
					07/10, TOH DST#8 @ 4600'.	Mud-Co/Service Mud Inc. Check #3 @ 3659' 07/03/18 08:45am
					07/11, drilling @ 4725'; TD @ 4730'; electric logged.	wt vis pH chl
						8.7 55 11.5 2400
						Filt LCM
						6.8 4
						Mud-Co/Service Mud Inc. Check #4 @ 3894' 07/04/18 10:00am
						wt vis pH chl
						8.9 67 11.0 4000
						Filt LCM
						7.2 4
						Mud-Co/Service Mud Inc. Check #5 @ 4016' 07/05/18 08:00am
						wt vis pH chl
						9.1 56 11.0 4200
						Filt LCM
						7.2 3
						Mud-Co/Service Mud Inc. Check #6 @ 4205' 07/06/18 10:50am
						wt vis pH chl
						9.4 59 10.5 5000
						Filt LCM
						8.8 2
						Mud-Co/Service Mud Inc. Check #7 @ 4270' 07/07/18 08:40am
						wt vis pH chl
						9.3 55 11.0 4500
						Filt LCM
						7.2 2
						Mud-Co/Service Mud Inc. Check #8 @ 4321' 07/08/18 10:20am
						wt vis pH chl
						9.2 54 11.0 5500
						Filt LCM
						8.0 2
						Mud-Co/Service Mud Inc. Check #9 @ 4480' 07/09/18 10:15am
						wt vis pH chl
						9.3 61 10.5 6000
						Filt LCM
						9.6 2
						Mud-Co/Service Mud Inc. Check #10 @ 4600' 07/10/18 09:35am
						wt vis pH chl
						9.2 67 11.0 6600
						Filt LCM
						8.0 2
						Mud-Co/Service Mud Inc. Check #11 @ 4730' 07/11/18 09:20am

Morning Report Depth/Activity (7:00 am)

06/30/2018, MIRU/Spud.
 07/01, drilling @ 390'.
 07/02

Survey Record
 Deg @ Ft
 0.2 @ 267'
 0.5 @ 871'
 0.3 @ 1379'
 0.2 @ 1854'
 0.1 @ 2769'
 0.2 @ 3659'
 0.4 @ 3881'
 0.6 @ 4016'
 0.3 @ 4210'
 0.3 @ 4620'
 0.5 @ 4730'



Drill cutting samples at 10' intervals start at 3700'.

SH: med-dk gry/bm, vry silty, micaous, soft-firm, no odor, ns.

SH: lt-med gry, vry silty, firm, friable, no odor, ns.

LS: gry/bm/wht mottled, micro-fn xtal, some foss frags/fusln, vry silty, vry arg, no vis por, no odor, ns.

LS: cm/gry, micro-med xtal, foss frags, vry silty/sndy, arg, no vis por, no odor, ns. Some SH: lt-med gry, vry silty/sndy, carb, firm, fissile.

LS: gry/cm, micro-fn xtal, min foss frags, gry is vry silty arg, no vis por, no odor, ns.

SH: lt-med gry/gry-bm/bm, vry silty, carb, firm, fissile, no odor, ns.

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

SH: lt-dk gry, vry silty, carb, firm, fissile, some SS: gry, vf-f, r-wr, hard, friable, no odor, ns.

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

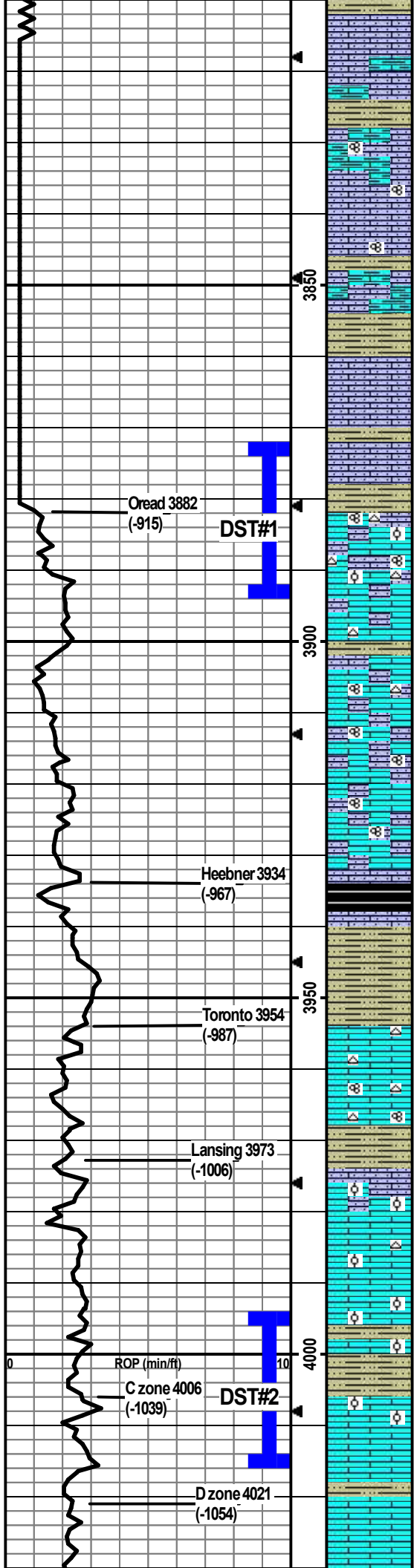
SH: lt-dk gry/bm, vry silty/sndy, firm, no odor, ns.

LS: cm/gry, micro-med, vry silty, arg, chalky, foss frags, no vis por, no odor, ns.

SH: gry-bm/gry, vry silty/sndy, carb, firm, fissile, no odor, ns.

LS: cm/tan/min gry, micro-fn xtal, vry silty, some arg, some chalky, no vis por, no odor, ns.

LS: cm/gry, micro-fn xtal, min foss frags, vry silty, arg, no vis por, no odor, ns.



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

LS: cm/lt gry/bm, micro-fn xtal, min foss frags, silty, arg, min ppt in-xtal por, no odor, ns.

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

LS: same as above, no odor, ns.

SH: lt-med gry, vry silty/sndy, some friable, carb, soft-firm, no odor, ns.

No Sample.

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

No Sample.

LS: cm/lt gry/lt brmsht gry, fn-med xtal, foss frags/fusln/dense ool, silty, some chalky, wht chert, ppt-fn in-xtal por, 3 pcs in 30min 9 pcs in 60min w/fn-crs in-xtal por w/sfo, dk bm, dull yel flor, slit odor, sfo.

LS: cm/lt gry/lt brmsht gry, fn-med xtal. foss frags/fusln, some silty, some chalky, wht chert, 12 pcs w/fn-crs in-xtal por w/sfo, bm oil, dull yel flor, slit odor, sfo.
Some SH: med-dk gry, some silty, firm, fissile.

LS: cm/lt gry/lt bm w/dk bm mottling, micro-med xtal, some chalky, some silty, foss frags/fusln, some ppt-fn in-xtal por, no odor, ns.

LS: same as above; 1 pce w/fn-crs por w/sfo, bm oil, dull flor, no odor, ssfo.

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

SH: lt-med gry, vry silty, soft, crushes easily, slit carb, no odor, ns.

LS: wht/cm, micro-med xtal, vry grainy, some vry chalky, foss frags, some silty, wht/lt gry chert, some ppt-fn in-xtal, no odor, ns.

LS: wht/cm/lt bm, micro-med xtal, some chalky, some silty, wht/lt gry/lt bm chert, foss frags/fusln, ppt-fn in-xtal por, no odor, 1 pcs in 30min w/fn in-xtal por w/sfo dull yel flor, ssfo.

SH: lt-dk gry/min lt green-gry, slit carb, slit silty, firm, fissile.

LS: cm/min lt gry, fn-med xtal, some silty, some chalky, foss frags/some dense ool, wht-lt brn chert, ppt-fn in-xtal por, no odor, ns.

LS: cm/min lt gry-bm, micro-med xtal, some chalky, foss frags/min dense ool, min wht/lt gry chert, ppt-fn in-xtal por, no odor, ns.

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

SH: lt-med gry/lt green-gry, some vry silty, slit carb, soft-firm.

LS: cm/lt bm, micro-med xtal, foss frags/ool, some pyritic, 23 pcs w/ppt-fn/min med in-xtal por w/sfo, dull yel flor, stg odor, sfo.

LS: wht/cm, micro-med xtal, foss frags, ppt-med in-xtal por, approx 25% of smpl w/sfo, vry strg odor, dull yel flor, gsfo.

LS: sht/cm/tan, micro-fn xtal, abund chalk, min foss frags, min ppt in-xtal/frac por, 5 pcs w/fn-med por w/sfo, dull yel flor, slit odor, sfo.

Made bit trip at 3881' connection, switched from PDC bit to rotary tri-cone bit.

CFS @ 3894' Stop/30"60"

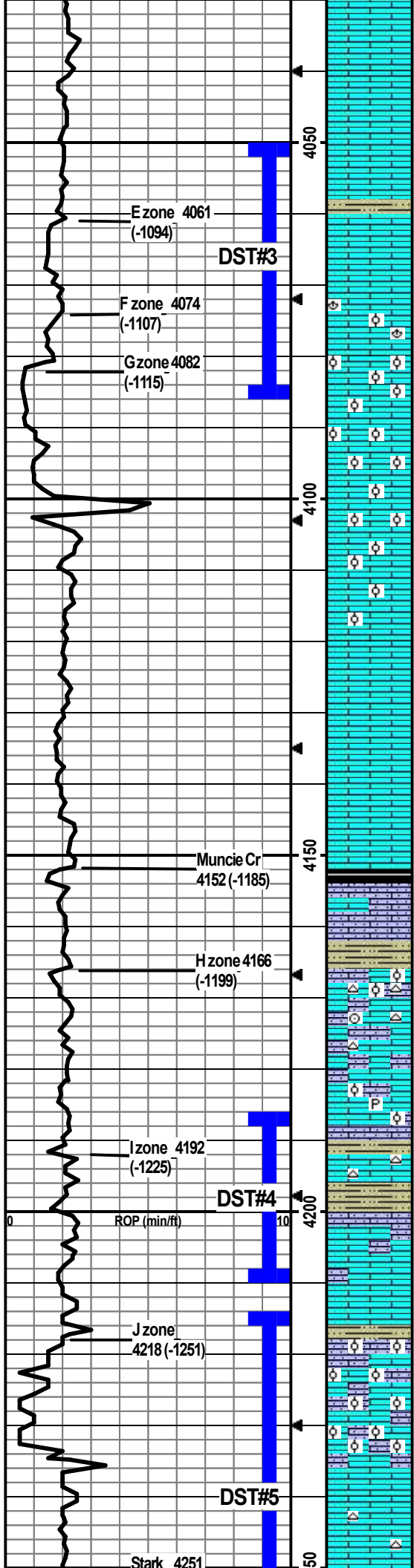
DST1) 3872-3894 Oread A-zone
30/45/45/60
1st) BOB in 9 min, no BB.
2nd) BOB in 11.5 min, no BB.
IFP 23-233#
ISIP 1098#
FFP 236-406#
FSIP 1089#
HP 1890-1888#
Recvd: 864' MCW.

CFS @ 3970' Stop/30"60"

DST2) 3994-4016 Lansing C-zone
30/45/30/30
1st) WSB died in 20 min, no BB.
2nd) No blow, no BB.
IFP 10-17#
ISIP 791#
FFP 19-23#
FSIP 733#
HP 1951-1945#
Recvd: 3' Mud.

CFS @ 4000' Stop/30"60"

CFS @ 4016' Stop/30"60"



LS: wht/cm, micro-med xtal, abund chalk, foss frags, mostly no vis por, 3 pcs w/f-med in-xtal por w/sfo, slit odor, ssfo.

LS: cm/lt gry, micro-med xtal, some chalky, foss frags, some ppt-fn in-xtal por, no odor, ns.

LS: cm/lt-med bm, micro-fn xtal, min foss frags, 16 pcs w/ppt-f in-xtal por w/sfo, dull yel flor, good odor, sfo.

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

LS: cm/lt bm, micro-fn xtal, min foss frags, some chalky, 19 pcs w/ppt-fn in-xtal por w/sfo, dull yel flor, good odor, sfo.

LS: wht/cm/lt brn, micro-fn xtal, foss frags/ool/brac, 4 pcs w/ppt-fn in-xtal por w/sfo, dull yel flor, odor, sfo.

LS: cm, micro-med xtal, abund med-crs ool, approx 50%+ of sample w/sfo, med-crs/vug oo-castic por, dull yel flor, stg odor, vgsfo.

LS: as above, abund ool, oo-castic, 2 pcs w/sfo, slit odor.

LS: cm/lt bm/lt gry, micro-med xtal, ool, chalky, some dense, some fn-crs oo-castic por, no odor, ns.

LS: as above w/lesser amt of ool, no odor, ns.

LS: cm/lt gry, micro-med xtal, min foss frags, some chalky, min frac por, no odor, ns.

LS: cm/lt gry, micro-med xtal, min foss frags, increase in chalk, min frac por, no odor, ns.

LS: cm/lt gry/lt brn, micro-med xtal, min foss frags, less chalky than above, no vis por, no odor, ns.

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

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

SH: med gry, silty, slit carb, soft-firm, fissile.

LS: cm/lt-med brn/lt gry, micro-med xtal, foss frags w/dense ool, some chalky, some silty/sndy cm/lt-dk gry/lt brn ool chert, no vis por, 1 pcs w/ppt-fn in-xtal por w/sfo, no odor, ns.

LS: cm/lt bm, micro-med xtal, foss frags/crin, some silty/sndy, some vry chalky, wht/lt gry/lt brn chert, no vis por, slit odor, no vis show.

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

LS: cm/lt-med brn/gry, micro-med xtal, some chalky, some silty/sndy, foss frags, wht/lt gry chert, no vis por, 2 pcs w/ppt-por w/sfo dull yel flor, no odor, ns.

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

LS: cm/lt gry, micro-med xtal, foss frags, some chalky, some silty, min wht chert, 22 pcs w/ppt-fn min-med in-xtal por w/sfo, dull yel flor, good odor, ns.

LS: cm/lt bm, micro-med xtal, foss frags/abund ool, some chalky, 24 pcs w/fn-crs in-xtal/oo-castic por w/sfo, dull yel flor, strg odor, sfo.

LS: cm/lt bm, micro-med xtal, foss frags/abund ool, some silty, some chalky, 8 pcs w/fn-crs in-xtal/oo-castic por w/sfo, dull yel flor, good odor, sfo.

LS: oolitic as above w/1 pcs w/sfo, some non-ool dense, cm/lt gry, micro-fn, some silty/sndy, min chalky, 1 pce w/med-crs oo-castic por w/sfo, dull yel flor, slit odor, ssfo.

LS: cm/lt bm/lt gry, micro-fn xtal, some foss frags, some chalky, wht/lt gry chert, 41 pcs w/ppt-fn in-xtal por w/sfo, dull yel flor, odor, gsfo.

CFS @4040'
Stop/30"/60"

CFS @4072'
Stop/30"/60"

CFS @4085'
Stop/30"/60"

CFS @4103'
Stop/30"/60"

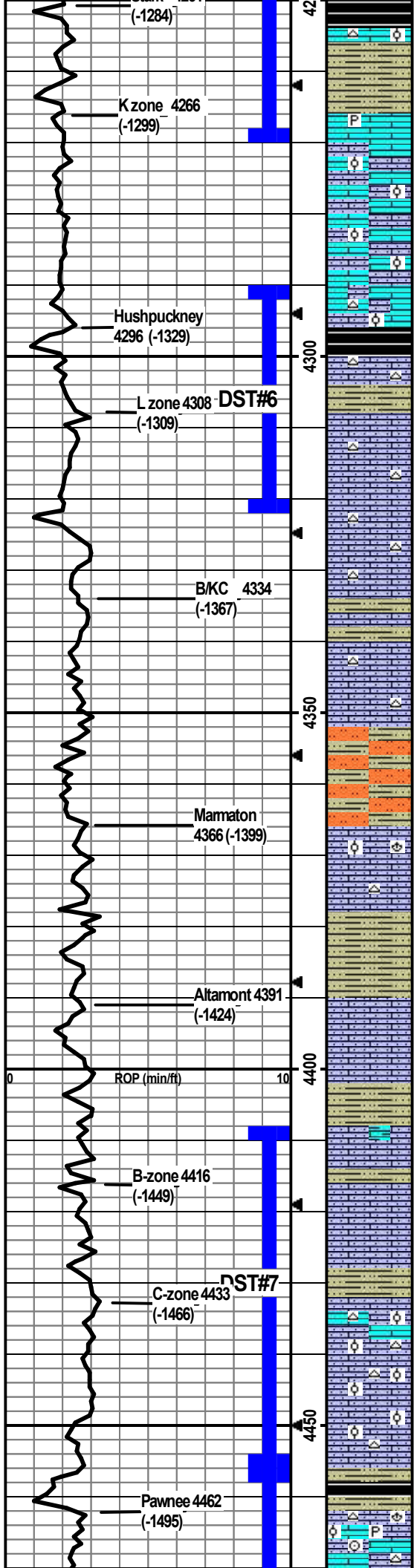
DST3) 4050-4085 Lansing D, E & F-zones

30/45/45/60
1st) 1" blow built to BOB in 3.5 min; no BB.
2nd) WSB built to BOB in 6 min; no BB.
IFP 57-381#
ISIP 983#
FFP 391-632#
FSIP 981#
HP 2019-1996#
Recvd: 1509' Total Fluid: 10' 100% O, 50' OCMCW (5%O, 35%M, 60%W), 189' MCOCW (15%O, 15%M, 70%W), 189' GCOCWCW (10%G, 10%O, 13%M, 67%W), 504' OCMCW (4%O, 5%M, 91%W), 567' MCW (5%M, 95%W).

CFS @4180'
Stop/30"/60"

CFS @4210'
Stop/30"/60"

CFS @4242'
Stop/30"/60"



SH: dk gry/blk, silt carb, firm, fissile.
 LS: cm/lt-dk brn, micro-crs xtal, foss frags w/some ool w/oo-castic por, some silty, wht/lt gry/brn chert, 9 pcs w/ppt-fn in-xtal por w/sfo, dull yel flor, odor, sfo.

SH: lt-med gry, silty-vry silty, some carb, soft-firm, some friable, fissile.
 LS: cm/lt-med brn/gry/gry mottling, micro-med xtal, foss frags, some chalky, some pyritic, 3 pcs w/ppt in-xtal por w/sfo, yel flor, silt odor, ssfo.

LS: cm/lt brn/lt gry-brn, micro-med xtal, foss frags/dense ool, vry silty, vry chalky, no vis por w/few pcs w/crs oo-castic por, no odor, ns.

LS: cm/lt gry, micro-crs xtal, foss frags/dense ool, vry silty, chalky, no vis por, no odor, ns.

LS: cm/lt gry/lt-med brn, micro-med xtal, foss frags/min ool, silty, chalky, wht/lt gry chert, no vis por, no odor, ns.

SH: lt-dk gry/blk, silty, silt carb, soft-firm, fissile.
 LS: cm/lt-med brn/gry, micro-med xtal, foss frags, silty, chalky, pyritic, wht chert, 23 pcs w/ppt-fn in-xtal por w/sfo, dull yel flor, odor, gsfo.

SH: lt-dk gry/blk/brn/green-gry, silty, silt carb, firm, fissile.
 LS: cm/lt gry, micro-med xtal, silty, chalky, wht/lt gry chert, some frac por, 3 pcs w/sfo looks like from above, no odor, ns.

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

LS: cm/lt gry/lt-med brn, micro-med xtal, foss frags, silty, some chalky, wht/lt gry chert, no vis por, no odor, ns. SH: gry-brn/dk gry, silty, silt carb, firm, fissile, no odor, ns.

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

SH: lt-med gry, vry silty/sndy, carb, soft-firm; Siltstn/SS: lt-med gry, vf-f, pred qtz, carb, soft-firm, friable, no odor, ns.

SH/Siltstn as above, no odor, ns.

LS: cm/lt brn, micro-med, foss frags/brac/dense ool, some silty, min wht chert, some chalky, no vis por, no odor, ns.

SH: lt-med gry, vry silty/sndy, silt carb, firm, fissile.

SH: lt-med gry/brn/maroon, vry silty/sndy, soft-firm, no odor, ns.

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

LS: cm/gry/brn, micro-med xtal, foss frags, some vry silty, arg, no vis por, no odor, ns.

SH: lt-med gry/green-gry, silty, carb, firm, fissile.
 LS: cm/lt gry/lt brn, micro-fn xtal, some foss frags, vry silty, chalky, 6 pcs w/ppt-fn in-xtal por w/sfo, dul yel flor, no odor, sfo.

LS: as above w/8 pcs w/fn-crs in-xtal por, dull yel flor, no odor, sfo.

SH: med-dk gry/green-gry/brn/maroon, silty, silt carb, soft-firm, fissile.
 LS: cm/lt brn, micro-med xtal, foss frags/crin/ool, some silty/sndy, chalky, wht/lt gry/lt brn chert, 13 pcs w/ppt-fn in-xtal/in-oo por w/sfo, silt odor, dul yel flor, sfo.

LS: same as above, 6 pcs w/ppt-med por w/sfo, dul yel flor, silt odor.

LS: same as above, 8 pcs w/ppt-crs por w/sfo, dul yel flor, silt odor.

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

LS: cm/lt-med brn/lt gry, micro-med xtal, foss frags/brac/crin/min ool, vry silty, some chalky, wht/lt gry-brn chert, silt pyritic, some frac por/min oo-castic por, 5 pcs w/ppt-fn in-xtal por w/sfo, dul yel flor, no odor, sfo.

CFS @ 4270'
 Stop/30"/60"

DST4) 4186-4210 Lansing I-zone
 30/45/45/60
 1st) 1/2" blow built to BOB in 15 min; BB built to 1".
 2nd) WSB built to BOB in 18.5 min; BB built to 1/4".
 IFP 22-171#
 ISIP 1076#
 FFP 173-262#
 FSIP 1073#
 HP 2094-2091#
 Recvd: 75' G; 750' Total Fluid:
 234' 100% O, 63' WCOCMCG (20%O, 20%W, 25%M, 35%G), 189' OCWCGCM (10%O, 20%W, 25%G, 45%M), 126' GCWCMCO (5%G, 20%W, 35%M, 40%O), 63' GCWCMCO (3%G, 20%W, 25%M, 52%O).

CFS @ 4321'
 Stop/30"/60"

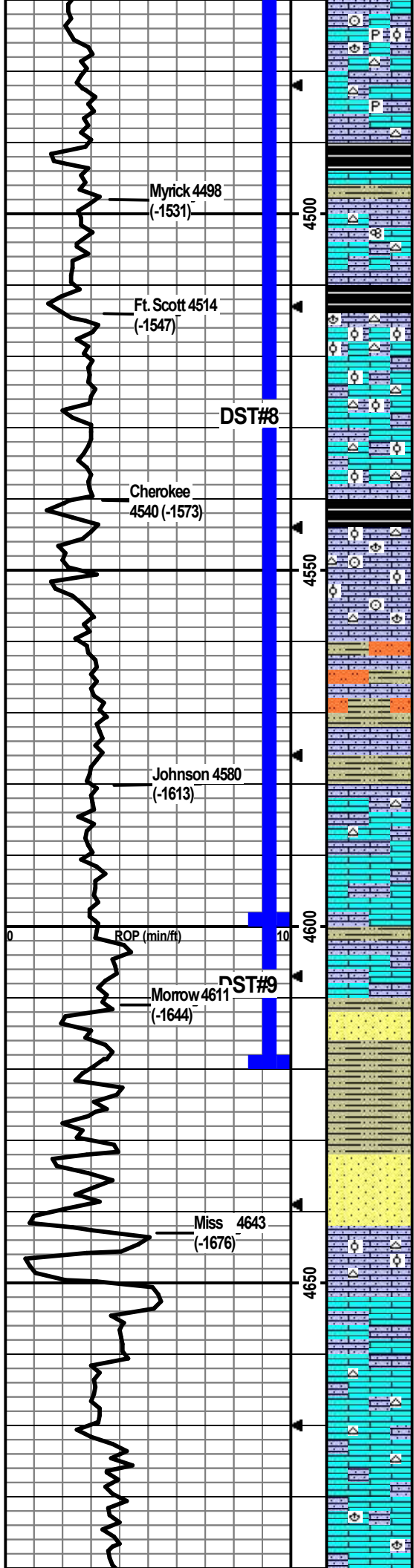
DST5) 4214-4270 Lansing J & K-zones
 30/45/45/60
 1st) 1/2" blow built to BOB in 20 min; no BB.
 2nd) 1/4" blow built to BOB in 25.5 min; WS BB died at 20 min.
 IFP 18-182#
 ISIP 1091#
 FFP 184-282#
 FSIP 1088#
 HP 2094-2073#
 Recvd: 662' Total Fluid: 32' OCWCM (3%O, 37%W, 60%M), 63' OCGCM (1%O, 6%G, 93%M), 126' GCOCMCW (5%G, 5%O, 25%M, 65%W), 252' OCGCMCW (3%O, 7%G, 40%M, 50%W), 189' MCOCW (10%O, 10%M, 80%W).

CFS @ 4410'
 Stop/30"/60"

CFS @ 4430'
 Stop/30"/60"

DST6) 4290-4321 Lansing L-zone
 30/45/45/60
 1st) WSB built to 2.9"; no BB.
 2nd) WSB built to 2.4"; no BB.
 IFP 12-37#
 ISIP 975#
 FFP 41-82#
 FSIP 941#
 HP 2133-2127#
 Recvd: 138' Total Fluid: 75' O, 63' OCM (10%O, 90%M).

CFS @ 4455'
 Stop/30"/60"



LS: as above w/3 pcs w/ppt-fn in-xtal por w/sfo, dul yel flor, no odor, ssfo.

CFS @ 4482
Stop/30"/60"

DST7) 4408-4455 Altamont B&C-zones

30/30/30/30
1st WSB built to 3/4"; no BB.
2nd) no blow; no BB.
IFP 11-22#
ISIP 1109#
FFP 23-30#
FSIP 1078#
HP 2162-2159#
Recvd: 30' OCM (2%O, 98%M).

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

SH: med-dk gry/blk/green-gry/dk bm, slit carb, silty, firm-vry firm, fissile. LS: med-dk bm, micro-med xtal, foss frags, no vis por, no odor, ns.

LS: cm/lt bm, micro-med xtal, foss frags/fusln, some silty, some chalky, wht/lt gry chert, some frac por, 4 pcs w/ppt-fn in-xtal por w/sfo, dul yel flor, no odor, ns.

SH: dk gry/blk, slit carb, firm-hard, fissile.

LS: lt-med bm, micro-med xtal, foss frags/brac/abund ool, some silty/sndy, some chalky, cm/lt-dk gry chert some oolitic, 11 pcs w/ppt-fn in-oolitic por w/sfo, dul yel flor, no odor, sfo.

CFS @ 4508
Stop/30"/60"

LS: cm/lt-med bm/dk mottle, micro-med xtal, foss frags/ool less than above, some chalky, some silty, slit pyritic, lt gry/lt-dk bm chert, 5 pcs w/ppt-fn in-xtal/in-ool por w/sfo, dul yel flor, no odor, sfo.

CFS @ 4530
Stop/30"/60"

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

SH: lt-dk gry/blk, some silty, slit carb, fissile.

LS: cm/lt bm, micro-med xtal, foss frags/brac/crin/ool, silty/sndy, arg, some chalky, some wht/lt gry/lt brn ool chert, 1 pce w/ppt in-xtal por w/sfo, no odor, ssfo.

LS: same as above, 1 pce w/ppt in-ool por w/sfo, dul yel flor, no odor, ssfo.

CFS @ 4555
Stop/30"/60"

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

SS/Sltstn: lt gry, pred qtz, vf-f, sr-wr, hard, friable, no odor, ns.

LS: cm/lt brn/lt gry, foss frags, vry silty/sndy, arg, vry chalky, some frac por, 1 pce w/brn staining 1 pce w/ppt-med in-xtal por w/sfo, no odor, ssfo.

DST8) 4456-4600 Pawnee thru Johnson

30/30/30/30
1st 1/4" built to 1/2"; no BB.
2nd) No blow; no BB.
IFP 15-23#
ISIP 273#
FFP 28-30#
FSIP 113#
HP 2156-2136#
Recvd: 20' OCM (2%O, 98%M).

LS: cm/lt-med bm, micro-med xtal, foss frags/ool, silty/sndy, brn chert, 21 pcs w/fn-vug in-xtal por w/sfo, dul yel flor, slit odor, gsfo.

SH: lt-dk gry/blk/brn/maroon, silty, slit carb, firm, fissile.

LS: cm/lt brn/lt gry, micro-fn xtal, foss frags, some silty/sndy, cm/lt gry chert, 22 pcs w/ppt-vug in-xtal por w/sfo, dul yel flor, slit odor, gsfo.

LS: cm/lt-med bm, micro-med xtal, some silty/sndy, some chalky, foss frags, 33 pcs w/fn-vug in-xtal por w/sfo, dul yel flor, slit odor, gsfo.

LS: cm/lt gry, micro-med xtal, some vry chalky, some silty, 33 pcs w/fn-crs in-xtal por w/sfo, dul yel flor, slit odor, gsfo.

SS: wht/lt gry/lt green-gry, vf-f, sr-wr, pred qtz, glac, ppt-fn in-xtal por, hard, friable, approx 25% of tray w/sfo, blk, no flor but strn cut, slit odor, vgdsfo. Blk thick globby tar oil.

SH: lt-dk gry/brn/green-gry/mustard yel, some vry silty/sndy, slit carb, firm, silty is friable, slit odor.

CFS @ 4620
Stop/30"/60"

Mostly SH as above; some SS as above, 3 pcs w/show of blk tar oil assumed from above, no odor, ssfo.

SH: lt-dk gry/bm/ green-gry/mustard yel/maroon, some vry sndy, slit carb, firm-hard, no odor, ns.

SS: wht/lt gry/lt green/maroon, vf-f, sa-r, pred qtz, glac, mostly clean w/some vry arg, hard friable, no odor, ns.

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

CFS @ 4642
Stop/30"/60"

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

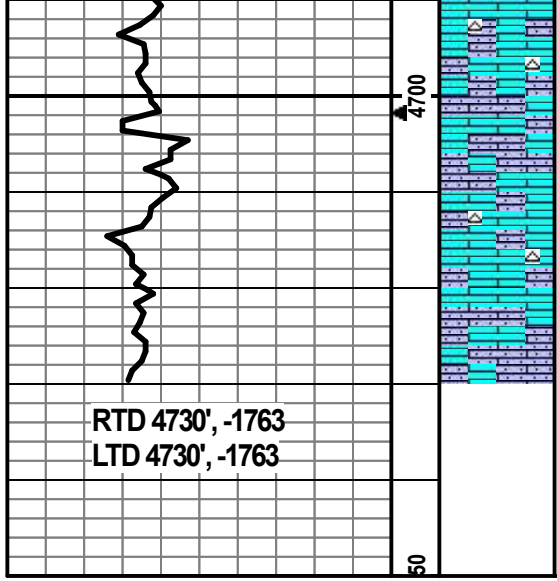
DST9) 4599-4620 Lower Johnson & Upper Morrow

30/30/30/30
1st) WSB; no BB.
2nd) No blow, flushed tool, no blow; no BB.
IFP 10-11#
ISIP 41#
FFP 100-102#
FSIP 102#
HP 2253-2244#
Recvd: 160' Mud.

LS: cm/lt bm, micro-fn xtal, some vry sndy, some vry chalky, min pyritic, some lt gry chert, no vis por, no odor, ns.

LS: cm/lt bm, micro-med, some sndy, some chalky, min lt gry chert, no vis por, no odor, ns.

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



RTD 4730', -1763
LTD 4730', -1763

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

LS: as above w/increase in sand and chalk, no chert, no odor, ns.

LS: cm/lt bm, micro-fn xtal, some chalky, decrease in sand, min gry/bm chert, no vis por, no odor, ns.

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

TD @4730'

CFS @4730'
Stop/30"/60"
Cir 1.5 hr to collect samples and condition hole then TOH for logging.